ACTES
DU XVᵉ CONGRÈS
INTERNATIONAL
DES LINGUISTES

QUÉBEC, UNIVERSITÉ LAVAL
9-14 AOÛT 1992

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PROCEEDINGS
OF THE XVᵗʰ
INTERNATIONAL
CONGRESS
OF LINGUISTS

QUÉBEC, UNIVERSITÉ LAVAL
9-14 AUGUST 1992

Actes
du XVᵉ Congrès
International
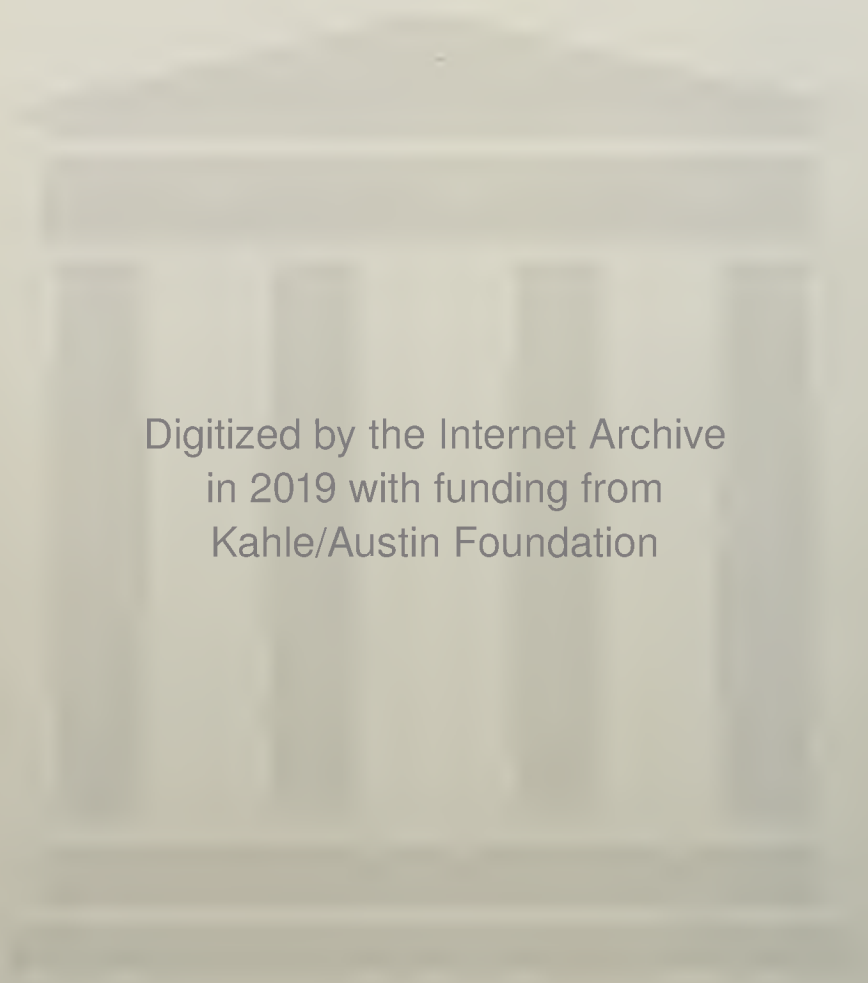## des Linguistes

QUÉBEC, UNIVERSITÉ LAVAL
9-14 AOÛT 1992

Proceedings
of the XVᵗʰ
International
Congress
of Linguists

QUÉBEC, UNIVERSITÉ LAVAL
9-14 AUGUST 1992

Le XVe Congrès international des linguistes a été organisé par l'Université Laval avec le concours de l'Association canadienne de linguistique (ACL) et sous les auspices du CIPL. Au nom du CIPL, l'Université Laval a été heureuse d'être l'hôte officiel de ce quinzième congrès, CIL 92, qui s'est déroulé du 9 au 14 août 1992 à la Cité universitaire dans la ville de Québec, Canada.

Les langues du Congrès étaient le français et l'anglais, les deux langues officielles du Canada.

The XVth International Congress of Linguists was organized by Université Laval in collaboration with the Canadian Linguistic Association (CLA) under the auspices of the PICL. Université Laval takes pleasure in inviting you, in the name of the PICL, to this fifteenth congress, ICL 92, which will take place from August 9th to 14th, 1992, on the university campus in Quebec City (Canada).

The official languages of the Congress were the two official languages of Canada, English and French.

REMERCIEMENTS / ACKNOWLEDGEMENTS

ACTES
DU XVᵉ CONGRÈS
INTERNATIONAL
DES LINGUISTES

QUÉBEC, UNIVERSITÉ LAVAL "V,1"
9-14 AOÛT 1992

Les langues menacées

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Publié par

André Crochetière,
Jean-Claude Boulanger
et Conrad Ouellon

Editors

Endangered Languages

PROCEEDINGS
OF THE XVᵗʰ
INTERNATIONAL
CONGRESS
OF LINGUISTS

QUÉBEC, UNIVERSITÉ LAVAL
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Les auteurs sont les seuls garants de la qualité linguistique des textes soumis pour publication. Ils sont également responsables des libertés prises avec les consignes imposées par le comité d'édition.

The quality of the language in the texts is the responsibility of the authors alone. The authors are also responsible for the liberties taken with the instructions issued by the editing committee.

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CONGRES ANTÉRIEURS

	villes / cities	organisateurs / organisators
1928	La Haye / The Hague	Uhlenbeck
1931	Genève / Geneva	Bally
1933	Rome / Roma	Pavolini
1936	Copenhague / Copenhagen	Jepersen
1939	Bruxelles / Brussels	Langenhove
1948	Paris / Paris	Vendryes
1952	Londres / London	Turner
1957	Oslo / Oslo	Sommerfelt
1962	Cambridge / Cambridge	Haugen
1967	Bucarest / Bucharest	Iordan
1972	Bologne / Bologna	Devoto
1977	Vienne / Vienna	Dressler
1982	Tokyo / Tokyo	Hattori
1987	Berlin / Berlin	Bahner
1992	Québec / Québec	Auger

PROGRAMME SCIENTIFIQUE / SCIENTIFIC PROGRAM

Le programme scientifique comprend des séances plénières, des communications orales, des communications par affiche, des tables rondes et une séance de clôture.

Le Comité d'organisation se joint à la présidente du Comité de programme, Marie Surridge pour remercier les personnes suivantes de l'aide apportée à la difficile tâche de l'organisation du programme :

The scientific program includes plenary sessions, oral presentations, poster sessions, panel discussions and the closing session.

For help in the difficult task of organizing the program, the Program Committee Chair, Marie Surridge, and the whole of the Organizing Committee wish to express their thanks to the following persons:

P. Bhatt P (U. Toronto)
H. Cedergen (U. Q. à Montréal)
S. Clarke (Memorial U.)
E. Drescher (U. Toronto)
V.A. Fromkin (UCLA)
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L. Stanford-Markwith (U. Alberta)
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L. White (McGill U.)

PRÉSENTATION

Quelque 500 conférences, communications et exposés ont été entendus dans les multiples séances parallèles tenues lors du XVe Congrès international des linguistes qui s'est déroulé à Québec en août 1992. Dans les volumes qui suivent, on trouvera rassemblée toute la mosaïque des textes proposés au comité des actes pour la publication. Certains chercheurs ayant préféré un autre canal de diffusion n'ont pas soumis leur texte aux éditeurs.

Les **Actes** occupent quatre forts volumes totalisant près de 1 900 pages. Le premier regroupe les allocutions de la séance d'ouverture, les onze conférences des séances plénières, les exposés, rapports et discussions des 19 tables rondes (plus de 75 contributions). Les textes sont ordonnés suivant l'ordre chronologique de leur présentation au Congrès. Les trois autres volumes réunissent les communications offertes dans les différentes sections thématiques. Les articles sont classés par section et suivent l'ordre alphabétique des auteurs dans chacune. Le volume 2 contient les sections 1 à 3, c'est-à-dire quelque 99 articles, le volume 3 porte sur les sections 4 à 7 et réunit 132 articles tandis que le volume 4 offre 114 articles répartis dans les sections 8 à 17. Les allocutions de la séance de clôture ainsi qu'un index général des auteurs terminent ce volume.

Même si un certain nombre d'erreurs de détail ont été corrigées dans les textes à l'étape de l'édition, nous considérons que les auteurs sont les seuls garants de la qualité linguistique des textes soumis pour publication. Ils sont également responsables des libertés prises avec les consignes imposées par le comité d'édition. Par ailleurs, les contributions publiés dans les **Actes** expriment librement les opinions de leurs auteurs. Elles n'engagent aucunement la responsabilité des éditeurs, ni celle du Comité d'organisation du Congrès.

Les **Actes** sont l'aboutissement d'un travail d'équipe. Les éditeurs tiennent à remercier tous ceux et toutes celles qui, du début à la fin des opérations, ont contribué à leur préparation. Il convient de mentionner notre reconnaissance particulière à Anne-Marie Ouellet, étudiante de deuxième cycle à l'Université Laval, qui nous a aidés à l'étape finale de la mise au point du manuscrit. Merci également à Pierre Auger, président du CIL 1992, pour ses conseils toujours judicieux. Les **Actes** forment un témoignage d'envergure pour la connaissance, l'avancement et le développement de la recherche en linguistique contemporaine dans le monde. Puissent-ils avoir une très large diffusion.

Les éditeurs
Québec, le 7 juin 1993

INTRODUCTION

Some 500 conferences, papers and presentations were heard during the multiple parallel sessions at the XVth International Congress of Linguists held in Québec City in August 1992. The following volumes gather together the mosaic of papers sent in for publication to the editing committee. Some presenters, preferring a different means of distribution, did not submit their texts to the editors.

The **Proceedings** make up four thick volumes totalling almost 1900 pages. The first volume includes the opening remarks, the eleven papers presented during the plenary sessions, as well as the presentations, discussions, and reports from the 19 panel discussions (over 75 articles), arranged chronologically. The other three volumes contain the papers presented in the different thematic sections, arranged thematically and alphabetically by author. Volume two includes sections 1-3, about 99 articles, volume 3 focusses on sections 4-7, which make up 132 articles, and volume 4 presents 114 articles from sections 8-17. The closing remarks as well as a general author index complete the fourth volume.

Although some minor mistakes were corrected during editing, the quality of the language in the texts is the responsibility of the authors alone. The authors are also responsible for the liberties taken with the instructions issued by the editing committee. Furthermore, the papers published in the **Proceedings** reflect the opinions of the authors, whose views are not necessarily those of the editors or of the congress' organizing committee.

As this publication is the product of teamwork, we wish to thank all those who participated in its preparation. Special thanks go to Anne-Marie Ouellet, a postgraduate student at Laval University, who helped in the final stages with revisions of the manuscript. We would also like to thank Pierre Auger, president of the 1992 congress, for his suggestions, which were always pertinent. These **Proceedings** are a witness to the knowledge, advancement and development of linguistics research in the world today. May they be widely distributed.

The editors
Québec, June 7, 1993

SÉANCE D'OUVERTURE / OPENING SESSION

Pierre Auger, Président du CIL92

Université Laval, Québec, CANADA

Monsieur le Recteur de l'Université, MM. les Président et Secrétaire général du CIPL, chers collègues, Mesdames et Messieurs

Merci d'être venus nombreux au XVe Congrès international des linguistes qui s'ouvre aujourd'hui à Québec dans la plus ancienne université francophone d'Amérique. Au nom du Comité d'organisation du Congrès, je vous souhaite la bienvenue et je formule avec vous le voeu que nous partagions ensemble cinq journées fructueuses au plan scientifique et riches d'une amitié qui va au-delà des frontières des pays, des continents même. La bienvenue également au Comité international permanent des linguistes, à son exécutif (je salue ici les professeurs Robins et Uhlenbeck) et à ses représentants nationaux.

Dear colleagues, thank you so much for your participation at the Fifteenth International Congress of Linguists which opens today in Québec City, in one of the oldest universities in America. In the name of the Organization Committee I would like to welcome you to this important event and hope that we will share together five fruitful days of scientific discussion, rich in a friendship that goes beyond country and continental borders. Welcome also to the International Permanent Committee of Linguists, its executive with a special salutation to Professors Robins and Uhlenbeck and its national representatives.

Le Congrès se tient pour la deuxième fois en Amérique du Nord. Il a eu lieu une première fois, en 1962, à Boston (Massachussets) au M.I.T.; trente ans plus tard, c'est à Québec que se fait le grand rassemblement, à Québec ville-berceau du peuplement francophone en Amérique qui participe aujourd'hui à un vaste ensemble canadien caractérisé par un bilinguisme français-anglais au plan officiel, auquel il faut ajouter plusieurs langues

autochtones amérindiennes et inuit, sans oublier plusieurs autres langues des communautés néo-canadiennes qui ont toujours à coeur de préserver leur patrimoine linguistique d'origine. Cette réalité linguistique canadienne n'est bien sûr pas étrangère au thème majeur du Congrès orienté vers la sauvegarde et le développement des langues menacées, nous en sommes bien conscients. Ce thème identifié lors de la tenue du Congrès de Berlin est toujours d'actualité en ce sens que le problème des langues menacées prend de jour en jour plus d'importance socialement parlant. La dualité langue dominante-langue dominée intensifie sa présence avec l'ouverture du marché des langues qui accompagne la libéralisation des échanges internationaux. De la même façon qu'on réclame la protection des ressources naturelles, on devra bientôt en venir à l'adoption de politiques de sauvegarde des langues menacées dans le monde.

C'est donc à la demande expresse du CIPL à la suite de la tenue du Congrès de Berlin que le thème des langues menacées a été choisi comme thème majeur de ce congrès. Le président Robert H. Robins et le secrétaire général Eugenius M. Uhlenbeck du CIPL viennent de publier un ouvrage important sur la question des langues menacées, il s'agit du collectif *Endangered Languages* paru chez Berg à la fin de 1991. Nul doute que cet ouvrage servira à alimenter les travaux du Congrès reliés à ce thème et plus particulièrement la première séance plénière qui suit immédiatement l'ouverture du Congrès et qui sera présidée par le Prof. Uhlenbeck.

C'est à la professeure Marie Surridge de l'Université Queen's à Kingston et à son équipe d'évaluateurs que nous devons la qualité du programme qui vous sera présenté au Congrès. Je profite de l'occasion pour les remercier du magnifique travail qu'ils ont effectué. Le programme comprend cinq séances plénières, 17 sections pour les communications orales articulées en 74 sous-sections (500 exposés environ), 37 communications par affiches, et 18 tables rondes. En tout, quelque 800 congressistes ont pu être réunis ici, je crois qu'il s'agit là d'une performance intéressante en considérant le climat économique généralement maussade qui a prévalu ces deux dernières années et qui n'a pas épargné les milieux universitaires.

Le CIL 1992 est placé sous l'égide du Comité international permanent des linguistes qui relève du International Council of Philosophy and Humanities et dont la mission est de promouvoir le développement de la linguistique comme science. Ce quinzième Congrès a en outre été organisé avec le concours de l'Association canadienne de linguistique (ACL). Il réunira quelque 800 congressistes provenant de 49 pays représentant toutes les parties du globe. Je profite de l'occasion pour souligner la présence ici aujourd'hui de plusieurs collègues des pays de l'Est qui ont pu profiter des changements politiques récents pour venir rejoindre la communauté scientifique internationale. En votre nom et au mien, je leur souhaite la bienvenue parmi nous.

Le Congrès de Québec se situe dans la pure tradition très internationalisante des Congrès précédents. Depuis 1947 que des Congrès CIL se déroulent régulièrement sous la bannière du CIPL, chacun de ces événements a su présenter une image fidèle et dynamique de l'état d'avancement de cette science humaine moderne qu'est la linguistique. Sans exagérer, on peut dire qu'à travers les Actes des Congrès, on peut suivre pas à pas les développements importants de la linguistique contemporaine. Ces congrès sont également le seul lieu où peuvent se côtoyer toutes les approches théoriques relatives aux sciences du langage, un lieu donc nécessairement diversifié et ouvert à la diffusion des connaissances les plus récentes en linguistique théorique. CIL 1992 a voulu dès le départ être à la hauteur de cet objectif et c'est dans cet esprit qu'ont travaillé les membres du Comité d'organisation.

Un événement de cette ampleur n'aurait su se passer du support matériel de diverses institutions publiques, je profite donc de l'occasion pour les remercier de leurs généreuses contributions. Il s'agit :

du Ministère de l'Enseignement supérieur et de la Science (gouvernement du Québec);
du Ministère du Tourisme (gouvernement du Québec);
du Ministre responsable de l'application de la Charte de la langue française, Monsieur Claude Ryan (Conseil exécutif du Québec);
du Bureau fédéral de développement régional (gouvernement du Canada);
du Secrétariat d'État du Canada;
du Conseil de recherche en sciences humaines du Canada;
de l'Université Laval :
- la Faculté des Lettres
- le Département de langues et linguistique
- le Centre international de recherche en aménagement linguistique (CIRAL).

Sans leur aide, il aurait été très difficile, voire imposssible de préparer adéquatement un congrès d'une telle ampleur.

L'Université Laval qui accueille le Congrès compte parmi les toutes premières universités canadiennes à avoir créé spécifiquement un département de linguistique . Traditionnellement orientée vers la linguistique romane et franco-québécoise, la linguistique guillaumienne et la phonétique du français, son champ de travail s'est progressivement agrandi au cours des années vers la didactique des langues (ÉLAV), l'aménagement linguistique (CIRAL), la lexicographie québécoise (TLFQ), la linguistique générative et le traitement automatique de la LN. Ce département compte aujourd'hui plus de 60 professeurs à temps plein pour constituer un des plus grands

départements de linguistique au Canada. Par ses programmes d'enseignement, il essaie de rendre compte de tous les grands courants de la linguistique moderne.

C'est devenu un lieu commun que de dire que l'étude de la langue et celle des langues est propre à rapprocher les peuples en diminuant les distances et les barrières interlinguistiques. L'Europe d'aujourd'hui représente bien, je le crois, ce modèle plurilingue évolué où chaque nation et chaque peuple peut vivre et se développer dans de grands ensembles sans perte de ses acquis linguistiques. Cette idéologie basée sur le respect de la différence linguistique, entre autres, pose la prise en compte de cette différence comme un élément fondamental de la pensée humaniste de demain. En effet, vouloir aplanir la distance entre les peuples ne doit pas être un idéal qui vise à déposséder en même temps les peuples de leur tissu culturel profond.

En terminant, je vous souhaite, je nous souhaite un fructueux Congrès. Je vous rappelle que le Comité d'organisation et le personnel du CIL sont à votre entière disposition durant cette semaine pour rendre votre séjour à Québec agréable et vous faire profiter au maximum de cet important événement scientifique.

Finally, I wish you a stimulating Congress. Allow me to remind you that the Organization Comittee and staff of CIL 92 is at your entire disposal and will do all that is possible to make your stay in Québec City, the Université Laval an enjoyable one. I would now, like to present the next speaker Professor Robins, the President of the International Comittee.

SÉANCE D'OUVERTURE / OPENING SESSION

Michel Gervais, recteur / rector

Université Laval, Québec, CANADA

Messrs President and General Secretary of the International Committee, Chairman, ladies and gentlemen

C'est pour moi une grande joie et un honneur de vous accueillir et de vous souhaiter la plus cordiale bienvenue à l'Université Laval à l'occasion de ce Quinzième congrès international des linguistes. Comme c'est la première fois que nous avons le plaisir d'être l'hôte de votre congrès, je me permet de vous dire un mot de l'Université qui vous accueille. L'Université Laval a été fondée en 1852 par une charte écrite en langue anglaise et octroyée à Londres au Séminaire de Québec par la Reine Victoria. Mais ces lointaines origines remontent à la création du Séminaire du Québec en 1663, par le premier évêque d'Amérique du Nord, Monseigneur François de Montmorency de Laval, d'où le nom de notre université. C'est en fonction de cette origine que l'Université Laval est considérée la plus ancienne université canadienne, comme la première, et pendant longtemps la seule université française en Amérique, et comme l'une des plus anciennes universités des deux Amériques, après l'Université de Lima, l'Université de Mexico et l'Université Harvard.

Le début de notre université fut modeste et pendant près d'un siècle, elle n'accueillait annuellement que quelques centaines d'étudiants dans les facultés traditionnelles de théologie, de droit et de médecine. Mais dans la dernière moitié du vingtième siècle, l'Université Laval a connu un essor extrêmement rapide et un progrès étonnant. Elle accueille aujourd'hui trente-six mille étudiants dont près de mille sept cent étudiants étrangers. Elle compte des facultés, des écoles et des centres de recherche dans pratiquement tous les grands écoles scientifiques et professionnelles. La recherche s'y est développée à un rythme accélérée au point qu'elle est aujourd'hui considérée comme une des grandes universités de recherche nord américaine. L'an dernier, elle décernait près de six mille diplômes de baccalauréat, mille

diplômes de maîtrise et près de deux cents doctorats. Parmi les disciplines cultivées à Laval, il vous plaira d'entendre que la linguistique occupe une place de choix. La chose ne doit pas surprendre, la question linguistique revêt en ce pays une importance vitale, et ce de façon permanente, car la survie de la langue française dans l'immense bassin anglophone de l'Amérique du Nord tient d'une invincible volonté collective de survie, sinon, du miracle. Rien d'étonnant à ce que la plus ancienne université francophone d'Amérique se soit toujours sentie solidaire de cette volonté de survie; qu'elle ait toujours perçu la promotion de la culture d'expression française comme un élément essentiel de sa vocation et qu'elle ait manifesté un intérêt soutenu pour l'enseignement et la recherche sur tout ce qui a trait à la langue. De là se traduit, entre autres, par l'enseignement des langues et plus particulièrement par l'enseignement du français aux non-francophones depuis plus de cinquante ans, et, par la création d'un Département de linguistique, il y a trente ans cette année si je ne m'abuse, à l'initiative de notre collègue, le professeur Roch Valin. Rien d'étonnant non plus à ce que le développement de la première science humaine ait trouvé ici une terre particulièrement fertile. Je pourrais m'étendre longuement sur les nombreuses réalisations de l'Université Laval en cette matière. Je me contenterai de mentionner les travaux réalisés dans le cadre du Centre international de recherche sur le bilinguisme, transformé récemment en un Centre international de recherche en aménagement linguistique, la conservation et l'exploitation du Fond Gustave Guillaume, que les organisateurs du Congrès vous invite à visiter, et le grand projet du Trésor de la langue française du Québec, sans parler des travaux majeurs dans le domaine de la phonétique, de la terminologie, de la sociolinguistique, de la didactique des langues ou de l'informatique appliquée à la linguistique, et j'en passe. Vous comprendrez par là, que la tenue de votre quinzième Congrès revêt pour nous une signification toute particulière.

L'un des deux grands thèmes de ce quinzième Congrès, la survie des langues menacées, est aussi pour nous très évocateur et, au profane que je suis, il apparaît particulièrement bien choisi. Les préoccupations contemporaines à l'égard de l'écologie nous ont tous rendus conscients des dangers entourant la survie des espèces végétales et animales et de la gravité de la disparition de telles espèces. "Extinction is forever", peut-on lire sur les T-Shirts portés partout dans le monde et montrant des belugas ou des oiseaux menacés. Il convient de réaliser que la perte ou l'oubli d'une langue ou même d'un dialecte constitue la perte ou l'oubli, d'une façon particulière, d'être homme, de se représenter le monde et de vivre en société, et qu'elle revêt une portée non moins dramatique et irrémédiable. La lecture du programme de votre congrès me convainct qu'il constituera une étape marquante dans la réflexion de ce thème et de façon plus générale dans le développement de votre discipline.

Finally, I express my sincere thanks to the organizers of this important event, and my full gratitude to the International Committee of Linguists for having chosen our university to host their Fifteenth Congress. I hope that this meeting will be a complete success and that your stay at Laval University and in Quebec City will be an enriching and agreable experience you will never forget. Thank you very much.

SÉANCE D'OUVERTURE / OPENING SESSION

Robert W. Robins, President of CIPL

University of London, London, ENGLAND

Monsieur le professeur Auger, monsieur le recteur de l'Université, mesdames et messieurs, ce Congrès des linguistes est le premier qui ait lieu dans une université canadienne, nous tenons à le souligner. Nous sommes très reconnaissants de l'accueil que nous ont réservé nos amis et collègues canadiens pour cette réunion à la fois très importante et très intéressante. La dernière fois que nous nous sommes rassemblés dans le "Nouveau Monde", c'était à Boston, en 1962. Depuis lors, nous avons tenu cinq congrès : en Roumanie, en Italie, en Autriche, au Japon, et en Allemagne. Une distribution aussi large des lieux de réunion pour les Congrès convient tout à fait à un groupe international d'universitaires comme celui rassemblé ici sous l'égide du Comité International Permanent des Linguistes.

Since the last congress, held in Berlin, we have of course to regret a number of valued and distinguished colleagues all over the world in our discipline and it might be appropriate at this time just to recall the name of such linguists who have played an important part in our generation and have often been present and active in the International congresses. I mention the names of professor Dwight Bolinger, professor Zellig Harris, professor Archibald Hill and professor Eugene Henderson.

Each time that we meet in these quinquennial congresses, it beholds us to focus our attention on one or more of the specific problems confronting the worldwide community of linguists and at the same time to review the current theoretical condition of contemporary linguistic studies. Such matters form the content of our plenary sessions. At the same time it is our duty to provide opportunities for specialists from all countries in the now numerous branches of linguistics to meet and to discuss their particular interests. All this may be seen provided for in the program you have before you, but I should like to draw your attention to one plenary item: "les langues menacées"

/ "endangered languages". Economic and political trends have their effects
on the survival of the languages of smaller speech communities under the
effective control of larger and more powerful speech communities. The
problems arising for speakers of the threatened languages and for the
linguistic community as a whole are our concern in this International
Congress. The problems are twofold. People whose languages are under
threat may, for cultural and political reasons, try to maintain their own
languages and their own identity by keeping their language in use in the
neighborhood of a potentially more dominant language. We recall the
struggles, at least partially successful, of the Irish, the Welsh and the Gaylick
Scots, to have their languages recognized and taught in their schools and
accorded proper facilities in television and radio broadcasting. Let us be
clear, every death of a language impoverishes the world linguistic community.
Ask not for whom the bell tolls, it tolls for thee. And where people strive to
maintain the status of their language, by litterary programs, litteracy programs,
language festivals and the like, such as the Welsh is saidforth: we as linguistic
scientists have the duty to give them all the technical assistance and moral
support that we can.

Mais il y a quelques langues qui seront certainement mortes dans une
ou deux générations. Un bon nombre d'entre elles ne survivront pas jusqu'au
vingt-et-unième siècle. Nous avons lu l'ouvrage classique *Language Death*, de
Nancy Dorrian, et nous sommes honorés de sa présence parmi nous et de sa
participation aux sessions du Congrès. Cependant, il ne peut être question de
tenter de préserver artificiellement l'usage d'une langue pour laquelle une
communauté n'a plus d'intérêt. Nous ne devons pas traiter les sujets parlants
comme des spécimens de musée; il faut bien se rendre compte qu'il reste
beaucoup à faire, pendant que les sujets parlants sont encore en vie, pour
décrire, analyser et enregistrer les langues les plus menacées. Comme nous
l'avons dit dans le préface du livre *Endangered Languages*, que vous avez reçu
en vous inscrivant, nous proposons que durant ce congrès nous prenions des
dispositions afin d'organiser et d'administrer, avec le concours du CIPL et de
l'UNESCO, un programme systématique et détaillé pour l'enregistrement, le
description et l'analyse d'au moins quelques-unes de ces langues. Ce
programme aura besoin d'enquêteurs sur le terrain, en anglais "field workers",
formés et enthousiastes; il offrira des possibilités d'emplois pour quelques-uns
de nos meilleurs jeunes linguistes. Nul doute que la communauté scientifique
internationale accueillera avec enthousiasme un tel programme.

With these few remarks, I would like to thank the organizers of this
congress, our Québec friends and colleagues, and I would like to wish all
participants a most pleasant and successful congress.

SÉANCES PLÉNIÈRES

PLENARY SESSION

SESSION PLÉNIERE 1 PLENARY SESSION

Prof. E.M. Uhlenbeck

Secrétaire général CIPL/PICL General Secretary

This is not an ordinary plenary session, not a plenary of the usual type like we had on previous congresses; it is not a purely academic session devoted to a general linguistic topic. I like to see this meeting, and this congress in general, in some sense, as a turning point in the study of the languages of the world. From now on we are going to pay serious attention to the extremely rapid rate of language extinction in many parts of the world; which has as one of its consequences, a dangerous weakening of the empirical basis of our discipline. But to pay attention is of course not enough, what we need is to find ways and means to fully exploit our linguistic descriptive potential and to embark upon an ambitious plan of action. Just like the biologits who witnessed the extinction of many species of plants and animals and who have realized that we cannot leave things to nature, we linguists cannot remain indifferent to the fact of rapid widespread language death.

Since 1970, the year in which Einar Haugen delivered his paper on the ecology of language at the *Burg Wartenstein* Symposium, there is fortunately a growing awareness, especially among sociolinguists, of the seriousness of this process of extinction. At the previous congress, held in Berlin in 1987, CIPL was urged by a number of linguists to make the extinction of languages more widely known and to put it on the agenda of the next congress as a central topic. CIPL accepted this proposal. In the intervening years between the previous and present congress, CIPL has tried to attain two goals: to provide a solid basis for discussion and to try to convince UNESCO to adopt the extinction problem as a project of its own, because it was clear to us that the problem is a worldwide one which could only be attacked by CIPL, if it could count on extensive financial and moral support from an international organization like UNESCO. The first of these two goals led to the volume of "Endangered Languages" which is now in your hands.

I would like to express here publicly the gratitude of CIPL to all

linguists who contributed to this unique survey. As to our second goal, I am happy to be able to report that a close cooperation has been established between CIPL and the Conseil international de la philosophie et des sciences humaines, of which professor Stephen Warm is at the moment President. In February of this year, this Council organized a meeting in Paris, in which CIPL also took part. This meeting led to a set of recommendations to UNESCO and also to a proposal to CIPL to endorse the following resolution and to bring this to the notice of the general conference of UNESCO which takes place next year. I will now read the resolution.

> «As the disappearance of any one language constitutes an irretrievable loss to mankind it is for UNESCO a task of great urgency to respond to this situation by promoting, and, if possible, sponsoring programs of linguistic organizations for the description in the form of grammars, dictionaries and texts, including the recording of the oral litteratures of hitherto unstudied or inadequately documented endangered and dying languages.»

This resolution will of course be discussed tomorrow at the meeting of our Executive Comittee and also at the meeting of the General Assembly on Friday. But, I thought it necessary to give this resolution some point of publicity as it is, or perhaps I should say ought to be, of concern to every linguist.

Finally, I would like to announce that on Tuesday evening, at eight o'clock, an informal meeting will take place in room 1A of the Charles-de Koninck building. A meeting to which I invited all the members of the panel and their reporters, of course, and everybody who has taken a special longtime interest in the problem of endangered languages and who are ready to work on this problem in the future; for instance, by becoming members of an advisory committee which may help the Executive Committee of CIPL in solving the many intricate problems involved in setting up a coherent plan of descriptive action.

Let me now return to the present session. I would like to propose to structure our meeting in the following way. First, I would like the rapporteurs to deliver their papers; this will take I guess about one hour. Then, we will have a tea or coffee break. And after that, there is time to spend on discussion until about 12:30. I propose to organize the discussion in the following way. In the first place the members of the panel may like to react to the speeches of the rapporteurs. Then there may be questions from the floor, either to the panel or to the rapporteurs. And finally, I hope there is at least some time left for discussing more practical matters such as research priorities and research possibilities.

May I now invite Professor Hale to deliver his paper and to introduce the papers of the other rapporteurs.

WORKING WITH ENDANGERED LANGUAGES:
PRIVILEGES AND PERILS

Nancy C. Dorian

Bryn Mawr College

Most of the world's approximately 6,000 languages are small languages, and a shockingly large proportion of them is endangered.[1] Endangered languges share some unfortunate features with endangered species. One of them is irreplaceability. Few endangered languages are adequately documented, and the circumstances which can lead to successful revitalization or revival are rare. Another unfortunate shared feature of endangered species and endangered languages is that they impinge on most of us relatively little. Rare species which can block a dam project, like the snail darter in the U.S., or rouse international conservationist sympathies, like the mountain gorilla, are the few among the many. Many small languages decline to a last handful of speakers far from the world's attention. Even basic information about the number of surviving individuals which represents a rare language or a rare species is often hard to come by, more nearly a guess than an accounting. Typically we have a general sense that the situation is critical, but we seem to have much less sense of what we should be doing about it.

For linguists as a professional group, this is not, or should not be, an abstract matter of no immediate concern. Languages are our stock-in-trade, after all. What we as professionals most particularly know derives from them, reflects their properties, and if we're lucky also predicts the possibilities of those properties. If we do not concern ourselves with the dauntingly large number of languages which are surely going to disappear in the foreseeable future, there is no likelihood at all that they will be written into the human record or that linguists of any future time will have reliable data from them to consider.

To the obvious 'Does it really matter?' question there are two sorts of answers, one in terms of inherent value, the other in terms of instrumental value.[2] Few human achievements are more remarkable than language. Our sheer admiration for the magnificence of the achievement ought to make us respectful of every individual manifestation of it. In at least this sense all human languages can be said to have inherent value, then: that each represents the language-organizing capacities of the human animal in a unique way. The instrumental value lies in the diversity of the outcome. Those language-

organizing capacities have produced some thousands of different results which in their similarities and likewise in their dissimilarities offer a measure both of the extent of the capacity and of the constraints which operate on it. To appreciate the nature of those capacities and constraints we need as full a range of exempla as we can obtain, including the information offered by related but alternative forms of the same language. This means not only versions drawn from different dialects and sharply different kinds of discourse, but also versions which reflect what Obler & Menn (1986) have called 'exceptional language': child-language versions; avoidance versions (such as 'mother-in-law language'); pidginized and creolized versions; and so forth. This is a tall order, even where languages which are not threatened are concerned. But something like this must represent our professional mandate, and our privilege. This is what we are trained for, and no other academic or professional training provides the wherewithal so fully as ours. If we do not do it, it will not be done.

It is also what we are most able to do. There will certainly be some cases in which linguists can contribute to creating a climate more favorable to the survival or revitalization of a threatened language. Publicity can make a start on this, and you might say that the very naming of endangered languages as one of the themes for this Congress is a contribution to the necessary publicizing of the threat to many contemporary languages. But in many cases we will not be able to promote direct change in the unfavorable conditions which threaten a language, and therefore what we have to offer is essentially our capacity to make a record of it. It's little enough, and there will be some groups which reject even that, perceiving it as a final expropriation of their culture. Still, many will welcome the chance to leave a record if only they get that chance. Whether or not they have any hope that their descendants will some day take an interest in the language, they often wish to leave a record of it as their linguistic legacy.

It's a happy coincidence, in cases of this kind, that self-interest and altruism can be made to coincide. The linguist who wants to describe and analyze the language needs abundant texts: bodies of material which are extensive enough to exemplify a good variety of constructions, a wide range of lexicon, various discourse properties, several styles, and so forth; at the same time, the people whose language is threatened will often be concerned to leave behind them a solid body of traditional material and also some personal narratives. Linguists can usefully accommodate final speakers' desire to document their traditional lore and their life histories, since these materials are likely to make up a good-sized and relatively coherent corpus.[3]

There are no doubt many reasons why linguists as a professional group have not to date tackled the endangered-language problem with the energy it requires and merits. Some are practical and need to be addressed by the discipline as a whole, if the will to change the situation can be mustered. In this category belong such matters as the encouragement and funding of fieldwork dissertations, along with the rehabilitation of descriptive monographs as intellectual undertakings; the climate within the profession has perhaps not been broadly favorable to these enterprises within recent decades, and for young

scholars with careers to consider there has consequently been too little inducement to devote the considerable time required for such studies or to cultivate the personal adaptability required. Anthropologists and missionaries have far outperformed linguists in this undertaking. Awareness of the problem also needs to be assiduously cultivated: it ought to be commonplace in Linguistics departments around the academic world to find Endangered Language lists posted and constantly updated, for regions near and far, in much the way that governments and biological research stations maintain and update lists of endangered species. (Indeed, there is a desperate need for the equivalent of those biological research stations themselves. Institutions like the Alaska Native Language Center and the Australian Institute of Aboriginal Studies need to be many, rather than few.) Ethnologue (Grimes 1989) and Endangered Languages (Robins and Uhlenbeck 1991) should be conspicuously on display and always accessible.

Another kind of problem arises from a certain intellectual arrogance to which scholars are prone: the tendency to suppose that we have by now amassed most of the requisite data for our analyses and made most of the important discoveries. Probably each generation suffers to some extent from this comforting illusion, since it's difficult by definition to imagine directions which havent yet been taken and it can be almost as difficult to see the flaws in one's own methods or theories. We are quite naturally more conscious of advances over previous researchers' efforts than of possible deficiencies in our own efforts. Encouraging our illusions is the fact that there are only a few branches of Linguistics which require information about large numbers of languages: comparative linguistics is one, typology another. Most of the rest of us can operate with information from a 'representative' group of languages (though 'representative' can be hard to define satisfactorily) or from a particular language family. In making our generalizations we then draw not only on our personal knowledge of various languages but on what certainly appears to be a large body of information about other languages, if you've waded through it to find evidence in support of a position or argument.

There are two clear problems with this way of proceeding. One is that the number of well documented languages is so small relative to the number of un- or underdocumented ones. The other is that there can be unconscious biases in our very approach to documenting languages, that is, in consultant selection or in recording and analyzing procedures.

Despite the fact that the two threatened languages with which I've personally worked are members of relatively well studied language families, I consider that I ran afoul of both these problems in my fieldwork. In Scotland, for example, there was no documentation of the distinctive eastern dialect of Gaelic I was working with from even as much as two decades earlier, which meant that I had no earlier local norm of so much as a generation's depth against which to set the dialect as I found it in the 1960s. And from the point of view of the phenomenon which most interests me currently, I find now that my sampling procedures were barely adequate, even though they went well beyond the norm in the number of speakers studied and in the duration of the period of study. If such problems arise in connection with a dialect of

Gaelic in an accessible site like Scotland, then the problems may well be much greater in connection with languages which are barely known except by name and still unstudied . I assume that they will in fact be greater, but that our sense of responsibility coupled with our hope of discovery will persuade us to persist in trying to overcome them.

To speak of responsibility and dangle a prospect of discovery, as I've just done, while suggesting that only a combination of ignorance and illusion supports the notion that our current knowledge is sufficient for generalizing and theorizing, is comfortably abstract. I think we ought not to be comfortable, and therefore I propose to stop being abstract. Instead I'd like quite specifically to introduce some material from my Scottish Gaelic fieldwork in East Sutherland because I think the material in question offers an illustration of the risk of both of the problems which I've raised: procedural bias in recording a threatened language, and imperfect documentation as a result.

In order to make my points, I offer here three tables which present findings on five cases of inter-speaker variation, and sometimes also intra-speaker variation, from fluent speakers of East Sutherland Gaelic. The variation in question is of a kind which I'm calling <u>personal-pattern variation</u>, for reasons which will quickly become apparent. These instances of variation do not correspond to any type of variation which is currently well recognized, so far as I'm aware. The variants in any given case of personal-pattern variability are not patterned like, or regarded by speakers of the dialect like, either of the other prominent forms of variability in the dialect. Those others are regionally-based variation (the villages of Brora and Golspie versus the village of Embo, for the most part) and proficiency-based variation (fluent-speaker versus imperfect semi-speaker variation, above all, a form of variation which is correlated with age within any one village). I'm currently tracking 18 cases of personal-pattern variation, 8 which are variable across all three villages, 4 which are variable across Brora and Golspie, and 6 which are variable within Embo. They consist primarily of variant forms of roots, suffixes, or grammatical elements, but several involve the initial consonant mutations for which the Celtic languages are famous, and several others involve grammar; meaning does not seem to be affected. With one exception they are very little attended to by speakers, who furthermore claim they are of no particular significance if asked to comment on the differences. This sort of variation is taken for granted. By contrast, fluent native speakers attend minutely and obsessively to geographical variation, which is deeply bound up with local identity, and they notice with amusement or disapproval most of the proficiency-related aberrations on the part of imperfect speakers.

You may have noticed that variation related to socioeconomic status has not been mentioned. When today's fluent East Sutherland bilinguals were growing up, their home communities were occupationally and economically undifferentiated: all were fisherfolk and all were poor. As a stigmatized social group the fisherfolk had no access to other occupations until after World War I, and then only gradually and grudgingly. Marriage was within the group because of the severe social stigmatization, and more often than not within the village rather than across villages. Within any one village fisher houses were ghettoized

and were mostly built to the same plan, regardless of how many people might live in the household. By economic necessity the young people all left school at the earliest age permitted by law, namely 14 years. Thus there was a striking absence of differences in socioeconomic status among the fisherfolk: occupation and education were uniform, and income differences were trivial. Social networks were dense and multiplex because of the endogamous marriages and the residential and occupational segregation: any two people might be both blood relatives in some degree and also affines; they might live in the same street and also be members of the same work crew; nearly all were co-congregants in the intense religious life of the region.[4]

Tables 1 through 3 deal with five instances of personal-pattern variation which appear among Embo Gaelic speakers. Two of the five are to some extent common to Brora and Golspie as well, but my data are far more usefully plentiful for Embo. In Embo, the smallest and most strongly Gaelic-speaking of the villages, I had a particularly large pool of fully fluent sources and I gradually acquired a respectable body of freely spoken, mostly tape-recorded, material from a subset of those sources.[5] The earliest tapes date from 1964, the most recent tape from 1991. I recorded all of the material from E4 myself,[6] and was present when all of the material from E10 and E22 was taped, but all other speakers made some recordings in my absence and gifted or mailed them to me. Most of the material from E24 and E28 was taped in my absence, for example, and all of the material from E3 and E32. Even when I acted as interviewer, as I did regularly with E4, my own choice of variants had little impact on my interlocutors for three reasons: I was young relative to all of them; I was a less proficient speaker than all of them; and because I moved routinely across village lines and was never able to clear my speech of regionally based variants completely, even though I worked hard at it, my sources were all accustomed to hearing and disregarding variants from me which they never used themselves. It is also important to note that I have no active command of standard Gaelic and speak only the local East Sutherland variety.[7]

In all three tables underlined numbers indicate some degree of clear preference for one variant as opposed to the other.[8] The criteria for 'clear preference' here are: either (a) at least three instances of one variant without any instances of the other, or (b) a preference by at least five instances for one variant over another. In case B both variants are underlined for E4 in recognition of the fact that he makes unusually high use of both.

In Table 2, six speakers from Table 1 who provide enough data so that their preferences between variants emerge in at least three of the five cases are selected and grouped according to their favored variants. Across the pairs of columns it is apparent that all five speakers agree only in case C, and that the sets of agreeing speakers do not hold across all cases. E13 and E24 agree in three of four cases for which both provide data, for example, but they differ in case D; E13 and E28 also agree in three of four cases, but differ in case B. E4 and E24, whose freely spoken texts provide evidence of preferences in all five cases, differ radically only in case E; but E24 also does not use the /xa t rɔ/ variant of B to nearly the degree that E4 does.

Table 1: Embo speakers' use of variants in freely spoken texts,
preferences or high-level uses underlined

speaker age/sex	A hã:nig	hãn:	B xa rɔ	xa t rɔ	C *čɛug	raxu	D furax	furiçal	E mwĩ	mwĩç
E3 85m			2	0			1	0		
E4 82m	13	4	48	21	0	5	1	7	0	11
E6 75m	2	0			2	0	1	0		
E7 ?73f	2	0	4	0						
E10 70m	1	0	1	0	3	0			1	0
E13 67f	10	2	12	1	0	3	5	0	1	3
E19 56f	2	7	10	0	0	3	0	1	1	8
E22 54f	5	0	1	0						
E24 54m	10	0	38	4	0	6	3	8	6	0
E26 50m	(1)	7	24	0					3	0
E28 46f	6	0	8	21	0	4	3	0		
E32 41m	0	1	(1)	0						
	'came'		'wasn't'		'would go'		'staying'		'out'	

Table 2: Alignment according to the variant use of speakers who
show preferences in at least three of the five cases

A hã:nig hãn:	B xa rɔ xa t rɔ	C *čɛu raxu	D furax furiçal	E mwĩ mwĩç
E4 E19	E4 (E4)	E4	E13 E4	E24 E4
E13 E26	E13 E28	E13	E28 E24	E26 E19
E24	E19	E19		
E28	E24	E24		
	E26	E28		

Table 3: Agreement (circles) and disagreement (triangles) on
variant use among the speakers of two social networks

	A hã:nig hãn:	B xa rɔ xa t rɔ	C *čɛu raxu	D furax furiçal	E mwĩ mwĩç
I	E10 (E13) E13 (E22)	E3 E10 E10 E13 E22	E10 E13	E10	E10 E13 E13
II	(E19) E19 (E24 E28)	(E19) E19 E24 E24 E28 E28	(E19 E24 E28)	E19 E24 E24 E28	E19 E19 E24

Table 3 offers a more critical test of agreement and disagreement on variants among these Embo Gaelic speakers because it presents socially grouped sets of speakers. Group I shows the members of a single household, three siblings and the husband of the elder sister. Agreement is fairly good, but the case is a weak one since only two of the four speakers have preferences that are established by the criteria of Table 1; in one of the two cases where both have established preferences, they differ cleanly from one another. Group II, a brother and sister close in age plus the brother's wife, all next-door-neighbors and companionable friends, offers a better test because more variant preferences are established by the criteria of Table 1. All three of them agree only in case C; in the four remaining cases there is divergence within the social group among established preference choices.

Overall the variation I've been discussing here does not behave like the variation reported by variationist sociolinguists, and even less like that reported by dialect geographers. Though there are some shared preferences within a social network, as in the Group 1's case A and Group II's case C (Table 3), coincidence or divergence in variant choice cannot be fully accounted for in terms of network or any of the other socially grounded categories which are currently well recognized. Since all speakers are strictly local, place of origin is obviously uniform and non-contributory. If other instances of variation for which I have freely spoken data were added, there would be some in which a suggestion of age-grouping appears; but when elicitation data (which agree to a useful degree with freely spoken data, for the sources who provide both) are added for additional Embo speakers, that suggestion disappears in all but a very few cases.

Personal-pattern variation in East Sutherland Gaelic is a rich topic which calls for much fuller treatment than I can give it here, but I wanted at least to suggest the differences between this sort of variation and the kinds which the literature of our discipline more typically discusses. For economy's sake I will simply list here the notable features of the personal-pattern variants to be met with in East Sutherland Gaelic, including the many not discussed here: 1) They are moderately numerous, and some are of high frequency. 2) With one exception no value judgement in terms of 'good' or 'bad' usage attaches to them. 3) It is relatively rare for the village community as a whole to show variation while all individual speakers have just one favored variant, but there are some instances. 4) In only about five cases are the alternative forms of these variables conditioned by anything in the phonological or syntactic environment, and even then sometimes for certain speakers as individuals, rather than for the forms across all speakers. 5) Patterns of usage cut across family lines and across social networks, ruling out the likelihood that groups of kin or of friends determine these patterns in any simple sense. 6) Patterns of usage cut across gender lines, ruling out the possibility of male- vs. female-based groupings. 7) Individual patterns of variation are mostly stable across tape-recordings which were made a number of years apart in time. 8) Only a modest part of the total variation reflects analogical regularization processes. 9) Any influence from contact with English is indirect, since direct English analogs of the variants are absent in most cases.

To return now to the larger questions about research which focuses on threatened languages: if it's the case that East Sutherland Gaelic speakers produce a great deal of a kind of variation that is not widely recognized or discussed, what are the implications? There are two chief possibilities. One is that East Sutherland Gaelic is simply odd, perhaps even that it's odd because it's dying. The other is that there are indeed still novel linguistic phenomena which merit attention in small populations; and if in the United Kingdom, in a dialect of a relatively well studied language, then most likely all the more so in less accessible sites and in less familiar languages.

To eliminate the possibility that East Sutherland Gaelic is simply odd, or is odd because it's dying, I need to produce evidence from the literature that the kind of person-by-person variation which I encountered among the Gaelic-speaking fisherfolk of East Sutherland has been encountered by some other linguists, too, even if not studied for its own sake, and encountered at least sometimes in languages with a stronger demographic base. To date I've turned up that sort of suggestive evidence in a dialectologist's careful report on the Pennsylvania German spoken in Lehigh and Berks Counties in the 1940s (Reed 1949), in a recent account of changes in the use of a-prefixing in Appalachian English by a team of linguists (Christian, Wolfram, and Dube 1988), and in Jane and Kenneth Hill's paper on variation in the form taken by the element -āška 'possession' in the Mexicano of three neighboring towns on the southern flanks of the Malinche Volcano in central Mexico (Hill and Hill 1986). I'll quote here from the crucial section of the Hill and Hill paper, because the authors are exceptionally careful in taking into consideration the possible effect of social factors such as age or sex or occupation and also the possible effect of proficiency, in case the region-wide tendency toward shift from Mexicano to Spanish might account for the variation. They report that the different developments of the element -āška in two of the three towns concerned

> do not appear to be associated consistently with age, sex, dominant source of income (such as whether a speaker is a factory worker or a farmer ...), or whether a speaker was Mexicano- or Spanish dominant (all respondents are bilingual). ... Speakers like S93, S96, and S53, all of whom exhibit irregular paradigms, are Mexicano-dominant bilinguals. Therefore, the position of a community on the language-shift continuum may not be an important factor in the -āška variability. We conclude that developments of -āška may be quite idiosyncratic.... (1986a:410).

The Malinche Mexicano speakers live in a region which is rural and isolated, as the East Sutherland Gaelic speakers do, and speakers of both languages are frequently illiterate in their home language, which is not taught in the schools. Even fully fluent, highly proficient speakers participate in the variation, in both regions. If it should be the case that some isolated speech communities -- made up of speakers who escape from much linguistic norming by remoteness and illiteracy, and perhaps escape the pressures of speech accommodation because all community

members know each other intimately and cannot change social impressions by adapting to one another's speech -- are characterized by a much greater presence of idiosyncratic patterns of variation than we are accustomed to, then many endangered languages may display that same idiosyncratic variation, since they often share the remoteness, the illiteracy, and the intimate levels of speaker interaction as well. We should accordingly be alert for possible manifestations of personal-pattern-like variation when we encounter such languages.

Assessment of the full significance of personal-pattern variation for the social organization of speech patterns and the transmission of those patterns, and for processes of language change, surely has to await fuller study of the phenomenon, especially in communities where its operation can be observed over a wider generational range than was possible in the foreshortened 20th-century existence of East Sutherland Gaelic. At present I can perhaps venture to suggest that notions of the latitude for stable individual variation within the family and larger kin networks, and within social networks generally, may need revision; further, community size and structure may prove to have a bearing on the applicability of speech accommodation theory. If personal-pattern variation appears, as I rather expect it will, in other remote, illiterate communities characterized by high-density social interaction, some of these other communities will no doubt permit observation across a full age-range of speakers, and even observation of children's acquisition, since many languages which are endangered still have a (dwindling) number of child acquirers. The absolutely fundamental point, however, is that a phenomenon can not be studied until it is identified.

If the evidence of personal-pattern variation from East Sutherland Gaelic suggests that our documentation of small languages may still produce fresh understandings of the way language is deployed in certain less familiar kinds of settings, then the length of time that it took me to come to grips with the evidence suggests something a little more unsettling. I was aware of the rampant variation in the dialect, though the nature of my original assignment on behalf of the Gaelic division of the Linguistic Survey of Scotland, which sent me to the region, caused me to concentrate above all on geographic variation in the local Gaelic. My main concern had to be to find out in each case of variation whether or not it was village-based, so that dialectologists and historical linguists could use my materials to plot distributions and then use those distributions to uncover settlement history, contact history, evidence of archaic features of Scottish Gaelic surviving in this geographically peripheral region, and other such matters. There was a great deal of geographically based variation, and I was heavily occupied just in handling the intricacies of that phenomenon. I realized that there was a considerable residue of variation even after I'd identified most of the geographically based variants, but I had several other priorities. I concentrated first on a descriptive monograph (in which I did at least faithfully report all variation I was aware of), then on a study of the proficiency-related changes in the language, and next on an accessibly written oral history of the fisherfolk as a repayment to the community for all they had shared with me over the years. Less than two years ago, when a colleague pressed me to report on whether stylistic variation still

survived in a language like East Sutherland Gaelic, used almost exclusively in the private sphere and for informal purposes, I finally began to look at my variation residue, with the thought that it might turn out to be correlated with stylistic differences.

There was no correlation with style, as it happened, but I did find the kind of individually patterned variation which I've represented for you in a very sketchy and incomplete way here. The discovery of the very extensive and fascinatingly organized personal-pattern variation left me face-to-face with the question of how I could have failed to deal promptly and fully with all this for so long -- for the 26 years between 1964 and 1990, to be exact. Part of the answer lies in the super-abundance of the still more conspicuous variation associated with geographical location and with differences in proficiency level, both of which I tried hard to sort out, analyze, and report on. Another part of the answer lies in the difficulty of moving beyond some of the accepted notions of one's research field. Large-scale variation within a single speech community has been associated with socioeconomic differentiation and with social networks, in recent decades, while the fisherfolk communities were socially homogeneous to an extraordinary degree, and the variation in the Gaelic spoken there does not correlate obviously with social networks. But part of the answer also lies, I believe, in the established conventions of fieldwork as it's practised within our tradition, and in the established conventions of documentation in our discipline. The constrictions of those conventions represent some of the 'perils' of my title.

Personal-pattern variation cannot be recognized without large amounts of data from a considerable number of speakers. But if you survey the acknowledgement sections in a selection of descriptive monographs in Linguistics, one thing that will strike you, I think, is the frequency with which a linguist thanks some one splendid consultant whose intelligence, willingness, good nature, and availability made the study possible. That is to say, our descriptions of particular languages or dialects are often primarily descriptions of the form a language or dialect takes in the usage of some one particular person, above all, even though other sources may be consulted to a lesser degree. In fact, my most immediate predecessor in Gaelic dialectology had been able to work chiefly with one good consultant, whom he duly acknowledged in the introduction to his descriptive monograph. As I motored daily from village to village in East Sutherland during my original year in the field, endlessly checking and cross-checking for village-related variants with a minimum of three informants per village, I often wished that I had been sent to study the Gaelic of any one of the three villages instead of having been made responsible for all three. My more fortunate colleague, working in the 1950s on an Outer Hebridean island, stated in his monograph that there was minor variation from one end to the other of the two-mile long village in which he worked, but he did not describe it; and though he mentioned that the wife of his chief consultant differed from her husband on 'some points' of phonemic distribution and of grammar, despite the fact that her parents and his had been next-door neighbors, he gave just one actual example of such a difference (Oftedal 1956:14, 17). The awareness that an excellent Celticist, linguist,

and dialectologist had not felt obliged to document more fully the variability within the dialect he worked on surely made it eaiser for me to feel that I had already gone beyond the call of professional duty just in recording all the cross-village and inter-speaker variation I had met with.

It's only now, more than two dozen years after my initial work in East Sutherland, that I'm dealing fully with stable inter-speaker and intra-speaker variation. I did neither East Sutherland Gaelic nor my discipline a service in putting off the investigation so long, but unfortunately my neglect was not out of line with professional norms. Given what I found when I did start looking, I would urge that in working with languages which are little known and unlikely to be available very long we operate with as few prior assumptions as possible and also that we go beyond the necessary minimum and <u>overrecord</u>, aiming for the greatest degree of completeness that we can achieve. This is both common sense and professional wisdom. We simply can't predict what will seem important two dozen years later, any more than I could in the case of East Sutherland Gaelic.

We're usually told that we should discard nothing from what we collect in the field, because it might turn out to be important. In general, but especially in the case of threatened languages, that's probably not really enough by way of caution and responsibility. We need to extend our collection practices, making sure we record texts from as many sources as possible, even if that produces uncomfortably contradictory material in some cases. We can consider ourselves lucky, where many severely endangered languages are concerned, if we find enough speakers left to give us those contradictions. We can't assume, in spite of our libraries full of studies treating hundreds upon hundreds of languages, that we've spotted what will strike future linguists as the most critical features of the languages we study or that we have distinguished the criterial ways in which language is acquired, used, or lost. We need to push ourselves, by exercising our imaginative capacities and by honing our sense of professional responsibility, to make fewer assumptions, to create a fuller record, and of course above all else to go ourselves, and send our students, to work in the locations where languages known to be seriously at risk are still spoken. As surely as we gather now to confront the foreseeable loss of an almost unimaginably large proportion of all human languages, we will be succeeded by linguists who will find some of our current preoccupations uninteresting and will wonder with frustration and bewilderment how we could have failed to ask some of the questions which will most intensely occupy them. It's never possible to anticipate the interests and requirements of your successors fully, but it is possible to be generous towards them. The very fact that we can't foresee all that those successors will need to know makes it doubly important that we leave them the most bountiful professional legacy we can.

Notes

1 I'm endebted to Suzanne Romaine for comments on an earlier draft of this paper.
2 I'm adapting here the approach taken in Norton's <u>Why Preserve Natural Variety?</u>, a consideration of the moral and philosophical issues raised by endangered species.

3 Dixon worked with running texts as his corpora and documented the various Aboriginal languages he worked on in this fashion (1984:18).

4 Women as well as men followed the seasonal herring fishing around the coasts of the northern British Isles, often for as much as ten or twelve years before marriage; they worked in crews of two gutters and a packer, and each village supplied a number of crews.

5 The freely spoken material from all three villages is tape-recorded except for two short texts taken down by dictation, one a recipe and the other a brief personal narrative the speaker wanted me to record.

6 The capital E stands for Embo village; the numbers reflect ranking by age within the village, with 1 representing the eldest source.

7 One variant in Table 1 did arise from my influence, for appropriate discourse reasons. E26 repeated a question from me rhetorically, changing only the pronoun, and since that rhetorical question provides the sole instance of /h̃a:nig/ (rather than /h̃an:/) in his freely spoken texts there are parentheses around the /h̃a:nig/ entry for him in Table 1.

8 Not all personal-pattern variant choices are purely binary, but for ease of presentation I've selected cases which have binary choices for the Embo sources who provided all the freely spoken texts of my corpus.

9 The asterisked form /*čɛu/ is non-occurrent. The two forms which do occur show the initial consonant mutations of lenition and nasalization, /hɛu/ and /ɟɛu/ respectively, which can only derive from an underlying base form /*čɛu/.

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ON THE HUMAN VALUE OF LOCAL LANGUAGES

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"We are bigger
than one language."
Jesse Jackson,
Campaign '88

0. INTRODUCTION

As a person who has been doing field work for more than thirty-five years, I share with many of my colleagues the experience of having worked on languages which are no longer spoken. And I would like to say something here about why I lament the extraordinary and unnatural decline in linguistic and cultural diversity during our time. The essential point that I wish to make in this connection is not very deep or complicated. And it is not original, since it grows out of my experience as a field worker and it is, therefore, almost certainly a part of the shared heritage of field workers the world over. The point is basically this, that diversity in language and culture is essential to progress in certain important human endeavors.

In fact, I would like to make the point in somewhat stronger terms. It seems to me reasonable to hold that a principal human purpose is the fullest possible use of the mind in creating intellectual wealth. Linguistic and cultural diversity is an enabling condition for the fullest achievement of this purpose, since it is diversity which permits the exploration of the widest range of paths of creation. A mere glance around the world tells us this. Thus, the loss of a language is a certain tragedy for the human purpose.

Linguistic diversity is clearly not something whose future can be taken for granted. Local languages and cultures typically find themselves in great peril in this era, a fact which is amply documented in a number of publications, including the collection of essays assembled in the important book *Endangered Languages* (Robins and Uhlenbeck:1991), produced in preparation for this Congress. The survival of local languages is a matter which will require the commitment of an extraordinarily wide range of talents, coming both from the local communities themselves and from responsible organizations working in solidarity with them.

In the following sections, I will present two brief illustrations of the idea that linguistic diversity is important to human intellectual life. The first relates to the class of human activities normally thought of as scientific, the second to the class of activities typically considered humanistic.

I will refer to the languages with which I am concerned here as "local languages". By this I mean the class of languages which can, I think, be considered to be among the most endangered. These are the indigenous languages characteristically associated with a particular place and subordinate, in some measure, to a national language or to another, more powerful, local language. Most or all Native American languages in North America belong to this category, for example, as do the Aboriginal languages of Australia, the indigenous languages of Nicaragua and much of Northern Mexico, to mention places with which I am personally familiar. There can be little ambiguity concerning the class

of languages to which I refer, nor can there be any doubt that the class is represented in all parts of the globe, a fact amply attested in (Robins and Uhlenbeck:1991). The present size of the speaker populations in local language communities varies greatly from language to language, of course — ranging from just one remaining fluent speaker, or perhaps a semi-speaker, to thousands of speakers. But I think personally that it is right to see them all as being of equal importance in relation to the aspects of human intellectual life which I will touch on here.

1. THE SCIENTIFIC IMPORTANCE OF LOCAL LANGUAGES

One of the uses to which human intelligence is put is the effort to understand nature, and the scientific study of the human mind itself is a most exciting and dignified tradition forming part of that endeavor. Since the time of the Indian grammarians, at least, knowledge of language has been seen as an aspect of the mind, and the study of the linguistic competence of human beings has been seen as a legitimate and essential part of the general effort to achieve adequate scientific understanding of the mind.

While it is a tenet of modern scientific linguistics that knowledge of grammar stems from a specific universal capacity possessed by human beings by virtue of their genetic heritage, there is within the field an exciting and productive tension between the essential *unity* of human linguistic knowledge, on the one hand, and the rich *diversity* of human languages, on the other. Without knowledge of the latter, we cannot hope to know the former. The truth of this is evident at every turn, and it can be exemplified with examples of the simplest and most straightforward sort.

The point which I intend to make here is well known to linguists, so I will limit my discussion to a single simple example, that of the category of number, as exemplified in such English pairs as *cat/cats, was/were, I/we*. And within this very accessible domain, I will limit my self to the question of what *oppositions* are inherent in it, what *distinctive features*, if you will.

Suppose that English were the only language in the world. What would we be able to learn from that language about the grammatical category of number in relation to the universal human capacity for language? Or to be more specific, would we be able to learn what *is* and what is *not* a possible system of grammatical number? Putting the question in the way linguists usually do, could we determine what *universal grammar* defines as a possible or impossible system of grammatical number oppositions in a natural language?

If English were the only language, we would be safe in assuming that number involves a binary opposition opposing *one* to *more than one*. From English alone, of course, we do not know whether this opposition is *singular* versus *nonsingular* or *plural* versus *nonplural* and the question would seem of little importance, more philosophical than empirical. But we know, anyway, that this English system is not representative of the world's languages. Many languages make a three-way number distinction, as does Hopi, exemplified here by forms of the nouns meaning "woman" and "man":

(1)	Singular	Dual	Plural	
	wu'ti	wu'ti-t	momoya-m	'woman'
	taaqa	taaqa-t	ta'taq-t	'man'

This suggests the possibility that the category of number is not binary— it could be ternary, for example. And this, in turn, opens the door to the possibility that an indefinite variety of number systems exists, some binary, some ternary, some quaternary, some quinary, and so on. But this does not seem to be true, in actual fact. Rather, systems of the English type and of the Hopi type abound

among the world's languages, but systems of other sorts (e.g., systems with a "paucal" or trial number category) are rare. This observation suggests that we should think of the system exemplified by Hopi animate nouns (as in (1) above) as implicating a pair of binary oppositions (or something comparable, using, perhaps, the feature [augmented] instead of [plural]):

(2) (a) [±singular]
    (b) [±plural]

The dual number is the intersection of the negative values of the two features [singular] and [plural]. From two binary features, then, we obtain the observed three-way distinction. And this would be a good move, since the theory involving binary oppositions is constrained in a manner which will permit us to work toward a universal theory of number marking. A theory with n-ary features is unconstrained and accordingly predicts that virtually anything is possible, contrary to observed fact.

However, the binary theory could be wrong, and we have seen no empirical evidence in its favor, apart from the fact that languages are rare which do not conform either to the English and Miskitu one/more-than-one pattern of number opposition or else to the Hopi singular/dual/plural pattern. The question, of course, is whether we can find evidence from languages of the Hopi type that dual is the intersection of the negative values of a *pair* of binary oppositions. Can we find evidence that these two oppositions exist independently? In this connection, consider the following sentences of Hopi:

(3) (a) Pam wari.
        (that   run:PERF)
        'He/she ran.'
    (b) Puma wari.
        (those run:PERF)
        'They (two) ran.'
    (c) Puma yu'tu.
        (those run:PERF)
        'They (plural) ran.'

These sentences have pronominal subjects and simple intransitive verbal subjects. The verb undergoes what is called "suppletion" to indicate agreement with the number of the subject. The subjects also appear in different forms, depending on the number category which they mark.

While the sentences of (3) represent a three-way opposition, the subject and the verb each indicate a two-way opposition only. Moreover, the verb and the subject involve different oppositions. Thus we can see clearly here that the dual interpretation of (3b) is due to the intersection of two distinct binary oppositions, one marked overtly only in the subject pronoun, the other only in the verb. Hopi pronouns are distinguished according to the opposition [±singular], while verbs are distinguished as [±plural]. Hopi, therefore, encourages the conviction that dual number is due to the intersection of two binary oppositions.

The example presented in this section is one of many that could be offered to illustrate the importance of the study of linguistic diversity within the general linguistic program whose purpose is the development of an adequate theory of natural language. The examples are drawn from one of the most accessible areas of grammar. But while the category of number is accessible, in an obvious sense, its surface realization across languages exhibits great diversity, and no single language presents the observable data which will permit us to get at the fundamental character of the oppositions involved and, thereby, to come closer to

an understanding of the universal organization and "inventories" of the grammatical category, and the same is true of grammatical categories in general.

The example of grammatical number is a tiny example of the tension inherent in the scientific study of grammar — i.e., the seemingly paradoxical circumstance that we must look at diversity in order to discover what is universal, and therefore uniform, in human linguistic knowledge. Diversity matters in the area represented by this brief example, but it is in fact essential to progress in every area of grammatical research.

2. LOCAL LANGUAGES AND THE EXPRESSION OF INTELLECTUAL LIFE

The world's linguistic diversity is a precious resource. The truth of this does not derive solely from linguistic science, of course. Language is much more than grammar. The term "language" embraces a wide range of human capacities, and it is not clear that it makes sense to think of it as a single entity.

Of supreme significance in relation to linguistic diversity, and to local languages in particular, is the simple truth that language — in the general, multifaceted sense — embodies the intellectual wealth of the people who use it. A language and the intellectual productions of its speakers are often inseparable, in fact. Some forms of verbal art—verse, song, or chant—depend crucially on morphological and phonological, even syntactic, properties of the language in which it is formed. In such cases, the art could not exist without the language, quite literally. Even where the dependency is not so organic as this, an intellectual tradition may be so thoroughly a part of a people's linguistic ethnography as to be, in effect, inseparable from the language.

The loss of local languages, and of the cultural systems which they express, has meant irretrievable loss of diverse and interesting intellectual wealth, the priceless products of human mental industry. The process of language loss is on-going. Many linguistic field workers have had, and will continue to have, the experience of bearing witness to the loss, for all time, of a language and of the cultural products which the language served to express for the intellectual nourishment of its speakers.

In this section, I would like to describe one such product of a people's intellectual work. This is a tradition whose decline and virtual disappearance I witnessed in the course of field work in Australia. It was the treasure of a small group of Australian Aboriginal people, the Lardil, living on Mornington Island in North Queensland.

While working on the syntax and lexicon of Lardil in 1960, I heard of the existence of an auxiliary language, called Damin, which some initiated men in the community could still use. Most men could not, since the missionaries who were in power on Mornington Island during the early decades of this century had forbidden the practice of initiation many years earlier, and it was in the context of initiation that Damin was learned. Only men initiated before the mission was established had the opportunity to learn Damin, and only a few of those men were still living in 1960.

I was not able to work on Damin until 1967. An anthropologist working with the Lardil people sent me a tape of Damin while I was working in another community farther south. When I heard the tape, I knew that Damin was something very special, so I arranged to visit Mornington Island again. The feature of Damin which first caught my attention was its phonology. It departs drastically from the phonology of Lardil, and it has sounds in it which do not exist in any other Australian language. For example, it has click consonants, otherwise found only in Africa — in the Khoisan languages, for example, and in the Nguni languages of the Bantu family. There is no historical connection between the Lardil and these African languages. The use of clicks in Damin developed locally. Damin has the appearance of an invented language, and it is attributed, in fact, to

a legendary figure named Kalthad (Yellow Trevally). If it was invented, then it is a clever invention, indeed, because it is almost unheard of for an invented language to depart radically from the phonological constraints of the ordinary language of the inventor. The impression that Damin is an invention is strengthened by the fact that it not only has sounds absent elsewhere in Australia, but it also has sounds found nowhere else in the world — as true phonological segments, that is. These include an ingressive voiceless lateral and a labio-velar lingual ejective.

Although its sound system is spectacular, the extraordinary genius of Damin is to be found in its lexicon. In its original purpose, Damin was an "auxiliary language," in the sense that it was used in place of Lardil when this was necessary for ritual reasons. An idea of its nature can be gained from a consideration of how it was learned and used. According to the accounts of surviving Demiinkurlda, or "Damin-possessors", as they were called, Damin was learned by novices in the advanced phase of men's initiation. Men who went through this stage were called Warama, and in theory, only Warama learned Damin. In practice, however, since it was used in public, many people who were not Warama, both men and women, had passive knowledge of it. Its purpose, apart from the intellectual pleasure it gave, was to serve as a vehicle of communication between Warama and all individuals involved in their initiation. The use of ordinary Lardil with these people was forbidden, until they had been repaid the ritual debt owed to them by the Warama as a result of initiation. Damin is a lexicon, not an entire language. The rule in using Damin correctly is this: each lexical item of Lardil must be replaced by a Damin item; the inflectional morphology and syntax of Lardil remains intact. An example of this lexical replacement procedure can be seen in (4) below, in which the first line is in Lardil, the second is the Damin equivalent, and the third is a literal gloss of the morphemes in the sentence:

(4)   Ngithun dunji-kan ngawa waang-kur werneng-kiyath-ur.
        n!aa   n!n!a-kan nh!nh!u tiitith-ur m!ii-ngkiyath-ur.
        (my   WiYBro-GEN dog   go-FUT   food-GO-FUT)
        'My wife's younger brother's dog is going hunting (lit. going
        for food).'

As this example shows, the syntax and morphology of Damin and Lardil are the same. Both use the same case system. The genitive (glossed GEN) is exemplified here, as well as the nominative, which is not overtly marked —*ngawa*, *nh!nh!u* 'dog' is in the nominative. And the two share the same system of verbal tenses — the future, glossed FUT, is seen here. And finally, they use the same system of derivational morphology, exemplified here by the verb-forming allative ending -*(ng)kiya*- (glossed GO). This element converts the noun *werne*, *m!ii* 'food' into a verb meaning 'to go after food, to hunt'.

While the morphology is the same for Lardil and Damin, the lexicon is totally different. Thus, each noun, verb, or pronoun in the Lardil of (4) matches a distinct item in Damin. It is the nature of this replacement lexicon which is extraordinary. It is constructed in such a way that, in principle, it can be learned in one day. It can be learned in one day, yet, in combination with Lardil syntax and morphology, it can be used to express virtually any idea. How can a lexicon be *small* enough to learn in one day and, at the same time, be *rich* enough to express all ideas? A moment's reflection on this question can only inspire admiration, in my judgment.

The answer, of course, is abstractness. The Damin lexicon cannot be rich in the usual sense of having large numbers of lexical items denoting concepts of great specificity (like the ordinary Lardil or English vocabularies, for example). Rather, the richness of Damin is of a different sort, the opposite of this in fact. Damin lexical items are abstract names for logically cohesive families of

concepts. The richness of Damin resides in the semantic breadth of its lexical items, permitting a small inventory (less than 200 items) to accommodate the same range of concepts as does the much larger ordinary vocabulary (of unknown size).

The example given in (4) above can be used to illustrate the basic point of Damin abstractness. Consider the first word of that sentence. In Lardil, this is a form of the first person singular pronoun, and, as such, it is involved in a rich complex of oppositions expressed by a set of 19 distinct pronouns. There are three persons, three numbers (singular, dual, plural), an inclusive-exclusive distinction in the first person dual and plural, and in all non-singular pronouns there is a two-way distinction among the pronouns for generation harmony. There can be little doubt that ordinary Lardil is rich, in the sense of highly specific, in this domain. By contrast, Damin reduces all of this to a single binary opposition:

(5)   (a) n!aa 'ego'
           (b) n!uu 'alter'

The first of these is used to refer to any set which includes the speaker, including the set which includes only the speaker. The second refers to any set which does not include the speaker. Incidentally, these two forms illustrate one of the click consonants of Damin. All Damin clicks are nasalized. That is to say, the velar occlusion associated with the production of clicks is released as a velar nasal. In this case, the click articulation itself (symbolized !) is in the alveopalatal position (symbolized by using [n] for the nasal component). The other clicks are the dental [nh!], as in the word for 'dog', and the bilabial [m!], as in the word for 'food'. In some items, the click is reduplicated, as in the words for 'dog' and 'wife's younger brother'.

The abstraction represented by (5) is actually greater than what I have indicated, since the entire set of determiners (i.e., demonstratives, as well as pronouns) is subsumed in this opposition. This means that each of (5a, b) is more abstract that any of the actual Lardil words which it covers. There is, in ordinary Lardil, no single word which corresponds either to (5a) or to (5b). Nor is it likely that there is any such word in English, or any other language, for that matter, setting aside the highly technical vocabularies of fields in which deictic reference is of central importance (e.g., *ego* and *alter* of kinship studies, a close, but not exact correspondence).

The domain of time is analyzed in the same fashion. Thus temporal reference, like pronominal reference, employs a fundamental binary classification, opposing the present to all other times:

(6)   (a) kaa 'present, now'
           (b) kaawi 'other than present, other than now'

The first of these terms is used in place of Lardil words such as *yanda* 'now, today' and *ngardu* 'presently', while the second corresponds to such words as *bilaa* 'recently (in the past)', *bilaanku* 'tomorrow', and *diwarrku* 'yesterday'. Again, the terminology here involves an abstract classification of the domain, and each of the terms is more abstract than any Lardil lexical item.

Our example sentence (4) contains further examples of abstraction. The term *nh!nh!u* 'dog', is one of the few terms in Damin that refers to a narrow class of entities (the class of canines, dingos and dogs). It would appear to be a counterexample to the general principle of abstraction. However, the term is, in fact, used to refer to an abstract set, that of domestic animals — it combines with *ngaa*, a term refering generally to animate beings, especially humans, and to mortality, to form *ngaa-nh!nh!u* 'horse', and it combines with *wiijburr*, a term referring to wooded plants, to form *wiijburr-nh!nh!u* 'cattle' The study of the

semantics of Damin compounds is in its infancy, I am afraid, and it is not clear how the components of the compounds just cited yield the meanings given. It is clear, however, that *nh!nh!u* refers to domestic animals in general. And, as usual, this usage is not matched by that of any Lardil lexical item.

Sentence (4) also illustrates the most abstract of the Damin verbal lexical items, *tiiti* 'act'. This is the generalized active verb in Damin. It corresponds to both transitive and intransitive verbs of Lardil — e.g., *jitha* 'eat', *jidma* 'lift', *kirrkala* 'put', *matha* 'get, take', *murrwa* 'follow', *wutha* 'give', *wungi* 'steal', *jatha* 'enter', *kangka* 'speak', *lerri* 'drip', *waa* 'go'. The Damin verb is used in reference to activities other than those resulting in harmful effects. Verbs of harmful effect are represented in Damin by *titi*, with a short initial syllable, rather than the long syllable of the generalized activity verb. However slight this phonological difference might seem to be, it is real and rigidly observed in Damin usage — *titi* corresponds to such Lardil verbs as *barrki* 'chop', *betha* 'bite', *bunbe* 'shoot', *derlde* 'break', *kele* 'cut', *netha* 'hit'. This does not exhaust the verbal inventory of Damin, but it covers the vast majority of active verbs in Lardil. And each of these Damin verbs is, as expected, more abstract than any Lardil verb.

While abstraction is the general rule in Damin, exceeding that of Lardil lexical items, in some cases the Damin terminology corresponds to abstract terms in Lardil itself. This is particularly true in certain domains having to do with foods. Thus, the Damin term *m!ii* applies to foods in general, particularly vegetable foods, and corresponds closely to the Lardil term *werne* 'food'. Likewise, certain seafoods are classed in the Lardil manner— thus, *l*ii* 'boney fishes' (with *l** representing the ingressive lateral consonant) corresponds to Lardil *yaka*; Damin *thii* 'cartilaginous fishes, sharks and stingrays' corresponds to Lardil *thurarra*; and Damin *thuu* corresponds to the interesting heterogenous Lardil class *kendabal* 'sea turtles and dugongs'.

The Damin lexicon must achieve a balance between abstraction and expressive power, since it must satisfy two essentially contradictory requirements. It must be such that it can be learned quickly and, at the same time, it must be such that it can be used, in cooperation with Lardil inflectional morphology and syntax, to express any idea which Lardil itself can be used to express. It cannot be *too* abstract, therefore.

The extent to which this balance is achieved can be appreciated through an examination of the system to which the Damin kinship term *n!n!a*, also exemplified in (4), belongs. This term is used in (4) to render the Lardil term *dunja* 'junior brother-in-law'. Of course, as expected, the Damin term is in fact more general than any actual Lardil kinship term. The entire Lardil kinship system — which, like most Australian systems, is terminologically enormous — is reduced to the five Damin terms charted below:

(7)   kuu   =   n!n!a
         |
         thungaa   =   kuu
                             |
         kungaa   =   jii
         |
         kungaa   =   kuu
                             |
              (da capo)

To understand this system, place yourself in the upper lefthand corner. That is the class to which your siblings belong — thus, you call your brothers and sisters *kuu*. Your spouse and his or her siblings are directly opposite, joined by the symbol =, as usual in kinship charts. Thus, a man calls his wife and her siblings *n!n!a*, and correspondingly, a woman calls her husband and his siblings by the

same term. A man calls his children and his father, and his father's siblings, *thungaa*; the bar (l) links father-child connections generally. One's mother is located in the column opposite to one's own (i.e, in the opposite "patrimoiety"), one row down — thus, your mother and her siblings are called *kuu*, the same as your own siblings (corresponding to the fact that you all belong to the same "matrimoiety"). The mother-child links follow this logic generally — opposite column, one row down. Applying this set of principles consistently to the chart in (7), it is possible to assign a Damin term to any person for whom a biological connection can be traced, actually or theoretically, no matter how distant. This terminology is based on an "eight subsection" classificatory system. It uses a biological model for calculation, though the terminology is "classificatory" and is not dependent on actual biological connections — though if these are in fact known, they will be used in determining how the terms should be applied in a given instance. In accordance with the principles inherent in this terminology, ones mother's mother's brother's daughter's child is *n!n!a*, a member of the class to which one's spouse belongs, in the preferred (second cross-cousin) marriage pattern. And ones mother's brother's child is called *jii*, and includes the class of people to which a spouse belongs according to the less favored alternative (first cross-cousin) marriage pattern.

A moment's reflection on this system will probably give rise to the natural question of why the number of Damin kinship terms if five, rather than two, four, or eight. The question is natural because the logic of the system suggests even numbers — four, say, would be appropriately abstract; eight might violate the principle of abstractness. The answer to this question, I believe, reveals the genius of Damin, i.e., the balance between abstractness and expressive adequacy. Reduction to four terms would force a merger in the most important distinction within the kinship system. This is a *subsection* system, containing eight classes of kinsmen. The key ingredient in the subsection system is the distinction between kinsmen related through the second (fourth, sixth, etc.) generation from those related through the first (third, fifth, etc.) generation. That is, it distinguishes kinsmen related through *harmonic* generations from those related throught *dysharmonic* generations. Systems which merge this distinction, also widespread in Australia, are called *section* systems. The beauty of Damin is that it expresses generation harmony precisely where it is most important in relation to alliances within the community — i.e., in classifying one's cross-cousins, thereby defining the set of potential spouses in the preferred marriage aliance. The generation harmony distinctions are merged where they are less crucial to the expressive efficiency of the terminology. Therefore, Damin has fewer terms than the eight implied by the subsection system, in keeping with the principle of abstraction.

The auxiliary language of the Lardil people is an intellectual treasure of enormous worth. It has not been studied in depth, and it is not clear that it will be possible, ever, to give an adequate picture of its structure. It is clear from what we know that it involves a sophisticated semantic analysis of the lexical resources of Lardil. The system of abstractions lays bare aspects of lexical semantic structure to a degree which, quite possibly, is not achieved by any other system of analysis which attempts to accommodate an *entire* vocabulary.

The last fluent user of Damin passed away several years ago. The destruction of this intellectual treasure was carried out, for the most part, by people who were not aware of its existence, coming as they did from a culture in which wealth is physical and visible. Damin was not visible for them, and as far as they were concerned, the Lardil people had no wealth, apart from their land. This visibility problem was overcome only at the last hour, when Doug Belcher, an extremely enlightened superintendent, with great intelligence and at considerable risk to his position at Mornington, struggled valiantly to create an environment in which the aboriginal wealth of the island could regain its position of dignity in the life of the community. His efforts led eventually to the real possibility of the resumption of

initiations and of a role for local languages in the educational system. In the context of the atmosphere which Belcher initiated, efforts were later made to produce tapes for Damin which would be available to Lardil young men, and an elementary dictionary of Lardil, with an appendix on Damin, was produced. It is not yet clear what effect these developments will have in relation to the intellectual traditions of the Lardil people. They have, however, had an important effect on the Kayardilt community, a refugee people from Bentinck Island, whose language is still very strong and whose intellectual traditions can form a central part of the education of the school-age population.

We cannot say that the Damin tradition is utterly lost to the Lardil people. However, it is all but gone, since revival of it would be from recorded sources, and if revival were to be attempted, a *new* Damin tradition would be initiated, necessarily, since the cultural context of the original tradition is irrecoverable — there are no survivors of that period. The development of a new Damin tradition is not a bad thing, of course, in fact it would be an exciting thing. But the old Damin tradition is effectively lost. And the destruction of this tradition must be ranked as a disaster, comparable to the destruction of any human treasure.

It is perhaps of little use simply to bemoan the loss of a treasure. The example of Damin is offered as an instance of the nature of things that have been lost and of what can be lost if linguistic and cultural diversity disappears. In the case of Australia, we cannot know what has been lost in regions where Aboriginal cultures no longer thrive — the wealth there was mental, not physical. But if the remaining diversity in Australia is not safeguarded, we know that we stand to lose a lot, including the language-based traditions of verse, and a living tradition of antonymy in Central Australia embodying a semantic analysis of lexical items along the lines of Damin. The same is true in all areas where local languages are spoken.

The safeguarding of linguistic and cultural diversity does not guarantee the perpetuation of existing traditions of intellectual endeavor, of course. In fact, a living tradition implies change. And it is precisely the development of new traditions which is most consonant with the human purpose. And it is precisely where local languages are viable that new traditions develop. Thus, for example, in the Southwest of the United States, beside the continuing traditions of sung verse, a new tradition of poetry is developing, in Papago, Pima, Yaqui, and Hualapai, for example, in the context of the growing use of the written form of these languages. Similarly, in Nicaragua, there is an increasing use of Miskitu and Sumu in the writing of prose and in composing lyrics for popular music. In these regions, and in many others, new traditions of language use are developing and growing. Their success will depend, of course, on a continuing position of strength for the languages involved.

3. ON RESISTING LANGUAGE LOSS

In the preceding sections, I have presented a somewhat self-serving perspective on the human costs of the observed decline in linguistic and cultural diversity. It is the point of view of a person who is professionally involved with language and whose field of study is seriously threatened by language loss. So I have not said anything about the personal costs of language loss, the grief felt by countless numbers of people who have been prevented, for one reason or another, from acquiring the language, or languages, of their parents, or the grief of parents who, for one reason or another, have not been able to give to their children the full portion of linguistic tradition which they themselves possessed. Those who experience this grief are the immediate human victims of language loss. And their experience, as much as any other consideration, is good reason to resist language loss.

To reverse language loss, ultimately, a certain condition must prevail. In short. people must have the *choice* of learning or transmitting the local language of their family, or other relevant social unit. In some cases, of course, this choice is directly denied to people, by an oppressive authority. Often now, however, the choice is effectively removed by other factors, specifically, economic factors. Choice is severely reduced where it is not economically feasible for the members of a local language community to stay together. In many cases, this boils down to the simple observation that if you can work where you talk your local language, your choice in the matter of promoting that language is greatly enhanced. Otherwise, your freedom of choice in the matter is virtually nil, except by dint of an extraordinary act of will, sometimes seen in the case of parents who simply insist that their language be used in the nuclear family, in defiance. so to speak, of the otherwise prevailing dominant language.

In many of the documented cases of language loss, one or another of the factors just mentioned could, arguably, be cited as a factor. Lardil and Damin clearly represent the situation of an oppressive authority which, in this instance, achieved its ends by separating the children from their parents and elders, and brothers from sisters, and by imposing English as the sole language of the school and dormitory. But the economic factor, broadly conceived, is perhaps the greatest contributor to language decline now. In many cases, economic considerations have forced individuals and families to separate from their local language communities, with the result that their descendants have been effectively deprived of the choice of learning the local language of their parents and forebears. This has been the situation of many North American local language communities. The alarming decline of Navajo, still the leader in absolute speaker population for North America, is due in part to this mechanism. By comparison, the relatively greater strength of the numerically much smaller Jemez community, is almost certainly due to the fact that it is possible, economically, for a significant number of Jemez speakers to live together in the same village.

I believe that it is necessary to extend the term "economic" to cover a situation which may well be just as important in explaining language loss as are the official suppression of linguistic choice and the economically forced emigration of local language speakers. The situation I have in mind stems from the extraordinary pressure which a dominant language puts on a local language, even where the speakers of the latter are able to live together in the same community. The pressure comes, not, of course, from the dominant language itself, but from the subtle and not-so-subtle propaganda of the associated economically dominant culture and society which encourages speakers of local languages to believe that their futures depend on switching from their native languages to the dominant one. Typically, the propaganda encourages the belief that a choice is not viable — the choice of retaining the local language is thought to be incompatible with the "proper vision" of the future. I am sure that I am not alone in having heard this argument many times in the course of doing field work in local language communities. The pressure involved here is fundamentally economic pressure, I believe, and its role in language decline belongs, therefore, to the category of economic factors, with economically forced emigration.

Essentially, the factors which I have mentioned here are factors which limit choice — the choice to maintain and propagate one's native language. The condition which must prevail in order to halt language loss is a form of sociopolitical and economic justice in which this choice is *not* limited. This necessary condition does not obtain in any country I know about, certainly not in the United States, where local language endangerment is an extremely serious matter.

The necessary condition for halting language loss, globally, or in the United States, say, is certainly not something that we will see in our lifetime. But this is just a fact of the world and cannot be allowed to get in the way of efforts on

behalf of local languages. The hard work of local language planning and development must go on, as it has been going on, in the context of the particular, usually unique, situations of local language communities — like the Hualapai bilingual education program, described in the essay by Zepeda and Hill in *Endangered Languages*. This kind of work must be done in any event — it amounts to an effort to *resist* language loss, in the absence of the condition which would be necessary to *halt* it utterly. If this work is not done now, all will be lost, I think, well before true advances are made in bringing about the conditions of sociopolitical and economic justice necessary for freedom of choice in maintaining and promoting local languages — the choice will be gone, because the languages will be gone. Work in the effort to resist language loss, it is reasonable to hope, can have the effect of retarding language decline.

4. ON CHOICE: THE CASE OF ULWA

The use of the term *choice* implies that there could be situations in which the choice is actually free — that there is the freedom to perpetuate a local language or not to perpetuate it. Generally, I would argue, in the world as it actually is, the choice is not free. There is, instead, pressure to make a particular choice — and that usually goes against the local language in favor of a dominant one.

But sometimes the situation is not very clear. One such is represented by the Ulwa (Southern Sumu) language of Karawala, on the Atlantic Coast of Nicaragua. Ulwa belongs to the small Misumalpan family, together with its close Sumu relative (Northern Sumu) and its much more distant relative Miskitu, the indigenous *lingua franca* of the Nicaraguan Atlantic Coast. For all intents and purposes, Ulwa is only spoken by residents of Karawala. The town has about 800 residents, of whom 600 or so are considered to be Ulwa. The language of the town is Miskitu, and there is a Miskitu-Spanish bilingual-bicultural education program, albeit of insecure funding. Karawala is near the mouth of the Río Grande de Matagalpa, in the southern part of the Atlantic Coast region generally associated with the Miskitu language and people. Miskitu is universal among indigenous people of the area. It has official status in the Nicaraguan constitution, though Spanish is the official language which is necessarily taught in the schools, and Spanish is the language one must know to advance in education beyond the elementary grades.

All speakers of Ulwa are fully fluent in Miskitu, and most of the day-to-day business of the town of Karawala is carried out in Miskitu. Bilingual Ulwa-Miskitu speakers are impressive in their command of Ulwa, their being no real difference in fluency, so far as we can tell. It would seem, considering just this bilingual population, that we have a situation in which the people have chosen to continue speaking Ulwa, in addition to the dominant Miskitu. But in 1987, in the context of the progressive programs of the Autonomy Project, representatives of the Ulwa community asked the Sandinista Government for a language program in support of the Ulwa language, which they perceived as endangered. They had in mind a program on the model of the very successful language rescue project for the Rama (cf. the piece by Colette Craig *in* Hale *et al.*:1992). Rama is a Nicaraguan Chibchan language spoken farther to the south on the Atlantic Coast.; it has perhaps two dozen speakers remaining, out of a population of nine hundred, or so, whose native language is a form of English, referred to as Rama Creole. Though the situation of the original Rama language is without question more grave than that of Ulwa, speakers of the latter saw the Rama community as very fortunate in having a language program which might help to safeguard their linguistic tradition. Their concern was taken seriously, and an Ulwa language program was started in 1988, with a six-member committee and working team, consisting of three younger speakers (also teachers in the school) and three elder speakers. From the beginning, it has received bi-yearly visits from two linguists,

myself and Tom Green, also of MIT. The initial program of the project had basically two aims, to prepare a dictionary (and eventually a grammar) of Ulwa, and to record the oral history and traditional stories of the Ulwa of Karawala. The members of UYUTMUBAL, the Ulwa Language Committee, have constructed a house in which to work, and they hold regular meetings to carry out the work of the project, i.e., to write down and tape stories and to add entries to the growing dictionary, now approaching its third edition.

The precise condition of Ulwa is not easy to determine. All speakers we know speak it extremely well, and many of these are young — in their twenties. There are, so far as we can tell, no "semi-speakers". But the health of the language depends not on what the speakers know but rather on who speaks. What is the cut-off? How young are the youngest speakers? To get some idea of this, the Committee took a language census of the children representing one of the sections of each of the six grades of the Karawala school. The results are partially set out in (8) below:

(8) **Ulwa-speaking School Children, Karawala, 1989:**

Grade	Number of Pupils	Ulwa Speakers	Percentage
1st	58	2	3.4
2nd	29	5	17.2
3rd	25	7	28.0
4th	17	5	29.0
5th	13	5	38.4
6th	11	3	27.2

The census asked the pupils what language they spoke with each of the following categories of people: (1) mother, (2) father, (3) siblings, (4) friends, and (5) grandparents. The two Ulwa-speaking first graders indicated that they spoke Ulwa to their mothers only. The five second graders spoke Ulwa either with a parent or with a grandparent, as did the seven third graders — though two of these, from the same family, also spoke Ulwa with a sibling. The five fourth graders spoke Ulwa with a grandparent, and two spoke also with a parent. The fifth graders spoke Ulwa with a parent, and one of them also spoke with a grandparent. Finally, the sixth graders spoke Ulwa with a one or both parents, and one spoke also with a grandparent. Where a pupil spoke with a single parent only, it was generally the mother. In many cases, however, this reflects either the economic emigration of men or the effect of the Contra war, which resulted in the loss of many men from the Atlantic Coast communities. Several children indicated that they spoke English, one of the languages of the Coast, or Spanish, with one or more members of their families. Overwhelmingly, however, the language used by these children was Miskitu.

The meaning of these figures is not entirely clear, except in the most general terms. It would appear that the percentage of Ulwa speakers increases in the higher grades. If this represents anything like a true picture, then there are many possible explanations, each of which would have to be pursued to get to the bottom of the matter. But the apparent correlation may be entirely accidental, a reflection of the fact that the size of the classes decreases as the grade gets higher. This is a well-known condition in community schools on the Atlantic Coast. But suppose it *is* a real correlation. What could it mean? Perhaps young Ulwa people actually learn Ulwa, their "native" language, in later years, i.e., as a second language, in effect — this is not an unheard of situation. Or perhaps it means that the higher grades, in the Karawala of 1989, represented the youngest of an "older generation" of Ulwa speakers, people belonging to a generation in which the languages was still utilized in the home? None of this can be determined by staring at the figures we have at this point.

What appears to be true is that Miskitu has assumed the dominant position as the language of general use in Karawala. Everyone knows and uses Miskitu. By contrast, among school children, at least, very few use Ulwa in speaking to the people closest to them. The central question is not settled, however. How many school children *know* Ulwa? What choice is Karawala making, in general? Are the young people of Karawala choosing to put Ulwa aside in favor of Miskitu?

There is, I think, an interesting reason why this question cannot be answered on the basis of numbers such as those set out in (8). There is reason to believe that, despite appearances, Ulwa has not really been set aside, as yet. The relation between Miskitu and Ulwa is very special — it is not like the relation between, say, English and Spanish. English is genetically related to Spanish, of course, and Miskitu is genetically related to Ulwa (i.e., it is related to the Sumu languages). But the fact of these genetic relationships is not directly relevant to the issue at hand. The relation between Ulwa and Miskitu, genetically speaking, is perhaps as distant as that between Spanish and English. The relation might even be more distant. But the special relationship comes about another way, independently of the genetic. Miskitu has been in intimate contact with Sumu for a long time, particularly during and since the period of British commerce and piracy on the Atlantic Coast. Mutually advantageous arrangements made between the Miskitu and the British gave the former great military and economic power, permitting them to dominate the Sumu tribes to the west and to assimilate Sumu elements into their society. In all probability, segments of entire Sumu communities were captured and assimilated in this manner — early travelers report villages that were, linguistically, part Miskitu and part Sumu. As a consequence of this process, Sumu came to have an enormous effect on Miskitu, probably through the agency of Sumu women, whose effect on the linguistic form of Miskitu would certainly be strong, in a fashion closely paralleling that in which Khoisan elements came to be integral features of the Nguni languages of the Bantu family. Entire sections of the Sumu lexicon were borrowed virtually wholesale, e.g., the color terms, clearly Sumu in origin, as shown by their inflection (involving an element otherwise entirely absent from Miskitu); and the pronouns, a system normally impervious to borrowing. Thus, Miskitu and Sumu have an important part of their history in common. The borrowings indicate that the primary contact was between Northern Sumu and Miskitu. Ulwa is Southern Sumu. But the typological and genetic remove which separates Northern and Southern Sumu is not great. And if Miskitu is, in the special sense described above, "close" to Northern Sumu, then it is close to Ulwa as well. In fact, our experience at Karawala — in compiling the dictionary, with ample exemplification in sentences, and in assembling material for a grammar — gives us to understand that Miskitu and Ulwa are extraordinarily close, in a certain sense. They are close in a way which Spanish and English, or even Spanish and Portuguese, or English and Danish or Frisian, are definitely *not* close.

It is only a slight exaggeration to say the following about Miskitu and Ulwa. They are a single grammar with distinct lexicons and (derivational and inflectional) morpheme inventories. In general, if you can say it in Miskitu, you can say it in Ulwa (if you know the lexical items and the morphology), and vice versa. In this respect, the relation between Miskitu and Ulwa is much like that between Lardil and Damin, except that the bound morphemes, like the lexical items, are distinct in form. This is emphatically *not* the sort of relation which holds between Spanish and Portuguese, English and Frisian, and so on.

In a certain rather clear sense, Ulwa continues to be used in Karawala — not merely by those who *obviously* use it, in the sense that they use its lexicon and morphology, but also by those who use Miskitu vocabulary. This follows, since, with some minor exceptions, Ulwa and Miskitu share the same grammar. Thus, to restore Ulwa to use in Karawala, it would be sufficient, basically, to restore use of the lexicon and morphology.

While this has obvious implications for the program of the Ulwa Language Committee, there are many questions which remain. There are questions having to do with what the Committee's program *should* be. At the moment, the interest is primarily in documenting "the language", i.e., the lexicon, and the history and oral traditions of the community. While a grammar will be written, that is primarily our interest, not theirs. The fact that young people do not use Ulwa extensively is often commented upon, but it is not obviously lamented, and there are conflicting ideas, on the Committee, and elsewhere, concerning the extent to which the language is lost among the young. Some people have even told us that most young people know the language, a proposition which clearly conflicts with what we observe. And I must say, I have been confused by certain observations. People who are generally regarded as non-Ulwa, have proven to be very knowledgeable about the language, understanding it quite well, and producing it reasonably well also — one such person is the Miskitu wife of an Ulwa Language Committee member, and another is a young girl, not known to us as an Ulwa-speaker, who suddenly demonstrated that she could read and understand the Ulwa dialogue of a small phrase book prepared for possible use in the school.

In general, we feel that Ulwa is very accessible to the young people of Karawala. They "almost know it." All that is needed is a good reason for them to begin using it again. And we plan, in cooperation with the Committee, to perform an experiment. In the past, all of the literature produced in the project has been provided with a translation, generally in Miskitu, but sometimes in Spanish. We would like now to produce a piece of literature, in Ulwa alone, without translation. We will pick something which will appeal to young people, a medium-length book known to be successful among Central Americans (but unknown to residents of Karawala, generally). A small number of copies of the translation will be reproduced, in as attractive a format as possible. The copies will be housed in the "Ulwa House," and its availability there will be publicized, perhaps through public readings. The target population is literate in Miskitu, which is written with the same orthography as that which the Committee adopted for Ulwa. The book will have pictures illustrating the text, so that no potential reader will be totally at sea. However, there will be no Miskitu or Spanish translation, and readers will have to struggle with the Ulwa.

We expect two results from this book, at least. It will uncover many young people who have some command of Ulwa, people not yet known to us. It will generate interest in Ulwa, not only among Ulwa-speakers but also among people who are primarly speakers of Miskitu, and some of these, we believe, will attempt to learn the language, a relatively easy task for Miskitu-speakers, for the reasons mentioned above.

I have taken the time to sketch the Ulwa Language Project here for two reasons. For one thing, I hoped to provide an illustration of a language situation in which the concept of choice is not entirely fictional. There seem to have been real choices in the case of Ulwa, and it seems to me that many interesting choices remain. The outcome is by no means clear. And despite surface appearances, it is not at all clear that the future in Karawala will be a future which excludes Ulwa.

Secondly, I wanted to cite the case of Ulwa in order to illustrate what I perceive to be an important fact in relation to endangered languages and possible programs in support of them. The case of Ulwa is *unique*. Surely, the situation of no other language exactly duplicates that of Ulwa, though features are shared with it, to be sure. In fact, however, the situation of every language is unique — no situation is an exact duplicate of that in which Lardil and Damin find themselves, nor is any the same as that of Hualapai, or Navajo, or Jemez. This simple fact, it seems to me, is fundamental to the general program whose aim is to safeguard and promote local languages. Each language, in effect, will require its own approach, its own program. And this is appropriate, since the core personnel in successful

local language programs will be made up of people from the local language communities.

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FIELDWORK ON ENDANGERED LANGUAGES:
A FORWARD LOOK AT ETHICAL ISSUES

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This paper is being pre-circulated to the participants of the plenary session on ENDANGERED LANGUAGES of the XVth International Congress of Linguists, Université Laval, Québec, August 10, 1992. Excerpts from this paper will be part of the collective talk given by K. Hale, M. Krauss and C. Craig. The outline of the planned talk is as follows:

1. The state of affairs with language endangerment, updated information on the situation in the US (Krauss).
2. Why bother rescuing those endangered languages (Hale)?
3. Advocacy at macro level: lobbying for legislation (Krauss).
4. Advocacy at the ground level: issues of ethics and empowerment in fieldwork on endangered languages (Craig)

A version of this paper was originally read at the Conference on American Indian Languages organized by the Society for the Study of Indigenous Languages of the Americas at the American Anthropological Association meetings in Chicago, December 1991.

1. GOAL AND SCOPE OF THIS PAPER.
This paper explores general issues of social responsibilities and professional ethics that linguists doing fieldwork on Amerindian languages need to face today. (In the Quebec talk issues that pertain more specifically to fieldwork on endangered languages will be highlighted.)

1.1. Audience
The AAA paper was addressed primarily to fellow Amerindianists practitioners of fieldwork. It was meant to break the silence kept by the profession on the subject and to promote an open discussion of our field experiences and of the challenges we all encounter in field research today. The topic should also be of interest to linguists unfamiliar with the practice of fieldwork, such as general and typological linguists who are the beneficiaries of other linguists' fieldwork, or linguists concerned with the fate of endangered languages and involved in "salvage linguistics". Another audience is the corps of graduate students in linguistics who are curious about or contemplating doing such fieldwork but who find little written about the psycho-socio-politico-ethical issues associated with fieldwork, and few practitioners openly talking about them.

1.2. Goal

I have two goals in mind for this paper: one is to argue that it is time for us linguistic fieldworkers to discuss publicly the ethical issues that arise in the process of our work. In doing this, I will not linger on the fact that we have no tradition for such a discussion, but rather offer an assessment of why we should collectively remedy that situation in view of the changes that have been taking place in recent times, both within the disciplines of the social sciences and in the "real world" in which we conduct fieldwork.

The second goal of this paper is to map out where and what I perceive potential sources of ethical conflict to be, minimally by displaying for linguists those areas relevant to linguistic fieldwork that other social sciences also involved in fieldwork are identifying as worthy of attention. More specifically, I will begin to construct a guide to ethical issues that is tailor-made for linguists, by translating some of the more general statements found across the social sciences into the particulars of our disciplinary practice. I hope that this exercise will facilitate initiating a discussion of the kind that would be needed if we were, some time in the future, to respond to the invitation of the AAA to "develop a (more) detailed statement of ethics specific to [our] particular professional responsibilities... consonant with the principles stated [in the Revised Principles of Professional Responsibility]" of March 1990.

1.3. Scope of coverage

There are various ways in which I am limiting the scope of the present discussion of ethical issues in linguistic fieldwork, along the following lines:

a. the field situations I will refer to are limited to the Americas.

b. I will further focus on the particulars of the relations of academic linguists to native speakers and their communities, rather than on the more generic aspects of the relations of academics to their profession, their sponsors, the public, or governments. In doing so, I am conforming to the priority set by the AAA in the first section of its Principles of Professional Responsibility which addresses our "responsibility to people whose lives and cultures (we) study".

c. I will talk more of the relation of linguists as a professional group to the communities they deal with, and less specificly of the personal relation between linguists and native speakers as individuals, emphasizing what the AAA document states as the need to "recognize (our) debts to the societies in which (we) work (I.4)"

d. Finally, I am aware of the built-in limitations of starting the discussion among academic non-Native American linguists, when it is clear that the points raised in this paper need to be discussed from the start directly with the Native American interested parties whose interests are at the center of such discussions of professional responsibility and ethics.

1.4. This writer's credentials

I do not claim to know much more than what my own experiences as a linguistic fieldworker have taught me. My field experience has been that of being a foreign linguist in Guatemala before and after the genocidal wave of 'violencia' perpetrated against the Mayan people in the eighties, and more recently in Nicaragua at the time of strife and conflict resolution between indigenous populations and the Revolutionary Sandinista government. An exploratory visit to the site of my projected third major field project — on the Tsafiqui language of the Tsachila people

of Ecuador (better known as Colorado)— has confirmed that somewhat different but certainly equally thought-provoking ethical challenges are awaiting there. All three languages involved (Jakaltek Mayan, Rama Chibchan and Tsafiqui Barbakoan) are typically at various stages of endangerment, and at more or less advanced stages of massive shift to colonial languages (Spanish or English).

I am writing from the perspective of a field linguist entirely trained within linguistics departments, who had no formal exposure to the field of anthropology, and whose preparation for fieldwork was solely provided through the academic practice of 'linguistic field methods' courses. And although an early interest in doing fieldwork had led me to take field methods courses from three different linguists in the course of my graduate training—each one with a different approach to the course—I still left for the field in a state of absolute ignorance of the realities of fieldwork. Requests for advice and warnings were met with a sink-or-swim attitude and a complete silence on the non-academic and essential aspects of all fieldwork, from basic survival skills to epistemological and ethical considerations.

Through the two decades of linguistic fieldwork that define my university career, I have found myself increasingly forced to confront issues that my linguistics graduate training did not prepare me for, that my academic surroundings do not presently help me think through, and that I do not see us preparing our students to face. This piece of writing is therefore a move toward filling a perceived gap in the training of linguistic field workers and in the articulating of essential issues related to the practice of fieldwork on the part of the linguistic profession.

I assume that, although my personal concerns have grown out of my experience with indigenous populations of Latin America, the issues that I have been made to confront in two decades of field practice are not essentially different from those of linguists working with indigenous populations of North America, or for that matter, indigenous peoples of other parts of the world. This writing is based not only on my own field Latin American field experiences, but also on the general readings I gathered for an experimental course on fieldwork methodology and ethics I recently taught.

2. URGENCY AND TIMING

I believe it is not only timely but urgent that we begin to discuss these issues in the context of the changing world around us. Field research today is not carried out the way it was 20 or 40 years ago, and we need to assess the reality of the world our students are entering and for which we must prepare them, as their fieldwork experiences are not likely to be defined the way ours were, or our mentors' were.

It is my own experience that the range of roles that US and other foreign academic field linguists will play in the future is being presently redefined and that we would do well to prepare ourselves to be constructive partners in the linguistic field ventures of tomorrow. In what follows I will mention several chains of events that have been set in motion in recent years, that I believe will determine in definite ways the practice of fieldwork in the future, both in North and South America.

2.1. Chains of events in the United States.
a. The American Language Act of 1990

Probably (hopefully?) destined to have some major impact is the passage in October of 1990 of the **American Language Act** which states that:
" it is the policy of the United States to preserve, protect, and promote the rights and freedom of Native Americans to use, practice, and develop Native American languages (Sec 104)"
How the English Language First campaign became the ultimate mobilizing force for the U.S. tribes which are behind this American Language Act has been documented by Ofelia Zepada (SSILA X:1 p7) and Lucille Watahogamie and Akira

Yamamoto (1992). Such a legislative statement clearly contains implicit injunction to academic linguists to help implement the policy. And although nothing in the official text specifies the conditions under which academic linguists will do so, it does not take much imagination to see how it could set the stage for a certain kind of relation between academic linguists and Native American communities.

b. NEH Code of Ethics 1981.

Another chain of events that took place earlier in the decade is encapsulated in the **National Endowment for the Humanities Code of Ethics for Research Relating to Native Peoples** of 1981 which all grantees now have to sign. Such code was produced by NEH in order to respond to the passage of the **Indian Religious Freedom Act (Public Law 95-561) and the National Preservation Act amendments of 1980**. In this case, demands from Native American communities produced pieces of legislation which in turn have already become a source of pressure, through granting institutions like NEH, on academic field linguists.

c. LSA Resolution 1991

The third chain of events I would like to mention is internal to the community of linguists. The part of the sequence of interest here started with an invited pannel on endangered languages and their preservation on the opening night of the LSA 90-91 meetings which involved the same three Amerindianist fieldworkers of the planned Quebec presentation: Hale, Krauss and Craig. It was followed by a discussion of some issues of professional responsibility put forth by the pannel which resulted in the ultimate collective response conceivable in the context of such academic meetings, i.e. the passage of a resolution at the business meeting and its subsequent publication in the LSA Bulletin (March 1991).

Thus, the Linguistic Society of America Resolution passed at the 1990-91 Annual Meetings resolved that the Society:

"respond to [the] situation [of widespread language endangerment] by encouraging the documentation, study and measures in support of obsolescent and threatened languages...(LSA Bulletin No 131)"

This chain of events continued with the subsequent invitation from the journal of the association, Language, to publish the set of panel presentations as the lead article of the March 1992 issue. The whole sequence involving the LSA is of particular relevance to us Amerindianists since the vast majority of Amerindian languages may be considered to be at different stages of endangerment (see Krauss's part of the Quebec presentation). Although I have no illusions about the status and weight of such a resolution for even the linguists who were present and voted for it, I take the whole sequence of events that took place between 1990 and 1992 as symptomatic of a new era. It is clear that nothing of the sort would have been thinkable twenty, or ten years ago at the LSA!

All three documents cited above—the American Language Act, the NEH code of Ethics for Research relating to Native Peoples, and the LSA Resolution in support of obsolescent and threatened languages—are setting the stage for a certain definition of the future relations of academic linguists and Native communities. Whether the initiatives came from native Amerindian linguists and native Amerindian speakers, whether they had the support of some non-native Amerindian academic linguists, or whether they were initiated by non-native academic linguists, they all represent manifestations of dynamics that stand to affect in the future the way we conduct our linguistic field research. As I will try to show later, they all converge on taking the same perspective on what the relationship between linguists (native and non-native) to the indian communities of this country will develop into in the future: a framework of collaborative and empowerment-based project design

for linguistic field research.

2.2. Chain of events in Guatemala

I am personally more familiar with chains of events from points further south, in particular, the chain of events that has been redefining over the last twenty years the relations between foreign linguists of Mayan languages and an increasingly articulate, vocal and organized population of educated native Mayan speakers in Guatemala. To take the pulse of the level of discussion reached in Guatemala, one only needs to read the 1990 article of Demetrio Cojti "Linguistica e idiomas Mayas en Guatemala", the content of which is reported by Nora England in her 1992 article "On doing linguistics in Guatemala". As with the other chains of events in the United States mentioned above, Cojti and England's publications have to be understood as the manifestations of powerful dynamics that, minimally Mayan linguists, but probably all field linguists of the Americas today, need to acknowledge and ponder.

Over the twenty years of my relation to Mayan languages, I have witnessed striking changes in the modes of fieldwork practiced in the country of Guatemala. When I started, fieldworkers were individual academics of the most traditional sort, working without any constraint. In the seventies, foreign linguists started summer workshops on Mayan languages (known as the Talleres mayas) and a research institute on Mayan languages aiming at linguistic documention and training native Mayan language specialists (the Proyecto Linguistico Francisco Marroquin, which was originally supported in part by a contract with the Peace Corps). Both institutions have not only survived two decades of existence, including the years of open "violencia", but they have by now been turned over to native Mayan linguists. Mayans who run them and other Mayan languages institutions are now questionning more and more forcefully the role of foreign linguists working on Mayan languages.

While a dialogue may have been established in Guatemala between native Mayan people, including native linguists, and foreign linguists specializing in Mayan languages (informally organized as "Linguistas en pro de las lenguas mayas"), in most other Latin American countries the situation has moved beyond such open face-to-face debate. In countries such as Mexico, Venezuela, Colombia, or Brazil, local administrative and academic institutions intercept foreign linguists before they actually reach the field and stringent sets of restrictions and constraints aim to restrict the kind of individualistic linguistic fieldwork that was typically carried out by foreign linguists in past decades. Part of what linguistic fieldworkers must face in Latin america is the reaction of nationals—indians and non-indians alike—to US foreign researchers. What both local academics and indian populations at various stages of politicization are reacting to are the US foreign policies in the region and the long-standing and very ubiquitous presence of missionaries, particularly those of US origin who specifically work with indian languages such as SIL.

2.3. Upcoming Quincentenial events in the Americas

But probably the major dynamic that will change in the future the way we do fieldwork, particularly in Latin America, is the convergence of forces that have been increasingly uniting the indigenous peoples of the Americas in anticipation of the upcoming 1992 **quincentenial anniversary** of the supposed "discovery of America". While official governments have been busying themselves with anniversary "celebrations", an increasingly coordinated indigenous population has been organizing a quincentenial "denunciation", in the form of annual "Continental Encounters" with the moto of "500 years of resistance". The first such "continental encounter" took place in October 1990 in Colombia; the second in Guatemala in October 1991, and the third one, on the actual quincentenary in October 1992, is

scheduled to take place in Nicaragua, a geographic mid-point for the indigenous populations of all the Americas and a country which granted a statute of autonomy to its indigenous populations in the process of the Sandinista Revolution in 1987. Of relevance to linguists is that, as the events grow in scope and in participation of organized indigenous groups from one Encounter to the next, declarations about indigenous linguistic rights have been accumulating.

This was what I meant by urgency and timing: that the fate of Amerindian languages is being discussed in ever-widening public circles and that linguists specialists of these Amerindian languages will be increasingly pressured to face, beyond the confines of an academic world delineated in other times, the socio-political dimensions of the larger dynamics at work in their chosen "field".

2.4. About other dynamics in the social sciences

But these dynamics that affect the indigenous populations of the Americas and that are bound to affect their relation to the academic linguists of Amerindian languages are not happening in a vacuum. There is also a tangible movement in the way the social sciences in general—of which linguistics is one—are responding to pressures from the surrounding changing world.

One place to see it is in the recent updates and amendments of the codes of ethics of the social sciences. One can study, for instance, the 1971, 1986 and 1990 versions of the AAA Principles of Professional Responsibility and note that the new element that has emerged in the revisions of the documents is the inclusion of the notions of empowerment and advocacy as part of the ethics of the time.

There is much debate in the social science fields surrounding the emergence of new approaches to the way fieldwork is conceived and carried out. One read about "participatory action research", "advocacy anthopology" or "collaborative research" and "empowerment framework". Several identifiable threads are interwoven in all the discussions of the need for a change in the paradigm of how social sciences are being carried out. One of them is a present-to-future orientation in which the subject of study is viewed dynamically rather than staticly (in which culture is viewed not as an object but as a process). In this orientation, life is viewed as a way to adapt to change, an important view for language revitalization projects for instance. Another one is a call for self-reflection on the part of the fieldworker researcher, which would translate for even linguistic fieldworker into the need to comprehend better the dynamics of field work and the status and roles of the field worker. A third one is the promotion and reliance on collaborative research which promotes the development and use of local theories as a means to an end rather than ends in themselves and which includes a critical assessment of the relations of power between researcher and researched.

Characteristic of this new trend in approaches to fieldwork is a recent publication "Researching Language: Issues of Power and Method" by Cameron et al (1992) which addresses issues of the politics of language and the evolving politics of language/ linguistic research. It traces the evolution from the "ethical framework" of fieldwork defined as traditional academic "research ON a language", to the "advocacy framework" in which research is ON and FOR the speakers of a language, to the "empowerment framework" in which research is carried out ON, FOR and WITH the speakers of a language.

3. IDENTIFYING ETHICAL ISSUES FOR LINGUISTIC FIELDWORKERS

Having hopefully made the point that there is good reason to think that now is the time for us linguistic fieldworkers working on Amerindian languages to discuss among ourselves the ethical dimensions of our professional practice of fieldwork, I will now turn to the exercise of spelling out where ethical issues may arise for linguistic fieldworkers.

3.1. A look at ethics as defined and handled in other social sciences.
Linguists need not reinvent the wheel. There is an abundant literature available from the social sciences recognizing the centrality of the phenomenon of fieldwork to their discipline and the necessity of considering the ethical dimensions of fieldwork. The AAA has produced recently a useful Handbook on Ethical Issues in Anthropology (1987), and has even more recently updated its Principles of Professional Responsibility (1990). The task at hand is rather to present linguists with the obvious facts that linguistic fieldwork occurs no more in a vacuum than any other kind of fieldwork, and that not talking about our responsibilities as a professional group does not mean that we are not expected to be conscious of them.

I have been collecting existing documents from the social sciences (such as anthropology, archeology, psychology, sociology) and have drawn from them the themes that are relevant to linguists. A partial list of the specific documents I consulted can be found in the Appendix to this paper.

First a passing comment on terminology. While reading these documents I was interested in the areas of ethical concerns identified, and for the moment I have nothing to say about the documents being either guidelines, principles or codes (as in codes of ethics (NEH and ASA), principles of professional responsibilities (AAA), ethical principles (APA), ethical guidedelines for good practice (ASAC)).

3.2. Preliminary list of ethical issues tailored for linguistic fieldworkers.
There are two ways of organizing the discussion. One is to think of them in some chronological fashion, in the order in which one would need to be concerned about them, all the while recognizing the limitations of such a linear organization of the material. For there is no such chronology in the whole enterprise of fieldwork, since one would need to identify from the very start the potential areas of ethical conflict which dictate early course of action, and to understand that the whole process is neither linear nor self-contained.

The guiding principle behind the mere existence of the list of topics to follow is the acknowledgement of the rights of the communities involved to participate in the decision process from the start to the end of the field project. This approach signals a shift from the traditional "ethical framework" which promoted a linguist-centered approach to decision making to the "empowerment framework" where decision making is a process of negotiations meant to meet equally the needs of the researcher and the researched.

A. From academia:

    (1)   choice of project and field site. (Includes checking who is working there (issue of native linguists in the US, national linguists in LA, same courtesy as one would give to colleagues)
    (2)   nature of the initial contacts

B.In the field:

    (3)   choice of consultants (issue of luring consultants away from national institutions and projects with US grant money, for instance)

    (4)   informed consent (a very key issue in issue in social sciences about which linguists are mum. The perception of paperwork by indigenous people. The sense that consent needs to be rechecked at every stage.

    (5)   disclosure of purpose of the study (particularly key with missionary

work, highly sensitive issue in politically sensistive areas...ghosts of Project Camelot and the Vietnam era, issue of Peace Corps infiltration in some countries...)

(6) disclosure of source of funding (also a sensitive issue in politically sensitive areas, CIA spy syndrom)

(7) relations to indigenous community (issue of recognizing the consultants are members of a community, even if they are isolated in towns away communities; issue of level of involvement and advocacy of the researcher; issue of reciprocity (what money can't buy)

(8) relations to individual consultants (issue of empowerment of the individual, formal education, training...)

(9) relation to local scholars (identify them, whether to negotiate with them, whether to engage them in collaborative research)

(10) relations to local indigenous institutions (the "gate keepers", sometimes staffed by indigenous people, sometimes not)

(11) relations to governments (visas and work permits...)

C. Back in academia:

(12) returning copies of data and analysis to community (who owns the data, where to archive it...)

(13) publishing (anonymity/recognition of identity of consultants; co-authorship; checking of material to be published with consultants and local authorities; choice of linguistic examples used)

(14) producing materials of use to the community (writing for the community; the so-called "applied linguistics"; issues of manpower: when there is in truth nobody else to do it but the academic researcher; lack of academic recognition for this work...)

(15) following up, staying in touch (to move on, to forget, effect on the perception of the next ones to enter the field)

Another way to think about these issues is in terms of variables presented as ends of a number of continua that need to be kept in mind, such as:

(14) responsibilities of the individual fieldworker vs collective responsibility of the profession (SSILA/SLA/LSA).

(15) responsibilities of linguists at home institution in their capacity as teachers/mentors vs that of fieldworkers in the field.

(16) issue of bare minimum understanding of issues involved by all academic linguists vs issues specific to fieldworkers challenged to become advocates/activists through their immediate contact with communities.

(17) sense of career path: responsibilities of senior vs senior members of the profession

[Section on specifics for endangered languages to be inserted here]

Conclusion 1: In this awkward beginning, I hope to have done the job of opening the door, and putting my foot in it to keep it open, and in so doing, encouraging others to join in the discussion.

Conclusion 2:

There could have been many other ways of writing this paper. The above was my own natural style, the descriptive linguist at heart! But others can be more eloquent at nailing down what the basic issues are. Here are thoughts from Berreman I would like to share:

-that what it is all about is "no more advocacy of free enterprise scholarship the consequences of which are often undistinguishable from colonialism (115)" and that by putting the discussion in the time frame of the Quincetennial denunciation of 1992, I establish a link with the notion of colonialism.

-that "the financial, political and prestige advantage we have enjoyed for years overseas and at home are now dissapearing along with others, more widely recognized aspects of colonialism. We should welcome this end to intellectual subservience" (111).

-that we should be warned "against arrogant rejection and denial of validity of demands from indigenous (and other dominated groups) that increasingly infuriates the young and the third world". As articulated by the posture of scholarship that is questioned and resented".

-that we should consider that "for social scientists, the moral imperative and self interest have become one" and that "the only hope for continued academic research abroad and also among our own ethnic minorities lies in genuine responsiveness to the needs, desires and demands of host communities" (154)

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THE LANGUAGE EXTINCTION CATASTROPHE
JUST AHEAD: SHOULD LINGUISTS CARE?

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Every language is as infinitely complex as a living organism; as such it is surely the most marvelous manifestation of the human mind. A hundred linguists working a hundred years could not fully fathom the mystery of a single language.

Further, just as all life that we know depends utterly on the natural world to sustain it, surely human life as such depends on our linguistic world to sustain it. We are all aware that our biological environment in its essential diversity is gravely endangered. What of our linguistic one?

First some statistics (summarizing and updating my report to the January 1991 meeting of the Linguistic Society of America, published in Language March 1992). There are, for the moment, about 6000 languages still spoken (give or take some 10%, depending especially on the definition of language vs. dialect). Now, a language no longer spoken by children is beyond endangerment. It is dying, doomed to extinction at the death of its youngest speakers, like a species that has lost its reproductive capacity. Our information on language viability is seriously inadequate. The best single source by far is SIL's remarkable Ethnologue (edited by the Grimeses), which provides some information --in terms of need for Bible translation -- for about 60% of the world's 6000 languages. From this and other sources we can only estimate that between 20 and 50% of the 6000 are no longer spoken by children, are already beyond endangerment, are dying and -- we need no crystal ball to predict this --will surely be extinct during the coming century.

The only way to estimate the percentage (merely) endangered is to attempt a definition of those not so, the languages I have termed "safe". Isolation is much too fragile any longer to be adequate protection; only sheer numerical or political strength will do. Big languages, spoken by over a million, and/or state languages (the big of course include most of the state) number only about 250. Lower the safety-in-numbers threshold generously to

half a million -- bearing in mind, though, cases like Welsh and Breton -- and we can say that up to 300 languages are "safe" -- pretty sure to be spoken still by children a century from now. It follows then that the century nearly upon us may see the extinction or doom to extinction of 95% of our languages. Moreover, of our real linguistic diversity an even higher percentage is endangered or worse, as the surviving 5% will belong to at most 20 genetic families, over half the "safe" languages belonging to just two, Indo-European and Niger-Congo.

But back for the moment to the plain statistics. The "endangered" percentage -- not counting the 20 to 50% already dying -- is thus 45 to 75% of the 6000, whose fate hangs in the balance. But what balance?

Let's take a few examples, starting with the indigenous languages of North America -- the US and Canada -- of which 180-some are still spoken. Preliminary results of our survey, still in progress, show that only about 30, one sixth of the 180-some are still spoken by children, and five sixths are dying. Of those perhaps another sixth are still spoken by most adults, but a quarter of the 180 will be extinct within ten years, and over half will be within 35.

However, the countries with the most languages today are Papua New Guinea with some 850 languages, then Indonesia with 670 (including Irian Jaya as well as East Timor) then Nigeria with 410, India with 380. Eighteen more countries have over 100 languages, including e.g. Brazil, Chad, Sudan, Ethiopia. Bear in mind current conditions in some countries, on the one hand, and on the other the fact that the median-size language worldwide is spoken by perhaps only 5000 persons, and you may form your own opinion on whether the percentage already dying is more like 20% or like 50%, and what the chances are for survival of the endangered remainder.

Are we linguists to remain weightless in the balance? Have we no interest in it?

Comparison of these catastrophic statistics for our linguistic world with those for our biological world will be instructive in more ways than one. Let's take the categories most visible and charismatic to us, mammals and birds. There are about 4400 species of mammals. Of these 326 or 7.4% are officially listed as "endangered" or threatened. of the 8600 bird species a mere 231 or 2.7% are officially so listed. Why such concern then over so trivial a threat? Well, there are powerful political and economic interests to prevent official listing of endangered species, especially against the inconvenience of preserving habitat. So underlisting may be quite severe, especially for birds, for which some conservation biologists now believe the endangerment rate to be more like 50% than 2.7%. Even so, the best scenario for language is still worse than the worst for birds. Are languages that much less important than

snail darters or spotted owls? Why so much less concern for language, even on the part of linguists?

We know our life depends on an ecosystem, a web of life of which birds are a part, but are we certain that our 6000 languages are not at least an essential part of an intellectual and social system upon which our humanity depends? How many languages are expendable, and which?

The loss of any one language diminishes us all, aesthetically, spiritually, culturally, intellectually, historically. Here we stand to lose 95% of our traditional intellectual wealth and diversity and -- worse yet -- of our ability, of our very freedom to think in different ways. And, yes -- a mere detail(?), we stand to lose scientifically, as linguistics is losing its own subject matter. So do we linguists not have a double stake in this, and double responsibility to act?

Again we have much to learn from the biologists' side. There are literally hundreds of organizations, local, national and international, private, public and governmental, educational to publicist to militant to regulatory, working toward the preservation of the natural world. The catastrophes we face together are not only similar, but causally related, with the unchecked expansion of a few species or languages threatening the destruction of all the rest, so too the very system on which they subsist. Why have we linguists, of all people, remained so oblivious to the catastrophic loss of the very matter of linguistics?

Beside what should be our partners in biology, there have been organizations and movements for a long time, formed largely of cultural patriots and educators, for the support of endangered languages, now gaining strength and network structure, for example the Native American Language Institute (NALI) in the US and Canada, and the European Bureau for Lesser-Used Languages. There have been a few pioneering entities in academe, such as the Alaska Native Language Center at the University of Alaska Fairbanks, which I represent, now working this way for 20 years. More generally during this time academic linguistics has been heavily preoccupied with matters of a different sort, and has only during the past two years even begun to respond, notably with a plenary session at the 1990-1991 LSA, which then established a committee on Language Endangerment. In early 1992 the German Society of Linguistics also established such a committee. In 1991 the CIPL published a book on worldwide language endangerment, edited by our Secretary-General Professor Uhlenbeck; in a February 1992 meeting it began to involve UNESC0 in Paris; and CIPL is now providing this major forum at last to engage academic linguistics on an international basis.

I see for us three urgent goals:

1)   We must turn much more of our attention to the documentation (in the form of grammars, dictionaries, text corpora, tape-recordings; safely archived) of as many dying languages as possible, to preserve both as data for linguistics and for the heritage of mankind. Linguistics departments need to become much more supportive in awarding degrees, positions, and promotions for this urgent kind of work.

2)   We must improve our very defective knowledge of the state of the world's languages, both in order to set priorities for rational deployment of scarce resources for the preceding --documentation of dying languages -- and for the following:

3)   We must join in the work to minimize the loss of viable or revitalizable languages. This is surely no less legitimate for us to do than for biologists to be involved in the struggle to preserve the biological diversity of our planet. Of course there is a political side to this. There are many regimes which are doing more than superimposing a national language, but are also eliminating their indigenous languages. The International Covenants on Human Rights adopted by the United Nations in 1966 explicitly include minorities' "right to use their own language" (Article 27, Civil and Political Rights). I am pleased to note that UNESCO's Educational Sector is now increasing its minority language support, with the consent of some regimes. In fact, I believe that the political and legislative potential for the strengthening of indigenous languages is now enormous. In Alaska and the United States, for instance, legislators have been, if anything, ahead of us linguists with initiatives to preserve as much as possible of our indigenous languages. This enormous political and legislative potential for state support has barely been tested yet. That is an obvious avenue to proceed, both in elevating public awareness and politically, along with our best allies, the local leaders and language educators on the one side, and on the other with the very advanced organization of those who have the same concern for the natural world.

We linguists must recognize our responsibility to join in the race against time to preserve what can be preserved of our human heritage. Consider the stakes for posterity.

THE WORD - WHY?[1]

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> ... le mot, malgré la difficulté
> qu'on a à le définir, est une unité
> qui s'impose à l'esprit, quelque
> chose de central dans le
> mécanisme de la langue ...[2]
> Ferdinand de Saussure

1. THE TRADITION

Saussure's remark may at first sight seem to be one of those commonplaces which any layman who has thought the least bit about language might make but which will not stand up to closer observation and analysis. However, coming from Saussure, the remark is perhaps worth more than a passing glance. Indeed, a few moments' reflexion suffices to bring out that, if it is not a gross exaggeration, it entails that the word must be a universal of human language because it is depicted as a central part in the mechanism of the tongue[3] one is speaking. As such, the word must come into play every time one speaks since one cannot envisage the functioning of any mechanism, be it physical or mental, if a key part is missing. It would, therefore, be a universal not just in the sense that it can be observed in a large number of languages or even in all languages, but in a much more comprehensive sense: it must be found in every act, every manifestation of language. Granted the extraordinary diversity of human languages and the infinite variety of situations prompting people to speak, this omnipresence of the word would, assuming that Saussure's remark reflects the reality of language, constitute a very remarkable fact.

Saussure, of course, is not the only scholar to endorse this view. Early in the nineteenth century, von Humboldt had written:

By *words* we understand the signs of particular concepts. The syllable represents a unity of sound; but it becomes a word only if it acquires significance on its own, which often involves a combination of several. In a word, therefore, a dual unity, of *sound* and *concept*, comes together. Words thereby become the true *elements* of *speech*, since syllables, with their lack of significance, cannot properly be so called. If we picture language as a second world, that man has objectified out of himself from the impressions he receives from the true one, then words are the sole objects therein for which the character of individuality must be retained, even in form. (Humboldt 1988:70; italics in the original)

He then goes on to affirm that word-constructing (*Wortbildung*) "is an essential requirement for speaking". Although sometimes romantic-sounding in style, much of his well known essay is concerned with the problem posed by the word. In the present century, the importance of the word was stressed by Vygotsky at the end of his essay "Thought and Word" (1962:153):

We cannot close our survey without mentioning the perspectives that our investigation opens up. We studied the inward aspects of speech, which were

as unknown to science as the other side of the moon. We showed that a generalized reflection of reality is the basic characteristic of words. This aspect of the word brings us to the threshold of a wider and deeper subject — the general problem of consciousness. Thought and language, which reflect reality in a way different from that of perception, are the key to the nature of human consciousness. Words play a central part not only in the development of thought but in the historical growth of consciousness as a whole. A word is a microcosm of human consciousness.

In the more prosaic tradition of linguists, Bühler considers words and sentences "the structures of language" (1990:81), and their duality as perhaps "its most characteristic structural law" (p.87). Gardiner (1951:88) has given the most succinct expression to this view: "*The sentence is the unit of speech, and the word is the unit of language*" (the original in italics), words being "the most important constituents of language". In the American tradition, perhaps the best known argument in favor of the importance of the word is Sapir's (1949:24ff), particularly when he describes his experience with young speakers of Nootka, claiming (p.33) the word to be "a psychological reality", "the existent unit of living speech". The most recent plea comes from Miller (1991:261): "...words — the fundamental units of language."

This, then, is a well established tradition. It implies that human language cannot exist without the word, a view which, if valid, entails not only that an analysis of language failing to take it into account will be at best incomplete but that any approach aiming at a general theory of language must accord the word a central place. Such is not the case, however, in many contemporary theories; few theories attribute to the word a truly central position in language, and more than one approach either peripheralizes it or dispenses with it altogether as a linguistic entity. Thus for many linguists there has been a break with tradition, but certainly not because the tradition lacked authoritative support. It will therefore not be wasted effort to dwell for a moment on the reasons why the word suffered an eclipse earlier in the century, particularly in view of the renewed interest shown in it over the last few years.

2. THE BREAK WITH THE TRADITION

The views of the above authorities all imply that the word is a sine qua non of human language, that without the word language as we know it cannot exist. Since it would be impossible to verify a view of so general a nature by way of direct observation, the only alternative is to try to understand on what it is based. Why is the word a necessary condition of language? Posing the problem in this way suggests that the word involves something essential to language, inherent in its nature. Discerning just what this is will be crucial to understanding the break with the tradition.

The above citations give us some hints where to begin. One might, like Humboldt, look on words as the elements of discourse[4], the building blocks of meaning from which sentences are constructed. This point of view has been put forward more recently by Bolinger (1963:136), who maintains that:

... the meaning of the sentence must be discussed in terms of the meaning of the component words and traffic-rule morphemes.... word meaning has a kind of priority and to that extent is unique.

Since any sentence, any discourse is constructed in order to express meaning, such a view certainly attributes an essential role to words. And yet this argument did not prove convincing to many linguists, perhaps because describing the word simply in terms of its sentence function in this way is not completely satisfying. To be convincing it would have to go one step further and show what it is in the word that permits it to fulfil this function.

In this respect, Gardiner's remark that the word is the unit of tongue[5], whereas the sentence is the unit of discourse, offers a more complete view. As the unit of discourse the sentence is not only the "constituent and isolable member" into which discourse can be divided but also a whole in its own right grouping smaller units, the smallest being the word. Similarly, the word is both a grouping whole and the member into which tongue can somehow be divided. This in no way contradicts the view that the word is the "element" of discourse, the smallest sayable unit capable of functioning in the sentence. On the contrary, in adding the notion that a word has its own make-up and so somehow has an existence prior to, and even independent of, that of any particular sentence, this view suggests that, to find what permits the word to fulfil its function as a sayable, meaning-expressing element in the sentence, the consitituents of the word must be examined.

Many linguists have, of course, examined the word from the point of view of its physical shape in an effort to discern just what makes it a sayable element of discourse, but none of these attempts to describe this determining factor from the point of view of its phonological manifestations has proved totally satisfactory. Attempts to discern the principle of unity on the mental side of the word were not more successful. Even when wholeheartedly undertaken, the observation of meaning led, not to the unity sought, but to polysemy, as the following passages from Stern 1931 make clear. On the one hand:

There is no getting away from the fact that single words *have* more or less permanent meanings, that they actually do refer to certain referents and not to others, and that this characteristic is the indispensable basis of all communication.... It is on this basis that the speaker selects his words, and the hearer understands them. (p.85)

On the other hand:

It is further evident that when the word *camera* is used of different cameras, the meaning changes in correlation with the change of referent. The sentence *there flies a bird* has not the same meaning when used of a fluttering sparrow, of a swallow, an eagle, and so on, in a variety of circumstances. Although the words remain unaltered, the meaning changes with the change of referents. (p.40)[6]

Saussure himself, quite aware of the problem, could only propose the need to seek the basis of word unity:

Le lien entre les deux emplois du même mot ne repose ni sur l'identité matérielle, ni sur l'exacte similitude des sens, mais sur des éléments qu'il faudra rechercher et qui feront toucher de très près à la nature véritable des unités linguistiques. (p.152)[7]

The failure of such attempts to deal with polysemy at a moment when behaviorist and positivist currents of thought were prevalent led to the view that meaning cannot be approached by competent observers in a coherent way. Indeed, without some method of analysis, it is difficult to see how meaning can be treated scientifically and so how the word can be adopted as a basis of language analysis. The fact that a word can express different senses thus raises a serious problem for anyone who would view it as a unit and describe the raison d'être of the word, its necessary condition of sayability, in terms of meaning.

The break with the tradition is thus understandable in view of the fact that no generally acceptable principle of word unity has been found. It led some to reject the word, not only as a universal but even as a reality of language: "Isolated words are in fact only linguistic figments, the products of an advanced linguistic analysis" (Malinowski 1935:11). More widespread, however, has been the attitude of those who "take the word for granted" (Cf. Guzman and O'Grady 1987:128), an attitude which may arise in part because we tend to overlook what is

omnipresent. Nevertheless, it remains that a scientific discipline cannot afford to take for granted any part of its object of study, let alone one that is present in every observation. Besides, if the word really does "impose itself on the mind" as Saussure claims, there must be some reason for it. If it is "something central in the mechanism of tongue" it must have some specific function to fulfil. If the word really is the unit of tongue, there must be some principle of unity, some criterion guiding the speaker. In short, until some compelling reason for the word's fundamental importance is made explicit, such pronouncements as Saussure's may well be accepted on the authority of the scholar who makes them, but one can understand those who abandon the tradition.

This, then, is the problem I wish to pose: if the word is a necessary condition for language as we know it, what is the reason for this? As one contemporary scholar puts it:

> What is at issue in a scientific discussion of words is not so much specific words as wordiness: why are all languages wordy? Why are words a universal design feature of languages? It is words in general, not scientific words, that are scientifically important. (Miller 1991:5)

In what follows, I wish to present one attempt to deal with this problem, that of Gustave Guillaume, who is, to my knowledge, the only linguist who has attempted to develop a general theory of language, The Psychomechanics of Language, based on the raison d'être of the word.

3. GUILLAUME AND THE TRADITION

As a sayable element of discourse to serve in building a sentence, a word for Guillaume consists of a meaning and its physical sign. Its inherent unity resides not in the physical component but in the mental component because the word is primarily a meaning construct.[8] Furthermore, a given word is not a ready-made unit, like a sandwich in a machine, to be deposited as such in the sentence one is putting together. Rather, like Humboldt, Guillaume maintains that each time a word is required, it has to be constructed, reconstructed, along certain architectural lines, from a set of pre-established formative elements. And so from a very general point of view, Guillaume considers the word in any language as essentially a "constructional mechanism" (1984:109) permitting speakers to produce the linguistic units that emerge into consciousness — the observable elements of a sentence.

Considering the word a constructional mechanism in this way, however, does not explain its universality. To understand why this mechanism is called on every time one engages in an act of language, it suffices to consider that whenever we speak, we speak about what we have in mind, about some experience. In fact it is inconceivable that one could speak about anything else, about something of which one is quite unaware. The particular experience may, of course, be the outcome of perceiving, of imagining, of remembering, of understanding something someone has said or written, etc., but whatever its source, our experience is personal. "One man's idea is not that of another", as Frege remarked, emphasizing thereby the strictly private nature of the experience constituting anyone's state of consciousness at a given moment. As such, then, our momentary experience is unsayable and yet it is the only thing we can talk about. Hence the necessity to translate it into some medium accessible to others, to present it again to the mind in another form, to re-present it linguistically with whatever means our language makes available to us. The speaker must represent the experience he has in mind by means of sayable meaning-units called words to be combined into a sentence or sentences, thereby reconstituting an analogue of his experience. That is, the meaning expressed by a sentence, or a set of sentences constituting a discourse, is a linguistic reconstitution of an experience which in

itself is unsayable. And this meaning can be expressed only if it has first been represented by words.

> The human principle underlying language is that expression is possible only if something has first been represented. The necessity of representing something before expressing it is universal in space and time. (Guillaume 1984:94-95)

lt is this which makes the word a necessity in every act of language: we cannot speak unless we have something to say, and we cannot have something sayable unless we represent the experience we have in mind by means of vocable units of meaning ready to form part of a sentence.

This, then, is Guillaume's postulate: words are the means of representing experience through language. This explains why, as Saussure maintains, the word is "central in the mechanism of tongue": without representation by means of words, we could express nothing linguistically and, in fact, language as we know it would cease to exist. Moreover, being the unit that emerges into consciousness, it "imposes itself on the mind". As such, the word is seen by the speaker to be, in Sapir's terms, "a psychological reality", "the existent unit of living speech". Indeed, this postulate is implicit in Vygotsky's view that words "reflect reality in a way different from that of perception" and in Humboldt's view of tongue "as a second world that man has objectified out of himself from the impressions he receives from the true one". This also gives content to Gardiner's view of the word as the "unit of language" (= tongue) in the sense that inherent in each word is a constructional mechanism, a little preconscious program (to borrow a metaphor from the computer) for representing some aspect or type of experience. That is, tongue is a complex mechanism of representation, a series of operational possibilities organized systematically for producing units of meaning that represent experience. Thus it can be seen that by postulating the word as a mechanism of representation Guillaume continues and summarizes a certain tradition by giving a reason for the universality of the word. On the other hand, this postulate brings with it an implication with far-reaching consequences, namely that the various forms and uses of words are meaning motivated.

All this no doubt strikes many linguists as a sort of wishful thinking which has little to do with the hard reality of actual language and the uncompromising demands of scientific analysis. They may well concede that the word is necessary for an act of language and even allow that it provides the means for representing experience, but when it is spoken of in terms of a mechanism for representing experience in units of meaning, this amounts to basing not only language theory but language itself on something intangible, something mental. After all there is no way of observing a mental or "psycho-" mechanism since it is, by definition, preconscious. In short, without some means of analyzing the hidden system of the word, this tradition may well remain a splendid vision, but it cannot be translated into anything of scientific worth. Thus the whole issue comes down to one crucial problem: how to analyze the system of the word in any language, its representational mechanism.

4. A METHOD OF ANALYSIS

Confronted with the words in a language like English, the linguist appears to be in a position not unlike that of other scientists, if one can judge from the following well known passage concerning physics:

> Physical concepts are free creations of the human mind, and are not, however it may seem, uniquely determined by the external world. In our endeavor to understand reality we are somewhat like a man trying to understand the mechanism of a closed watch. He sees the face and the moving hands, even hears its ticking, but he has no way of opening the case. lf he is ingenious he may form some picture of a mechanism which could be responsible for all the

things he observes but he may never be quite sure his picture is the only one which could explain his observations. (Einstein and Infeld 1966:31)

The attempt to "form some picture" of a word's mechanism of representation which would help explain all its uses, "all the things he observes", calls for some basic parameter with reference to which the elements resulting from analysis can be grouped coherently. Only in this way can an explanation of the word as a functional unit be worked out.

The basic parameter for all Guillaume's analyses is a very simple one: time. The operations made possible by any mechanism require time, operative time, to take place, so those involved in the construction of a word must require time as well. Now the operative time required to realize the physical part of the word is perceivable and so measurable, but that required to construct the mental part of the word is not. Notwithstanding the fact that the operations of representation are so rapid as to defy perceivability, they must take time. It is this microtime of representation — as opposed to the macrotime of expression — which provides the basic parameter for the elements of analysis in serving to position them before or after one another.[9] This operative time can be diagrammed in the general form of a vector:

BEFORE | AFTER

OPERATIVE TIME

In analyzing meaning, perhaps the most obvious distinction for words in English (or in other Indo-european languages: cf. Guillaume 1984:38ff) is that they express both lexical and grammatical meaning. Interpreted in terms of a representational mechanism, this means there must be an operation of ideogenesis to provide the lexical component and an operation of morphogenesis to provide the grammatical component. Granted that these two operations constitute the two parts of a single operation of word formation, they must arise at different points in its operative time. The key question then is: which arises first? Considering that grammatical meaning is categorial by nature, that it situates in general categories the particular lexeme of a word, it follows that the lexeme must be represented first. That is, ideogenesis precedes morphogenesis in the process of word formation. In a diagram:

IDEOGENESIS | MORPHOGENESIS

WORD FORMATION

In this way, by observing a result (the grammatical categorizes the lexical) and imagining the process required to produce it, this basic distinction in representation is made in operational terms.

The grammatical component itself can often be observed to consist of several elements. That is to say, in a noun or in a verb, the operation of morphogenesis categorizes the lexeme in diverse manners, finally situating it in its most general category, the part of speech. In a noun, for example, the most obvious category is that of number, expressed by ø or by -s, to indicate that the lexeme has been represented as 'continuate' or as 'discontinuate', respectively. Again the basic parameter prompts the key question: which arises first in the process of representing number, continuate (ø) or discontinuate (-s)[10]? By far the most frequent sense of -s is that of 'plural', 'more than one', while that of ø is 'singular', 'one'. And here too an order can be postulated: to represent 'more than one', 'one' must already have been discerned. That is, in the system of number,

'singular' must arise before 'plural', continuate must precede discontinuate. In a diagram:

    Ø   -S

'CONTINUATE'   'DISCONTINUATE'

SYSTEM OF NUMBER
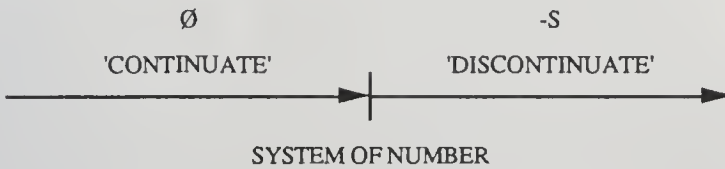
Using the same method, the analysis can be pushed to the final element, the morpheme itself. One can observe the different senses expressed by each morpheme and attempt to imagine the respective operation required to produce them. Thus it is well known that the 'continuate' morpheme can express not only a 'singular', as in *I liked the film*, but also a 'mass' sense as in *We enjoyed the music*, and even a 'generic' sense as in *Water boils at 100°*. All three senses[11] are found with certain nouns:

       1a. Beer is a fermented drink. ('generic')
       1b. Beer was served with the meal. ('mass')
       1c. A beer was left on the table. ('singular')

An extensive examination of usage has shown that this polysemy of the ø morpheme can be explained by imagining that the ø movement itself is intercepted at different points. Intercepted at its final point, this movement gives rise to the representation of a minimal quantity, a 'singular' sense, as in 1c; intercepted at its initial point, it gives rise to the representation of a maximum quantity, a 'generic' sense, as in 1a; intercepted at some intermediate point, it gives rise to the representation of some quantity neither maximum nor minimum, a 'mass' sense, as in 1b. In a diagram, where M = maximum quantity, I = intermediate quantity, and m = minimum quantity:

Ø

'Continuate'

M   I   m
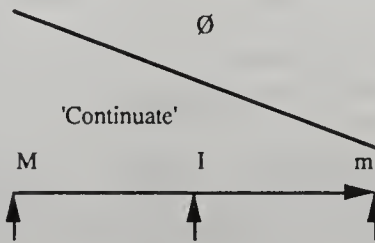
The great advantage of analyzing the different senses of a morpheme by positioning them in operative time is that it permits the reconciliation of the observed polysemy of the morpheme with the monosemy required by the needs of communication. Ø morpheme always signifies 'continuate' quantity, but the particular quantity signified varies from one use to another. That is, the unchanging meaning potential of the morpheme is the possibility of a movement through the field of 'continuate' quantity; its actual meaning, resulting from intercepting this movement at the appropriate point, is the representation of a particular quantity. In this way, polysemy, far from being an obstacle to analysis, is rather an invitation to imagine a representational operation capable of producing the observed senses.

Similar remarks can be made for the -s morpheme. Its usual 'plural' sense, as in *Cars are lined up for miles*, can be constrasted with its 'generic' sense as in *Cars pollute*. The morpheme can even be used, though far less frequently, in a 'singular' sense, as in *an outstanding opening ceremonies, a new airlines, an*

army barracks (see Wickens 1991 for many more examples). All three senses are found with certain words:

> 2a. That crossroads is blocked. ('singular')
> 2b. The next three crossroads have no traffic lights. ('plural')
> 2c. Crossroads should be well lighted. ('generic')

Again, trying to situate these different senses at successive moments in the -s movement leads to the following picture: intercepted at its initial point, the movement gives rise to the representation of a minimal quantity, a 'singular' sense, as in 2a; intercepted at its final point, the movement gives rise to the representation of a maximium quantity, a 'generic' sense, as in 2c; intercepted at any intermediate point, it gives rise to the representation of some quantity neither minimum nor maximum, a 'plural' sense, as in 2b. In a diagram:
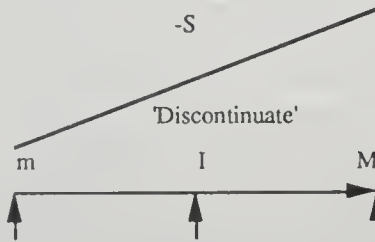
It can be seen from this diagram that the -s movement is the reverse of the Ø movement, its mirror-image, starting up where the other leaves off: at the point where a minimal quantity is represented. Together, the two form the system:
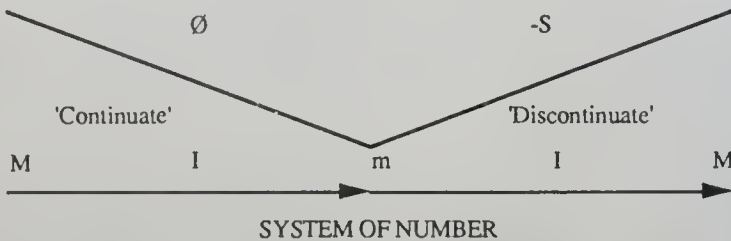
SYSTEM OF NUMBER

Conceived as a mechanism, the system of number in English can thus be seen to provide the means of representing any positive quantity imaginable for a noun lexeme. Furthermore, this mechanism is put into operation every time a noun is required or understood.

Although number is the most clearly marked element of grammatical meaning in the noun, it is not the only one. Most observers would agree that gender is also part of its meaning and this raises the question of order: which arises first in morphogenesis, gender or number? Recent work done on gender in English (Morris 1991) provides evidence not only that gender precedes number in the series of categorizing forms in the substantive, but that it is the first such form to arise in its morphogenesis. Space does not permit even a summary discussion of what has been discerned so far in the representational mechanism involved here, nor of that involved in case, which appears to be a later form in morphogenesis leading to the most general category, the part of speech. Sketchy though it is, this outline will perhaps give some idea of the complexity of the representational mechanism called into play every time one wishes to use a noun.

The representational nature of the lexical meaning of the word is much more obvious, granted the unlimited multiplicity of individual experiences which ordinary words like *door* or *feeling* may be called upon to represent. To accomodate this multiplicity, the potential meaning can be usefully considered as a

sort of "viewing idea", a conceptual construct for scanning the speaker's experience and representing a certain grouping of impressions. Because of the particularity of each concept, however, its nature is much harder to analyze than the meaning of a morpheme[12]. On the other hand, this very particularity provides a clear indication that ideogenesis is an operation of particularization, a movement providing the word with what individualizes it, and as such quite the opposite of morphogenesis. Such considerations suggest that for a word in English the operation of ideogenesis is a movement of particularization and the operation of morphogenesis a movement of generalization, itself consisting of several sub-systems. The following diagram will perhaps help to picture this representational mechanism:

IDEOGENESIS · · · · · · · · · · · · · · · · · MORPHOGENESIS · · · N O U N

FORMATION OF A NOUN
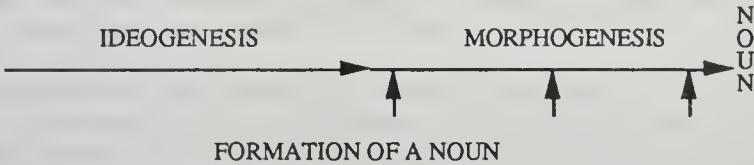
It is hoped that these remarks will be sufficient to indicate how this type of analysis serves to interpret data collected by observing attested usage. They should also give some idea of the complexity of the resulting construct, the substantive noun, with its lexeme and various morphemes constituting an element of discourse. Of course, not all words are constructed on the same lines as the noun. The morphemic constituents of the verb, for example, are quite different from those of the noun, but the same technique of positioning them in the operative time of morphogenesis has thrown considerable light on this system of representation as well.[13] Even words like the articles, whose meaning consists of an extremely abstract representation, have been analyzed by means of the positioning technique and described on the basis of a necessary temporal relation between viewing something as indefinite, unidentified or as definite, identified. A potential meaning has been proposed for each article in the form of an operation of representation capable of engendering its different observed senses.[14]

Thus it appears that the particularizing component and the categorizing components of the meaning of even apparently simple words in English like *boy*, *eat* and *the* are structured systematically. In other languages, the complexity of words may be far more apparent, their constructional mechanism being more clearly reflected in the make-up of the physical sign. Using the same positioning technique, Lowe (1985) has shown for three dialects of Eskimo that the rigorous syntax within the word reflects the system of its mental constituents, not just in situating the lexical with regard to the grammatical, but in ordering the components of each type. His work both confirms the widespread heuristic value of the method of analysis and, through a comparison of the word system in English with its counterpart in Eskimo (see his "Introduction") provides a healthy antidote to those who still unwittingly try to impose an English or Indo-european word system on languages with a different type of word.

5. THE CONTEMPORARY SCENE

Perhaps enough has been said to show why the following is not an empty claim:

In any language the word constitutes a system. Discovering this sytem, that is, discovering the constructional mechanism behind the word, is the task of the psychosystematics of language, with its special technique called *positional linguistics*. (Guillaume 1984:109)

Based on the postulate of operative time, the positioning technique leads to a type of morphological analysis — what might be called operational morphology — which is at the heart of this approach and opens a vast program of research. By offering a means for solving the crucial problem of polysemy, this technique makes it possible to validate the claim that the word is a mechanism of representation. In this way, it permits an important development of the tradition which puts the word at the center of language as a unit of meaning.

Where does this approach fit in the contemporary scene? The postulate that the word is a representational mechanism mediating between private experience and sayable meaning — between incommunicable representations arising from the mechanisms (more specifically the psychomechanisms) of perception, memory, etc. and communicable representations arising from the psychomechanisms of language — entails a level of mental representation proper to word meanings. This involves an approach to semantics differing from the better known approaches today.

This renewed word-centred approach obviously has important implications for the study of syntax as well. In a language like English, for example,

A word with a material meaning, a word which is a lexeme, contains indications as to both its fundamental meaning and its intended use — the role, defined within certain limits, it is slated to play in the sentence; within these limits the word is delimited and its category determined. (Guillaume 1984:119)[15]

The conditioning influence of the word in this respect has been summarized as follows: "Each language has the syntax of its morphology." From this, of course, it follows not only that syntax plays an essential part in the meaning-expressing role of the sentence but that the formal relations established between words in a sentence is conditioned by the formal elements represented within words. That is to say, syntax is meaning dependent.

From Guillaume's point of view, then, language is essentially a "mechanism for commuting" some experience into something said. Determining whether or not the experience spoken about corresponds to something outside the speaker's mind lies beyond the limits of the linguist's competence, as does analyzing the psychomechanisms of perception or memory or imagination. Central to the linguist's field of competence, however, is the task of analyzing the psychomechanisms exploited in language which enable a speaker to commute something private — be it true or false, perceived, imagined, remembered, or otherwise conceived — into something public. And for this, an analysis of the mental system of the word in any language is the key.

6. CONCLUSION

The intent here is not to justify one approach to language — this would require a lengthy working over of the details of data in different areas of analysis — but rather to pose a problem and suggest a plausible solution. Either words, vocable units of tongue, are found in all languages and in every discourse, or they are not. Assuming they are (and the burden of proof is on those who would maintain the contrary), the tradition as expressed by Humboldt, Saussure and others must have some validity even if its raison d'être was not clearly established. Granted this, no scientific approach to language can afford to neglect the word as the fundamental theoretical problem.

I have suggested that Guillaume's approach offers a plausible solution. By postulating that the word consists essentially of a mechanism of representation permitting the speaker to pass from individual experience to representations with signs proper to each language, it provides a raison d'être for the word. By postulating that a language, being a mechanism, exists as a potential (tongue) permitting actual realizations (discourse), it provides a basis for explaining

polysemy. Finally, by postulating that every operation of the representational mechanism takes time, it provides a method for the linguist to analyze the different senses of a morpheme and arrive at a view of its potential meaning. For linguists who are not prepared to accept these assumptions, it remains to propose a more plausible solution to the problem of why the word is universal. After all, it is part of the pragmatism of science to adopt whatever works best, to accept that theory which explains most at the moment, assuming that one is always ready to develop, modify or replace it in order to obtain a fuller understanding of the object under study.

NOTES

[1] For helpful comments on this text I wish to thank several colleagues, particularly Bob Uhlenbeck, Peter Blumenthal, Patrick Duffley and Roch Valin.

[2] "... the word, in spite of the difficulty one has defining it, is a unit which imposes itself on the mind, something central in the mechanism of tongue...." (My translation)

[3] Considerable confusion arises from using the term "language" both in the everyday sense of 'the linguistic entity as a whole' and in the more restricted, technical sense opposed to "speech" (see following note) to serve as an equivalent for Saussure's *langue*. To avoid this confusion, the term "tongue" will be used in the latter, more restricted sense, a sense approximating that found in the expression "mother tongue" and "the tongues of men".

[4] The term "speech", used in the Humboldt translation, is replaced here by the more current term "discourse" because, for one thing, it is more general, including the written as well as the spoken manifestations of language.

[5] For the use of the term "tongue" here, see above, p.1, n.2.

[6] Stern's attempt to resolve the dilemma is hardly satisfying, to say the least: "The constant element in the meaning of the word *camera*, whenever used, is the fact that the word is referred to one or more of the objects belonging to the category of 'cameras'. *That category is an empirical fact* [my italics], the existence of which a philologist can simply take for granted. It is a problem for epistemology...." (p. 40)

[7] "The link between two uses of the same word is not based on material identity, nor on exact similarity of sense, but on elements that must be sought and will bring us close to the real nature of linguistic units." (my translation)

[8] Because of limited space, it will not be possible to outline Guillaume's distinction between different types of vocable, as in Guillaume 1991:188-189. The remarks that follow apply primarily to the type found in the Indo-european languages.

[9] The terms "microtime" and "macrotime" were introduced by Valin (1971:34) in a discussion exploring the diverse ways language is related to time. Macrotime consists of stretches long enough to be perceivable, whereas microtime involves durations too short to fall within the range of ordinary perceivability.

[10] See Wickens 1992 for an extensive examination of how the -s morpheme expresses discontinuity in garment names, tool names, liquids, and many other quite surprising areas of usage.

[11] These are not the only senses of the ø morpheme. For a more complete treatment and an analysis of the whole system see Hirtle 1982.

[12] For interesting analyses, see Ruhl 1990 and Picoche 1986, the latter applying Guillaume's positioning technique.

[13] See, for example, Korrel (1991) and Duffley (in press).

[14] See Hewson 1972 for a study of the article in English. See also Hirtle 1988 for a study of *some* and *any* based on the same method of analysis.

[15] Sapir (1949:30) makes a similar point concerning Latin.

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A CHALLENGE FOR UNIVERSAL GRAMMAR: VALENCY AND "FREE" ORDER IN UNDERLYING STRUCTURE

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If more attention is paid to the longterm development of linguistic theories, an approach can be achieved which allows for a more economical and more perspicuous description of languages displaying different degrees of configurationality. The present paper points out some principal theoretical differences between some of the dominant theories in the Anglo-Saxon tradition and the Praguian functional generative description; time does not permit a self-contained description of all the relevant theoretical and descriptive issues, but fuller discussions can be found in the references cited. I would like to deal with the desirability of a cumulative character of our science (Section 1.1) and with the possibility to specify a level of 'linguistic meaning' as a suitable starting point for semantic interpretation (1.2), to treat underlying grammatical relations without the notion of (immediate) constituent (1.3), to analyze the topic-focus articulation (1.4) and the three dimensions determined by (a) the syntactic relations in the narrow sense, (b) topic and focus, and (c) coordination. The approach outlined is then further characterized with respect to configurationality (2.1) and as a challenge to Chomsky's Universal Grammar (2.2). It may be concluded that the present diversity of approaches, if they are systematically compared, can lead to the desired cumulativity of the development of linguistics (3).

1. UNDERLYING STRUCTURE WITH TOPIC/FOCUS AS THE LEVEL OF LINGUISTIC MEANING

1.1. Cumulativity of the development of linguistics

One of the desirable aspects of the development of a science consists in its cumulative character. Even with the transition from one paradigm to another it

rarely happens that all the major claims of the older
epoch are abandoned (and if so, then not for a long
time).

Thus it is symptomatic that in various trends of
contemporary formal linguistics several features of
European classical linguistics emerge, be the authors
aware of it or not. On the other side, the classical
trends have their continuations, and especially the
conceptions subsumed by H.-H. Lieb (in press) in his
'New Structuralism', discussed at his round table
session at the last Congress of Linguists, document the
possibility of integrating the empirical procedures of
European structuralism with recent methods of
description and explanation. As for the core of
grammar, Chomskyan methodological rigor can well be
combined with techniques of syntactic description based
on operational criteria which were elaborated within
Saussurean linguistics by Mathesius, Tesnière,
Kurylowicz, de Groot and others. Such a strategy makes
it possible for the new paradigm to include the main
achievements of the older one.

1.2. The level of 'linguistic meaning'

European structuralism differs from Bloomfieldian
descriptivism in not excluding semantics from
linguistic investigations.[1] The linguistic structuring
of meaning was contrasted by de Saussure, Hjelmslev,
Coseriu, or Dokulil and Daneš (1958) with the
ontological or cognitive content. This linguistic
structuring, corresponding to Lyons' descriptive
meaning and recently substantiated by Uhlenbeck
(1980), in spite of all its complexity, may be
understood on the one hand as the underlying structure
of the sentence (representing, to a certain degree,
a counterpart both to Chomskyan D-structure and to
Logical Form, LF), and on the other hand as one element
of the series of explicata necessary for the
presystemic notion of meaning. This member of the
series belongs to the system of language, while the
others (one of which combines the linguistic meaning
with the specification of reference, others belonging
to the layers of intension and of extension) pertain to
the interdisciplinary domain of semantic
interpretation. The latter domain, including natural
language inferencing (based on context and on factual
knowledge), deixis, figurative meanings and various
layers of cognitive patterning (associative links,
scenarios, etc.), can use the linguistic meaning as its
starting point (similarly as is done with Chomskyan
LF), at which the ambiguity and synonymy of lexical and
grammatical means of expression is absent. At the same
time, the disambiguated linguistic meaning is
a starting point for the transition to surface syntax
and other levels down to the outer shape of sentences.

1.3. Syntactic dependency

In the first epoch of the Prague School of structural and functional linguistics syntax was not elaborated in such a depth as N. Trubetzkoy's and R. Jakobson's phonology or as the morphologically based characterology and typology of languages (V. Mathesius, V. Skalička). In the fifties, such members of the Prague Linguistic Circle as L. Tesnière, M. Dokulil, F. Daneš and other linguists (esp. J. Kurylowicz, V.Šmilauer) reached more or less explicitly the conclusion that the basic dimension is that of syntactic dependency, with which the head word of the sentence (prototypically the verb) is semantically specified step by step by its modifiers, by the modifiers of its modifiers, etc. The distributional possibilities of this dimension can be understood as specified by the valency of every head word, which determines the kinds of complementations required or allowed by this word. Among the kinds of complementations, i.e. the relations of dependency at this underlying level, there are those which Chomsky calls theta roles, and also free adverbial complementations (cf. already Fillmore: 1966, 1968).

An attentive inquiry into the constraints of syntactic distribution and of semantico-pragmatic values makes it possible to distinguish the oppositions inherent to the linguistic patterning of meaning from those belonging to a basically non-linguistic layer of cognition (see Sgall et al. 1986: esp. Ch. 2). Some of the linguistic valency slots occur at most once with a single verb token: Actor/Bearer (cf. 'premier actant' in Tesnière: 1959), Objective (Patient), Addressee, Origin and Effect.

(1) Mary (Actor) sent her daughter (Addressee)
    a letter (Objective).
(2) The author (Actor) changed his text (Objective)
    from an essay (Origin) into a monograph
    (Effect).

While these complementations are classified as inner participants, the other ones, each of which can occur more than once in a single clause, and with any verb, are understood as free (adverbial) modifications: Location, Direction, Means, Manner, several temporal, causal and other complementations:

(3) Yesterday (Time-when) John stayed at home
    (Location) due to the rain (Cause), since he
    had no coat (Cause).
(4) He will come there (Direction) by train (Means)
    if his car is not yet repaired
    (Condition-real).

It has been found that operational criteria based on syntactic distribution constraints make it possible to establish a list of about 40 kinds of complementations. They are understood in our approach,

the functional generative description, as kinds of the dependency relation. Not only verbs, but also nouns, adjectives and adverbs have their valency frames.

In our view the valency frames contain the list of possible complementations of the given word[2] (in a certain order, see Sect. 1.4 below), each of which is marked as for its subcategorization properties, as for being obligatory or not, deletable, possibly reoccurring in a single clause, available to be chosen as subject or as a *wh*-element, to be moved to the left of the verb, and for being an obligatory or optional controller. It is possible to add further characteristics found relevant, e.g. a certain degree of closeness to the head (e.g. with *put somewhere* or with an 'inner object', e.g., *smoke cigarettes*), and so on.

Such a valency based approach to the structure of the sentence stores much of grammatical information in the lexicon, thus conforming to the requirement to understand the word as a basic unit of language (see esp. Uhlenbeck: 1983).

Notions from the domain of dependency syntax (head and modifier, deep case or theta role, cf. also such terms as noun phrase or noun group, and the X-bar theory) are used even in linguistic frameworks not based on dependency. On the other hand, in dependency-based theories the counterparts of the neo-Bloomfieldian notions of (immediate) constituents are limited to the dichotomy of the subject and the predicate parts of the sentence, if present at all. This corroborates the view that it is not necessary to work with the notion of constituent in a linguistic description. However surprising this claim may be for those accustomed to Chomskyan (and most other) formal frameworks, there are further arguments for such an approach, see Section 2 below.

1.4. Topic and focus

Before comparing our dependency-based approach with constituency-based ones, we have to mention also the other dimensions of the sentence structure. One of them is that known under such terms as topic-focus articulation of the sentence, or theme and rheme (comment) and analyzed in the Prague School in the pioneering work of V. Mathesius, followed by rich and many-sided investigations by J. Firbas (1974; 1975) and others. In our view this articulation belongs to the system of language (competence), rather than to discourse patterning (performance), since the articulation often is (i) expressed by systematic language means of the surface structure (word order, position of the intonation center, particles, etc.), and (ii) semantically relevant (even for truth conditions), esp. for the scopes of such operators as

negation, quantifiers and focalizers.

To illustrate these points, let us consider the following examples (where capitals denote the intonation center):

(5) Father didn't bring any new BOOKS. (...He stayed home today.)

(6) Father didn't bring any new BOOKS. (...He brought only a few video cassettes.)

(7) Father didn't bring any new books, since he was too BUSY. (Why didn't father bring any new books?)

As discussed in Hajičová (1973; 1989), in the primary case the scope of negation is identical with the focus; two situations can be distinguished then:

(a) the verb belongs to the focus and is negated, as in the primary reading of (5), where only the subject (functioning as topic) is outside the scope of negation;

(b) the verb belongs to the topic, so that it is not negated, see (6).

In the secondary case, a verb in the topic constitutes itself the scope of negation, see (7).[3]

At least one type of definite noun groups triggers a presupposition if it stands outside the scope of negation, as (8) illustrates, while the presupposition is absent whenever the noun group stands in the focus, i.e. in the scope of negation, cf. (9):[4]

(8) The king of France is (not) BALD.

(9) Yesterday, Quebec was (not) visited by the king of FRANCE.

The relevance of the boundary between topic and focus for scopes of quantifiers manifests itself in such well known examples as the following:

(10)(a) Many men read few BOOKS.

(b) Few books are read by many MEN.

(11)(a) John talked to few girls about many PROBLEMS.

(b) John talked about many problems to few GIRLS.

It can be seen from (11) that passivization is not always necessary to this effect, since even English has a certain degree of "free" word order, which allows for a switch in accordance to the topic-focus articulation. Let us point out that not only the boundary between topic and focus is relevant here, but also the degrees of communicative dynamism within the topic:

(12)(a) It was JOHN who talked to few girls about many problems.

(b) It was JOHN who talked about many problems to few girls.

The fact that such differences are of a semantic character, i.e. do not concern only stylistics, pragmatics, or some syntactic hierarchy (perspective), is documented by the existence of states of affairs

(possible worlds) for which only one of the variants of such examples is true. This also holds of a (not yet clearly specified) class of sentences without overt quantifiers, e.g.:

(13)(a) Mary teaches on SATURDAYS.
   (b) On Saturdays Mary TEACHES.
   (c) (It is) MARY (who) teaches on Saturdays.
      (On Saturdays MARY teaches.)
(14)(a) ENGLISH is spoken in New Zealand.
   (b) English is spoken in NEW ZEALAND.

Moreover, such particles or adverbs as *only, also, even* (as well as an open class of sentential adverbs), called rhematizers or focalizers, have their scopes, which exhibit similar properties as the scope of negation (see the analysis by Koktová: 1986).

If one abstracts from specific shallow rules on the positions of the verb, the adjective, the clitics, etc., one finds that in the prototypical case a combination of surface word order and the position of the intonation center determines the scale of communicative dynamism, which may be represented by the underlying word order in the description of such different languages as English, German, Czech, Latin, and presumably also Hungarian, Japanese, etc. As the following example shows, the variants of our "free" underlying order are not symmetric: one of them may be viewed as basic, whereas the other one is present only if the complementation standing to the left of a different one belongs to the topic (is contextually bound); for a more substantive discussion, see Hajičová and Sgall (1987):

(15)(a) John moved form a small village to a large industrial CENTER.
   (b) (None of my relatives was born in an industrial center.) John moved to a large industrial center from a small VILLAGE.
   (c) John didn't move from a small village to a large industrial CENTER; rather, he lived all the time in a quiet COUNTRY TOWN.
   (d) John didn't move to a large industrial center from a small VILLAGE; rather, he lived all the time in a quiet COUNTRY TOWN.
   (e) John didn't move from a small village to a large industrial CENTER; rather, he moved (from there) to a quiet COUNTRY TOWN.
   (f) John didn't move to a large industrial center from a small VILLAGE; rather, he moved (there) from a quiet COUNTRY TOWN.

The (a) sentence in this example is unmarked in a sense in which the (b) sentence is more peripheral. This can be stated in a more precise way if it is recognized that, as the difference in the degree of acceptability of (c) and (d) shows, in (a) both the complementations standing after the verb belong to the focus on one of

the readings of the sentence, but this is not the case in (b), where the marked order signals the focus more clearly. For (a) as well as for (b) there exists a reading on which just one of the participants belongs to the focus, the other one being a part of the topic of the given meaning of the sentence; this is illustrated by (e) and (f).

The single complementation that can constitute the whole focus of the sentence is called the focus proper. It always is the bearer of the intonation center.

According to what has been found in the empirical investigations of Czech, German, English and Russian, such switches are not isolated; rather, they concern the whole set of complementations in the individual languages. As for English, *to arrive from ... at (in) send) something from ... to ...*, and so on behave similarly as *to move from ... to ...* in example (15), so that the order Directional-from - Directional-to can be stated to be basic.

By means of these and other examples it is possible to establish a tentative scale of such a basic ordering of complementations, which is called systemic ordering.[5] A partial scale of complementations in English can be formulated as follows:
Condition - Temporal - Actor - Addressee - Objective - Origin - Effect - Cause - Regard - Aim - ...

A third dimension of the underlying structure is that of coordination, the patterning of which has much in common with constituency. The proper interplay of these three dimensions makes the underlying structure more complex than can be represented by a planar graph. However, this interplay is severely restricted by such conditions as that of projectivity; cf. Sgall's contribution at the present Congress, where it is pointed out how this constraint allows for an economical formal elaboration of a procedure generating the set of underlying representations.[6]

2. IS CONSTITUENCY NECESSARY?
2.1. Dependency and constituents

Functional generative description differs from many other formal approaches in that it is not based on configurationality. However, as we have seen, not even English is a fully configurational language. In certain respects a translation between a dependency metalanguage and a phrase-structure metalanguage is possible, since, e.g., the notion of NP (AP) basically corresponds to a subtree headed by a noun (an adjective). The specific syntactic properties of underlying subject or of sentential adverbials, etc., can be stated by means of referring to the labels of edges (parentheses), instead of distinguishing elements in and outside of VP. Movement rules can be formulated, e.g., in terms of passing over from the head to the

head of the head. This can be illustrated by (16),
where *who* is moved from the leftmost position depending
on the embedded verb to that depending on the main
verb.

(16) Who do you believe Mary visited yesterday?

Nor is the absence of the difference between the
non-terminals S and VP detrimental with regard to
so-called VP-deletion. In fact, the deleted parts of
the sentence have to be specified prototypically as
belonging to its topic; they can be either less or more
than a VP, or both at once, as is the case when the
verb and a sentential adverbial, though not an
obligatory element of the VP are deleted:

(17) Tom arrived at Boston with great pleasure, and
Mary at Brooklyn.

2.2. Dependency and Universal Grammar

In the classical transformational description,
underlying P-markers represent a shortened derivational
history of underlying representations; thus, terminal
representations (strings) yielded by these P-markers in
fact do not play any important role in the description
as a whole. With a dependency-based approach all the
relevant information determined by the derivation can
be included in the terminal representations (trees or
more complex networks) of the underlying structures.
They can serve to account for the relationships of
these structures both to the semantic interpretation
and to surface syntax. Thus our representations contain
no non-terminals, and, in this sense, are much simpler
than P-markers. Moreover, they display nodes for truly
lexical occurrences only: it is not immediately
theoretically relevant whether morphological categories
and syntactic relations are expressed by function
words, affixes, alternations or word order; it is
important that these items are not syntactically freely
combinable. They are just attributed to autosemantic
occurrences, and are appropriately distinguished from
these by being rendered, in the underlying
representations, by mere indices within complex node
labels (or as labels of edges).[7]

The high degree of modularity, or at least of
a perspicuous patterning of the functional generative
description is based not only on its set of levels, but
also in their inner articulation. The three dimensions
are clearly divided from each other, which allows both
for an economical account of dependency and
coordination (as two different kinds of relations) and
for that of topic and focus (including its
relationships to the opposition of presupposition and
allegation, to the scopes of operators, and to the
intricacies of "free" word order). Furthermore, the
very nature of dependency is intrinsically connected
with viewing a maximal amount of grammatical

information as determined by the lexicon (by valency frames in lexical entries). At the same time, surface words are treated differently in accordance with expressing lexical or grammatical meanings.

A major advantage of the functional generative description can be seen in the degree of perspicuity of a generative specification of the underlying structures, or at least of its core.

A dependency tree is generated from top to bottom and from left to right, while every edge is assigned a label selected from the valency frame of the head word; when generating left daughters (i.e. those in the topic of the given subtree), every inner participant selected is correspondingly marked off as saturated in the frame; when generating right daughters (i.e. those in the focus of the subtree), the frame is scanned from the left, and every free complementation can be applied n-times, $n \geq 0$, and every obligatory complementation has to be applied.

In the same vein as various frameworks based on categorial grammar or descending from GPSG, we can, along with the processual formulation, work with a declarative one, based on unification of the representation (tree) with the valency frames of the lexical units involved. The unification should be restricted by conditions specified in the valency frames.

If regarded from the viewpoint of Chomsky's Universal Grammar as determined by innate properties and responsible for the relative easiness of language acquisition, the functional generative description may be understood as a challenge: the innate properties basically only determine a pattern of a labeled tree-like graph or a well-bracketted structure (be it with two kinds of brackets). Items and relations which are not directly semantically relevant (from agreement to the difference between affixes and function words) can be excluded from the universal core of grammar as belonging to surface. Such non-prototypical phenomena as the positions of the *wh*-elements, left dislocation, contrastive stress also may belong to what the child has to find out step by step when acquiring her/his mother tongue. Perhaps this way of reasoning can be useful in looking for a psychologically realistic solution of the issues raised by requirements of Universal Grammar.

3. CONCLUSION

A systematic comparison of various theoretical positions and frameworks is made difficult by the rapid development of many of them. However, in the given stage of development of linguistics it is necessary to concentrate on this task, to identify the positive ingredients and achievements of individual approaches

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and to combine them in appropriate ways, not forgetting that continuations of classical European linguistics may offer non-negligible contributions. In accordance with the principial possibilities pointed out by McCawley (1982), such combinations (concerning both technical matters and deeper issues) are to be established without fear of the label of eclecticism. Certainly the compatibility of such combinations has to be strictly checked, but it is important to be aware of the development of the discipline as a whole, to recognize the others' insights and to mutually enrich the theories. Only such a qualified discussion can exploit the diversity of opinions and supply the development of linguistics with the desirable cumulative character.

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NOTES
(1) As usual in classical linguistics, the term 'semantics' is used here in the sense of 'semantico-pragmatics', since we do not assume the system of language to be organized in strict accordance with the semiotic trichotomy. For a more detailed discussion of the methodological attitude and theoretical framework I base my contribution on, see Sgall, Hajičová and Panevová (1986).
(2) The term 'word' refers here to underlying counterparts of autosemantic lexical items, cf. Sect. 2.2 below.
(3) Further possibilities concerning the scope of negation were analyzed by Koktová (1990).
(4) Other cases of this interrelationship between one kind of presupposition and the topic-focus articulation were described in Hajičová (1972; 1984), where the notion of allegation was introduced.
(5) Systematic psycholinguistic tests have shown the plausibility of this hypothesis for Czech (differing from English especially in that Objective follows Means and some other free complementations). Experiments with German are being carried out in Vienna.
(6) Sgall also analyses the way how to identify which part of an exocentric syntagm is its governing and which is its dependent element and other questions which still remain more or less open for further discussion.
(7) This treatment may increase the difficulties concerning recursive properties of lexical and morphemic units in polysynthetic and agglutinative languages, respectively; we cannot discuss these

problems, hard also for other frameworks.

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SEGMENTS, CONTOURS AND CLUSTERS

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1. THE QUESTION

I would like to present here some ongoing research centered on a problem of significant interest to phonologists: how do we define a segment? There are several aspects to this question. The one I am interested in here is the distinction between one segment and a cluster of segments.

In order to formulate the question more precisely, let's assume that we can segment any speech event into a sequence of articulatory units. There may be analytical difficulties involved in this task as well, but let us assume that articulatory phoneticians can resolve them. Suppose now that we are analyzing a speech event in which we have isolated of sequence of three articulatory units [ABC] where A, B and C are distributionally independent of each other in the language under study - in the sense that each can occur independently of the others. Given this segmentation into articulatory units and these distributional facts, how many *phonological* segments do we have in this string? One, two or three? How do we decide the issue?

To use a concrete example: suppose that the string being analyzed is [mba], where [m] represents the gesture of oral bilabial closure accompanied by nasal airflow, [b] represents oral bilabial closure and [a] is some vowel gesture. In the language being analyzed, neither [m] nor [b] nor [a] are contextually predictable transitions from one sound to another. Does this mean we have three segments? Under what circumstances would we decide that we have fewer than three: more concretely, how would we decide that [mb] is one phonological unit?

This is the question I would like to address here. I will have some suggestions about what sort of answer we want, though not a complete solution.

1.1 How we came to ask the question

The problem of segmentation is being addressed here because recent developments in the theory of feature and segment structure have revealed that it is not only an unresolved issue but also that the range of empirical questions falling in its scope is significantly richer than previously assumed.

The recent history of this issue begins with Anderson's (1976) demonstration that a single segment may contain two distinct phases of nasality. Anderson showed that partially nasal consonants - prenasals such as [ᵐb] and

postnasals like [bᵐ] - must be phonologically analyzed as being part oral and part nasal. He showed that any phonological description based on the assumption that the entire segment is phonologically homogeneous for nasality will fail to explain the cross-linguistic patterning of these sounds, as well as details of their behavior in individual languages. The significance of this finding for the problem of segmentation is this: there exist languages where a phonetic sequence [ᵐb] must be analyzed as containing one phonological segment. However, internally to this one segment, there must exist two distinct values for nasality. The most obvious questions raised by Anderson's work on nasality are: under what circumstances do we get this type of segment-internal sequencing; and what are the principles in virtue of which such articulatory sequences as [ᵐb] are analyzed by native speakers as being mono- rather than bisegmental?

In the later literature, the class of configuations we discuss here - monosegmental sequences containing two values for a given feature - were called *contour segments*. In figure (1), which reflects currently standard assumptions about the make-up of segments[1], the node labelled *root* designates the abstract notion *one phonological segment*.

(1) [ᵐb] =   [+nasal][-nasal]
                    \   /
                    Root
                     |
                  [labial]
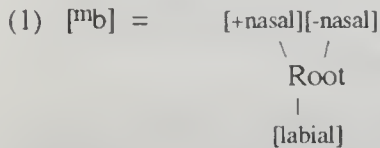
The notation employed in (1) allows us to express both aspects of Anderson's discovery: that items like [ᵐb] are single segments - as indicated by the fact that they possess a single root node - and that, nonetheless, they contain two sequenced values for the feature [nasal]. The same formalism can be extended to other varieties of contour segments: affricates, for instance, were represented by Sagey (1986) as single root nodes to which a sequence of [-continuant] [+continuant] feature values are associated.

But the fact that we can now point to an item in our representations which stands for the intuitive notion of one segment doesn't mean that we understand why certain phonetic sequences count as one segment, while others don't. This question has been taken up in a number of studies[2], but the proposed answers are - in my view - overly technical, in the sense that they legislate an observed state of affairs rather than explain why it obtains. There is substantial agreement that pre and postnasal consonants, affricates, pre- and postglottalized, as well as postaspirated segments frequently function as single segments. Recently, Buckley (1992) has added to this class clusters such as [ht], [ʰtʰ], [ʻk], [ʻk'] which function as monosegmental units in Kashaya, a Pomo dialect. On the other hand, there is also substantial agreement that consonant sequences such as /rk/, /sp/, /pl/, /ys/ do not, in the vast majority of cases, function as single segments. The interesting task for the phonologist is not to restate such observations in technical language but rather to understand why articulatory contours like [pʰ], [ʰp], [ʰpʰ], [ᵐb], [ʻɓ], [ts] display this systematic difference in patterning from other conceivable contours, such as [sm], [kr], [rkr], [ys].

1.2. **Three generalizations and a proposal**
Some progress in this direction can be made by taking a new look at the circumstances under which distinctive intrasegmental contours occur. Several

general observations can be made in this respect. First, only plosives - stops and affricates - can be contour segments: the most obvious fact illustrating this is that the pre- and postnasal segments are always plosives, never vowels, approximants or fricatives. Second, the plosives can display intrasegmental contours *only if they are released*: pre- and postnasalized consonants, for instance, are absent in contexts where stop releases may not occur. I will suggest here that this second generalization holds for a substantial subset of the contour segments enumerated previously - postaspirated stops, postglottalized stops, affricates - but not for all. The exceptions will be noted and explained. Third, distinctive intrasegmental contours *never exceed two* articulatory phases: we get, for instance, distinctive pre- or postnasalized consonants, but not distinctive medio-nasals (e.g. [bmb$^\beta$]) or medio-orals (e.g. [mbm]). Ternary contours don't exist[4].

Let's assume then that, as a general rule, contour segments involve a subset of the class of released plosives. Why should this be? The suggestion made here will be that released plosives are inherently bipositional, in that they consist of a closure and a release slot. Wherever these two intrasegmental positions - the closure and the release - can occur, the intrasegmental contours can appear as well. This can be seen in the following schematic representations of nasal, oral and partially nasal segments, where A_0 stands for closure (Aperture zero), A_{max} (maximal aperture) represents an approximant segment or release and A_f (intermediate aperture generating turbulent airflow) represents fricative segments or the fricated releases of affricates. Note the representation of released stops: a closure (A_0) followed by an approximant release (A_{max}).

(2) Patterns of [nasal] association within a segment:

a. nasal stop   prenasal stop   postnasal stop   oral stop (released)

  [nas]   [nas]   [nas]

  / \ | |

$A_0 A_{max}$ $A_0\ A_{max}$ $A_0\ A_{max}$ $A_0 A_{max}$

b. nasal continuant   oral continuant   unreleased nasal stop

  [nas]   [nas]   [nas]

  | | |

A_{max} or A_f A_{max} or A_f A_0

If we assume further that the feature [nasal] is privative[5], then we can begin to understand why the presence of release is critical for the segmental contour to surface: if [-nasal] is not a phonological entity, orality can manifest itself only as a position unattached to a [nasal] value. To represent partially nasal segments, we therefore need two such positions: this is what we see in (2), where only the released plosives appear as partially nasal.

Fundamental to the representations suggested in (2) is the idea that the slots to which features attach - units comparable in function to the root node in (1) - are defined in terms of *degrees of oral aperture*. For our purposes, we need to distinguish three such degrees: full closure (A_0), fricative (A_f) and approximant (A_{max})[6]. The proposal to view released stops as sequences of a closure followed by approximant release ($A_0 A_{max}$) can be extended to provide a representation for affricates: these can be seen as sequences of closure followed by a fricated release ($A_0 A_f$).

The positions thus defined can all anchor features. And we may reasonably hypothesize that *all features associated to a given aperture position are interpreted as phonologically simultaneous*[7]. If we assume this, we will have come very close to explaining the observations made at the beginning of this section. We anticipated the descriptive result that contour consonants always belong to the category of released plosives: this is so because any featural sequence defining a contour - $[\alpha F][-\alpha F]$ - will, under the convention sketched here, require two distinct positions in order to be realized. The only bipositional segments are released plosives. Therefore the only contour segments will be released plosives. QED. The observation that distinctive contours do not exceed two distinct articulatory states - recall the absence of ternary nasality contours like [mbm], or [bmb] - is also explained: a segment may have at most two aperture positions. It cannot support a tripartite contour.

2. THE EVIDENCE
2.1. Which contours are distinctive

I would like to sketch now the evidence supporting one generalization proposed in the last section: that contour segments are released plosives. First, however, we need to clarify the relation between the observable data and this claim. Consider the following pattern of association between /h/ - i.e. aspiration - and supralaryngeally articulated oral consonants: this pattern is encountered in a Mazateco dialect studied by Kirk (1966: 14-25), Mazatlán de Flores. One must bear in mind that Mazateco is a language in which consonant clusters are exclusively onsets and thus pattern as single C's. Further evidence for their monosegmental status is discussed elsewhere (Steriade 1992b).

(3) <u>oral plosive + h</u>   <u>continuant + h</u>
    th, tsh, tʃh, kh, kʷh   sh, ʃh,

    <u>h + oral plosive</u>   <u>h + continuant</u>
    ht, hts, htʃ, hk, hkʷ   hy, hw, hwy [hɥ]

Both oral plosives and continuants are transcribed by Kirk as sometimes preceding and sometimes following /h/. But only the plosives are *distinctively* ordered relative to /h/: /th/ contrasts with /ht/ while no comparable contrast exists among the continuants. The relative order between /h/ and the continuants can be predicted: /h/ follows a voiceless (or fricated continuant) and precedes a voiced one. Because the sequencing can be predicted, there is no reason to encode it in the phonological representations. By this reasoning, we reach the conclusion that the *phonological* contours involving aspiration in Mazatlán de Flores occur among the plosives only. The Mazatlán plosives are necessarily released since they occur sylable-initially. This is then a first illustration of our claim, outside the domain of nasal contours: only the plosives, the released plosives, yield distinctive contours . Note that Kirk's transcriptions indicate quite clearly that some phonetic sequencing or temporal misalignment exists between /h/ and *any* oral constriction, whether it involves a plosive or a continuant. But phonetic sequencing is not what we're interested in. We're looking at the distinctive aspiration contours, and these are found among the plosives only.

Some explicit representations of the Mazatlán contours presented in (3) can now be proposed. Note the close parallel between these structures and the representations of nasal contours in (2). ([spread] = [spread glottis], i.e. /h/)

(4) <u>postaspirated stop</u>   <u>postaspirated affricate</u>   <u>aspirated fricative</u>
    [spread]   [spread]   [spread]
      | | |
   A_0A_{max} A_0A_f A_f

   <u>preaspirated stop</u>   <u>preaspirated affricate</u>   <u>aspirated glide</u>
    [spread]   [spread]   [spread]
      | | |
   A_0A_{max} A_0A_f A_{max}
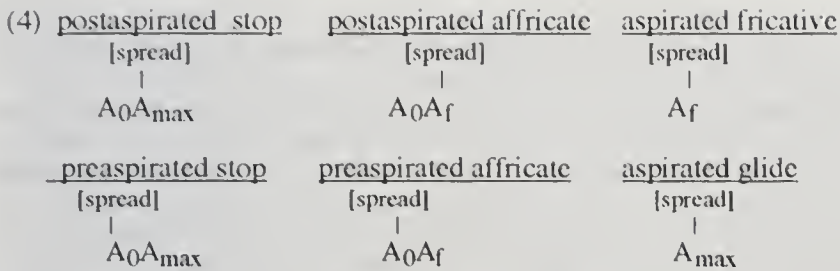
These structures help answer several questions. First, why do the hC and Ch clusters of Mazatlán pattern as single C's? The answer is that they *are* single C's: aspiration does not occupy in the representations of (4) an aperture position - i.e. a segmental slot - distinct from those projected by the basic consonant. It resides *on* the consonant, rather than next to it. Second, why do the distinctive contours occur only among the plosives? Because only the plosives are bipositional and, hence, only they can display a contrast between association to the first vs. last position.

Stepping back from our hypothesis, we should ask how the sounds in (3) could be represented in the absence of a closure/release distinction. The only possibility sems that of adopting representations comparable to (1), inspired by Sagey (1986):

(5) <u>Preaspirated stop</u>   vs.   <u>postaspirated stop</u>   ?
   [+spread][-spread]   [-spread][+spread]
     \   /   \   /
    laryngeal   laryngeal
      | |
    root   root
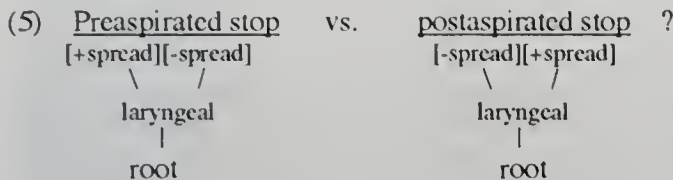
The difficulty with these representations is that we are left without an explanation for the asymmetry observed between plosives and continuants. The contours in (5) could reside inside a continuant's matrix, as well as inside a plosive's. The fact that they are distinctively present only on plosives remains unaccounted for[8]. We may, alternatively, claim that the phonetic sequences in (3) are all bisegmental: but if we do, we fail to understand why these particular phonetic sequences act as single segments, not only in Mazatlán but also in numerous other languages, while phonetic sequences like /ys/, /rk/, /kr/, /km/ do not.

The Mazatlán pattern of pre- vs. postaspiration is encountered in a number of other American Indian languages (cf. Buckley (1992) and Steriade (1992b). The same possibilities are attested with the feature of glottalization: we observe minimal contrasts between pre- and postglottalized segments, but only within the plosive class. A contrast between pre- and postglottalized stops - representable as association of /ʔ/ to closure vs. release - is present in languages like Maidu (Shipley 1956), which oppose an ejective to an implosive series[9]. Both series are limited to stops; neither is attested in contexts where Maidu plosives are unreleased.

(6) <u>Ejective stop</u>   vs.   <u>Implosive</u>
    A_0A_{max} A_0A_{max}
      | |
   [constricted]   [constricted]
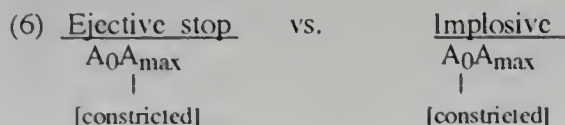
Cases of contrast between ejectives and implosives have been examined by Greenberg (1970), who claims that the linguistically relevant difference is that between glottalized voiceless (ejectives) vs. glottalized voiced (implosives) segments. This may or may not be true for some languages in Greenberg's survey but it is clearly untrue of the entire class: in Maidu, for instance, the contrast between the ejectives /p'/, /t'/ and the implosives /ɓ/, /ɗ/ cannot be represented as voiceless glottalized vs. voiced glottalized, because the language has no independent series of voiced *unglottalized* obstruents. Voicing *per se* plays no role in the sound system of Maidu; rather, it is the automatic consequence of the implosive realization of preglottalized C's. Maidu therefore represents a clear example of distinctive glottalization contours limited to the released plosive class[10].

2.2. Released vs. unreleased plosives

The proposal made here predicts that *unreleased* plosives should pattern like continuants: they have a single aperture position - A_0 - on which only one value for any given feature can be realized. Distinctive contours should be impossible on such consonants[11]: for instance, in the absence of the stop release, a contrast like that depicted in (6) cannot be realized. We examine now the evidence supporting this aspect of our proposal. Illustrated first is the global effect loss of release has for the phonotactics of a language. We turn then to a more careful consideration of the link between unrelease and the loss of glottalization contours.

2.2.1. Loss of contours in coda

The global loss of segmental contours in unreleased codas can be observed in a language like Tlahuica (Muntzel 1982), which contrasts postaspirated and postglottalized plosives with plain voiceless ones; prenasalized plosives with full nasals; and the affricates [ts], [tʃ] with the plain stop [t]. Tlahuica thus has practically all widespread types of contour segments. Significantly, all are missing from coda position. Tlahuica codas are limited to plain stops (/p/, /m/, /t/, /n/, /k/), fricatives (/s/, /ʃ/) or approximants (/l/, /h/, /ɾ/). Since coda /h/ is attested in examples like /lih.t'ʌ/ 'el/ella', /lih.thim.pi.ya/ 'usted', it is clear that what excludes the postaspirates /pʰ/, /tʰ/, /tsʰ/, /tʃʰ/, /kʰ/ from coda position is not the presence of aspiration but rather the fact that aspiration is realized, in these consonants, on the release. Similarly, since coda /ʃ/ and /s/ are attested in examples like /ʃaʃ.kʷa.li/ 'estropajo', /ki.tsis.ntankwe] 'bautizaste a los dos', we cannot explain the absence of coda /ts/ or /tʃ/ by focussing on the point of articulation or stricture type of these segments: the affricates are absent in coda because their release is absent.

Phonotactic paradigms similar to that of Tlahuica are encountered in Slave (Rice 1989), Kiowa (Crowell 1949), Tolowa (Bright 1964), Tututni (Golla 1976), Zuni (Walker 1972), Navajo (Sapir and Hoijer 1967) and others.

The converse of the generalization proposed here - that unreleased plosives do not support contours - can also be documented: in languages where codas are systematically released, postaspiration, postglottalization, affrication and nasal contours are permissible coda features. Languages illustrating this option are: Wikchamni (coda affrication, postaspiration, postglottalization: Gamble 1978), Tunen (coda prenasalization: Degast 1971), Tzutujil (coda ejectives contrast with implosives; coda affricates: Dayley 1985); Hupa (coda ejectives, postaspirates and affricates: Woodward 1964).

2.2.2. Deglottalization in coda: which instances come from unrelease?

Taking now the specific case of glottalization, we can outline as follows the predicted developments of glottalized consonants in positions where stop releases are absent. Plosives which surface as postglottalized when released may turn, when unreleased, into plain closures lacking glottalization:

(7) A_0A_{max} -> A_0
    |
  [constricted]

This is what happens in Kiowa (Crowell 1949), Tolowa (Bright 1964), Maidu (Shipley 1956), Slave (Rice 1989), Tututni (Golla 1976), Zuni (Walker 1972), Tonkawa (Hoijer 1946), Navaho (Sapir and Hoijer 1967) as well as other, better known languages, such as Cambodian, Korean and Klamath.

In order to better appreciate the connection between loss of release and deglottalization, we must draw a number of distinctions. It is frequently the case that coda consonants lose certain components of their matrix, *regardless of where these components are located*. In the case of the laryngeal features - voicing, aspiration, glottalization - these are frequently excluded from the coda, independently of whether they are linked to stop releases or not. I will cite here only one immediately relevant example: Maidu (Shipley 1956) disallows coda ejectives, implosives as well as coda /ʔ/. The representations of implosives and ejectives were given in (6); /ʔ/ is an approximant (A_{max} position) associated to [constricted glottis] . Note that the loss of stop release in coda may explain the deglottalization of the ejectives, but not that of the implosives, or the loss of /ʔ/. We must invoke in such cases a condition like (8).

(8) [constricted glottis] is disallowed in coda.

Thus the absence of postglottalization from the codas of Maidu, although consistent with our representations, is not a direct effect of unrelease. To observe the unmediated consequences of unrelease, we must consider cases in which loss of glottalization cannot be attributed to (8). Indeed a significant number of languages in our sample disallow ejectives but not /ʔ/ in coda: to this class belong, among others, Zuni (Walker 1972), Navajo (Sapir and Hoijer 1967), Kiowa (Crowell 1949), Tolowa (Bright 1964). Even more directly relevant patterns are attested in languages that disallow the coda ejectives but not coda glottalized sonorants - realized with preglottalization - or fricatives. In Tolowa, for instance, where all coda affricates, ejectives and postaspirated plosives are disallowed, the glottalized sonorants [m'] and [n'] - as well as /ʔ/ - occur at the end of syllables. As Bright (1964) points out, the phonetic realization of Tolowa syllable-final glottalized nasals is transcribable as [mˀm], [nˀn] respectively, with the glottal gesture occuring during the period of oral closure: these sounds are not postglottalized nasals, but rather nasals with glottalized closures[12]. They can be given representations consistent with the idea that Tolowa plosives are unreleased in coda:

(9) <u>Tolowa coda [n']</u> (place features omitted)
    [nasal]
     |
    A_0
     |
    [constricted]

Tolowa represents therefore a language in which condition (8) is inactive: the absence of coda ejectives - as opposed to plain /ʔ/ or preglottalized nasals can be traced unambiguosly to the loss of release.

A distinct prediction of our analysis is that in languages where coda plosives are unreleased and the constraint in (8) is inactive, ejectives will lose postglottalization but glottalized continuants, along with preglottalized segments, will maintain their feature of glottalization. Consider the following data from Tonkawa (Hoijer 1946): all consonants may be glottalized syllable initially - stops, affricates, nasals, fricatives and glides - but only the continuants are allowed to be glottalized in syllable-final position: word-final /s'/, /l'/, /y'/ occur[13]. The representational difference between /ts'/ and /s'/ is shown below:

(10) <u>(Post)glottalized plosive</u> (ts')   vs. <u>glottalized fricative</u> (s')
$$A_0A_f \qquad\qquad\qquad A_f$$
$$| \qquad\qquad\qquad\qquad\quad |$$
     [constricted]   [constricted]

Given these structures, we understand that coda unrelease will affect the realization of the glottal feature in /ts'/ but not in /s'/.

A much more interesting development is attested in the languages where glottalized plosives are maintained in coda but with altered timing between the oral and the laryngeal gestures. Several American Indian languages display a shift from postglottalized onset ejectives to preglottalized codas: Chitimacha (Swadesh 1934) is perhaps the most revealing in this class. All Chitimacha consonants can be glottalized: there are ejective stops and affricates, postglottalized nasals and postglottalized glides in onsets. In coda position, however, the articulation of the glottalized stops changes. Swadesh distinguishes three realizations of the ejectives and postglottalized nasal stops (1934:358): a syllable-initial allophone with "synchronous glottalization", a distinct syllable-initial allophone with "strong, slightly retarded glottal gesture" ; and a syllable-final allophone "with glottal stricture slightly preceding the oral closure". We suggest the following representations for these three variants:

(11) a. A_0A_{max} b. A_0A_{max} c. A_0
          \ / | |
      [constricted]   [constricted]   [constricted]

      "synchronous   "retarded   "glottal stricture slightly
       glottalization"   glottal gesture"   preceding oral closure"

The syllable-final allophone appears in (11.c): note that the loss of release renders inevitable some change in the glottal gesture. In the case of Chitimacha this modification is the realignment of glottalization with closure, a timing change which obviates the loss of the feature. To show that the changes described here involve the phonological representations of these sounds rather than just their phonetic realization, we must show that the glottalized continuants are not similarly affected by their syllabic position. Indeed, glottalized glides are attested in Chitimacha, in syllable-initial as well as syllable-final position: syllable-finally they are, if anything, *postglottalized* (Swadesh (1934:361). Our phonological representation for [y'], [w'] - syllable initial or final - is that of an approximant (A_{max}) linked to [constricted]. Swadesh's observations indicate

that the shift towards syllable-final preglottalization involves only the plosives. We claim that this is so because only the plosives are affected by unrelease.

A further prediction is that ejectives and implosives - represented as in (6) - will be differently affected by unrelease: ejectives will lose glottalization altogether, or become preglottalized, while implosives may well just turn into unreleased implosives, with no significant change in the timing or nature of the laryngeal gesture. My data is very limited on this point, but suggests that this prediction is not far off the mark. In Adamawa Fulani (Stennes 1967) syllable-final stops are unreleased (p.7) ; as a consequence, the prenasalized stops and affricates of the language are excluded from coda position (p.10). But the implosives and the voiced stops are allowed syllable-finally: their laryngeal features are associated to closure and therefore immune to loss through unrelease.

3. CONCLUSION: WHAT ARE SINGLE SEGMENTS?

We have seen here that the designation *contour segment* is appropriate for certain classes of glottalized and aspirated segments: in particular, the distinctively pre- and postaspirated plosives of Mazatlán, the distinctively pre- and postglottalized plosives of Maidu. The results obtained for nasality by Anderson (1976) can thus be legitimately extended to laryngeal features as well. Wherever such distinctive contours occur, they are realized on released plosives. This too is a property that holds of the nasal contours studied by Anderson.

We have also noted that postaspirated and postglottalized plosives are affected by the loss of release, along with all other categories of contour segments: unrelease trigers either the loss of the relevant laryngeal feature or else it induces a significant realignment of this feature inside the consonant's matrix. Not all instances of laryngeal loss can be directly attributed to unrelease, but a significant number can.

These considerations suggest that *the most widely attested contour segments are simply varieties of released plosives in which the association of a particular feature to closure or release is phonetically unpredictable*. But where does this conclusion leave us in our search for solutions to the problem of segmentation?

Let's approach this problem indirectly by asking a narrower question: what is the sense in which a postaspirate like /t^h/ is a single segment - albeit one involving a distinctive contour - instead of a /t+h/ cluster? My suggestion is that /t^h/ is identified as a single segment because it contains no more than one of each featural components of a segment: it has one oral constriction and one laryngeal component (aspiration and voicelessness). These features happen to be realized in sequence - the oral constriction precedes at least the perceptible portion of the laryngeal gesture - but they are, in principle, articulatorily compatible with each other. Similarly, a prenasalized postglottalized stop like /^{n}t̰/ - functioning as a single segment in many Mazateco dialects - is, despite the distinctive contours of nasality and glottalization, a composite of mutually compatible features drawn from complementary sets: one oral constriction, one nasal gesture, one laryngeal gesture. This property of featural coherence is, in part, what makes it one segment. A contributing factor to the monosegmental analysis of /t^h/ and /^{n}t̰/ is the fact that the timing of the laryngeal features relative to the oral constriction is such that they can be phonologically analyzed as residing on the stop's release. Thus not only are the featural contents of the sequence /th/, /^{n}t̰/ mutually compatible: their timing relative to each other is such that a

monosegmental representation of the sequence can be given, one in which the stop's closure carries the point of articulation features, while the stop's release carries the laryngeal values. The analysis is sequential - insofar as we distinguish closure from release - but monosegmental nonetheless, since the release is a predictable by-product of closure.

The answer suggested here is influenced by Trubetzkoy's second principle governing the distinction between single segments and clusters: " a phonetic cluster can be analyzed as one phoneme only if it is produced by a single articulatory movement or *through the gradual dissolution of an articulatory complex*" (1939:58). Trubetzkoy makes it clear that he views postglottalized and postaspirated stops - instances of what he calls "an articulatory complex" - as representing always stops in which the oral and laryngeal gestures are simultaneously initiated: only the timing of their release differs. Thus he requires that a monosegmental unit involve some moment of *actual* rather than potential simultaneity between the articulations composing it. In this respect, his position is even stricter than the one suggested here: it appears that a phonetic sequence such as that involved in the Chitimacha postglottalized stops with "strong, slightly retarded glottal gesture" (11.b above) might not qualify as monosegmental if the glottal gesture involves no significant temporal overlap with the oral constriction. But, aside from this difference, the idea of articulatory (i.e. featural) coherence as a prerequisite for monosegmental status is clearly present in Trubetzkoy's second principle.

It is useful to compare, in closing, Trubetzkoy's view of monosegmental sequences - a view from which ours derives - with the conception of contour segments implicit in representations like (1), repeated below. The reader will recall that such structures became, after Sagey (1986), the standard means of representing intrasegmental contours.

(1) [ᵐb] =   [+nasal][-nasal]
                    \   /
                  Root
                    |
                  [labial]

The prenasal depicted in (1) contains two incompatible values for [nasal]: thus, the notion that a segment is defined at least in part by the coherence of its featural components cannot be maintained within a theory employing (1). What then identifies [ᵐb] as one segment, under the theory instantiated by (1)? The presence of the unique root node? But the root node is a simple diacritic, a concise way of stating *All this is one segment*, rather than a testable principle that could shed light on the observed behavior of contour segments.

I hope to have shown that, whether or not the proposals made here are on the right track, there is interesting work to be done in discovering such a principle.

NOTES

(1) See in particular Clements 1985 and Sagey 1986.

(2) Sagey 1986 , Rosenthall 1989, Buckley 1992 and references there.

(3) For the term and exemplification, see Anderson 1976.

(4) The Kashaya contours transcribed as [hkh] are not ternary sequences of [h-k-h] but rather pre- and postaspirated stops. Their phonological representation is discussed in Steriade 1992b.

(5) On privativity in general , see Trubetzkoy 1939, who classifies the nasal/oral opposition as privative. On specific arguments to this effect, see Steriade 1992a, b.

(6) Because vowels will not be discussed, the necessary distinction between vowels and approximants is left undefined.

(7) The results derived from this assumption - which essentially denies the coherence of representations like (1) - can be equivalently obtained by assuming that all features, not just [nasal], are privative. I believe there is support for this view, but cannot defend it here.

(8) Worse still, we could not even stipulate the correct restrictions. We cannot state that continuancy is incompatible with the presence of feature contours, since affricates - standardly analyzed as containing a [+continuant] value in their matrix - do display contours of nasality, aspiration and glottalization. (On the latter see below.) And we cannot state the relevant restriction in positive terms - something like *Intrasegmental contours must coexist with the feature value [-continuant]* - since unreleased plosives, which are clearly non-continuant sounds, do not display contours, as will be observed in a later section.

(9) Additional instances of contrast between pre- and postglottalization are discussed in Buckley (1992) and Steriade (1992b).

(10) Kingston (1985) discusses other reasons to reject Greenberg's claim that implosives should always be represented phonologically as [glottalized, +voiced].

(11) I cannot discuss in any detail here the contexts where releases tend to be absent. The most common such locus is in the syllable coda. We should note however that there is considerable variation on this point: not all languages have unreleased plosives in their codas, nor do all codas behave identically on this score in any given language.

(12) Bright states that the glottalized nasals are restricted to the coda position. She is probably referring to the phones transcribed as [mʔm], [nʔn], which are indeed coda-bound. There appear to exist postglottalized nasals in the onset, as indicated by the example /nʔée/ 'land'.

(13) Word medial codas are subject to the constraint in (8) in Tonkawa, since no glottalized segments are allowed there. However, word-final codas are subject to a distinct treatment, since they disallow ejectives, though not glottalized continuants: (8) is not in force, only the loss of release in plosives. Interestingly, the phonetic realization of glottalized continuants involves postglottalization, since Hoijer transcribes them as sequences of continuant followed by /ʔ/.

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NATURALIZING FORMAL SEMANTICS

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1. APPROACHES TO SEMANTICS.

Semantics has been a lively and controversial field of research for centuries, and radically different approaches to it can be found within various disciplines and interdisciplinary combinations, involving such fields as linguistics, philosophy, logic, cognitive science, artificial intelligence, theoretical computer science, informatics, semiotics, and literary criticism. It is not surprising that there are a lot of competing approaches, rapidly evolving theories, and a mixture of mutual influence and mutual ignorance among contemporary semanticists; I cannot pretend to be familiar with all the important contemporary approaches nor is it my aim to provide a representative survey, but I do want to set my central concerns within a slightly broader perspective.

One source of deep differences is the initial selection of the object of study: the central questions of semantics may come out quite differently if one focusses on language and thought, or on language and communication, or on language and truth. A more accidental but no less profound source of differences is the research methodology prevalent in the field within which one approaches questions of semantics: early linguists tended to see features and many linguists still see another level of tree structures; logicians see formal systems and model structures; psychologists see concept discrimination and principles for scaling semantic fields; artificial intelligence researchers see data bases and symbol manipulation. After an interdisciplinary conference fifteen years ago, the philosopher David Kaplan remarked to friends that philosophers are like black holes and linguists are like vacuum cleaners: philosophers will take any approach and show that it suffers from probably fatal foundational problems, while linguists will take any approach and absorb it into their arsenal.

I want to begin by very briefly characterizing certain broad classes of semantic theories; then I will turn my attention to the issue of how model-theoretic semantics has been evolving in the hands of linguists to meet more of the demands posed by the phenomena of natural language.

1.1. Cognitive or conceptual approaches to semantics.

Probably the oldest psychological or psychologistic approaches to semantics are ones which are in a sense conceptualistic. The universality of *concepts* is presupposed, and concepts are taken to correspond to the common meanings that words in different languages express when they are translations of one another. Vygotsky, Piaget, and other psychologists discussing semantics and semantic development generally focussed on word meanings and generally on examples for which translation from language to language is relatively unproblematic. The analysis of concepts in that kind of tradition often focusses on the decomposition of complex concepts into combinations of atomic simple concepts, and on uncovering appropriate taxonomies of concepts and their acquisition and manipulation. I will use the term "conceptualistic" for any semantic theory that assumes that concepts are universal and takes the task of semantics to be (or to include) a specification of the mapping from linguistic forms onto concepts or conceptual structures understood as universal. I will use the broader term "psychologistic" for any approach to semantics which takes the central task of semantics to be the study of the mapping between syntactic forms and something in the head - mental representations or cognitive structures or mental states or the like.

1.2. Model-theoretic semantics: what it is and where it came from.

The model-theoretic tradition in semantics has a very different source. It stems from the work of logicians and philosophers of language who viewed semantics as the study of the relation between language on the one hand and whatever language is *about* on the other, some domain of interpretation which might be the real world or a part of it, or might be some constructed model. Model theory in logic studies the relation between syntactic notions such as *proof*, i.e. derivation from a given set of premises via a certain set of formal rules of inference, and semantic notions such as *validity*, a property an argument has if its conclusion is true in all models in which its premises are true. Philosophical logicians, at least since Frege, have tended strongly to view semantics non-psychologistically, making a distinction between language and our knowledge of it, and generally taking such notions as reference, truth-conditions, and entailment relations as the kinds of things a semantic description has to get right to reach the equivalent of "observational adequacy." Montague grammar comes out of this tradition, and I have struggled over the years with the question of whether it is or is not possible to arrive at a view of semantics which is somehow compatible simultaneously with the Montague-Frege emphasis on including truth-conditions and entailment relations among the most basic criteria of adequacy and the Chomskyan linguistic tradition of locating grammars in the head. (See Partee 1979, 1980, 1982, 1989a for several different views on this question.)

Now comes a confusing point of terminology: Work in the model-theoretic tradition has come to be commonly referred to as formal semantics, for historical reasons that I believe rest on

the contrast between formal and informal; but there is also a
tradition called "formalist" in logic and mathematics which is
opposed to the model-theoretic tradition, and there are
contemporary approaches to semantics which can be called
formalist in that sense.

1.3.   Representational or formalist approaches.

The formalist tradition in logic and metamathematics is
epitomized by the formalist school of Hilbert, and is more
recently reinforced in semantics by the rise of computational
theories of the mind. In mathematics, a formalist is one who
resists interpreting mathematics as being *about* anything and
regards it as no more nor less than the manipulation of
expressions according to rules that depend only on their form.
In logic a formalist holds that the appropriate way to specify
the interpretation of logical connectives, quantifiers,
operators, etc., is not by specifying their content in model-
theoretic terms but rather by providing axioms and rules of
inference that spell out the role of the symbols in constructing
(formal) proofs. Formalism in logic and philosophy arose at least
in part out of skepticism that the notion of meaning could ever
be put on a scientifically or philosophically respectable
footing. Model theory as it has developed since Tarski, Carnap,
Kanger and Kripke has removed the principal grounds for such
skepticism, although not all skeptics would say so. But formalism
has had a major renaissance in modern cognitive science and
artificial intelligence, with the advent of the idea that the
mind can be viewed as a symbol-processing computational system,
with mental processes "conceived as formal operations on
combinatorial structures" (Jackendoff 1987.)   This is of course
not a universally shared view of the foundations of cognitive
science, but it is the dominant one in the United States. Only
in the last several years has attention begun to (re)focus on the
problem of how content can be ascribed to information-processing
systems, whether mechanical or mental, if they are described in
terms of purely formal operations on uninterpreted symbols.

This contemporary formalism in linguistics and cognitive
science is often combined with conceptualism, in that the basic
forms in question have generally been taken to be universal and
innate, thus guaranteeing intersubjectivity and thereby providing
a potential answer to how we can understand one another if our
languages are uninterpreted (in the model theorist's sense.)
It is in the principle of model-theoretic interpretation that
(the misnamed) formal semantics contrasts most directly with more
"syntactic" or "formal" or "representational" views of semantics,
where semantic interpretation is seen in terms of additional
levels of representation not very different in kind from
syntactic levels of representation, and where the operations that
combine meanings are seen as combinatorial operations on
expressions.

1.4.   Information-states and information change: epistemic/dynamic approaches.

One kind of approach that is basically model-theoretic but
with an importantly different emphasis is one that is

foreshadowed in work of W.S. Cooper 1978 and of Stalnaker 1978 and developed in different ways in Veltman 1981, Landman 1986, Barwise and Perry 1983, Heim 1982, Kamp 1981, Kratzer 1989a,b, and Groenendijk and Stokhof 1990, 1991. The difference that I have in mind is that semantic content on these approaches is looked at not in terms of "static" truth-conditions but in terms of potential information change, or more broadly, potential context change. This approach subsumes some aspects of what Carnap and Morris would have considered pragmatics, since it crucially involves consideration of the epistemic states of the language users and the effects of language use on the updating of the conversational background. This newer work may also serve to help bring model-theoretic and psychologistic approaches closer together, in offering the possibility of providing equally important places in the theory for both the state of the language user and the truth-conditional import of language.

2. **WHY TRUTH IS RELEVANT.**
     Probably the most significant and lasting effect of the influence of the philosophico-logical model-theoretic semantics tradition on linguistics has been the introduction of truth conditions as the bedrock data that a semantic theory is responsible for. Before linguists began to exploit truth conditions (influenced by the work of such philosophers as Montague, Lewis, and Cresswell in the early 1970's), linguistic semantics had no even relatively solid data to appeal to for a notion of "observational adequacy" comparable to the notion of grammaticality for syntax. In principle, the strongly theory-dependent notion of synonymy was supposedly central; in practice, the basic data was often limited to "numbers of readings": more than one for an ambiguous sentence, zero for an anomalous sentence, and it is thus not surprising that the enterprise often looked very syntactic, concerned with finding unambiguous representations for readings of sentences and identifying principles for mapping between syntactic representations and such disambiguated semantic representations or logical forms.
     There are still linguists who would argue that truth conditions are not relevant for linguistic semantics, from several different angles. Some would say that truth conditions are relevant for some kind of semantics (possibly "real semantics") but that precisely because truth conditions concern the relation between linguistic expressions and non-linguistic reality, or non-linguistic models, this must take us outside the realm of linguistics proper. (This is a more-or-less Chomskyan position.) Others have no quarrel with the borders of the domain, but would argue that a concern for the explication of the competence of the native speaker precludes any direct attention to truth conditions, since a competent speaker may not have command of the truth conditions of expressions he or she is able to produce and comprehend.
     I believe that truth-conditions are indeed relevant to natural language semantics, including from the perspective of a linguist concerned with the explication of native speaker competence. Space permits only pointers to arguments for this position: (i) the analogy between geometry and grammar, and the

relation between the subject matter and our knowledge of it; (ii) David Lewis's "convention of truthfulness and trust" (Lewis 1969) and the commitments speakers make to the truthfulness of their utterances, whether they have full command of the truth conditions or not; (iii) even if and when it may be appropriate to consider truth-conditions relativized to the speaker of an utterance, what one is doing is relativizing to what that speaker believes the truth-conditions to be, so that we need the notion of truth-conditional content to get that right even if absolute truth doesn't itself matter much; (iv) Cresswell's "Most Certain Principle": among the kinds of judgements that one may appeal to as data for semantics, Cresswell 1978 argues that the most secure are judgements, when given two sentences for consideration, that there exist possible circumstances in which one is true and the other false. Cresswell shows how once this principle is granted, the centrality of truth conditions to semantics more or less follows.

3. NATURAL LANGUAGE METAPHYSICS

Emmon Bach (1986a) suggested the term "natural language metaphysics" to characterize a field of inquiry which belongs among the concerns of linguists working on semantics. Some philosophers may consider this field to be no different from the field of metaphysics itself, but this can be controversial; the name is designed in part to leave that question open. Metaphysics is concerned with what there is and the structure of what there is; natural language metaphysics, Bach proposes, is concerned not with those questions in their pure form, but with the question of what metaphysical assumptions, if any, are presupposed by the semantics of natural languages (individually and collectively: here as elsewhere one can ask how much is universal). For example, in the domain of time, one can ask whether the tense and aspect system of a language requires for its analysis any assumptions about whether time is discrete or continuous, whether it extends infinitely or not, whether it makes any difference whether instants, intervals, or events are taken as basic, whether the same "time line" must exist in every possible world, etc.

See Bach 1986a for an introduction to some of the general issues of natural language metaphysics and some initial applications in the domain of tense and aspect. Here I will mention two recent studies which I consider to belong to this enterprise and which have had considerable repercussions on contemporary developments in semantics, the first originating in the study of the semantics of mass and plural nouns, the second involving tense and aspect and the semantics of event sentences.

3.1. Link's atomic/non-atomic lattices for noun denotation domains.

Link 1983 proposed a treatment of the semantics of mass and plural nouns whose principal innovations rest on enriching the structure of the model by treating the domain of entities as a set endowed with a particular algebraic structure. In the model Link proposes, the domain of entities is is not simply an unstructured set but contains some subdomains which have the

algebraic structure of semilattices, structures which are similar to Boolean algebras with a union or sum operation but no intersection operation. A distinction is made between *atomic* and *non-atomic* semilattices. Intuitively, atomic lattices have smallest discrete elements (their atoms), while non-atomic ones (really "not necessarily atomic") may not.

These atomic and non-atomic join semilattice structures, when used to provide structures for the domains of count and mass nouns, give an excellent basis for showing both what properties mass and plurals share and how mass and count nouns differ, as well as for formally elucidating the parallelism between the mass/count distinction and the process/event distinction (for this last see Bach 1986b.)

The denotation of each count noun (including both singular and plural forms) is taken to have the structure of an atomic join semilattice, where the entities denoted by the singular form are the atoms and the "plural entities" denoted by the plural form are the non-atomic elements. The denotation of a mass noun, on the other hand, is taken to have the form of a non-atomic join semilattice.

There is thus no assumption of smallest "individual" parts for the mass nouns. It is not forbidden that there be such units, and intuitively there are for some mass nouns such as *furniture* and *clothing*; but it is not structurally presupposed that there are, so mass nouns do not enter into constructions that require atomicity.

These lattice structures also make it possible to give a unified interpretation for those determiners (and other expressions) that are insensitive to atomicity, i.e. which can be used with what is intuitively a common interpretation for mass and count domains, such as *the*, *all*, *some*, and *no*. *The*, for instance, can be elegantly and simply defined as a "supremum" operation that can be applied equally well to atomic and non-atomic structures, yielding without further stipulation a uniqueness implication when used with a singular count noun and a maximality implication for plurals and mass nouns. Other determiners such as *three* and *every* have interpretations that inherently require an atomic semilattice structure, so the fact that they only occur with count nouns is predictable.

One of the most important features of this analysis is that the mass lattice structure emerges as unequivocally more general than the count noun structure, i.e. as the unmarked case. The domains of mass noun interpretations are simply join semilattices, unspecified as to atomicity. Atomic join semilattices are characterized as join semilattices with an added requirement, hence clearly a marked case. This means that languages without the mass/count distinction are describable as if all their nouns are *mass* nouns; we need not seek some alternative structure that is neutral between mass and count, since mass itself turns out to be the neutral case (see also Stein 1981.)

How does all this relate to conceptual structure? If non-atomic semilattice structure universally underlies the semantics of nouns and nominal quantification (with some but not all languages adding count nouns and hence grammaticizing atomic

semilattice structures), and perhaps also underlies the semantics of process and event expressions, then I would suppose that it must be innately available, since nature certainly does not force the distinction between atomic and non-atomic upon us. So I would offer that as a robust example of a semantic universal reflecting the *structure of the domains* that we're talking *about*, not the syntactic structure of the language. At the same time this is clearly a kind of structure that we impose on these domains, not imposed by the external domains on us.

3.2 **Adding situations, adducing their properties.**
    One area which has been particularly fertile ground for exploring and developing hypotheses about natural language metaphysics has been the domain of tense and aspect, together with the study of event sentences, generic sentences, modality of various sorts, and other phenomena which have led to expansion and modification of the parts of models which in earlier work such as Montague's were constituted by a set of possible worlds and a set of moments of time, with propositions interpreted as sets of possible worlds (or world-time pairs). A number of researchers have argued from a variety of points of view for the addition of events as basic entities alongside ordinary individuals (Davidson 1967, Parsons 1986,1990, Bach 1986a, Kamp 1979, Higginbotham, and others), and several have argued for seeing an analogy between the structure of mass vs. count nouns on the one hand and process vs. event on the other (Bach 1986b).
    In early work on situation semantics by Barwise 1981 and by Barwise and Perry 1983, it was not always clear to the present writer whether situations were best construed as alternatives to possible worlds as those authors argued or instead as a species of individuals, analogous to events (see Partee 1985). Recent work by Angelika Kratzer and by some of our students has developed and exploited the possibility of letting situations, construed as parts of worlds, function both as individuals (analogous to events, playing a direct role in the interpretation of event nominals, for instance) and as "world-like" in that propositions are reinterpreted as sets of possible situations and expressions are evaluated at situations rather than at world-time pairs. (See e.g. Kratzer 1989a,b, Berman 1987, Portner 1991.) The very rich area of research that is being opened up by this development promises to shed important light not only on the linguistic constructions under study but on some of the formal properties of possible cognitive structurings of some crucial ontological and "background-framework" domains which play a central role in human thought and language but for which the structure of the relevant domains is not at all obvious to simple inspection or introspection. It has been evident since the early work of Barwise and Perry that the notion of "situation" is not at all a straightforward one, and it is exciting to see how linguistic research can simultaneously exploit such a notion and contribute to articulating the properties it must be assumed to have.

4. DEVELOPING MORE ADEQUATE LOGICS

Some of the most interesting developments in contemporary semantics, which because of their technical nature I can only hint at here, have been proposals that have resulted in new ways at looking at the basic logic that governs the logical expressions in natural languages. Just as Montague's work freed linguists from many of the constraints imposed by a rigid adherence to classical first-order predicate logic and gave us new glasses through which to examine generalized quantifiers, opaque transitive verbs, the semantic variety of adjectives, etc., and permitted the positing of the ubiquity of function-argument structure and type-driven translation, so recent developments have opened up exciting new perspectives on quantification, anaphora, context-dependence, and many other fundamental semantic phenomena.

Caveat: when I talk about developing new logics, I don't necessarily mean anything that a logician would consider new (although that possibility is not excluded, and has shown up in recent work on property theory, e.g. by Chierchia and Turner 1987); most of the current developments rather involve new ideas about how to apply what sorts of logical tools to which linguistic phenomena.

The work of Kamp and Heim beginning in the early 1980's is one of the important developments of this sort. Kamp 1981 and Heim 1982 offer solutions to certain problems involving indefinite noun phrases and anaphora in multi- sentence discourses, such as (1) and in the famous "donkey-sentences" like (2) and (3).

    (1)   Mary owns a dog. She talks to it.
    (2)   Every woman who owns a dog talks to it.
    (3)   If a woman owns a dog, she talks to it.

On their theories, indefinite and definite noun phrases are interpreted as variables (in the relevant argument position) plus open sentences, rather than as quantifier phrases. The puzzle about why an indefinite NP seems to be interpreted as existential in simple sentences but universal in the antecedents of conditionals stops being localized on the noun phrase itself; its apparently varying interpretations are explained in terms of the larger properties of the structures in which it occurs, which contribute explicit or implicit unselective binders which bind everything they find free within their scope.

The foregoing is a relatively narrow perspective on what Kamp's Discourse Representation Theory and Heim's File Change Semantics offer. From a broader perspective the Kamp-Heim theories have brought with them important innovations in several fundamental aspects of semantic theory. The most central is the intimate integration of context-dependence and context change in the recursive semantics of natural language.

A related important innovation is Heim's integration of the idea that the function of assertion is to change the context (Stalnaker 1978) with the idea that the function of indefinite NPs is to introduce new individuals into the context (an idea which has a substantial history, including particularly the work

of Karttunen 1976, but which had not previously been successfully incorporated into a formal semantic framework).

Kamp's and Heim's work has led to a great deal of further research, applying it to other phenomena, extending and refining it in various directions, and challenging it. One particularly interesting alternative that has been proposed is "Dynamic Montague Grammar", developed by Groenendijk and Stokhof 1990,1991 and extended by colleagues in Amsterdam and elsewhere (see Chierchia 1991).

One line of my own recent research also concerns the interaction of quantification and context-dependence, in a slightly different way. It was brought to my attention by Jonathan Mitchell (see Mitchell 1986) that a large number of open-class context-dependent predicates are capable of behaving like bound variables in the sense that the contexts they can anchor to include not only the utterance context and constructed discourse contexts but also "quantified contexts" as illustrated in (4-6) below.

(4) (a) John visited a *local* bar. (Mitchell 1986)
    (b) Every sports fan in the country was at a *local* bar watching the playoffs.
(5) (a) An *enemy* is *approaching*. (Partee 1984)
    (b) John faced an *enemy*.
    (c) Every participant had to confront and defeat an *enemy*.
(6) Implicit antecedent, implicit anaphor (if any), but all the properties of "donkey-pronouns" (Schwarzschild, p.c.):
    (a) Every man who stole a car abandoned it *2 hours later*.
    (b) Every man who stole a car abandoned it *within 50 miles*.

In current research extending earlier work on this phenomenon in Partee 1989b, I am trying to integrate the following ideas, which come from a variety of sources:

(a) To integrate variable-binding and context-dependence, I believe we need to allow for differences of detail within a system that does not force a dichotomous distinction between variables (e.g. bound variable pronouns) and context-dependent "constants"; we must allow "mixed" and in-between cases.

(b) I take the need for a dynamic approach, either of the Kamp-Heim sort or of the Groenendijk and Stokhof sort, as established and believe that it should be helpful in analyzing the phenomena in question. I would hope that by taking meaning as context-change potential and developing appropriate means for recursive manipulation of contexts, abstracting and quantifying over contexts, appropriate accommodation of potentially salient or presupposable contexts, etc., one could develop parallel treatments of worlds, times, "assignments", reference locations, and "contexts" qua "reference situations" more generally.

(c) If we shift to propositions as sets of possible situations (Kratzer 1989a,b) rather than of worlds, it should be possible and helpful to exploit the fact that situations can

bring with them such things as reference locations, salient reference individuals, and other such features of local contexts.

(d) The manipulation of reference situations by recursive rules and by accommodation should be done in such a way as to capture the fact that the basic "accessibility constraints" are the same for (i) pronominal anaphora (both discourse and bound), (ii) the projection of presuppositions, and (iii) contextual anchoring.

(e) The lexicon is not partitioned into constants, variables, and demonstratives, each getting its interpretation in a different way; rather each lexical item may in principle have aspects of all three kinds of meaning, with the traditional three-way distinction corresponding to three extreme cases.

The lines of research mentioned above are of course just a small sample of exciting current research, selected to illustrate some of the ways in which the analysis of linguistic phenomena by semanticists who have some command of the tools of formal semantics is leading both to a better understanding of semantic phenomena in natural languages and to the development of new formal tools that are increasingly well suited for linguistic theorizing.

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WHAT IS FUNCTIONAL GRAMMAR?

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Functional Grammar (henceforth FG) is a general theory of the grammatical organization of natural languages that has been developed over the past fifteen years by Simon Dik and his associates. For up-to-date presentations of the theory, see (Dik 1989a) and (Siewierska 1991); and, for a comprehensive bibliography of FG, now also available in database format, (De Groot 1992). Whereas many other theories of grammar see language as an essentially arbitrary structure, possibly genetically determined, FG seeks above all to integrate its findings into a more all-encompassing framework, that of an overall theory of social interaction. Indeed, FG proposals are evaluated against a metric of *pragmatic adequacy*, i.e. the extent to which they are successful in achieving compatibility with just such an account of human action and interaction. FG is thus a representative of the functionalist paradigm of linguistic research.

The fundamental hypothesis of FG is that there is a largely non-arbitrary relation between the instrumentality of language use (hence Functional) and the systematicity of language structure (hence Grammar). In other words, FG aims to explain regularities in and across languages in terms of recurrent aspects of the circumstances under which people enter into verbal interaction. FG shares many theoretical presuppositions with Systemic Functional Grammar (Butler 1990) and Role and Reference Grammar (Van Valin 1990).

In studying the systematics of language, we may expect to encounter functional, dysfunctional and afunctional aspects. In the area of word order, for example, whether a language chooses Prefield organization (i.e. the order O(bject) V(erb) or O postposition V) or Postfield organization (VO or V preposition O) appears in itself to be immaterial for the functioning of that language: this is thus an afunctional matter. On the other hand, many word-order phenomena (clause-initial positioning of topics, extraposition, passivization and many others) can be related to functional considerations, e.g. the speaker's assessment of the hearer's knowledge and expectations, and it is indeed these phenomena that receive the greatest attention from adepts of FG; and there are yet other phenomena that appear to display dysfunctionality, for example the occurrence of postpositions in a Postfield

language where the language can be shown to have introduced prepositions as a 'therapeutic' measure (Kahrel 1985).

The order of words in any sentence is regarded as reflecting the language user's attempt to cope with various factors (functional, afunctional and dysfunctional) which may either work in parallel or conflict with one another. The result is a 'compromise', with the major input coming from the so-called functional pattern that reflects the communicative function of the sentence, from various language-independent principles of ordering, and from diverse pragmatic factors. Thus FG does not accord an unequivocal syntactic structure to the sentence, and certainly not a structure representable by means of tree diagrams or labelled bracketing.

This is not to say that FG fails to use a grammatical formalism. Indeed, the formalizations used in FG have led some observers to assume that it thereby falls under the 'formal paradigm' in linguistics. However, although work in the 'formal paradigm' does make extensive use of formalisms, these cannot be regarded as defining that paradigm. Formal grammar, to which FG seeks to offer an alternative, results from a particular view of language 'as a set of structural descriptions of sentences, where a full structural description determines (in particular) the sound and meaning of a linguistic expression' (Chomsky 1977: 81). The functionalist perspective is quite different: here the form of utterances cannot be understood independently of their function and a 'full description' needs to include reference to speaker and addressee and their roles and status within their socioculturally determined situation of interaction. The use of a formal symbolism does not detract from the achievement of that aim, indeed it increases the clarity of the descriptions proposed.

It will be evident that any theory in which great importance attaches to the speaker and addressee's knowledge and indeed their assumptions, feelings and attitudes must enter into an interdisciplinary relation with psychology, in particular cognitive psychology. Like most contemporary approaches, FG is mentalistic; what distinguishes FG from many other frameworks is that it offers an account of communicative competence, i.e. our ability not only to en- and decode expressions but also to use and interpret those expressions in an interactionally satisfactory manner. It is for this reason that FG seeks to achieve *psychological adequacy* by 'relat[ing] as closely as possible to psychological models of linguistic competence' (Dik 1989a: 13). Recent contributions to determining the relation between FG and claims from cognitive psychology are (Dik 1989b) and (Nuyts 1990).

FG is in principle equally applicable to all languages and language types. In practice this means an attempt to achieve a balance between the general and the particular. Descriptions must not be so language-specific that they are not, *mutatis mutandis*, transferable to other languages; nor may they be so general that the peculiarities of individual languages are obscured. One of the operationalizations of this quest for *typological adequacy* is a taboo on transformations, filters and non-lexical predicates. Two major recent FG contributions to language typology are Hengeveld

(1992) and Rijkhoff (1992): these works have shown that the assumption of a rigorous but flexible grammatical framework allows typological work to attain greater precision than previously achieved.

Of central importance in FG is the notion of a *State of Affairs* (*SoA*), a speaker's linguistic (and possibly cognitive) codification of a situation. SoA's come in four basic types: Actions, Positions, Processes and States. Actions and Positions are [+control], i.e. one of the participants in the SoA has the power to determine whether the SoA applies; Actions and Processes are [+dynamic], i.e. one or more of the participants undergoes some change in the SoA:

> Action: [+control, +dynamic]
> Position: [+control, -dynamic]
> Process: [-control, +dynamic]
> State: [-control, -dynamic]

For each set of SoA's codified by the same lexical item (such a lexical item is in FG called a *predicate*, symbolized as ϕ) there is a corresponding *predicate frame*, e.g.:

$$\text{offer}_V \ (x_i: <\text{animate}>)_{Ag} \ (x_j: <\text{concrete}>)_{Go} \ (x_k: <\text{animate}>)_{Rec}$$

All the meaning-bearing elements of a language (i.e. not its function words) are located in the *fund* in the form of a such a predicate frame; the *lexicon* is that subset of the fund that encompasses all the non-derived predicates of the language.

A predicate frame contains five types of information about the predicate: its form; its word class; its quantitative valency; its qualitative valency; and its selection restrictions. (The relative ordering of the various pieces of information is purely conventional, and immaterial for the actual order of expression in the language under analysis.) The idea is that the language-user who expresses him/herself in English can talk about a particular kind of situation by using, say, a verb of the form *offer*, and that the language then 'dictates' a fixed number of aspects of those situations as participants. In this case there is a quantitative valency of 3, with -- in qualitative terms -- an Agent (the offerer, preferentially animate), a Goal (the object offered, preferentially concrete) and a Recipient (preferentially animate). The verb *offer* is language-specific, but the types of participants singled out by the language (Ag, Go, Rec) and the selection restrictions are general, possibly universal.

The representation of each utterance takes just such a predicate frame as its starting-point. The formal description of an utterance may be visualized as the gradual addition of more and more functional and lexical information to the lexical information present in the predicate frame. Taking the predicate frame as our point of departure, we expand it in the following steps:

1) Referring expressions (*terms*; see below) are inserted into the argument positions (x_1 ... x_n) defined by the quantitative valency; the result is a *nuclear predication*.

2) Further positions additional to the quantitative valency are opened for *satellites*. Satellites, symbolized as σ, are optional lexical elements modifying the predicate. By convention, these are placed to the right of the predicate frame. Satellites added at this, the lowest, level within the representation are called level-1 satellites. Some of these are referring expressions, e.g. those with the semantic function Beneficiary, others are non-referring expressions, e.g. those with the function Manner.

3) Concurrently, grammatical modifiers of the predicate (level-1 *operators*; operators are symbolized as π) are specified (conventionally to the left of the frame). The result of 2) and 3) is termed a *core predication*.

4) Thereafter, further operators (e.g. for Tense) and satellites (e.g. for Place) taking the entire core predication in their scope are added at the 2nd level, the result being an *extended predication* (symbolized as e) giving a full description of the SoA in space and time.

5) This construct is now recognized as part of a *proposition* (symbolized as X, at the 3rd level), in which the speaker indicates his/her attitude to the SoA (as true, probable, based on hearsay, etc.); here, too, (modal) level-3 operators and satellites can be added to qualify the proposition.

6) The 4th and highest level is a representation of the entire *utterance* (symbolized as E) as a speech act; again, it is possible to incorporate level-4 operators (indicating the illocutionary status of the utterance) and level-4 satellites modifying the illocutionary value of the utterance.

The structure of the utterance in Functional Grammar is thus as follows:

UTTERANCE (E)

$\pi4$ (DECL, INT, ...) $\sigma4$ (Status, Reason, ...)

PROPOSITION (X)

$\pi3$ (OPINION, EXPERIENCE, ...) $\sigma3$ (Opinion, Quotative, ...)

EXTENDED PREDICATION (e)

$\pi2$ (TENSE, POLARITY, ...) $\sigma2$ (Time, Place, ...)

CORE PREDICATION

$\pi1$ (ASPECT, COMPARISON, ...) $\sigma1$ (Manner, Instr, ...)

NUCLEAR PREDICATION

predicate$_{V/A/N}$ (x_1) ... (x_n)
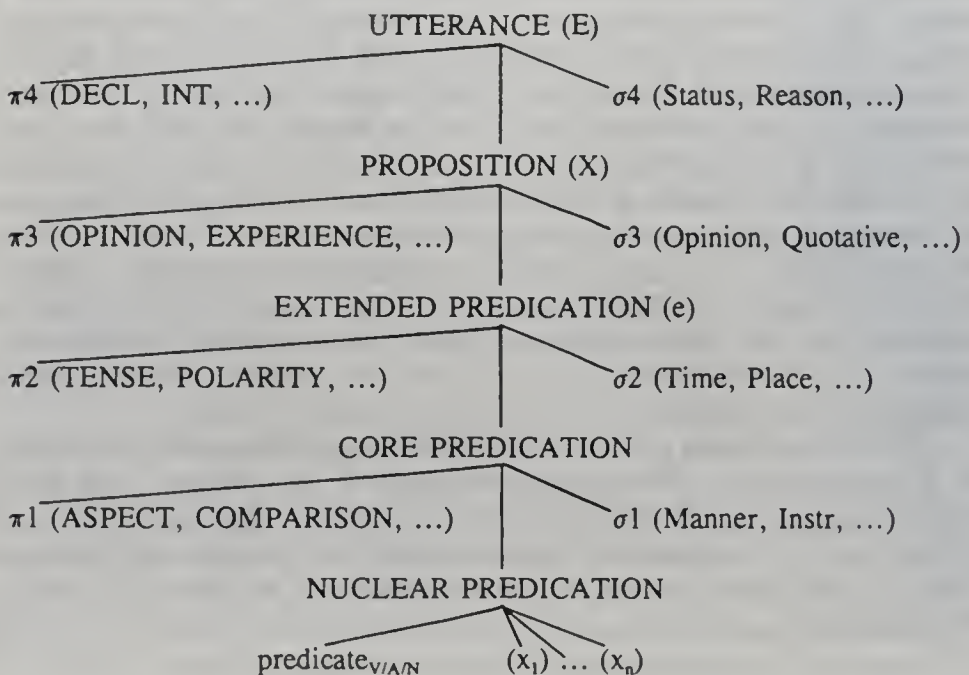
In FG practice, a bracketed representation is used rather than a tree diagram; to adapt an example from (Dik 1989a: 263), (1) may be shown as (1'):

(1)   The duckling was killed by this farmer

(1')   DECL E_i: [X_i: [Past e_i: [kill$_V$ (ds1+prox x_i: farmer$_N$(x_i))$_{AgFoc}$ (ds1x_j: duckling$_N$(x_i))$_{GoSubjTop}$](e_i)](X_i)](E_i)

(1') shows the four-level structure of the utterance, and includes information about one syntactic function (Subj) and two pragmatic functions (Foc and Top).

Before progressing to these, let us clarify the nature of the elements to which they are attached. The two argument positions opened by the verb *kill* are filled by terms: (ds1+prox x_i: farmer$_N$(x_i)) and (ds1x_j: duckling$_N$(x_i)). Each term contains a variable, x for a first-order entity, e for a second-order entity, etc.; the variable is indexed for its 'address' in the overall discourse representation. This variable may be in the scope of operators, equivalent to grammatical modifications, e.g. for definiteness (d), specificity (s), proximity (±prox) and number (1,2, ...). Furthermore, the variable may be restricted in its reference by one or more stacked *restrictors*, i.e. lexical material in the form of predications. In outline, terms have the following structure:

```
                          TERM
         _____|_____
        |                |               |
term operators     variable (x/e/X/E) :  restrictors
   /|\                   |            ____/|\____
  / | \                  |           /    |     \

def; spec; prox; number ...  1st (head):  2nd:   3rd:    4th
                               !           !      !       !
        prototypically:      noun      adjective possessor rel.cl.
```
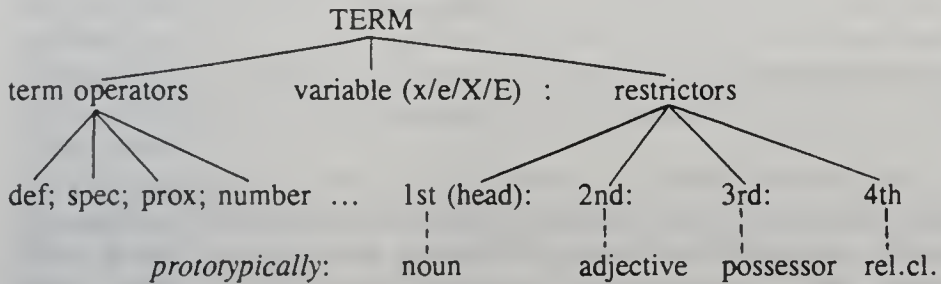
In a term, the first restrictor is prototypically a nominal predication, the second an adjectival predication, the third a possessive predication, and the fourth a predication in the form of a relative clause. The following example, showing the bracketed structure preferred in FG, is adapted from (Rijkhoff 1992: 13):

(2)   the old man's dog that chased a cat

(2')   (d1x_i: dog$_N$ (x_i): {(d1x_j: man$_N$ (x_j): old$_A$ (x_j))$_{Poss}$} (x_i)): [Past e_i: chase$_V$ (x_i)$_{Ag}$ (i1x_k: cat$_N$ (x_k)$_{Go}$])

We will now return to the representation of the utterance as a whole. Depending on the language in question, various elements of that representation may be assigned *syntactic and/or pragmatic functions*. One

of the most striking claims of FG is that only two syntactic functions (Subject, Object) are required for the description of natural languages. These are assigned to arguments (and sometimes satellites, as in *Pete was bought a beer*, where *Pete* is a Beneficiary satellite) in the extended predication and serve to indicate the point of view taken by the utterer with respect to the SoA. Subj(ect) assignment to a Go(al) as in (1) above reflects the speaker's taking that Goal as his/her vantage point on the killing. Certain languages require both Subject and Object -- these have both passive and 'dative objects'; others only Subject -- these have only passive; yet others neither. Whereas syntactic functions indicate the speaker's perspective on the SoA, pragmatic functions specify the informational status of the constituents to which they are assigned with respect to the ambient discourse. The pragmatic function Topic is assigned to arguments and satellites whose topicality is signalled by some grammatical or intonational device; Focus, the other major pragmatic function, may be assigned to any element of the entire representation that is somehow marked as being communicatively salient. English has been argued to require only Focus (Mackenzie & Keizer 1991), whereas other languages need at least both Topic and Focus. The following overview summarizes various claims that have been made in FG writings for the presence and absence of syntactic and pragmatic function assignment in various European languages:

syntactic functions:	Subject, Object	(English, Dutch)
	Subject	(French, German)
	--	(Hungarian)

pragmatic functions:	Focus, Topic	(Dutch, Hungarian)
	Focus	(English)

The complete underlying representation, of the type shown in (1'), is mapped onto the actual form of the corresponding utterance by a system of *expression rules*. The information offered in the representation is both necessary and sufficient for the operation of these rules. The representational adequacy of the grammatical model as well as the internal workings of the expression rule system are currently being tested through computer implementation (see below) as well as in research by (Bakker & Siewierska forthc.) into a formal model for the explanation of constituent order in a representative sample of some 50 languages. The expression rules and principles take care of the form of the various lexical elements, the introduction of function words, the order in which the various elements occur, and the prosodic contours of the associated accent and intonation pattern.

Let us again take (1) and the underlying representation (1') as an example of how each piece of information in the representation is reflected in the ultimate form of the utterance. The initial placement of *the duckling* (in FG terms, placement in P1) follows from (a) the choice of the level-4 operator DECL(arative) and (b) the assignment of Topic (or in Mackenzie

& Keizer's 1991 approach, Subj) to that term. The lack of any prepositional marking is a consequence of the assignment of Subj to that term. The form of the predicate *was killed* is attributable to the combination GoSubj, i.e. the assignment of Subject to the Goal argument: Subject assignment to non-first arguments in English causes passive morphology on the verb. The introduction of the verb *be* is brought about by a very general rule inserting that verb in a range of contexts where it has a supportive function (Dik 1983); its tense follows from the level-2 operator Past. The singularity of the verb *was* and of the term *the duckling* is provided for by the number operator '1' in the underlying representation. Finally, the preposition *by* in *by this farmer* is triggered by the presence of Ag(ent) without Subj; *this* comes from d1+prox, with '1' determining the singular form of *farmer*; and the final position of the term is partially determined by its having Focus function. In this way the complete (and let us recall, unordered) representation is translated by the expression rules into a linear order, with all function words and morphological details added. The result is an utterance which provides the best possible expression of the speaker's intentions.

The layered model sketched here (the layering being attributable above all to Hengeveld 1989) is characteristic of all contemporary work in FG. One of its advantages is that it allows an insightful account of the differences in form and meaning among the various types of finite complementation and infinitive complementation in a language such as English. Embedded clauses can refer to various 'higher-order entities': a State of Affairs (as in 3a), a possible fact (as in 3b) or a complete utterance (as in 3c). These are analysed, respectively, as second-order complements, comprising the lowest two levels, as third-order complements, comprising the lowest three, and as fourth-order complements, with all four levels:

(3a)   I saw **that Andy was mowing the lawn** (2nd level)
(3b)   I assumed **that Andy was mowing the lawn** (3rd level)
(3c)   I said **"Andy is mowing the lawn"** (4th level)

Similarly, infinitive complements can be analysed purely as predicates (with associated arguments), but also as second-order or third-order complements:

(4a)   Andy began **to mow the lawn** (lowest, 'zero' level)
(4b)   I saw **Andy mow the lawn** (2nd level)
(4c)   I assumed **Andy to be mowing the lawn** (3rd level)

As anticipated in the analysis of (4a), some very recent work (Hengeveld 1992a, Keizer 1992a) points towards the addition of a further zero level for predicates, symbolized as f, and already adumbrated by (Dik 1989a: 50). Motivation for this innovation is drawn from the analysis of anaphora by means of the A-operator. In a sequence such as (5):

(5)   A: His question was "Where are you going?"
      B: No, that was my question   (adapted from Keizer 1992a: 4)

A's utterance will be analysed as the equation of two level-4 phenomena, informally representable as $E_i = E_j$; *that* in B's response will then be analysed as (AE_j), i.e. an anaphor to *"Where are you going?"*, with A as an anaphoric operator. Consider now (6):

(6)   Ernest is sleeping. So is Jack   (from Keizer 1992a: 4)

Here the anaphor *so* refers back not to the entire State of Affairs of Ernest's sleeping but merely to the progressive-aspect verb *sleeping*. This relation can be captured by giving the predicate its own variable:

(6') [Pres e_i: [Prog f_i: sleep$_V$ (Ernest)$_\theta$]. [Pres e_j: [(Af$_i$) (Jack)$_\theta$]

(Hengeveld 1992a: 33) points to another advantage of adding a 'zero' layer to the 4-level analysis presented above. In (7):

(7)   an extremely intelligent girl   (from Hengeveld 1992a: 33)

extremely has scope over the adjective *intelligent* only. This is handled by analysing the second restrictor as follows:

(7') f_j: intelligent$_A$ (f_j): (f_k: extremely$_{Adv}$ (f_k)) (f_j)

      Another important contribution to the layered representation of linguistic expressions has been made by Rijkhoff (1992), who shows that the notion of layering that has proved so fertile for the analysis of the utterance is also applicable to the internal structure of the term. He argues that the various non-head constituents of a term, both operators and satellites/restrictors, may be distinguished according as they are concerned with the quality, the quantity or the locality of the referent of the head. Correspondingly, he suggests that terms have three internal layers: the quality layer, nearest to the head and containing operators and satellites concerned with matters such as mass/count, collective/individual, etc., referred to by Rijkhoff as 'nominal aspect'; the quantity layer, next up, and specifying quantitative properties of the referent, such as number and numerals; and the locality layer, the highest level, at which demonstratives, articles, relative clauses and possessor/locative phrases are situated. Rijkhoff shows that this layering of the term is not only semantically appropriate but also typologically adequate in allowing a understanding of word and morpheme ordering phenomena across a wide and representative sample of languages. The parallelisms that Rijkhoff observes between the term and predication lead him to suggest that the predication has the same three-level structure as the term. Adoption of his proposals would entail adding yet another level to the structure shown in (1') above.

At the 'top end' of the structure of the utterance, too, recent proposals have tended towards the introduction of more layers. (Bolkestein 1992: 392 ff.) has pointed out that indirect speech complements, hitherto analysed as level-3 complements, are differentiated according to their illocutionary status, notably as DECL(arative) or IMP(erative). Thus Latin *dicere* 'to say' requires an accusative-and-infinitive construction where the embedded illocution is declarative but a finite subjunctive clause introduced by *ut* where the embedded illocution is imperative. In (Hengeveld 1992b: 55), the f-variable, now capitalized, is applied to an abstract illocutionary predicate, allowing a distinction between the entire utterance (E_i) and the illocution (F_i). In this approach, the highest level appears as follows:

(8) $(E_i: ([F_i: ILL (F_i)) (Speaker) (Addressee) (X_i : [...] (X_i))] (E_i))$

Now it becomes possible to analyse complements with illocutionary value as embedded F-complements, with ILL appearing as DECL, IMP, etc.

The question has also arisen whether there are levels of sentential analysis even higher than those shown in (8), e.g. for adverbials indicating the status of the utterance in the surrounding discourse such as *finally*, and for other interaction-managing devices such as *as far as John is concerned*, known in FG as Themes (for discussion, see Bolkestein 1992: 398 ff.). And indeed there is increasing mention in current FG work of 'level-5 satellites' (although there is no level 5 as such) taking the entire utterance in their scope and placing it in the ambient discourse.

This development runs parallel with growing interest among practitioners of FG in the relation between utterance and discourse; many feel that it is only by tackling the difficult issues of the grammar-discourse interface that they can enhance the pragmatic adequacy of the model. One promising initiative in this regard is that of (Hannay 1991), who distinguishes a number of communicative strategies available to the speaker for conveying information. In his view, there are five modes of message management, each of which induces distinct assignments of Topic and Focus. These modes may be represented as operators on the abstract illocutionary predicate, i.e. on F_i in (8) above, and have -- as their effect percolates down the hierarchy -- the effect of constraining the assignment of pragmatic functions to elements of the utterance. Another important stimulus has come from the work of (De Vries 1989) on Papuan languages: among his many findings on the grammar-discourse interface is the claim that Themes (i.e. utterance-initial, intonationally-separated elements that set the frame of reference for the rest of the utterance) not only have a function within the sentence but also are no less crucial to the information flow of the ongoing discourse.

Many of these insights have arisen from a growing commitment to corpus analysis. The use of corpora in FG has been prominent from the very outset in the analysis of classical languages (e.g. Bolkestein 1985; Pinkster 1985). This has now been extended to the analysis of unwritten languages, where the assembly of large corpora of transcribed text has

yielded vital insights (e.g. Reesink 1987), and more recently to the inspection of corpora of modern written languages (e.g. Hannay & Vester 1987; Keizer 1992b). One effect of this development has been to provide a new manner of testing the empirical claims of FG; another has been to throw up novel questions and often bewildering challenges which are bound to become dominant issues in the FG of the nineties. Can FG increase its 'compatibility with a wider theory of interaction' without including in its formalisms the pragmatic principles underlying speakers' actual choices of language structure? How can a bridge be built between the process-oriented claims of discourse analysis and the product-oriented contentions of grammar?

One striking aspect of current work in FG is the increasing interest in a computational implementation of the grammar, as reported in (Dik & Connolly 1989) and (Hannay & Vester 1990). This interest has developed into a research programme known as FG*C*M*NLU (Functional Grammar Computational Model of the Natural Language User). The programme is aimed at (a) elaborating an integrated understanding of the communicative competence of the NLU and (b) testing the adequacy of the proposals put forward as a result of more purely linguistic work on the model.

As far as the first aim is concerned, the boldest contention of FG*C*M*NLU is that grammatical representation, knowledge representation and the calculus of logical syntax are in fact all the same and that the underlying representations proposed by FG (such as (1') above) offer a suitable 'cognitive language' for grammatical, epistemological and logical analysis. Thus it is assumed that much of our knowledge, specifically that part which is not perceptual in nature, is coded in the form of FG representations of propositions, i.e. level-3 entities. One immediate advantage of this assumption, which is recognized to be controversial, is that the links between linguistic expressions and the knowledge structures with which they are correlated may then be established in a particularly direct fashion. Similarly, it is argued that logical operations can be readily carried out on propositional representations; this would offer an immediate connection between reasoning processes and their linguistic repercussions. Various consequences of this line of thinking are laid down in (Weigand 1990).

The second aim of the enterprise, the testing and refinement of existing proposals for the representation of linguistic expressions, has led to a number of publications (notably Dik 1992 and Dik & Kahrel 1992) under the banner of ProfGlot, a computer program written in Prolog and simulating various essential components of the communicative competence of a multi-lingual speaker as represented in FG. This program is capable of generating various types of construction in a range of (Indo-European) languages, parsing a subset of these construction types, and translating them across the various languages covered, as well as performing certain logical operations on the representations involved. As a result, many rules and principles of FG have been rendered more precise. Current work is aimed at integrating ProfGlot with an extended lexicon and at addressing

the nature of a 'discourse competence' for ProfGlot. It will be clear that the latter ambition offers a point of contact between the two major streams in FG at present: integration of grammar with discourse and computational implementation.

It will have emerged, I hope, that FG seeks to offer linguists a framework in which they can make precise statements about the relationship between the functionality of language use and the structure of linguistic expressions. At the same time, FG is open to interdisciplinary relations with discourse analysis, lexicology, logic, epistemology and computing-in-the-humanities. The three goals of typological, psychological and pragmatic adequacy continue to provide a general background to FG work, while allowing a broad range of methodologies and applications. In this way, the notion of 'unity in diversity', invoked in the title of a recent Festschrift for Simon Dik (Pinkster & Genee 1990), may also be seen as characterizing the grammatical model of which he is the intellectual father.

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TOWARDS A SOCIO-OPERATIVE CONCEPTION OF LINGUISTICS

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1. INTRODUCTION
    I will try to show in this paper that a fruitful way of do-
ing linguistics is to view it as a science whose objects, i.e.,
human languages, have a basic characteristic: through the mental
operations that result in utterances meeting the requirements of
communication, languages reflect the social dimension of cognit-
ion. In order to show this, I will first examine some contempo-
rary attempts at a cognitive treatment of language (§ 2); I will
then study the role of social factors in the making of linguist-
ic forms (§ 3); finally, I will propose what I call the anthro-
pophoric system: the system of linguistic forms which are used
in deixis, and by means of which human beings, according to
their needs, interpret the universe by reference to themselves
(§ 4).

2. ON CURRENT ATTEMPTS AT A COGNITIVE TREATMENT OF LANGUAGE
    No linguist, whatever his theoretical position, would
deny the importance of the contribution of linguistics to the
program of Cognitive Science: providing, as stated in Anderson
(1989: 810), "a new and explicit science of the mind". Even tho-
se who do not wish, or do not feel prepared, to reach such an
objective will probably agree that if we did not recognize that
languages reflect the functioning of knowledge, we could not ex-
plain why their use in communication, while it transforms them,
does not change their nature as languages.
    However, the remarkable development of cognitive research
in contemporary studies on language raises again a problem which
has often arisen, already, in the past: the problem of the auto-
nomy of linguistics. Some linguists react negatively to the cur-
rent situation. Thus, J.E. Joseph, after stressing, in his re-
view of Koerner 1988, the role of Saussure as a founder of modern
linguistics, writes (1989: 601):
            "The crisis of autonomy of the late 19th century is
        being replayed in the waning years of the 20th, as lin-
        guistics departments find themselves being swallowed up
        by more inclusive cognitive science programs, or bitten
        into by computer scientists, or both at once. The disci-
        pline's survival depends upon continual reassertion that

language can and must be studied in itself, along with a
recognition that data, models, and metaphors from con-
tingent areas can be enlightening, provided that they
are not mistaken for linguistics."

Let us hope that this point of view will turn out to be too
pessimistic. At any rate, it is true that linguistics has long
striven to conquer its specific domain as scientifically isolable
from the broad field of human knowledge, formerly studied by phi-
losophy, more recently by psychology, and today by cognitive re-
search. There is an interesting paradox here. Most linguists wor-
king in the framework of classical TG, i.e., the model to which
the renewal of cognitive research is historically and logically
related, consider syntax as an autonomous domain. Now, it so hap-
pens that this jeopardizes the autonomy of linguistics itself,
since such a treatment leads one to posit innate principles of
Universal Grammar reflecting the organization of the brain.Thus,
advocating the autonomy of syntax may cause us to give up the au-
tonomy of linguistics. Preserving the autonomy of linguistics, in
fact, does not imply believing in the autonomy of syntax. Rather,
it implies attention to the whole structure of languages, and to
the way their levels are related to one another, and all of them,
in turn, to the conditions of use in everyday speech. In other
words, we should not restrict linguistics to syntax, as made
of categories which have an intrinsic meaning, in contradistinc-
tion to the lexicon, as made of words whose meaning depends on
the conditions of use. Such an opposition is not obvious at all,
as soon as we examine grammaticalization phenomena. The reason is
not far to seek: there is a diachronic continuum between lexical
units on the one hand, and, on the other hand, grammatical units
resulting from a process of semantic evolution (see Hagège 1992:
ch. 7). Even along a synchronic line, we may observe the freezing
of lexemes into grammatical tools, as illustrated, for example,
in written contemporary French, by se voir, which, in France at
least, is more and more frequently used as a passive marker.

Such a process as grammaticalization, to the extent that it
is observed in most languages on which we have reliable data (see
Traugott and Heine: 1991, Hagège: 1992), is one among the defin-
ing features of languages that justify a universalist conception
of linguistics. Yet the conception referred to here has little to
do with Universal Grammar as a set of inborn principles related
to the acquisition of language and information processing by the
brain. Rather, it is tightly related to language typology, since
languages differ widely with regard to the way universals are re-
flected in each of them. Studying language universals and typolo-
gy as fields central to our knowledge of how humans meet their
communicative needs does not exclude taking into account cogniti-
ve factors. However, the attempts made so far in this direction,
even by serious professional linguists, have not yet brought
really new lights.

Thus, in the last chapters of an interesting work (Givon
1990: 893-986), we find a "cognitive re-interpretation of the
grammar of referential coherence", and a study of markedness and
iconicity in syntax. The author suggests treating definite gram-
matical markers in terms of mental processing instructions such
as

"...defer activation decision; if unimportant, then:
(i) do not open a file (ii) do not activate (iii) file as
a chunk of new information in the current active file. If
important, then – determine the source of definiteness
among the three disjunctive options: (i) situational
('deictic') source (ii) generic (cultural) permanent me-
mory (iii) textual ('discourse') episodic memory, – search
for co-referent in the appropriate mental space;if found,
then (i) retrieve ; (ii) re-activate; (iii) start filing
incoming information in re-activated file." (Givon 1990:
924-925).

The author admits that this is a hypothesis, and that the
terms used are necessarily metaphoric: "Given our present know-
ledge of higher mental operations, the use of metaphors to refer
to mental entities is unavoidable" (ibid.: 895). He also states
(ibid.: 947) that

"there are three major criteria that can be used to dis-
tinguish the marked from the unmarked category in a bina-
ry contrast: a) structural complexity...b) frequency dis-
tribution...c) cognitive complexity: the marked category:
the marked category tends to be cognitively more complex
– in terms of attention,mental effort or processing time –
than the unmarked one."

Still, reasonable though they may appear, these criteria remain
hypothetical. There is, perhaps, more solidity in the general
principles referring to sequential order, since "the psycho-
linguistic literature suggests that the string-initial element
commands more attention and is memorized better." (ibid.: 973).
But in general, this cognitive interpretation "is formulated in
terms of the speech-receiver's ('decoder's', 'hearer's') perspec-
tive", and the very complex and just as important "mental proces-
ses that take place in the mind of the speech-initiator ('coder',
'speaker')" are simply presumed to be "at least in part isomor-
phic" (ibid.: 895).

But above all, we do not have any material, i.e., neurologi-
cal, trace, testifying to the substantial reality of the cogniti-
ve processes posited here, whatever the suggestive character of
mental processing instructions. Consequently, we may wonder whe-
ther it would not be useful to explore other paths, related to
the social aspect of language.

3.   ON THE ROLE OF SOCIAL FACTORS IN THE MAKING OF LINGUISTIC
      FORMS
      Everybody agrees that there are important social factors in
language. But recalling that they also deserve to be taken into
account is often nothing else, in fact, than simply paying them
lip service. In order to proceed further, I will first examine
the genesis of linguistic constraints   (3.1.), and then study
some aspects of the voluntary human intervention in language
(3.2.).
3.1. About the genesis of linguistic constraints
      I will limit myself here to the general level of logical

constraints on the one hand, and to the specific domain of phone-
tic constraints on the other hand. As far as the former is con-
cerned, it is not self-evident that the form of logic which
has been called natural, as opposed to the classical logic of
professional logicians and philosophers, is innate. Infants do
not appear wholly equipped with natural logic, even if we can re-
cognize that certain predispositions are inborn. Natural logic
might well be rooted in social factors, as seems to be suggested
by the important differences between classifying procedures from
one language with classifiers to another (see Craig: 1986).

    With regard to phonetic constraints, it has been shown
(Boysson-Bardies and May Vihman 1990: 316) that "infants do not
systematically choose their target words from among the simplest
phonetic forms. For example, 18% of target words in Swedish begin
with a cluster, 32% of target words in English end with a closed
syllable,liquids represent 19% of target words in French, and po-
lysyllabic words represent 66% of target words in Japanese."(target
words are words which exist in each of the four languages, and
which are uttered by young children after the babbling stage).
The authors add that "the presence, in high-frequency, high-
interest adult words, of phonetic and phonotactic categories dis-
favored in babbling and early words will affect infant produc-
tion" (ibid.: fn. 3). This is illustrated in their article with
the word shoe, French chaussure,Swedish sko, whose peculiarities,
in each of these languages, are alien to infant speech. Thus, the
flexibility of the human aptitude for language requires a frame-
work relying on both the physiological constraints and the cons-
traints to which humans are submitted in their social existence
as early as the beginning of their life, i.e. the constraints of
adult language, which surrounds them. Consequently, social fac-
tors play a significant role in the genesis of phonetic cons-
traints. But this is also true of other levels, as will appear now.

3.2. Voluntary human intervention in language

    Voluntary human interventions in language are not limited to
the domain in which one can expect to find them, i.e., the lexi-
con (3.2.1.). They are also to be found in the field of sounds
(3.2.2.), and even in syntax (3.2.3.). I will successively recall
here some of the main facts and their interpretation (for more
detail, see Hagège 1992: chap. 1).

3.2.1. Interventions in the lexicon

    Word-coining is an activity which plays a direct role in va-
rious frameworks. I will successively deal with word-coining in
literate societies, in restricted populations, and finally among
individual users.

    In literate societies, neology is often government-supported
and constitutes an important enterprise. There are sets of tech-
nical designations proper to various domains of human activity.
In Hagège 1983: 33, I have called these sets technolects. The va-
rious types of words which belong to technolects, i.e.,loanwords,
calques, semantic extensions, descriptive compounds, truncated
units, acronyms, etc., are used with especially remarkable cons-
cious creativity in languages which their users have long cheri-
shed, like Hungarian. The same can be said of a language that has

been revived long after it had fallen into disuse, i.e., Israeli Hebrew, a spectacular case.

In restricted populations, we can easily observe interesting of the following principle: the history of words reflects the history of human representations of the world. In certain languages, the lexicon is restructured when foreign objects and notions are imported into the culture: some words are then used to designate them, while these words, prior to acculturation, were applied to familiar entities. In Fijian, for example, a bow was _dakai_; when guns were introduced, they were called _dakai ni va̰ lagi_, literally "bow from overseas"; but today "gun" is _dakai_, and "bow" is _dakai ni viti_, literally "gun from Fiji", or _dakai tītī̃_ "gun of mangrove root" (Geraghty 1989: 380-381). Thus, as the native object became less usual, its name became the marked one. Other examples of the same process could be cited (see Hagège 1992, 1.3.1. d.). In all these cases, the unmarked becomes marked. This evolution testifies to the way human communities reorganize their lexicon according to the position they adopt with regard to cultural events.

As far as individual users of language are concerned, it is a widely shared assumption (see, especially, Boas 1911: 67, 70-71) that they do not usually propose reinterpretations or secondary explanations of the processes by which linguistic categories are formed. However, they may exert, particularly in small groups, a conscious, and successful, word-coining activity. Thus, in a Mbum village (North-Cameroon), my elderly informant, who had something to say about my tape-recorder, once invented the Mbum compound word ŋaw-ɓè, literally "calabash-(for) speech" (Hagège 1970: 179). The new term was a success, as proved later by its wide diffusion within the village. This is because this term met three requirements: it conformed to the word-formation rules of the language, it filled a gap in the lexicon because people needed to designate a new and interesting object that was visible and audible to everybody, and finally the new term referred to cultural realities that were as close as possible to the way pe̲ople could describe the new object.

3.2.2. Interventions in the field of sounds

Striking though it may appear, an ongoing diachronic change in a given sound system can be deliberately halted if it does not meet he requirements of social evalation. For example, in Icelandic, as a result of an old historical development, /I/ and /Y/ had merged with /e/ and /ö/ respectively. However, between 1945 and 1984, we note a striking decrease of this merging, as shown by a comparison of two statistical surveys (Håkon Jahr 1989). Between these two dates, an intensive campaign was conducted against the merging, because, having originated among fishermen in in the 19th century, it has a low social value. Not leaving the Scandinavian languages, one may mention the important role played, in Oslo Norwegian, by the urban/rural socio-professional paramemeter and by school-teaching. These two factors have succeeded in eliminating, respectively, a pronunciation that was considered to be too rural, i.e., the alveolar or retroflex realization of a lateral consonant after back vowels, and the Danish-influenced pronunciation of /p/, /t/ and /k/ as lenes (ibid.).

3.2.3. Intervention in syntax

Even in the field of syntax, where most mechanisms are held to lie beyond the metalinguistic awareness of users, who seem to apply the rules in an unconscious way, there are cases of decisions made by speakers with regard to the linguistic evolution. I will limit myself here to a single illustration, probably one of the most impressive ones. Between 1952 and 1964, there was a strong controversy, in Israel, arising from the opposition of D. Ben Gurion, one of the founders and then Prime Minister of the State, to the use of the preposition ?et, which is the normal marker for definite objects in Biblical and Mishnaic Hebrew. The striking fact here is that various arguments were put forward by writers, readers, professional linguists but also laymen, in favor of ?et as a necessary tool in order to distinguish the object from the subject. In the end, the conservative point of view prevailed, and Ben Gurion was forced to give up his project. Other aspects of Israeli Hebrew, given the circumstances of its restoration, are also man-made,rather than resulting from natural evolution.

To sum up the teachings of the facts presented in this section, we may say that on the lexical, phonetic and syntactic levels as well, languages bear explicit traces of voluntary human interventions. What triggers these interventions is the fact that humans are constantly looking for the best way of meeting the need to communicate. Just as it is important to know what mental processes take place in the mind of speakers-listeners, it is also important to study the social factors that bring about these processes. Humans also adopt a definite position with regard to the cultural models they follow. Furthermore, many characteristics show that languages are felt to be places of symbolic investment and vehicles of self-affirmation, reflecting national identity.

4. THE ANTHROPOPHORIC SYSTEM

The social factors whose role in language has just been examined in 3. above are all related to the complex nature of human beings viewed in the perspective of communication by language. Throughout the history of languages, the lexicon and its frozen part, syntax, as well as the phonemic system, are constructed around the speaker-listener,whom we may characterize as psychosocial, thus lumping together the two axes that define the framework of all communication by language. The psycho-social speaker-listener is here interpreted as ego, the personal source of any discourse. This implies an anthropologic conception of linguistics. I will illustrate this conception with the example of deixis, as centered around ego. Chart 1 below represents what I call the anthropophoric system:

Chart 1. The anthropophoric system

| chorophorics chronophorics | exophorics | endophorics | ⎧ - anaphorics
⎜ - cataphorics, including
⎜   diaphorics, i.e.,
⎨   isophorics/anisophorics
⎜ - autophorics
⎩ - logophorics |
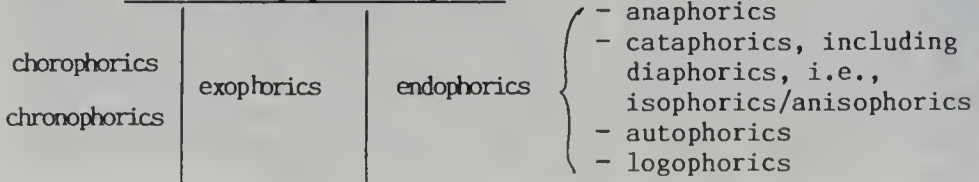
The labels in Chart 1 are meant to meet the need for termi-
nological consistency. he suffix -phorics, etymologically "carry-
ing", means "element that refers to", and the Greek roots in-
dicate the domain to which reference is made: choro- for space,
chrono- for time, exo- for individuals, objects and notions of
the external world, endo- for the linguistic material within the
discourse itself: in the latter case, reference can be made to
the grammatical subject, to a preceding or following word, phrase
or sentence, or to the author of a speech which is either expli-
cit or implicit; the corresponding terms are autophorics, anapho-
rics, cataphorics and logophorics, respectively. The second
and the third term belong to the tradition; exophorics and endo-
phorics are taken from Halliday and Hasan 1976; all the other
terms have been introduced by myself in various works.

Chorophorics, chronophorics and exophorics have been studied
in detail in Hagège 1986: 101-104. Among endophorics, anaphorics
are abundantly studied. I will therefore give some more details
on only the tools for which I have proposed new names, in Hagège
1986 and 1992: a)the special type of cataphorics which I propose to
call diaphorics and to subdivide into isophorics and anisopho-
rics, b) autophorics, and c) logophorics.

The adjunction of the new labels diaphorics, isophorics and
anisophorics is meant to make the chart more comprehensive,by ta-
king in to account the phenomenon hitherto known as switch-
reference: in languages such as those of the Papuan and Yuman fa-
milies, the verb of a clause is linked to that of the following
clause by a suffix indicating whether there is ,between their
respecive subjects, coreference, in which case I call the suffix
isophoric, or non-coreference, in which case I call the suffix
anisophoric. The suffix often adds to this indication, in a sin-
gle fused form, other parameters, such as the simultaneousness or
non-simultaneousness of the two events; it sometimes also indica-
tes what type of semantic relationship (temporal, final, consecu-
tive or other adverbial link) can be established between the two
clauses.

The second type of reference tools whose role deserves to be
stressed here are what I call autophorics. I prefer this label
over the classical one, i.e., reflexives, because these personal
and possessive markers are thus better inserted within the an-
thropophoric system. The label autophorics explicitly says that
they stablish identity of reference (-phorics) with self (auto-),
the latter being the experiencer or syntactic subject of the verb
in the same sentence or in the higher clause. The presence of the
psycho-social ego is quite clear in the languages whose autopho-
rics are in fact NPs of the type " 'head' or 'soul' or 'body' + a
mark of possession: Mbum soâ-à-ké (lit erally head-of-s/he) "him-
or herself", Fula hoore-mum (literally head-his/her) id.; Basque,
Georgian and Moksa Mordvinian also use the word meaning "head" as
a basis to form the autophoric marker; the basis,in Amharic,is
the word meaning "hand", and in Logbara and Shilluk (both Nilo-
tic), as well as in Vietnamese and Malay, it is the word meaning
"body". Through all these formations, we may see how the psycho-
social ego organizes discourse by reference to the central
position occupied by ego, as defined by physical and psychologi-

cal attributes, within the sentence and in the universe, which is linguistically reflected in speech.

The third type of reference tool which deserves mention here is the one for which I introduced the label logophoric in Hagège 1974. The main points made in this work have been taken over in subsequent articles, like Clements 1975 and Voorhoeve 1980, and von Roncador 1988. But other works, such as Kuno 1987 or Koster and Reuland 1991, insert the concept within a framework which has little to do with what I meant by logophoric. I coined this term in relationship with what I then called the egophoric system (and now prefer calling the anthropophoric system becau- se this designation is broader). A logophoric pronoun or adject- ive , in my definition, refers to the author of a discourse (logo-) which is either explicit, the main verb being a "say" verb, or implicit, the main verb having, in this case, one of the meanings "to think", "to want", "to order", etc. Works such as Koster and Reuland 1991, on the other hand, exploit the con- cept of logophoric by acclimatizing it in quite another issue, namely the role of anaphora within the Government and Binding   theory, and the ability this theory has to handle long-distance anaphora and related phenomena. Thus they write (1991: 23):

> "Free anaphors and logophors (like Icelandic sin/sig or English first or second person free anaphors) are completely beyond the descriptive range of a structural binding theory with opacity factors ... The fact that certain logophors need not even be bound in the root cause implies that there are no structural limitations to their domain. Hence no opacity factor should be speci- fied, but ... this gives the wrong result, as not speci- fying an opacity factor gives the minimal, rather than the maximal, value fo the governing category. Therefore, such a binding theory cannot handle logophoricity in its general form at all."

In this conception, logophoricity is one of the arguments brought forward in order to assess the value of a theory, and to examine to what extent it should be preferred over another theory, in terms of the ability to account for allegedly controversial phe- nomena. According to this way of doing linguistics, languages serve to test pre-established theories, i.e., descriptive me- thods, and linguists devote much energy to discussing the respec- tive merits of competing theories. In the conception advocated here, on the other hand, what linguists aim at when studying lan- guages as exhaustively as possible and having recourse to langua- ge typology is to learn something about human beings. What I was interested in when I introduced the term logophoric was to stress the way discourse can be embedded within the speaker's discourse itself: the psycho-socal ego can refer to him/herself not only by first and second person pronouns in present instances of discourse, but also,thanks to the creation of a self-reporting pronoun or adjective, by logophoric in reported instances of discourse.

The central position of ego in the deixis system such as ex- pressed by the tools studied above is also evidenced by the rela- tionship between what I propose to call the itive (from the su-

pine itum of Latin ire "to go") and the ventive (from the supine ventum of venire "to come"). In the course of the history of many languages, the verbs originally meaning "to go" and "to come" have yielded various morphemes such as demonstratives, tense and aspect markers, relators, conjunctives, directionals, etc. The reference to the psycho-social ego as deictic center may be made in any direction: hence the variety of meanings of the itive which, if we start from ego towards a certain direction, may express either the future, as in English, Luiseño, Palauan, Tamil, Arabic dialects, or, even, the past, as in Catalan; symmetrically, with the ventive, we start from somewhere towards ego, so that we will get either a recent past, as in French (ex. il vient de partir "he has just left") and Malagasy, or a close future, as in Luo (Nilotic) and Cherokee (Hagège 1992: 3.2.1.).

Finally, the anthropophoric organization of language is reflected in such phenomena as those which I have proposed to call case anthropology, axiological scales and cultural indexing. I will just recall them briefly (for more detail, see Hagège 1986 and 1992). By case anthropology, I mean the formation of spatio-temporal pre- or postpositions by means of names of body-parts or spatial landmarks: in many languages, the relators (Hagège 1992: 7.2.1.) meaning "in", "on", "under", "in front of" and "behind", to take just those, are unaltered or variously reduced forms of nouns which are either obsolete or still in use, as the case may be ; these nouns mean "belly", "head", "foot", "face" and "back" respectively. The notion of axiological scales refers to the relative values assigned to animate and inanimate beings within a given culture. In languages such as Kawi (old Javanese) and Dyirbal (Queensland: Australia), specific morphemes indicate what grade each being occupies on the scale. By cultural indexing, I mean the special linguistic treatment of objects, places or activities which play an important role in a given culture. For example, in many African languages, the ecological and/or professional relevance of certain places is enough for these places to imply by themselves their space-like nature; consequently, the word designating these places does not, when used in a sentence, require a spatial relator: it suffices, in this case, to say something meaning literally, for example, "he'll go bush". Another illustration of cultural indexing may be found in the system of personal pronouns. In Port-Sandwich, for example (Charpentier 1979: 49-51), there is a distinction between inclusive and exclusive in the dual, trial and plural, not only in the first person, but even in the second and third persons: special forms indicate whether the group of people to whom (second person trial or plural) or about whom (third person trial and plural) one is talking does or not include the addressee proper. Thus, the social circumstances of communication have a direct influence on linguistic morphogenesis.

5. CONCLUSION

In this paper, I have tried to show that human beings, when building language systems through time, adapt linguistic forms to their communicative needs, as defined by the social environment of communication. The mental operations they accomplish during

this process are thus tightly related to the structures of, and relationships within, human societies. This is the reason why the model proposed here is called socio-operative.

Contrary to a widespread opinion, language-making is not always totally unconscious. This appears clearly in § 3. In addition, human presence is manifest at all levels of consciousness: full (3.2.2., 3.2.3.), partial (3.2.1.) or zero (4.). For that reason, we may conclude that the study of the social dimension of cognition, such as revealed by a socio-operative conception of linguistics, has something useful to bring to the study of language.

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THE SEARCH FOR FACTS

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1.INTRODUCTION

The central concern of linguistic inquiry is knowledge of language:
1) What constitutes knowledge of language?
A person who has learned a language has acquired a system of rules that relate sound and meaning in a certain specific way. S/he has acquired a certain competence that s/he puts to use in producing and understanding speech. The central task of descriptive linguistics is to construct grammars of specific languages, each of which seeks to characterize in a precise way the competence that has been acquired by a speaker of this language. The generative grammar of a particular language, that is the explicit grammar of this language, is a theory that is concerned with the form and meaning of expressions of this language (see Chomky 1986: chapter 1).
The linguist's task then is to uncover the expressions of the language under investigation and to provide an explicit account for these expressions. The problem in this respect is how to uncover the expressions of a given language. This is a standard problem in linguistic inquiry. It may be useful for us to consider this question one more time. There is a certain view which assumes that the expressions of a given language are there to be collected. The gathering of the data in this respect is an endeavor that precedes the analysis: first you uncover the relevant facts and then you analyze them. This view is to be contrasted with another that assumes that the uncovering of the data is theory driven: it is the theoretical or analytical apparatus that explicitely or implicitly guides linguists in their search for the data. My purpose in this presentation is to compare the two approaches and to see how far each one of them will take us. Since ultimately the question we

are probing has an empirical impact, I will contrast
the two approaches by investigating a phenomenon that
has been subject to extensive discussions in
traditional as well current linguistic discussions:
the phenomenon of agreement.

2.AGREEMENT

Specifically, I will investigate the phenomenon
of Agreement in Lebanese Arabic (LA), and then
contrast the working of agreement in LA and Standard
Arabic (SA). My discussion is based on an ongoing
collaborative work with El-Abbas Benmamoun and
Dominique Sportiche.

2.1.Standard Agreement Facts in LA

In LA, the verb agrees with the subject in person,
gender and number under both the SV and the VS order:

```
2-a) l-baneet      neemo
     the-girls     slept(3pl)
     "the girls    studied"
  b) neemo lbaneet
```

2.2.Agreement and conjuction

The situation becomes more interesting when
conjoined subjects are considered. Under the order SV,
the verb fully agrees with the whole conjoined subject
(3a). Under the order VS, however, the verb has the
option of agreing in number with the whole conjoined
phrase (3b) or with the first member of the conjoined
phrase (3c):

```
3-a) kariim w   marwaan neemo
     Kariim and Marwaan slept(3pl)

  b) neemo  kariim w marwaan
  c) neem        kariim w marwaan
     slept(3m.sg)
     "Kariim and Marwaan slept"
```

These are the facts that a basic description of
the subject/verb agreement phenomenon in LA will
uncover. These facts can be retrieved from the
investigation of a set of sentences uttered by
speakers of LA. Other facts concerning agreement such
as the so-called 'resolution rules' could also be
retrieved from this corpus. This, roughly, is the
extent of a description based on a corpus.

2.3.Beyond the corpus

The description based on the corpus of sentences
is far from being sufficient to characterize the
knowledge native speakers of LA have of the subject-
verb agreement phenomenon in their language. It is
descriptively inadequate. The inadequacy of this

description may be brought to light when one wonders why LA displays a discrepancy with respect to agreement between the order subject-verb and the order verb-subject.

At least two possible analyses may be put forward, the first would stipulate that in LA, the verb agrees with the subject as a whole or the first noun phrase contained within a subject that follows the verb. Linearity plays a role in the order VS: the verb has the option of agreing with the first NP contained within the subject. In the order SV, agreement is with the full conjoined subject and in the order VS , agreement can be with the conjoined subject or the first member of the conjoined subject. This analysis essentially is a restatement of the facts that we presented so far. It amounts to negating the value of an explanation for the agreement facts discussed so far: the agreement facts are what they are and there is nothing more to say about them.

The second analysis would run as follows: contrary to appearances, there is no discrepancy with respect to agreement between the order subject-verb and verb-subject in LA. Agreement in both orders works in the same way: it always involves the whole subject and the verb. In the order SV, agreement involves the whole conjoined noun-phrases because these conjoined NPs function as suject. In the order VS, agreement may involve the whole conjoined phrases or only the first member of the conjoined phrases because either the whole conjoined phrases (see 4b) or the first member (see 4c) may be characterized as the subject of the verb with which it enters into an agreement relation. In other words, the sequence V NP and NP, contrary to the sequence NP and NP V, is structurally ambiguous:

4-a) [$_{subject}$ NP_1 and NP_2] V

  b) V [$_{subject}$ NP_1 and NP_2]

  c) V_1 [$_{subject}$ NP_1] and NP_2

The second analysis a priory looks less straightforward and is more abstract. Its implementation raises numerous delicate questions such as the status of the second member of the conjunction (NP_2 in 4c) which will be discussed shortly. Before doing this, notice that the payoff is far greater with the second analysis: it provides us with an understanding of the seeming discrepancy between the working of agreement under both orders. The advantages of the first analysis are practically non-existent since it essentially is restatement of the facts. Obviously, the burden is on the proponent of the second analysis to provide evidence for it.

2.4. A Theory Driven Search

What kind of evidence is it possible to find for the second analysis? The second analysis states that in the order V conjoined NPs, the verb agrees with the element that qualifies as subject: either the whole conjoined noun phrases as in (4b) or the first NP as in (4c). In case it agrees with the conjoined phrases, plural agreement obtains in (3b). In case it agrees with the first NP singular agreement obtains in (3c). The first analysis, on the other hand, states that the subject is always the conjoined noun phrases and that the verb has the option of agreing with this element or with the first member of the conjoined NPs. In other words, the subject, in the first analysis, is always a plural conjoined NP even when there is singular agreement. The second analysis, on the other hand, states that when agreement is plural, the subject is plural and when it is singular, the subject is singular.

One way of distinguishing between the two analyses, then, is to look for processes that involve plural or non singular subjects. The first analysis leads us to expect these processes not be sensitive to the type of agreement (singular or plural) in the order VS·since the subject is always plural. The second analysis leads us to expect these processes to only be available when there is plural agreement since this is the only case which involves a plural subject.

The word <u>sawa</u> ('together') qualifies a non-singular noun phrase. It can occur in a sentence involving pre-verbal or post-verbal non-singular agreement as in (5a-b) but not in a sentence involving singular agreement (as illustrated in 5c):

5-a) kariim w marwaan raaHo sawa
"K.and M.left(3pl) together"
b) raaHo kariim w marwaan sawa
"K.and M.left(3pl) together"
c) *raah kariim w marwaan sawa
"K.and M.left(3sg) together"

The word <u>tnayneetun</u> ('both') qualifies a dual noun phrase. It too cannot occur in a sentence involving singular agreement. LA, contrary to standard Arabic, does not have a special morphological form for dual agreement:

6-a) k. w m. raaHo tnayneetun
"K.and M. both left(3pl)"
b) raaHo k. w m. tnayneetun
"K.and M.both left(3pl)"
c) *raah k. w m. tnayneetun
"K.and M. both left(3sg)"

The phrase <u>kull</u> <u>waaHad</u> ('each') distributes over a non-singular subject. Once again, it cannot occur in a sentence involving singular agreement:

7-a) k. w m. ?akalo   tiffeeHa kill waahad
             ate(3pl) apple

  b) ?akalo k. w m.   tiffeeHa kill waahad
     ate(3pl)   apple
  c) ?akal   k. w m.   tiffeeHa kill waahad
     ate(3sg)   apple

Consider, now, the behavior of the verb <u>lta?a</u> ('to meet'). In LA, this verb can be used with a preposition <u>bi</u> ('with') or intransitively. In the first use, this verb can have a singular subject as illustrated in (8a). In the intransitive use, it requires a non-singular subject as illustrated by the contrast between sentences (8b) and (8c). The behavior of this verb is not unlike the behavior of its counterpart in English:

8-a)   k. lta?a bi m.
       "K. met(3sg) with M"
  b)   k. w m. lta?o
       "K. and M. met(3pl)"
  c) *k. lta?a
       "K. met"

In its intransitive use, the verb 'meet' cannot occur with a post-verbal subject and have a singular agreement. The plural agreement is required as illustrated in sentences (9a-b):

9-a) lta?o k. w m.
       "k. w m. met(3pl)"
  b) *lta?a k. w m.
       "k. w m. met(3sg)"

The facts discussed so far clearly point to the same direction: in the order verb-conjoined noun phrases, the conjoined noun phrases are not treated as plural when there is singular agreement. This result can be accounted for if one adopts the second analysis that assumes that when there is a singular agreement in the order verb-conjoined noun phrases, the subject is not the whole conjoined noun phrases but only the first NP of the conjoined phrases. On the other hand, in case one adopts the first analysis which assumes that the conjoined noun phrases are always treated as subject even when there is singular agreement, the facts concerning 'together', 'both', 'each', and the verb 'meet', receive no account. To the extent that these facts can be understood in light of the second, but not the first analysis, they

provide support for the second analysis.

The adoption of the second analysis raises several questions that need to be answered. If in the sequence V NP and NP, the first NP may be characterized as subject, then what is the status of the second NP? Clearly, this second NP does not form a constituent with the first NP. This second NP may be analyzed as the subject of a non-phoneticaly realized verb identical to the first one. In other words, we are suggesting that the sentence (3c), which is repeated below, has the representation in (10):

3-c) neem   kariim w marwaan
     slept(3m.sg)
     "Kariim and Marwaan slept"

10-neem k. w neem m.
   "K. slept and M. slept"

The option of not phonetically realizing the verb when it is identical to a preceding one is productive in the language under consideration and can be found in other contexts:

11-?akal K. tiffeeHa mbeeriH w M. bird?aane lyom
   "K.ate an apple yesterday and M.an orange today"

We are assuming that in a sentence in which the verb agrees with the first member of the post-verbal conjoined noun phrases, these noun phrases are not in fact conjoined. Rather, the sentence is to be analyzed as a conjunction of two propositions as illustrated in (3c-10). if, now, we can find grammatical processes that force the two noun phrases to form a single constituent, then we expect the option of agreing with the first NP not to be available for the verb which precedes the conjoined noun phrases . This expectation is fulfilled as evidenced by relativization and by the behavior of pronominal reflexives and reciprocals.

Starting with relatives, in the following sentence, the relative clause has to restrict the two noun phrases because of the selectional properties of the verb 'meet' which, as we saw earlier requires a plural subject: in other words, in sentence (12), the two noun phrases must form a single constituent:

12-raaHo(3pl) lwalad w lm9allim yalli lta?o
   9almadrase
   "the boy and the teacher who met went to school"

This being the case, the verb that precedes the subject no longer has the option of agreing with the first NP of the conjoined phrases as illustrated by the contrast between sentence (12) and the ungrammatical sentence (13). Thanks to Barry Schein

for pointing out the relevance of this fact:

13-*raaH(3sg) lwalad w lm9allim yalli lta?o
    9almadrase
    "the boy and the teacher who met went to the
    school"

    Let us,now, turn to pronominal reflexives (Haalun
'themselves') and to reciprocals (ba9dun 'each
other'). These elements, like their English
counterpart, require a plural antecedent (see
Chomsky 1981). The antecedent is the preverbal
subject in sentences (14a-b):

14-a) k. w m. biHibbo Haalun
      "k. and M. love(3pl) themselves"
   b) k. w m. biHibbo ba9dun
      "k. and M. love(3pl) each other"

    The postverbal conjoined subject can serve as
antecedent for the pronominal reflexive Haalun
('themselves') or for the reciprocal ba9dun ('each
other') only when the verb fully agrees with the whole
post verbal subject. The post verbal conjoined subject
cannot serve as antecedent for the reflexive and the
reciprocal when the verb agrees with the first member
of the conjoined phrases. This is illustrated by the
contrast between the grammatical sentences (15a-b) and
the ungrammatical ones (16a-b):

15-a)biHibbo k. w m. Haalun
      "k. and M. love(3pl) themselves"
   b)biHibbo k. w m. ba9dun
      "k. and M. love(3pl) each other"

16-a)*biHibb k. w m. Haalun
      "k. and M. love(3sg) themselves"
   b)*biHibb k. w m. ba9dun
      "k. and M. love(3sg) each other"

    At this point, it may be useful to recapitulate
what we said so far. Our starting point was the
discussion of subject-verb agreement in LA   which
varies with respect to the relative order of the
subject and the verb. To understand the behavior of
agreement in this language, we contrasted two possible
accounts: the first incorporates the relevance of
linearity in the working of VS agreement, the second
assumes that in both SV and VS orders, the verb always
agrees with the subject. To distinguish between the
two analyses, we were led to uncover facts which were
not heretofore recognized. The uncovering of these new
facts was theory driven. The theoretical or analytical
apparatus, ultimately, provided us not only with an
account for the problem under consideration but also

served as a guide in the search for data relevant to solving the problem.

2.5.A comparative sketch

In the previous sections, we investigated with some detail the working of subject-verb agreement in LA. Assuming that an explicit analysis of agreement in LA can be build along the lines presented so far, our next task will be to shift from a paradigmatic study of subject-verb agreement in a given language to a comparative study of this phenomenon across various languages: (1). It is natural to start with the investigation of languages closely related to LA. Apart from minor differences which will not be discussed in this presentation, the working of subject-verb agreement in Moroccan Arabic (MA) is essentially similar to that of LA. The situation is different in Standard Arabic (SA),however.

In SA, the verb agrees with the subject in person, gender and number under the order SV (17a). However, number agreement is missing under the order VS (17b). In this respect, SA differs from LA. In the latter language, number agreement may not be missing under the order VS (see sentences 2a-b repeated below):

```
17-a) l-banaat-u      darasna
      the-girls-nom. studied(3f.pl)
      "the girls studied"
   b) darasati      l-banaat-u
      studied(3f)
      "the girls studied"

2-a)  l-baneet      neemo
      the-girls     slept(3pl)
      "the girls studied"
   b) neemo lbaneet
```

Several questions are raised by this contrast. We obviously will not be able to explore all of them in this presentation. I nevertheless would like to consider some and attempt to sketch the beginning of an answer. The first question concerns the contrast between LA or MA and SA: why is it the case that under the order VS, the person and gender features are preserved but not the number feature?

There are some facts in other languages which indicate that the possibility of omitting number agreement, but not gender agreement, is not restricted to SA. In French, for instance, a preposed adjectival predicate must preserve its gender agreement while number agreement may be preserved or not:

```
18-a) monumentaux,ils le sont
   b) monumental, ils le sont
```

19-a) grosses, elles le sont
    b) *gros, elles le sont

The fact that gender, but not number, must be preserved in both French and SA suggests that gender is an inherent feature of the verb in SA or the predicative adjective in French. That is, gender is part of the morphological make up of the verb. Once the value of the gender feature is specified in a clause, it has to be preserved in the course of the derivation. The same remarks would extend to person agreement in SA which is preserved, but not to number agreement which does not have to be preserved throughout the derivation. In other words, we are suggesting that in the order VS in SA, the number agreement, though present, is not phonetically realized.
    In brief, in the order VS, number agreement may be phonetically missing in SA but not in LA. Let us now reconsider the sequence V NP and NP, we saw that the verb in LA may agree with the whole conjoined NPs or with the first NP only. We also argued that when the verb agrees with the first NP only, the two NPs do not form a constituent. As such, a verb like 'meet' which requires a plural subject cannot appear with singular agreement. The relevant sentences in LA are repeated below:

9-a) lta?o k. w m.
     "k. w m. met(3pl)"
  b) *lta?a k. w m.
     "k. w m. met(3sg)"

Consider the same sequence V NP and NP in SA. The verb will never surface with number agreement in this language. We suggested that the number agreement, though present, is phonetically missing. As such, to the two sentences (3b-c) in LA will correspond a unique sentence (20) in SA:

3-b) neemo   k. w m.
     slept(3pl)
  c) neem   k. w m.
     slept(3m.sg)
     "Kariim and Marwaan slept"

20-naama   k. wa m.
    slept(3m.sg)
    "Kariim and Marwaan slept"

This being the case, we expect the verb 'meet' to be able to surface with no number agreeeement in SA even though this is not possible in LA. This expectation is fulfilled as evidenced by the grammaticality of (21). The plural agreement on the

verb 'meet', though phonetically not realized, is
present. Sentence (21), corresponds to the grammatical
sentence (9a) in LA:

21-?iltaqa   k. wa m. ?amsi
   met(3m.sg)
   "Kariim and Marwaan met yesterday"

    More generally, we expect the counterpart of the
ungrammatical sentences discussed so far in LA to be
grammatical in SA. This is the case. For instance,
the post verbal subject can serve as antecedent for
the pronominal reflexive and the reciprocal in SA even
though plural agreement on the verb is not realized.
Sentences (22) minimally contrast with the LA
sentences (16):

16-a)*biHibb k. w m. Haalun
     "k. and M. love(3sg) themselves"
   b)*biHibb k. w m. ba9dun
     "k. and M. love(3sg) each other"

22-a)yuHibbu k. wa m. nafsayhimaa
     love(3sg)
     "Kariim and Marwaan love themselves"
   b)yuHibbu k. wa m. ba9dahumaa
     love(3sg)
     "kariim and Marwaan love each other"

    Similarly, the post-verbal conjoined subject in SA
can be modified by a restrictive relative clause even
though plural agreement is missing. Once again,
sentence (23) is to be contrasted with the
ungrammatical LA sentence (13):

23-dhahaba   lwaladu   wa lmu9allimu
   went(3m.sg) the boy-nom. and the teacher-nom.

   lladhaani ltaqayaa   ?ila lmadrasati
   who   met(3m.duel) to   the school-gen.
   "the boy and the teacher who met went to school"

13-*raaH(3sg) lwalad w lm9allim yalli lta?o
   9almadrase
   "the boy and the teacher who met went to school"

    Finally, consider the following two sentences of
LA and SA respectively. In both these sentences,
plural agreement is missing:

24-a)raaH   k. w. m.
     left(3m.sg)
   b)dhahaba   k. wa m.
     left(3m.sg)
     "Kariim and Marwaan left"

Despite this superficial similarity, we are claiming that plural agreement never takes place in LA in a sentence like (24a). On the other hand, we are claiming that in SA plural agreement takes place but is simply not phonetically realized in (24b). This straightforwardly accounts for the following contrast between the ungrammatical sentence (25a) in LA and its grammatical counterpart (25b) in SA:

```
25-a)*raah          lwleed w lm9allim
      left(3m.sg)   the boys and the teacher
      "the boys and the teacher left"
   b)dhahaba         l?awlaadu        wa     lmu9allimuuna
      left(3m.sg)   the boys(nom.) and   the teacher(nom.)
      "the boys and the teachers left"
```

The ungrammaticality of (25a) is not surprising: the verb in LA has the option of agreeing with the first NP 'the boys', which is plural, or the whole conjoined phrases. Sentence (25a) is ungrammatical because plural agreement didn't take place. This sentence becomes grammatical with plural agreement as illustrated in (26). In the SA sentence (25b), on the other hand, plural agreement takes place but does not surface in the order VS. This is why this sentence is grammatical:

```
26)raaho          lwleed w lm9allim
   left(3pl)      the boys and the teacher
   "the boys and the teacher left"
```

Recapitulating, we started by discussing subject-verb agreement in LA. Agreement in this language varies with respect to the relative order of the subject and the verb. Once the major features of subject-verb agreement in LA sketched, we turned to the study of agreement in SA. The results reached in the relatively detailed study of agreement in LA provides us with a background to launch the study of agreement in SA and to contrast the working of agreement in these two languages. In SA, too, agreement is sensitive to the relative order of the subject and the verb. This, essentially, is the extent of the similarities between the two languages. There are substantial differences concerning the working of agreement between LA and SA. We suggested that these differences can be traced to a unique difference: in LA plural agreement is never phonetically missing, in SA plural agreement is not phonetically realized in the order VS in SA:(2).

3.CONCLUSION

The purpose of our presentation was to contrast two approaches to data gathering: the first assumes

that data gathering is a process independent from the analytical process and precedes it. The second assumes that data gathering is theoretically driven. We hope to have illustrated, through the discussion of subject-verb agreement in LA and SA, the limits of the first approach. The theoretical or analytical apparatus provided us not only with an account for the problem under consideration but also served as a guide in the search for data relevant to solving this problem. It is this theoretical apparatus that ultimately constitutes a genuine discovery procedure.

NOTE
(1) An illuminating discussion of agreement and conjunction in Modern Irish can be found in (McCloskey 1986)

(2) We didn't say why plural agreement can be missing in the order verb subject, in SA. An account is offered in (Aoun, Benmamoun, Sportiche 1992).

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TABLES RONDES / PANEL DISCUSSIONS

TITRE : PHONOLOGIE DÉCLARATIVE
TITLE : DECLARATIVE PHONOLOGY

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DECLARATIVE PHONOLOGY

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1 INTRODUCTION

Declarative phonology is a program of research that was motivated in part by the need for theories of phonology that can be implemented on a computer. While it is clear that such a development would be beneficial for both theoretical and field phonology, it is not immediately obvious how one should go about implementing phonological models. The so-called 'declarative' approach draws on a key insight from theoretical computer science, where there has been a long tradition of distinguishing between the *declaration* of a problem and a *procedure* which computes the solution to that problem. Paradoxically, the kind of problem specifications that are frequently the most useful for computational implementation are those which make the fewest procedural commitments.

The declarative phonology programme is, at its heart, an attempt to do away with the ordered derivations and the concomitant feature-changing rules of traditional generative phonology. In this respect, declarative phonology ties in with some recent developments in theoretical phonology where feature-changing rules have been criticized or explicitly avoided (Rice, 1989; McCarthy, 1991). However, it is also possible to find precedents in the literature on American Structuralist phonemic phonology (Hockett, 1954), Firthian Prosodic Phonology, Natural Generative Phonology (Hooper, 1976; Hudson, 1980) and Montague Phonology (Wheeler, 1981; Bach, 1983). More recently, 'harmonic' approaches to phonology arising from work in connectionism (Smolensky, 1986) have also questioned the procedural paradigm but from a perspective which does not clearly differentiate the declaration of grammar from the means of its implementation (Goldsmith, ta; Prince & Smolensky, 1992). Despite this difference, the declarative and connectionist approaches are alike as regards their incorporation of various kinds of constraint satisfaction.

With increasing interest in the interaction between phonology and syntax being expressed in the literature, declarative phonology has something to contribute here too. Constraint-based grammar frameworks such as HPSG (Pollard & Sag, 1987) (manifesting good linguistic coverage and attractive computational properties) have the same metatheoretical commitments as declarative phonology. The prospect for having a computational theory of phonology that is fully integrated with a computational theory of syntax and semantics is now imminent.

A final area of concern is the phonology-phonetics interface. In the declarative framework it makes sense to view the relationship between phonology and phonetics as being one of *denotation*. Under this view, phonological representations are *descriptions* of phonetic

reality and a particular phonological construct is said to *denote* a phonetic event (Bird & Klein, 1990; Pierrehumbert, 1990; Scobbie, 1991a; Coleman, 1992).

This article consists of four sections, where each section has been contributed by a different author. The first three sections present reanalyses of phenomena that have previously been thought to require the ability to destructively modify phonological structures. In §2, James Scobbie discusses syllabification in Tashlhiyt Berber and presents a declarative analysis couched in a feature-structure based framework. In §3, Steven Bird investigates vowel harmony in Montañes Spanish and consonant harmony in Chumash and proposes a non-feature-changing account using a finite-state model. In §4, John Coleman presents a brief overview of his reconstruction of Lexical Phonology in a declarative framework. The final section contains a commentary by Janet Pierrehumbert, discussing the achievements and prospects of declarative phonology in relation to generative phonology, Lexical Phonology and laboratory phonology.

2   CONSTRAINT CONFLICT (James M. Scobbie)

2.1   The Phonotactic: General Tendency or Hard Constraint?

It is well-known that rewrite rules fail to capture some generalisations about the level of representation they derive (Kisseberth, 1970; Shibatani, 1973). Defining the well-formed structures of that level using phonotactics enables those patterns to be addressed. Moreover, insofar as the patterns that exist in a language trigger its alternations, the alternations are explained.

If well-formedness constraints are used, it is necessary to decide whether or not to use rewrite rules also. When a grammar employs both formal techniques, their interaction is necessarily an area of concern (Scobbie, 1991b). Some work (e.g. (Singh, 1987; Paradis, 1988)) replaces structural descriptions with phonotactics and structural changes with *repair-strategies*. Whenever a structure known to be ill-formed at the surface level of representation can be generated during the derivation, it is indeed generated, only to be destructively modified. Therefore one can state general *tendencies* of distribution directly in the grammar and 'repair' those forms generated by the tendency which happen to be in conflict with empirical considerations. Though in these theories phonological representations are intended to be models of aspects of competence, the derivation and the intermediate forms are uninterpreted aspects of the theory. Such hidden elements imbue the theory with greater abstractness, and they decrease the modularity of the theory with respect to the procedures that can be employed to implement it.

Another line of research is to use only constraints acting in consort to describe a level of representation. If the constraints are broad-stroke general tendencies (such as a syllable's disdain for a coda or love of an onset) they will of course sometimes clash in their demands. Some means must be found of resolving such inconsistencies.

We can avoid an inconsistent grammar by using formal statements of distribution which fail to clash by virtue of their precision, and by using familiar conventions such as the Elsewhere Condition. Formalising the universal tendencies with an appropriate amount of detail dispels constraint conflict. The interaction of these *hard constraints* is therefore declarative and compositional. This is the approach advocated here.

Other approaches adopt optimisation techniques which provide a metric capable of determining the best-formed structures possible in the contradictory circumstances. The optimal solution the one in which the fewest *important* constraints are violated. Tendencies

are in fact *soft constraints* in these theories and are carefully prioritised in a derivational architecture familiar from connectionism.

In the next section I examine data which has been argued to be ideally suited to optimisation. I will show that once the tendencies are formalised, they include enough detail to allow them to be implemented as hard constraints in a derivationally neutral, declarative way.

2.2 Tashlhiyt Berber syllabification

The nature of syllabification usually allows phonotactics to easily discriminate between well-formed and ill-formed syllables. The syllable structure of Berber (Tashlhiyt dialect), however, provides a challenge for standard approaches to syllabification because any segment in the language can be syllabic (Dell & El-Medlaoui, 1985). Consequently the number of absolute constraints on a syllable's form are small, as evidenced by such forms as /tf.tk̩t/ 'you suffered a sprain'. The syllabifications found are predictable, however:

3-MASC-SNG	3-FEM-SNG	
/i̩ldi̩/	/tl̩di̩/	pull
/i̩ɣza̩/	/tɣza̩/	dig

2-SNG-PERF	3-FEM-SNG-PERF	
/tsk̩r̩t/	/tsk̩ras	do
/tm̩šft/	/tm̩šfas/	graze (of skin)
/txz̩n̩t/	/txz̩nas	store

If any consonant can be syllabic, what constraints can we impose on possible syllable structure? Are these constraints parametric variants of general tendencies? Do they require optimisation to resolve conflicts?

To handle Berber, Dell and El-Medlaoui suggest a syllabification algorithm which is unlike that needed for other languages. It sweeps for segments of a given sonority from left to right, and builds core CV syllables on them, with the targeted segment being the nucleus. The first sweep is for the most sonorous group, /a/. Further sweeps target decreasingly sonorous classes:

a, High-Vocoid, liquid, nasal, voiced fricative, v-less fric., voiced stop, v-less stop.

Any unsyllabified segment left over is a coda. Thus

$$/tzdmt/ \rightarrow /tz(dm̩)t/ \rightarrow /(tz̩)(dm̩)t/ \rightarrow /(tz̩)(dm̩t)/$$

Prince & Smolensky (1992:hereafter P&S) propose an analysis intended to be more in keeping with universal syllabification. They incorporate such universal tendencies as 'syllables must have onsets', 'nuclei must be maximally sonorous' and 'each segment must be syllabified'. Of course, statements of such generality conflict: in /i̩ldi̩/ the initial syllable has no onset; in /tsk̩r̩t/ the nucleus /s/ is far from sonorous.

To resolve the constraint conflict, P&S offer a theory of optimisation in which constraints are ranked for value. Given C_1 and C_2 where C_1 is higher valued than C_2, if these constraints clash, it is C_1 which must be obeyed. Surface forms which violate some constraints (the less important ones) are permitted. Constraints are defeasible, conflicting and ranked in that it is their place in the prioritisation hierarchy which determines whether they are likely to be over-ridden. (This is somewhat like the rules applying early in a procedural derivation that produce forms which are input to feature-changing rules.)

One of the problems with such an analysis is that different formalisations of tendencies as general as 'nuclei must be maximally sonorous' are possible, and the very formulation will affect the ranking of the constraints. P&S give for Berber:

$$\begin{array}{c} \text{Nuc} \\ | \\ /a/ \end{array} > PARSE > ONS > FILL > H.nuc > \neg CODA$$

These mean (in order or decreasing priority): /a/ must be a nucleus, all underliers must be syllabified, syllables have onsets, syllable roles must be filled, nuclei must be maximally sonorous, syllables have no codas.

The analysis works roughly as follows. Given /txznt/, if the most sonorous segments /n/ and /z/ were to be nuclei, the syllable with /n/ as nucleus would have no onset. This breaks a higher-ranked constraint (ONS) than the constraint about nuclei being maximally sonorous (H.nuc). Contrast this surface form with /tx̩.zn̩t/. Syllabic /x/ violates H.nuc but the string conforms to ONS. The latter is optimal, so is chosen as the surface form.

Optimality is required because P&S have reified tendencies as constraints on derivations. But if we express the language-specific variation in these tendencies by adding explicit information to the tendencies, we can avoid prioritising them (a language-particular process itself). Of course, it is incumbent on any theory to make its rules formal and to incorporate the idiosyncracies around the edges of the general patterns, so if the rules proposed here look complex compared to those of P&S, note that first, they express a more detailed level of analysis and second, they are modifications of highly general rules. The ways in which these constraints interact with each other is hard-wired. Each one is surface-true rather than being dependent on its place in a bank of rules to gain its meaning (with the possible exception of the elsewhere-ordered 6a/6b).

The formalisations of the appropriate rules are as follows. (The papers referenced above give an introduction to the formal mechnisms, but note that co-syllabic structures share the value of their σ attribute, where sharing is indicated by tag: [1].) (1a) says a syllable can be peripheral or non-peripheral and that the peripheral type of syllable is final in its domain. (1b) assigns the normal syllable functions and an extra appendix to peripheral syllables. (1) uses an unfamilar type of constraint, the *sort assignment*, but the point is that these statements encode final extrametricality. (2) demands that each segment be dominated by syllable structure, like PARSE. (3) imposes a sonority minimum, that /a/ be a nucleus. (4) is like H.nuc in that it forces codas to be no more sonorous than onsets. (5) deals with phrase-final phenomena — e.g. nuclear stops must be phrase-internal. (6) expresses ONS and FILL and ¬CODA and H.nuc: the pre-nuclear segment must fill the onset, and in the general case the onset will be less sonorous. The onset can be more sonorous — the specific case (6b) — just in case it follows an open syllable.

1a. *syllable* = *peripheral* ∨ *non-periph. non-periph* $\prec_{prec}$ *peripheral*
1b. *syllable*: ONSET & NUCLEUS & CODA. *peripheral*: APPENDIX
2. $\boxed{1}\, segment[\ ] \rightarrow [\sigma \ldots \boxed{1}]$
3a. $[\text{SEGMENT}\boxed{1}\,[/a/]] \rightarrow \begin{bmatrix} \text{SEGMENT}\boxed{1} \\ \sigma|\text{NUCLEUS}\boxed{1} \end{bmatrix}$
3b. $\{p, \ldots\} \prec_{son} \cdots \prec_{son} \{i, u\} \prec_{son} \{a\}$
4. $\begin{bmatrix} \sigma \begin{bmatrix} \text{NUCLEUS}\boxed{1} \\ \text{CODA}\boxed{2} \end{bmatrix} \end{bmatrix} \rightarrow \boxed{2} \preceq_{son} \boxed{1}$

5a.
$$\left[\begin{array}{l} \text{SEGMENT}\boxed{1}_{obs}\ [\cdots[cont-]] \\ \sigma|\text{NUCLEUS}\boxed{1} \end{array} \right]_i \rightarrow [\phi\boxed{2}]_i\ [\phi\boxed{2}]$$

5b. (Opt)
$$\left[\begin{array}{l} \text{SEGMENT}\boxed{1}_{cons}[\ ] \\ \sigma|\text{NUCLEUS}\boxed{1} \end{array} \right]_i \rightarrow [\phi\boxed{2}]_i\ [\phi\boxed{2}]$$

6a. [ ]
$$\left[\begin{array}{l} \text{SEG}\boxed{1} \\ \sigma|\text{NUC}\boxed{1} \end{array} \right] \rightarrow \left[\begin{array}{l} \text{SEG}\boxed{2} \\ \sigma\boxed{3} \end{array} \right] \left[\begin{array}{l} \text{SEG}\boxed{1} \\ \sigma\boxed{3}\left[\begin{array}{l} \text{NUC}\boxed{1} \\ \text{ONS}\boxed{2} \end{array} \right] \end{array} \right]$$

6b.
$$[\text{SEG}\boxed{1}]\left[\begin{array}{l} \text{SEG}\boxed{2} \\ \sigma|\text{NUC}\boxed{2} \end{array} \right]_i \rightarrow \left[\begin{array}{l} \text{SEG}\boxed{4} \\ \sigma|\text{NUC}\boxed{4} \end{array} \right]\left[\begin{array}{l} \text{SEG}\boxed{1} \\ \sigma\boxed{3} \end{array} \right]\left[\begin{array}{l} \text{SEG}\boxed{2} \\ \sigma\boxed{3}\left[\begin{array}{l} \text{NUC}\boxed{2} \\ \text{ONS}\boxed{1} \end{array} \right] \end{array} \right]_i$$

where $\boxed{2} \prec_{son} \boxed{1}$ where $\boxed{1} \leq_{son} \boxed{4}$

The analysis is couched in terms of Attribute Value Phonology (Scobbie, 1991a). Note that, to be syllabified, the value of the SEGMENT attribute is shared by the value of one of the following paths:

$$[\sigma|\text{ONSET}],\ [\sigma|\text{NUCLEUS}],\ [\sigma|\text{CODA}],\ [\sigma|\text{APPENDIX}]$$

All of these routes linking segments to σ satisfy the demands of prosodic licensing in (2) (see (Scobbie, 1992) for more discussion).

The core of the analysis is found in the constraints of (6). Assuming that every syllable must have nucleus filled with segmental material, there are a number of apparently possible nuclei in a string such as /ildi/ given that all segments may be nuclear. The constraints will rule all such choices as ill-formed, however, bar one. For example, * /iɭ.dɪ̯/ is bad because /l/'s onset, which is more sonorous than /l/, is not preceded by an open syllable (6b). /iɭ.dɪ̯/ is well-formed because it satisifes every constraint. The fact that phrase-initial syllables can be onsetless is encoded in the form of (6a) rather than by introducing a soft constraint placed high in the optimisation hierarchy.

/tɭ.dɪ̯/, which is also well-formed, has the initial syllable (tl̩) rather than (t̩) or (tl̩) because /l/ is more sonorous than /t/. In the context of this word, /l/ cannot be /t/'s coda, and it cannot be the onset to a syllable of its own — (ld) or (ldi) — because first /i/ cannot be a coda to /d/ (4) and second there would be no onset to /i/'s syllable (6b).

/txzmt/ is analysed as follows. Initial /t/ as nucleus passes (6), but demands that either /z/ or /x/ be nuclear. (4) rules out the latter possibility and the former would result in other violations such as * /t.xʐmt/ (bad because /m/ is in the coda of nuclear /z/), * /t.xʐ.mt/ (6), * /t.xʐ.mt/ (5a). Whatever procedure is used, /tx̩.zmt/ emerges as the well-formed syllabification.

2.3 Conclusion

It will be interesting to investigate the relationship between core formalisations of general cross-linguistic tendencies and the variant constraints permitted by individual grammars. This analysis suggests that hard constraints have their interactions 'pre-compiled' and thereby obviate the need for optimisation to compute relative well-formedness.

3 FEATURE-CHANGING HARMONY (Steven Bird)

A key challenge for declarative phonology is to come up with analyses of phenomena that are claimed to involve modifying the values of distinctive features. In this section two 'feature-changing' harmonies are considered, and it is shown how they can be analyzed without changing feature values.

The analysis will be expressed in terms of a computational device known as a *finite-state automaton*. Many phonologists will be familiar with the regular expression notation used for stating syllable canons, e.g. C(C)V(V)(C). This can be written as an automaton as follows:
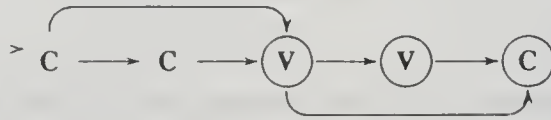
The start state is marked with a '>' sign and the final states are circled. An automaton *accepts* any string that can be generated by proceeding from a start state and following arrows until a final state is reached, where the state reached after n steps must be non-distinct from the n'th element of the string. As it happens any regular expression can be written as an automaton. Two operations on automata are concatenation and intersection. If the automata A_1 and A_2 accept the string sets S_1 and S_2 respectively, then the concatenation of A_1 and A_2 accepts all strings that result from concatenating a member of S_1 with a member of S_2. The *intersection* of A_1 and A_2 accepts the string set $S_1 \cap S_2$. Intersection is the method used to combine multiple interacting constraints on a segment string. More detail about automata for phonology is given by Bird (1992) and Bird & Ellison (1992).

Feature-changing harmony is considered to be an extremely rare phenomenon, the cases of Montañes and Chumash being the only ones I am aware of (Lieber (1987:145) claims to only be aware of the latter). In both cases, the conditioning segment is at the right-hand end of the harmony domain. The analyses of Montañes (McCarthy, 1984) and Chumash (Lieber, 1987) proceed according to the following schema:
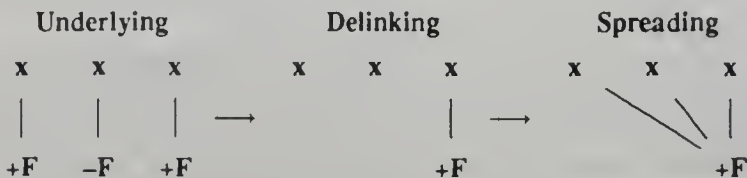
Each harmonizing segment is lexically specified with a value of the harmony feature, and then post-lexically all but one of these specifications is removed. A spreading rule then fills in the values as required. (McCarthy identifies the deletion rule as the harmony rule in this case, although it seems to have little in common with ordinary harmony rules.) Lieber (1987:145) claims that "because feature changing harmony requires a rather powerful sort of Delinking rule, it is surely a highly marked sort of process." It is also possible to complain that an analysis where most lexical associations are deleted is overly circuitous and makes it difficult to identify the separate contributions of morphology and phonology to the harmony. In the following two sections the data and new analyses for Montañes and Chumash harmony are presented.

3.1 Montañes Vowel Harmony

McCarthy (1984) presents data from the Pasiego dialect of Montañés Spanish and observes that the non-low vowels of verb roots must agree in height with the stressed vowel in the suffix. Low vowels are transparent to this process.

sEnt-	sintáis	sentémus	sintí:s
feel	*2pl pr sub*	*1pl pr ind*	*2pl pr ind*
bEb-	bebámus	bebémus	bibí:s
drink	*1pl pr sub*	*1pl pr ind*	*2pl pr ind*

In the first column of data the stressed vowel is a and no harmony occurs; the root vowels are evidently in their 'underlying' forms. In the second and third columns the stressed vowel the root vowels agree with the stressed vowel on their specification of the feature [high]. Therefore, underlying high vowels can be changed to mid and underlying mid vowels can be changed to high, and the harmony requires a feature changing rule (as McCarthy also claims, p.304).

The declarative generalisation about this data is the following: if the stressed vowel of the suffix is low then the harmony value of the root is determined morphologically, otherwise it is determined phonologically (by a harmony constraint). This constraint is expressed as the following automaton (ignoring intervening consonants):
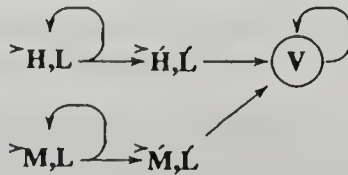
In this automaton, V={a,e,i,o,u}, H={i,u}, M={e,o}, L={a}, Ĥ={í,ú}, M̂={é,ó}, L̂={á}. The automaton states that we can have either a string of high vowels (with low vowels interspersed) ending in a stressed high vowel or a stressed low vowel, or a string of mid vowels (again with low vowels interspersed) ending in a stressed mid vowel or a stressed low vowel. After the stressed vowel there is no constraint on the following material. The three suffix types (áis/ámus, émus, í:s) are specified as follows:

áis/ámus   émus   í:s

$$\begin{bmatrix} \text{PHON} & \text{L̂H} \end{bmatrix} \quad \begin{bmatrix} \text{PHON} & \text{M̂H} \end{bmatrix} \quad \begin{bmatrix} \text{PHON} & \text{ĤH} \end{bmatrix}$$

The roots sEnt and bEb are specified as follows, using the notation for subcategorisation of HPSG (Pollard & Sag, 1987).

sEnt

$$\begin{bmatrix} \text{PHON} & \{H, V\}_x \\ \text{SYN|SUBCAT} & \begin{bmatrix} \text{PHON} & \{L̂V.^*, L̂V^*\}_x \end{bmatrix} \end{bmatrix}$$

bEb

$$\begin{bmatrix} \text{PHON} & \{M, V\}_x \\ \text{SYN|SUBCAT} & \begin{bmatrix} \text{PHON} & \{L̂V^*, L̂V^*\}_x \end{bmatrix} \end{bmatrix}$$

These feature structures introduce a formal device known as 'parallel disjunction'.

When disjunctions $\{m,n\}_x$ and $\{p,q\}_x$ are coindexed in this way it means that m can be chosen iff p is chosen and n can be chosen iff q is chosen. Consider the structure on the left for sEnt. It has a high vowel if its suffix has a low vowel, and it does not specify vowel height if its suffix has a nonlow vowel (a generalisation which does not arise transparently out of the feature-changing analysis). The root bEb is identical except that it has a mid vowel if its suffix has a low vowel. If we combine sEnt with the three suffixes and apply the harmony rule, the following feature structures are produced.

sintáis
$$\begin{bmatrix} \text{PHON} & \text{H\acute{L}H} \end{bmatrix}$$

sentémus
$$\begin{bmatrix} \text{PHON} & \text{M\acute{M}H} \end{bmatrix}$$

sintí:s
$$\begin{bmatrix} \text{PHON} & \text{H\acute{H}H} \end{bmatrix}$$

A potential problem with this analysis is that it makes use of a kind of subcategorisation that is sensitive to phonology, and this is not permitted in the most recent version of HPSG. Since the subcategorisation is dependent upon the immediately following segment (on the vowel plane), it is possible to localise this contextual information in the phonology attribute using a technique described by Bird (1992), thereby obviating the need for phonologically-sensitive subcategorisation. An advantage of this analysis over the feature-changing analysis is that the lexical entries of the verb roots clearly show under what conditions the height value is morphologically determined and under what conditions it is phonologically determined.

3.2   Chumash Sibilant Harmony

Poser (1982) and Lieber (1987) have presented a rather different kind of harmony which both claim to be feature-changing. The data is from the extinct Hokan language Chumash.

ʃapitʃʰolit	/s + api + tʃʰo + it/	I have a stroke of good luck
sapitsʰolus	/s + api + tʃʰo + us/	He has a stroke of good luck
ʃapitʃʰoluʃwaʃ	/s + api + tʃʰo + us + waʃ/	He has had a stroke of good luck

Observe that the rightmost sibilant determines the harmony value of all other sibilants of the word and that the same morpheme can both condition and undergo the harmony. Following Lieber, I shall assume the harmonizing feature is [dist(ributed)]. We cannot simply leave sibilants unspecified for [dist] since this feature actually conditions the harmony. If sibilants are specified for [dist] then feature-changing is necessary. The declarative generalisation is that a sibilant is only specified for [dist] if it is final. This condition is encoded into the representation of a segment (in a way that is reminiscent of the lexicalisation of syntactic rules in HPSG). Working with a sibilant tier, we let S={s,ʃ} and adopt a diacritic feature F(inality). The s-default and ʃ-default morphemes are represented as follows:

s-default   ʃ-default

(S,–F)   (S,–F)

(s,+F)   (ʃ,+F)

Now the automaton for sapitsʰolus will initially look like the following, once concatenation has taken place.

$$^>\text{S,--F} \longrightarrow \text{S,--F} \longrightarrow \text{(S,--F)}$$
$$^>\text{s,+F} \longrightarrow \text{ʃ,+F} \longrightarrow \text{(s,+F)}$$
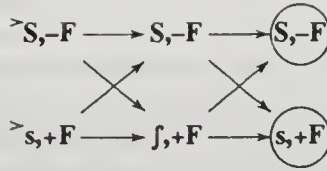
Observe that there are many ways of getting from a start state to a final state. This automaton must be intersected with an automaton for harmony and an automaton for the F(inality) feature. These automata will be part of the definition of a word in terms of the lexical hierarchy of HPSG (Bird, 1992).
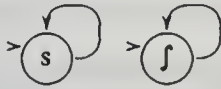
Harmony Automaton   **Finality Automaton**
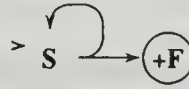
Intersecting the lexical form of sapitsʰolus with the harmony automaton gives:

$$^>\text{ʃ,--F} \qquad \text{s,--F} \qquad \text{(ʃ,--F)}$$
$$^>\text{s,+F} \qquad \text{ʃ,+F} \qquad \text{(s,+F)}$$
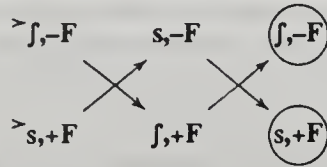
Observe that in the top row, the underspecified sibilants have now been completely specified. Furthermore, there is now no way to get from an s to an ʃ or vice versa. There are now only two ways to progress from a start state to a final state, one involving only s segments and the other involving only ʃ segments. Intersecting this automaton with the finality automaton gives:

$$^>\text{s,+F} \longrightarrow \text{s,--F} \longrightarrow \text{(s,+F)}$$
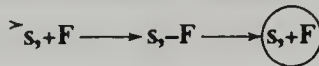
Here, the finality automaton effectively rules out one of the paths, leaving the one which ends in a +F specification. The resulting choice of s instead of ʃ is what we required for sapitsʰolus.

4 A Declarative Approach to the Phonology of the Lexicon (John Coleman)

Previous works in declarative phonology, e.g. Bird & Klein (1990), Bird (1990), Scobbie (1991a), Coleman (1991), Coleman (1992), Local (1992) and others have concentrated on declarative accounts of phonological structure and phonotactic constraints, i.e. structure-building accounts without extrinsic ordering or structure-changing. The morphophonological phenomena central to SPE and work in that tradition have not yet been extensively attended to by proponents of declarative phonology.

In this presentation I shall examine from a declarative perspective the segmental morphophonology of modern English proposed by Chomsky & Halle (1968), Rubach (1984), Halle & Mohanan (1985) and other work in the research area now termed "Lexical Phonology", which employs extrinsic ordering of rules, cyclical rule application and feature-changing and structure-changing rules. At first appearance, therefore, the phenomena discussed at length in Halle & Mohanan (1985) present an apparent challenge to the declarative phonology programme.

Nevertheless, I shall argue that the framework of Lexical Phonology can be recast into a declarative formalism which employs an enriched conception of lexical constituent structure to avoid extrinsic ordering and cyclic rule application (cf. Cole & Coleman (1992)). A close examination of each of the rules proposed by Halle and Mohanan shows that they can be recast as declarative constraints which are neither feature-changing nor structure-changing. For a fuller written presentation of my analysis, see Coleman (ta).

5 Declarative Phonology, Generative Phonology, and Laboratory Phonology (Janet Pierrehumbert)

In many ways, declarative phonology is in the best tradition of Chomsky & Halle (1968). It uses a mathematically coherent formalism, and has the aim of building grammars which describe all and only the possible forms of a language. These grammars can be empirically evaluated. They can support the transfer of linguistic results to speech and language technology. In these respects, declarative phonology surpasses most current work in generative phonology.

Declarative phonology posits incompletely specified lexical representations, as does Lexical Phonology and other work on underspecification theory within generative phonology. However, the force of these representations is quite different, because of the different conception of how rules apply. In current work in generative phonology, rules apply to forms which they are "contained in" (see p. 391, SPE) whereas in declarative phonology a symmetric notion of nondistinctness governs the interaction of rules with forms (as described in p. 336-37, SPE). Their force also differs because declarative phonology relies on positive generalizations and current generative theory makes extensive (and sometimes psychologically implausible) use of negative generalizations. Therefore, it is not clear how to reconstruct within declarative phonology one of the major results of Lexical Phonology, the Strict Cycle (see Kiparsky, 1985). Specifically, "feature-changing" rules are described in declarative phonology using disjunction in the morphological component and the similarity in content between these rules and the feature-filling rules is not brought out. A weakness of generative theory, in contrast, is the similarity between lexical forms and phonological rules; the concept of Structure Preservation, though central, has not yet received an adequate definition.

In general, declarative phonology should be more ambitious in seeking new empirical and typological results. To date, it has been more successful in reanalyzing generalizations proposed by generative phonologists than in putting forward new generalizations.

Phonologists who work in the laboratory do not fall into any particular theoretical school. However, many laboratory phonologists are likely to find declarative phonology congenial because of its empirical orientation, and the capability it provides for building and testing models. I also agree strongly with its claim that phonetics provides the semantic interpretation of phonology; see Pierrehumbert (1990). This claim ultimately goes beyond the grammatical character of the present theory, because the availability of objects in the phonetic stream cannot be taken for granted. The relationship of phonology to phonetics exhibits many of the problematic characteristics of reference in general, and mainstays of model theory, such as events, are not trivially supplied by descriptions of speech as a physical phenomenon.

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TABLES RONDES / PANEL DISCUSSIONS

TITRE : LANGAGE ET PRÉHISTOIRE
TITLE : LANGUAGE IN PREHISTORY

ORGANISATEUR(S) / ORGANIZER(S) :
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(Wayne State University - United States)

THE WIDER AFFILIATIONS OF CHINESE
SINO-TIBETAN, SINO-CAUCASIAN, AND SINO-AUSTRONESIAN

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1. INTRODUCTION. For many, there is no controversy at all over the wider affiliations of Chinese: Sino-Tibetan (S-T) is *the* dominant language superfamily of the Far East, the only question being how many subfamilies it contains: just Chinese and Tibeto-Burman (T-B) or these two plus Tai-Kadai and Hmong-Mien. But two controversies are apparent to some observers of discussions at recent S-T meetings: (1) Is T-B the sister of Chinese, or is it Austronesian, as Laurent Sagart proposes? And (2) Is it possible to link S-T, in the traditional view, to a larger grouping which includes North Caucasian and Yeniseian, as S. A. Starostin proposes?

The Sino-Caucasian (S-C) and Sino-Austronesian (S-A) hypotheses deserve serious consideration because they are advanced by practitioners of the classical methods of determining historical relationships. Starostin and Sagart are not guilty of the crimes of "megalocomparison" as seen by Matisoff (1990). To an outsider, they appear to have done their work soberly and carefully. Their arguments must be evaluated on the basis of how well the traditional methods have been applied: whether the sources are reliable, whether the phonetic changes are plausible, how much can be explained by each hypothesis, and how the results compare in statistical tests.

But there is resistance to a consideration of these proposals on their own merits by the S-Tists. A review of this impasse is important for the general discussion of how or, less optimistically, whether we can establish a picture of language prehistory in the Far East which will be acceptable to all on the basis of evidence collected according to an almost universally agreed-upon methodology.

2. METHODOLOGIES.

2.1. S-T. S-Tists have chiefly been either Chinese scholars or Tibeto-Burmanists. Not until very recently has there been active debate on substantive issues regarding the connection. Benedict claims the validity of S-T can be established on the basis of "...the fact that [Chinese and T-B] have certain basic roots in common, and that phonological generalizations

can be established for these roots". By "phonological generalizations," Benedict does not mean, nor does he present, series of sound correspondences that work through the respective inventories of Chinese and T-B. The chief strength of the argument involves the importance of the lexical items that Chinese and T-B appear to share.

2.2. **S-C.** The methodology which Starostin uses to support S-C involves three familiar diagnostics: the presence of (1) shared non-core vocabulary in quantity, (2) regular phonetic correspondences and (3) significant shared core vocabulary. He had reconstructed over 500 roots as of 1984, reflecting 42 consonant correspondences (see his later revision, n.d.). 68 of these are from Swadesh's 100-word list. Starostin claims these results taken together "...are sufficient to demonstrate a genetic relationship among the three families...", although he also reports the existence of morphological correspondences (which I have not seen) to further substantiate his claim.

2.3. **S-A.** Sagart uses the presence of sound correspondences as reflected in a sizable shared lexicon which includes a number of core items to argue that Chinese is genetically related to Austronesian. The CVC structure of OC words is to be compared with the final syllable of PA polysyllabic etyma. He reconstructs 31 OC initial to PA medial and 34 final correspondences. He has made available 232 lexical comparisons, which include 11 items from Swadesh's 100-word list and other items not easily borrowed. Sagart has also reconstructed the phonology and semantics of two infixes for S-A by which he explains the medials -j- and -r- reconstructed for Old Chinese, taken by others to be part of the base. He also uses the argument that a hypothetical connection is stronger insofar as it is able to shed new light on old problems that cannot be solved exclusively from within one of its proposed sub-branches. A link with AN, he claims, can explain (1) the source of tones, (2) contrastive aspiration, and (3) the aberrant behavior of the medials in OC.

3. **CRITICISMS.**

3.1. **S-A.** Matisoff (1992) has criticized S-A on three main grounds: lax phonological and semantic correspondences and the procedure of working by rhyme group as opposed to working from core vocabulary first. To answer criticisms about the marginal nature of the lexical items involved, Sagart might profitably use Matisoff's own CALMSEA list of 200 items to help substantiate his claim of a connection between Chinese and Austronesian.

3.2. **S-C.** S-C has been criticized on the slenderness of the correspondences between the proto-languages compared: sometimes the correspondences involve only one consonant (see Baxter's comments the in introduction to Starostin 1984). Establishment of vowel correspondences should, if the hypothesis is correct, lead to multiple correspondence memberships for each proposed cognate set.

3.3. **S-T.** And S-T has been criticized on the basis of the paucity of regular sound correspondences that have been clearly laid out and exemplified. Sagart's main criticism is that in the wake of the **S-T**

Conspectus, "the S-T hypothesis gained almost exclusive acceptance . . . even though sound correspondences between Chinese and Tibeto-Burman are still generally acknowledged to be somewhat on the weak side" (1990:2). In light of the challenge posed by Sagart's work on S-A, however, it is good to see that Matisoff has now begun what he terms "...a larger study of the "regularity" of Chinese/T-B sound correspondences" (1992:1) of which his 1992 paper is the first promised installment.

4. DISCUSSION. Matisoff (1990) states that the essentially uninteresting thing about arguments over remote relations is that it is impossible to choose between them. For those actively working on establishing a given remote relation, though, it may not seem so difficult: as the Africanist Robert Armstrong was heard to say, "The longer one studies a group of languages the more closely related they seem to be." Yet objectivity must be maintained. This means, in the first place, that the proponents of these hypotheses must take criticisms as a serious basis for redirecting research plans.

Beyond such responses comes the second and more difficult piece in this process, however: when a methodological challenge is accepted and well met, those who originally voiced the criticism must be willing to concede the point, if not the game. In this spirit, we may eventually discern the true alignment of languages in the Far East.

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LANGUAGE IN PREHISTORY:
WESTERN EURASIA AND NORTH AMERICA

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Let us consider Illič-Svityč's (1971, 1976, 1984) Nostratic and Greenberg's (1987) Amerind theories. Whether ultimately correct or not, I will argue that both have a common problem (which is the opposite of that usually suggested), specifically, excessive conservatism.

Consider, e.g., Illič-Svityč's derivation of IE st and sK (= sk, sk^w, and sky) clusters from various Nostratic affricates: IE *st from Nostratic hushing affricates (č et al.), *sK from hissing affricates (c et al.) and hissing-hushing affricates (ć et al.). A change from affricate to cluster is unnatural, and this became one of Doerfer's (1973) main objections to Nostratic (references for this section in Manaster Ramer: 1993).

But there is a related problem within Kartvelian: Zan and Svan have clusters of hissing or hushing fricative or affricate + velar stop (SK resp. CK) where Georgian has a plain fricative or affricate. Normally this is assumed to reflect a Kartvelian series of hushing consonants (in contrast to the independently motivated hissing series), implying that Kartvelian provides a precedent for the affricate-to-cluster change between Nostratic and IE.

However, it is more likely (e.g., Schmidt: 1961) that the CK and SK clusters were original. In addition to this being more natural, Georgian and Zan are more closely related than Svan, yet only Georgian lacks the clusters; also there are "too few" *k's under the standard reconstruction, only as many as *p's, whereas with SK and CK the frequency of *k rises to twice that of *p.

Now, Illič-Svityč derived the Kartvelian hushing sounds (= Zan/Svan SK and CK) from the Nostratic hushing affricates which yield IE *st. Yet he did not seize on this IE-Kartvelian parallel, although he knew Schmidt's work. Instead, he condemned Schmidt as too radical (1971: 52), preferring to rely on standard treatments and

ignoring naturalness. There are numerous similar exam-
ples, and so on the whole, Illič-Svityč may have been
right about the existence of Nostratic, but because of
his conservatism may have been wrong about much of its
reconstruction (and perhaps also its composition).

In Greenberg's case, I will also discuss one example,
hoping to show that much of the debate about his metho-
dology of superficial mass comparison misses the point.
Such techniques have been used for both good and ill in
the past, much as the techniques of reconstruction have,
and so the real issue is how well the method was used in
the concrete case of the Native American languages.

Since Greenberg is contrasting Amerind with just two
other (much smaller) families, there will be few good
test cases. We need languages which lack close relatives
or whose immediate affiliations are unobvious (so we get
around the issue of intermediate proto-languages) and
presumably ones located along the Amerind/Na-Dene
frontier. Zuni (Penutian according to Newman: 1964 but
perhaps Aztec-Tanoan according to Sapir: 1929) and
Tonkawa (Hokan for Sapir: 1920 but perhaps Algonquian for
Haas: 1959, 1967) seem to qualify (references to this
section in Manaster Ramer: To appear). While said by
Greenberg to be Amerind, Tonkawa has resemblances to Na-
Dene (often specifically to Athapaskan), while Zuni seems
quite unlike either Na-Dene or Amerind. The Tonkawa
results, pointing to a previously unsuspected link
between this language and Na-Dene, are perhaps the more
striking, especially such grammatical similarities as:

	Tonkawa	Na Dene	Amerind
'I'	saa-	Navaho shi	n-
'thou'	naa-	Navaho ni	m-
'this'	tee	Navaho díí	k
'that'	he(')e	Navaho eii (< Ath. *hai)	m, t

Further Tonkawa-Na-Dene resemblances include:

'wh-'	he-, het-	Apache xà'-/xàa-/xàad
'pl.'	-k (pronominal)	Navaho -ké (kinship terms)
'NEG'	wil'a	Tlingit l, Chipewyan -hilE
'POSS'	-kan	Navaho -igí (< Ath. *-ye)

Of special interest are the forms which Greenberg
considers Amerind but which could as well or better be
related to Na-Dene. Thus, -' '1st person subject in past
tense declarative' may be related to Amerind forms like
'i or i, but none of these appear to share the tense/mood
restriction found in Tonkawa. Yet Apache i-, Chipewyan -
ii-, etc. are subject prefixes used in "perfective"
paradigms. Likewise, ke- '1st person singular object'
could be related to Na-Dene, considering Eyak x-/xʷ- 'I',

c-/s-/si- (etc.) 'my' (this might explain saa- vs. ke- in Tonkawa). Also, -n nominalizer resembles Apache -ń "relative referring to persons". And, finally, w(e)- 'plural object', -wes' 'plural subject' (which Greenberg claims reflect "a w- plural that seems to be restricted to Hokan"), could be related to such plural forms as Tlingit -x'/-x'ʷ and perhaps to Navaho -ké and Tonkawa -k itself.

On the other hand, Greenberg's entire corpus of Tonkawa grammatical forms similar to Amerind amounts to: '- '1st person subj. in past tense declarative', ke- '1st person sing. obj.', w(e)- 'pl. obj.', -wes' 'pl. subj.', -n 'nominalizer', -k 'participial', and "perhaps" ok 'when, as if' and ee 'hortatory clitic'.

On the lexical side, Na-Dene parallels can be found for the Tonkawa singular, dual, and plural verbs of motion as well as words for 'testicles, scrotum', 'shit', 'dog/deer', 'mouth', 'eggs', 'man's brother', 'cheek', 'house', 'eye', 'hand' (< 'to touch'; Tonkawa does not have a word for 'hand' of the form ma-, which Greenberg finds in so many Amerind languages), 'tears', 'rib', 'head', 'liver', 'tail', 'grease', 'head hair', 'ice, frozen', and 'to eat'. Of course, Greenberg seeks to trace some of these words to Amerind, and in general, lexical comparisons, being open-ended, are all too easy when regular sound correspondences are not demanded. The crucial evidence comes from the grammatical elements.

Why, then, did Greenberg classify Tonkawa as Amerind? I would, again, attribute this to excessive conservatism: Tonkawa had previously been related to groups which he includes within Amerind (such as Hokan and Algonquian), and Greenberg does not indicate that he gave the Na-Dene connection a fair chance.

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THEORY AND PRACTICE OF GLOBAL ETYMOLOGY

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0. INTRODUCTION

In the last few years, global etymology has received much attention in the popular press and aroused much controversy in the study of language and prehistory.(1) This popularity and controversy indicate that the topic warrants discussion among mainstream historical linguists. Here, I treat some discrepancies between claims about global etymology by its theoreticians and what their practice actually reveals. The gross internal inconsistencies between the theory and practice indicate that such work must be rejected.

I focus here on three particular problems, based on Ruhlen (1987), Bengtson (1987) and the unpublished but widely read manuscript of Bengtson & Ruhlen. First, the way that linguistic forms are compared proves problematic. Bengtson & Ruhlen claim (ms.: 3), e.g., that only families and not individual languages are being compared, which is not quite true. Second, the handling of semantic variability is a problem, where the execution of the etymologies does not correspond to the claims of the compilers. Third, inconsistency with regard to theoretical principles could render results unfalsifiable and thus outside of the realm of scientific investigation, including the central principle of linguistic reconstruction, the establishment of systematic sound correspondences.

Other issues cannot be explored here. For example, Salmons (in press) shows that controls on chance have largely been removed and data are not accurately represented. Ringe (1992) shows that comparisons proposed in Greenberg (1987) fall within the range of coincidental similarities, which is true of PW as well.

1. THE NOTION OF 'COMPARISON'

In traditional linguistic reconstruction, what is compared and how it is compared is tightly controlled. In mass comparison, superficial correspondences are sought in form and meaning. I focus on one of the few specific claims about how comparison is done.

Bengtson & Ruhlen (ms.: 3) say that the 'units we are comparing are *language families*, not individual languages....' They see this as a control on chance: Comparison of two individual languages might reveal some accidental similarities, but they claim that using families limits accidental similarities by limiting the data considered. Bengtson (1987: 330) writes:

> Even with no historical information, the classic false etymology cited by Whitney (Polynesian *mata* : Modern Greek *máti* 'eye') is easily shown to belong to the accidental type, since the Greek form is isolated and not reconstructible, as such, in Proto-Indo-European.

This claimed reliance on families is at odds with what we find in global

etymologies. For example, five different FAMILIES are included in the entry for *kano 'arm' with support from only a single language. Four of these are marked as questionable, e.g. Proto-Indo-European is given a '?' since it is only supported by Germanic *handu(-z). However, an Indo-Pacific form is listed with support only from Southeastern Tasmanian without being marked as questionable. In fact, Indo-Pacific is not widely accepted as a genetic grouping although Ruhlen (1987) includes 731 languages in it. Data from one language out of such a large and controversial stock is counter to the methodological precepts expressed. Among the evidence for *bu(n)ka 'knee; to bend', Kordofanian is supported by a lone form from Tegele, mbo 'knee'. A Mongolian word for 'dog' is posited based solely on one Mongol form and so forth throughout the corpus. Another slightly different form of this problem also crops up repeatedly, namely the projection of forms back to broader groupings than the data support. In the entry for 'knee' just mentioned, a number of families are supported only by evidence from a single subgroup, e.g. Niger-Congo is posited from a Proto-Bantu form. Similarly, Afro-Asiatic is included without any reconstruction, using three attested forms. All are from the Omotic branch, one of six major branches in Ruhlen's classification. The claim to work only with families is not reflected in practice.

The presentation of the corpus also skips intervening reconstructed stages if they do not fit the desired pattern. PW *tsaku 'leg, foot' is putatively supported by three attested Indo-European forms including Sanskrit sak- 'thigh'. The formal match looks good except that the source, Pokorny (1959), posits *(s)keng meaning 'to limp, crooked'. Lower level comparative evidence traces the Sanskrit form back to a radically different form with a substantially different meaning, which is not cited. Myriad other problems exist with the 'comparison' in mass comparison, but this example is a very serious one.

In fact, it is easy to construct a broader pattern for Whitney's classic accidental similarity, using only the most minimal semantic variability and eminently plausible sound changes. I assume that Bengtson would now indeed posit a global etymology based on these data, a set which could be expanded.

(1)   Austro-Thai *mata 'eye (Benedict 1975)
        Tibeto-Burman Proto-Lolo-Burmese mya? 'eye' (Burling 1967: 80)
        Common Australian *mirin 'eye' (Wurm 1972: 86)
        Japanese me 'eye'
        Proto-Bantu mon- 'to see' (Guthrie 1967-1971)
        Indo-European? Modern Greek máti 'eye'

2. SEMANTIC LATITUDE

An illusion of rigor is created when Bengtson & Ruhlen (ms.: 2) state that they 'have constrained the semantic variation of each etymology very tightly.' However, the data for their global etymologies indicate that virtually any narrowing of meaning or extension is acceptable. Three of the 31 items exemplify this problem:

(2)   'who' > what, whose, how, why, when, where, how much, which, either/or, etc.
        'arm' > elbow/hand, fingernail, foot, armpit, shoulder/arm
        'dog' > fox, lynx, hyena, deer, dog, wolf, animal

Perhaps, as they claim (ms.: 2), '[f]ew of the semantic connections we propose would raise an eyebrow if encountered in any of the standard etymological dictionaries.' Still, the aggregate of these items would raise eyebrows.(2) I am not aware of cases where a particular question word has come to include so much semantic territory, for example. At the very least, the PW glosses them-selves are misleading, creating the impression of more unity in the data than exists.

3. SYSTEMATIC CORRESPONDENCES

Broad comparisons of lexical material provide the ultimate starting point for

linguistic comparison, creating the basis for establishing systematic sound correspondences. This point was made recently by Greenberg (1991: 18-19), who expands on the point: 'once we have a well established stock I go about comparing and reconstructing just like anyone else... [T]he first step has to be to look very broadly..., to see what obvious groupings there are.' This contrasts with Ruhlen (1987: 253):

> One of the more serious errors in contemporary classification involves the artificial standards of proof of genetic affinity that are still followed by many linguists. In the attempt to recognize valid cognates, criteria such as the presence of regular correspondences and the reconstruction of proto-forms are still commonly invoked...Obviously, research limited by such artificial constraints...will be unable to probe very deeply into the past.

If no regular correspondences are required at any point, then there is no longer any control on what can count as cognate. This renders the results no longer falsifiable and thus uninteresting to those involved in scientific study of language.

4. CONCLUSION

In this paper, I have simply tried to show that the various works of Bengtson and Ruhlen do not play the game by the rules they themselves claim to have established. This calls to mind my first serious encounter with global etymology, after which I talked to my dissertation advisor and asked him what he made of such work. Edgar Polomé gave me what I have since come to call Polomé's Law: Give me one rule that says 'Any segment X can go to any other segment Y in any environment Z' and I can give you Proto-Human.

5. NOTES

(1) I am grateful to Greg Iverson, Monica Macaulay and Mary Niepokuj for comments on this paper. All mistakes are mine.

(2) One might argue that the time depth makes a range of far-flung developments plausible, but mass comparison rests on the assumption that such forms are extraordinarily conservative. Formal resemblances, e.g., among PW data are far closer than among many PIE or Proto-Bantu forms.

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TABLES RONDES / PANEL DISCUSSIONS

**TITRE : CADRE MÉTHODOLOGIQUE POUR UNE
GRAMMMAIRE DESCRIPTIVE
TITLE : A FRAMEWORK FOR DESCRIPTIVE GRAMMARS**

**ORGANISATEUR(S) / ORGANIZER(S) :
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A FRAMEWORK FOR
DESCRIPTIVE GRAMMARS

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1. INTRODUCTION

What is the motivation for having descriptive grammars? There are at least three valid answers to this question. First, good description is one of the bases of all good linguistics. This is not to deny that there is also feedback from other aspects of linguistics, in particular linguistic theory, to descriptive linguistics, but simply to emphasize the importance of the link from good description to good theorizing. Second, the recognition of the importance of cross-linguistic variation requires the availability of good descriptions. It is unlikely that the linguist interested in cross-linguistic variation will be thoroughly competent in each of the languages needed for investigation, and reliance must therefore be placed on good secondary sources, namely descriptive grammars. While the importance of cross-linguistic variation has long been recognized within certain approaches to language, for instance linguistic typology, this importance is now widely recognized among the most diverse approaches, including mainstream formal grammar. Third, the phenomenon of endangered languages, in particular those that no longer have longterm viability as living systems of communication, urgently requires documentation of these languages, an important aspect of human cultural diversity.

What are the constraints that must be placed on a good descriptive grammar, especially in relation to our answers to the first question above? Clearly a descriptive grammar must be accurate; we will have nothing further to say about this. In addition—and here we have specific proposals to offer—a descriptive grammar must present material in an accessible manner, for instance by avoiding idiosyncratic terminology (except, of course, for idiosyncratic facts). Thus, where essentially the same phenomenon is found across a large number of languages, the same term should be used for it. While this may seem obvious, only too many descriptive grammars have violated this requirement, often trying to present the language in question as being as idiosyncratic as possible. We would go even further, and say that a good descriptive grammar should follow standardized and a standardized framework. This framework must be sufficiently constrained to permit cross-linguistic comparability. Equally, it must be sufficiently flexible to allow for the actual range of cross-linguistic variation. The resolution of the tension between constrainedness and flexibility is the hallmark of a good descriptive framework.

In the remainder of this section, we will contrast two attempts to solve this problem: an early attempt, Comrie & Smith (1977), and project on which we are currently working.(1) The main characteristics of the 1977 version are as follows. First, the questionnaire it presents is in book form, thus being essentially committed

to the linear format of a printed text (although there is considerable hierarchical structure as an organizing principle of the framework); while this essential linearity can to some extent be overcome by cross-references, extensive use of cross-references makes use of the framework (or of a grammar written according to the framework) cumbersome. Second, also following from the nature of a book, the framework is immutable: it cannot take advantage of advances in our understanding of various phenomena, other than by printing a new version of the questionnaire (and of each grammar written according to the framework). Third, there is a conceptual flaw in this early version, quite independent of its implementation as a book, namely a failure to delimit carefully form (morphology–syntax) and function (semantics–pragmatics). For instance, §1.1.2 deals with subordination, and includes a subsection, §1.1.2.4.2.1, on time clauses; however, it is by no means universally true cross-linguistically that time clauses are subordinate. This could be avoided by more carefully distinguishing such formal categories as subordination from such functional categories as temporal reference. Despite these disadvantages, the framework of Comrie & Smith (1977), to our knowledge the first attempt at a comprehensive descriptive framework of this kind, has inspired a substantial volume of descriptive work, in particular about twenty descriptive grammars in the series Croom Helm Descriptive Grammars (formerly Lingua Descriptive Studies).

We are currently working on a longterm project to devise a better framework for descriptive grammars; this new framework differs from the earlier version in being computer implemented, and in clearly delineating form and function.

Computer implementation means that this new framework will avoid the problems of linearity and immutability. At present, we are working within the environment of Hypercard (for the Macintosh). This environment enables new insights into language to be incorporated readily into the overall framework, and allows existing descriptions within the framework to be updated to take account of such changes. Essentially, the basic framework will be centrally controlled, to ensure continuing comparability of descriptions. We are anxious to avoid certain possible misconceptions of this approach to implementing descriptive grammars. A grammar written according to this framework can be regarded as a grammar with loose pages, so that one can easily go from one to the other without being tied to any fixed linear order. We do not deny the importance of good prose descriptions in descriptive grammars, indeed we continue to regard the prose description as the most important part of a descriptive grammar. A linguist compiling a descriptive grammar according to this method would still be free to use this description as the basis for a conventionally published descriptive grammar (or part of a grammar); needless to say, individual grammars compiled within the framework would remain the intellectual property of their authors. As a final practical consideration, we note that the increasing power–size ratio of computers makes it plausible that the fieldworker could take the system to the field and work on the grammar there.

As noted above, a major characteristic of the framework on which we are currently working is the clear delineation of form and function. The basic structure of the framework is elaborated in section 2 below.

2. FORMAL AND FUNCTIONAL FRAMEWORKS

The minimal unit of description is a single use of a construction or morpheme of the language. These descriptions can be subsumed under more general categories of morphemes or constructions (e.g. a description of English may have a general category of Auxiliary in addition to descriptions of the individual modal auxiliaries and their uses). A schematic description of the component elements of the construction must be provided. Through this description, links can be made to the descriptions of the elements of the construction, for example a link from an

intransitive clause to a subject noun phrase (and conversely, the construction in question can be linked to still larger constructions of which it is an element). Constituency of the construction will be represented in the schematic description, while word order, dependency, and other grammatical information will be described elsewhere.

The primary organizing principle of the framework is the strict separation of the description of linguistic form from the description of linguistic function. Thus, there are two separate descriptive frameworks, for function and for form. Each framework is structured by a series of parameters for which the fieldworker may select values for each construction. The logical structure of the parameters is the same as is found in "attribute-value" or "feature-value" descriptions. These parameters are intended to be used for organizing the grammatical description, so that it will be possible to examine the description in terms of both its formal and functional structure.(2) The parameters are NOT substitutes for a prose description of the form and use of a construction. The prose description is still primary.(3)

We will provide a substantial number of values for the parameters. These values will use terms that will be standardized in the system (on-line definitions with examples will be provided). The terms, and the definitions for them, will follow de facto established usage from traditional grammar, typology, and field description as much as possible. However, in some cases we have had to choose between competing terms, resolve inconsistent definitions, or disambiguate terms (for instance, we distinguish 'referential', the specific indefinite, from 'referentive', usually also called 'referential', the semantic role found in 'talk ABOUT the war').

While the terms that we provide as standard terminology attempt to cover as broad a range of formal and functional categories as possible, we cannot expect to make every distinction that might be found in the world's languages. For this reason, we will allow the fieldworker to create his/her own values for a parameter if the desired distinction is lacking. However, new parameters cannot be added by the fieldworker, in order to retain the overall organization of the descriptive frameworks. The system will not allow logically inconsistent combinations of values, e.g. 'volitional' and 'inanimate'. This constraint applies to the functional framework only, since a language may combine arbitrary grammatical values in a single morpheme (e.g. 1st person subject and irrealis mood).(4)

The parameters are not organized hierarchically. This is another means by which flexibility in the organization of the system is provided. If anything, this may render the system too flexible in its organization, a response to the excessive rigidity of previous descriptive frameworks. In order to counteract this, "maps" of the formal and functional frameworks will be provided, along with other navigational aids for viewing the grammatical description.

2.1. Functional parameters

Constructing the functional framework is obviously quite an ambitious task. However, it is made simpler by beginning with the functional parameters required only for the characterization of the standard values of the formal categories, in a broad sense (see below for the relation between formal and functional categories). While this leads to a somewhat ad hoc initial list, it covers a wide range of phenomena, and a general picture of functional organization emerges. A summary of the functional organization is given by the following list of functional parameters, loosely organized in a hierarchical fashion:

I. Speech acts
    A. Speech event : speech act participants, respect level, respect locus, social situation
    B. Linguistic interaction: epistemic commitment, deontic force, attitude

      C. Discourse structure: topicality, focus, emphasis, current relevance, genre
II. Propositional Acts
      A. Major propositional acts: propositional act
      B. Minor propositional acts
          1. Classification: sex, animacy, size, evaluation
          2. Instantiation: boundedness (individuation), internal structure, intentional phase, temporal phase
          3. Quantification: cardinality
          4. Specification: determination, reference tracking, alternative selection
          5. Situating (in space, time, quantity/scale): situating dimension, deictic-location, deictic-dimensional, reference point, reference-present, extendedness, distance
          6. Grounding (epistemic): hypotheticality, evidence
III. Concept Type: entity type, relationality, gradability, permanence, stativity
IV. Conceptual Domains: domain
V. Relations
      A. Relations between things: inherence, relationship (relation type)
      B. Relations between things and eventualities: semantic role type, participant (semantic role), volitionality, affectedness
      C. Relations between eventualities: chaining type, event relation

Space permits only a cursory examination of the functional organization. There are five general realms of functional description. The first two realms of functional parameters pertain to the organization and expression of information in discourse. The speech act realm outlines conversational interaction. The speech event involves the participants, their social status with respect to each other, and the type of social situation in which the conversational interaction takes place. The latter parameter currently has values 'formal' and 'familiar', but can and should be expanded to include any type of social situation, such as 'at home', 'in a classroom', 'on the street', etc. The linguistic interaction characterizes what sorts of acts the interlocutors are performing, construed broadly to include epistemic, deontic, and evaluative speech as well as the traditional illocutionary forces (declarative—the "neutral" form—interrogative, imperative, exclamative, all defined functionally). The discourse structure parameters range from a global characterization of the genre (which, like social situation, can be used to make refined distinctions) to a more local description of information status.

    The realm of propositional acts describes how information is structured and presented in discourse. The major propositional acts are reference, predication, and modification. The "minor propositional acts" (Croft 1990) represent conceptual processes that are applied to both concepts referred to (prototypically, objects) and predicated concepts (prototypically, actions). Classification is applied basically to referring expressions (except for the positive/negative evaluation parameter). Instantiation includes partition and aggregation—other means for defining units. It is now well known that boundedness applies both to events in time and objects in space (or some other domain defining a boundary to an object). In addition to partitives of objects, events can be partitioned into temporal or "intentional" phases (desire, intention, attempt, execution; cf. Bybee's (1985) "agent-oriented modality"). Quantification is a straightforward description of the cardinality of units.

    Specification is a complex function which involves how the concept is determined (e.g. unique, specific, universal, free-choice (any), or no choice (none)); tracking reference across a discourse through identity of reference or different reference, or overlap; and selecting alternative tokens from a set of tokens described by the same label ('the first, last, best, worst, next, previous, same, other

book'). An object or event can be situated in space or time, or on a scale defined by some other property, such as height as in 'Mary is taller than Susan'. Languages have complex means for representing location, direction and distance in space, requiring several parameters; and some of those parameters carry over into the description of location in time and other one-dimensional scales. Finally, the term "grounding" is borrowed from Langacker (1991) to describe how an object or event is situated in a "possible world" or "mental space", real or hypothetical, and the evidential status the information has in the speaker's beliefs.

The remaining three realms of functional description characterize concepts themselves. The heading 'concept type' refers to what is often called an 'ontological', 'topological' or 'image-schematic' classification of concepts. These are grouped into two "summary values", that is, values that subsume several other values): 'things' are objects, object parts, substances, and groups, while 'eventualities' are properties, qualities, relations, transitions (change-of-state), activities and events (which involve causation and more than one participant). This basic ontological classification is supplemented by parameters of relationality, stativity, gradability, and permanence, in order to accommodate alternative construals of the ontological categories (for instance, an activity such as 'walk' is construed as a state in the progressive construction 'be walking'). This classification of concepts more or less cross-cuts the classification by domain of experience, which is the second realm. Here a fine-grained division of concepts into approximately 170 domains is provided, including such domains as '(human) body part' (head, foot), 'tools' (hammer, axe), 'color' (red, blue), 'numerals' (two, thirteen), 'change-posture' (sit down, stand up), 'disposal' (drop, throw away), 'attentive perception' (watch, observe), 'obtaining' (grab, steal), and 'reaction to authority' (obey, refuse). These are grouped into summary domains such as living thing, physical object, possession, mental states/processes, etc.

Lastly, there are several parameters that describe the relationships between concepts. These are grouped by the type of concepts that are linked by a relation: thing–thing, thing–eventuality, eventuality–eventuality. Each type of relation has a single parameter indicating a detailed range of semantic relations (relationship, participant/semantic role, and event relation, respectively), and additional parameters that vary partly independently of the basic set of relations, such as inherence, volitionality, and affectedness.

2.2. Formal parameters

The formal parameters differ in one significant respect from the functional parameters: linguistic form is for the most part language-specific, while linguistic function is taken here to be more or less universal, or at least much more easily comparable across languages. The provision of standard labels or terminology for the characterization of grammatical form requires some degree of comparability between languages, so that we can be assured that the use of the term 'Present Tense' or 'Adjective' is coherent across languages.(5) The way we have chosen to do so is in the tradition of typological analysis: a standard term can be used for a language-specific form if among its functions is a "prototypical" function that is specified by the system. For instance, the term Present Tense can be used only for a form that includes among its functions that of time reference to the time of the speech event, and the term Adjective can be used only for a category that includes among its members at least some of the prototypical adjectives as described by Dixon (1977)—property concepts indicating color, dimensionality, and age—in their use as modifiers of a (prototypical) noun. Once the label Present Tense or Adjective has been chosen to describe a language-specific formal category, then the label can be used for the same category in any of its functions—for example, the use of the Russian Present Tense in Perfective verb forms for future time reference.

Of course, if the fieldworker believes that the category does not exist in their language, e.g. Adjective, then s/he need not use that label; or if the fieldworker believes that there is a grammatical category in their language not described by any of the standard labels, then s/he may create a new term in the way described above. In general, we have not tried to establish standard terms and definitions for every grammatical category known to us, but only for ones that are found across language groups, or might be found in more than one language group. Since there are a number of different ways in which formal categories are defined, the remainder of this section will be devoted to explaining how these parameters are defined.

There are three parameters that do describe "pure" linguistic form, without any necessary reference to a functional prototype:

Order(Element1,Element2): Rigid, Preferred, Free

Obligatoriness(Element): Obligatory, Optional

Expression(Element): Root, Stem, Particle (morphologically unbound uninflected [nonroot] element), Proclitic, Enclitic, Clitic [= Proclitic + Enclitic], Prefix, Suffix, Infix, Affix [= Prefix + Suffix + Infix], Reduplication, Consonant Alternation,, Vowel Alternation, Tone Change, Stress Shift [if necessary], Internal Change [= Consonant Gradation + Ablaut + Tone Change + Stress Shift], Nonstem [= Internal Change + Affix + Clitic + Particle + Reduplication]

As mentioned above, the schematic description of constructions does not implicitly indicate word order, because the possibilities and constraints (especially in a "free" word order language) are too complex for simple notation, and it is expected that the fieldworker will explain the word order of the construction in the prose description. However, for the purpose of searching through the grammar to examine at least some elementary word order facts, we have included a word order parameter. The expression parameter indicates the type of morpheme, in morphophonemic terms. We leave the values here undefined except in a broad sort of way, because the currently funded portion of the project does not include (morpho)phonological description. (Note the use of the summary values Clitic, Affix, Internal Change, and Nonstem.)

All of the remaining definitions of values on formal parameters describe grammatical categories and relations, and so involve the use of functional prototypes. The simplest cases of defining functional prototypes are found in most inflectional categories, which usually have a single functional parameter corresponding to them. An example is the parameter of Number, matched closely by the functional parameter of cardinality:

NUMBER
Singular (SG)
     entity type = object
     cardinality = 1
Dual (DU)
     entity type = object
     cardinality = 2
Paucal (PAU)
     entity type = object
     cardinality = few
Plural (PL)
     entity type = object
     cardinality = maximum

Nonsingular (NSG) = DU+PL
    (use only if a plural >2 exists)
Nonplural (NPL) = SG+DU
Singulative (SGT)
    Stem: entity type = group
    Output: entity type = object
Collective (COLL)
    Stem: entity type = object
    Output: entity-type = group

Note also that some categories (Singulative and Collective) require functional prototypes both for the stem and the resulting form.(6)
    Some formal values are defined based on other formal values, which in turn are defined by functional prototypes. In the simplest case, a value is defined as the complement of its sister value(s):

OBVIATION
Proximate (PRX)
    topicality = high
    reference-tracking = same
Obviative (OBV)
    complement of PRX

In other cases, prototypes make reference to other formal values—that is, functional prototypes of other formal values. The example here is of the construct form of a noun, prototypically found as the form of the head noun in a genitive or possessive construction (commonly found in Semitic languages):

NOUN FORM
Construct state (CONST)
    Expression(CONST) =   Nonroot
    In construction with: N prototype
    Controlling: NP prototype
                      Case = GEN
    prop-act = modification

Of course, all formal values ultimately are grounded in functional prototypes.
    The most difficult definitions are those for syntactic categories and grammatical relations. Again, functional prototypes are used. For grammatical relations, we provide a skeletal characterization of a complete situation type in which the grammatical relation would be most likely to be found. This is illustrated here with a definition of the oblique Comitative case, using the situation of accompaniment of an agent of a motion event:

CASE/GRAMMATICAL RELATION
Comitative (COM) (dependent on the verb)
    sem-role = accompaniment
    Controlling unit: propositional act = reference
                     domain = motion
                     entity type = activity
    Controlled unit: propositional act = reference
                     domain = human
                     entity type = object
Example: 'Mark went to the market with Jack.'

The lexical syntactic categories use functional definitions based on the domain, entity type, and propositional act for which the lexical category is used prototypically. We illustrate this with the example of Adjective discussed above:

Adjective (Adj)
      propositional act = modification
      domain = color/dimension/age
      entity type = quality
      In construction with Head Category = N, Role(Adj) = Adjunct

The nonlexical syntactic categories are defined in terms of the lexical categories. The phrasal categories consist of constituents containing a head of that category and all of its dependents. The distributional categories include various nonheaded constructions with similar distributional properties, which in turn are based on the propositional acts. These are: clauses of the relevant type plus subordinator; headless phrases; pro-forms; and coordinate and appositive structures.

Lexical	Phrasal	Similar distribution
V	VCl	Cl (clause) (cf. predication)
N	NP	Nl (nominal) (cf. referring expression)
Adj	AdjP	Adjl (adjectival) (cf. attributive modification)
Adv	AdvP	Advl (adverbial) (cf. adjunct modification)
Num	NumP	—
Qnt	QntP	—
Det	DetP	—
Adp	AdpP	— (can fill any propositional act)

The overall organization of the formal framework is as follows:

I. Syntactic/Morphological Structure
      Order(Element1,Element2), Expression(Element),
        Obligatoriness(Element)
II. Inflectional Categories
      A. Nominal/Pronominal
        Person, Deixis, Number, Gender, Definiteness, Obviation, Size,
          Affect, Pronoun Type, Noun Form
      B. Verbal
        Directional, Voice, Directness, Tense, Aspect, Mood, Polarity,
          Volitionality, Transitivity, Logophoricity, Verb Form
      C. Adjectival/Numeral
        Degree, Intensification, Numeral Type
      D. Clause-Level Categories
        Switch Reference, Pragmatic Role, Emphasis, Politeness
III. Derivational Categories
      Nominalization, Verbalization
IV. Syntactic Categories
      Syntactic Categories, Syntactic Level, Head Category
V. Grammatical Relations
      Role(Element), Case/Grammatical Relations, Nexus, Possession Type

3. ILLUSTRATION: SPACE IN YUCATEC MAYA

3.1. Formal perspective

3.1.1. *Nominal constructions*

A simple nominal (Nl) in Yucatec Mayan (YM) has the syntactic structure shown in (1) and illustrated in (2):

(1)   [(Adj) N]_{Nl}

(2)   *nohoch áaktun*
        big   cavern   'big cavern'

A noun phrase (NP) may be formed from this by optionally preposing the definite article, which in turn triggers a deictic clitic at the end of the phrase, as represented in (3) and exemplified in (4):

(3)   [(*le*) Nl]NP ... (-Deictic_clitic)

(4)   *le   nohoch áaktun-o'*
        DEF big   cavern-D2   'that big cavern'

3.1.2. *Prepositions*

YM prepositions (Prep) may be divided into primary (monomorphemic) and secondary (derived) prepositions. There are only very few primary prepositions, namely: *ti'* 'LOC', *ich* 'in', *tumen* 'by, because of'. One of these, *tumen*, could even be argued to be complex; cf. the complex prepositions with initial *t-u* below.

All derived prepositions are formed with the help of the grammatical preposition *ti'*. The base may be either a relational noun or an adverb. If the base is a noun, it is transformed into a relational adverb, i.e. a preposition, by making it a complement of *ti'*. The structure of such derived prepositions is shown in (5); a subset of them relevant for localization is enumerated in (6):

(5)   [*ti'*-Poss_clitic N_{rel}]_{Prep}

(6)   *ts'u'*   'marrow, inside'   *t-u ts'u'*   'inside'
        ba'+pàach 'around+back'   *t-u ba'+pàach* 'outside'
        tséel   'side'   *t-u tséel*   'beside'
        nak'   'belly'   *t-u nak'*   'at the side of'

In some denominal prepositions, the derivational apparatus may be dropped if the complement is third person. This is symbolized in (7); relevant forms are in (8):

(7)   [(*ti'*-Poss_clitic) N_{rel}]_{Prep}

(8)   *iknal*   'proximity'   *(t-u) y-iknal*   'near, by, at'
        pàach   'back'   *(t-u) pàach*   'behind'
        óok'ol   'top'   *(t-u) y-óok'ol* 'on, over'
        áanal   'bottom'   *(t-u) y-áanal*   'under'

If the base of the preposition to be formed is an adverb, it is rendered relational by combining it in apposition with following *ti'*, as shown in (9). Some examples are given in (10):

(9)   [Adv *ti'*]_{Prep}

(10)   *ak+táan*   'opposite+front'   *ak+táan ti'*   'opposite'
        táan+chúumuk   *táan+chúumuk ti'*
                              'front+center'   'between, among'
        táan-il   'front-ADVR'   *táan-il ti'*   'in front of'
        pàach-il   'back-ADVR'   *pàach-il ti'*   'behind'

3.1.3. *Prepositional phrase*

Trivially, a prepositional phrase (PrepP) consists of a preposition followed by a NP complement, as in (11):

(11)   [Prep (NP)]_{PrepP}

The complement NP is optional for all of the prepositions except *ich* 'in'. This parallels the case of the PossNl. Since a PossNl is possessed whether or not the possessor is present in the form of a NP, it will be assumed that a PrepP remains a PrepP even if its complement is implicit; that is, it will not be assumed that the preposition then becomes an adverb. Examples (12)–(15) illustrate each of the four

morphological types of prepositions with its complement:

(12)	*t-eh* LOC-DEF	*áaktun-o'* cavern-D2			'at/in the cavern'
(13)	*t-u* LOC-POSS.3	*ba'+páach* outside	*le* DEF	*áaktun-o'* cavern-D2	'outside the cavern'
(14)	*(t-u)* LOC-POSS.3	*y-iknal* Ø-NEAR	*le* DEF	*áaktun-o'* cavern-D2	'near the cavern'
(15)	*táan-il* front-ADVR	*t-eh* LOC-DEF	*áaktun-o'* cavern-D2		'in front of the cavern'

3.1.4. *The verbal clause with a dependent prepositional phrase*

In a verbal clause, complements and adjuncts, including PrepPs, follow the verbal complex, as represented in (16) and illustrated in (18)–(21) below:

(16)   [Asp_aux Verbal-complex PrepP]s

3.2. The functional perspective: space construction

The functional domain of space construction is based on a spatial situation. The constitutive components of a spatial situation are the following:

1.   the deictic center;
2.   the situation core with its dynamicity (i.e. rest (essive) or motion (lative));
3.   the located object with its own spatial properties, which form part of the situation core;
4.   other participants (especially the agent) of the situation;
5.   the reference object;
6.   the orientation of the situation core as to the reference object;
7.   the relevant spatial (topological or dimensional) region of the reference object).

Sentence (17) illustrates most of these components of a local situation:

(17) *Linda led* (situation core) *the guest* (central participant=localized object) *to the back of* (spatial region) *the institute* (reference object).

Each of these components is associated with a set of functional parameters. The following discussion will be confined to components 2, 6, and 7.

3.2.1. *Spatial regions*

In the following, we give the subdivision of the conceptual domain of spatial regions. The tables contain the relevant YM words, in the order: adverb, preposition. When the adverb is shown as '—', this means that there is no special adverb for the meaning in question. However, as noted in section 3.1.3, the syntactic function of an adverb may be fulfilled in most cases by not specifying the nominal complement of the preposition.

SR1	Topological		
SR1.1	Enclosure		
SR1.1.1	Inner		
SR1.1.1.1	Interior		
	'in'	—	*ich*
	'within'	—	*ich-il*
	'inside'	—	*t-u ts'u'*
SR1.1.1.2	Medial		
	'between, among'	*táan+chúumuk*	*táan+chúumuk*
SR1.1.2	Outer		
SR1.1.2.1	Exterior		

SR1.1.2.2	Circumferential		
	'outside, around'	*ba'+pàach*	*t-u ba'+pàach*
SR1.2	Distance		
SR1.2.1	Contact		
SR1.2.2	Proximity		
SR1.2.3	Farness		
	'there, LOC'	—	*ti'*
	'at, by'	—	*(t-u) y-iknal*
	'near'	*nàats'*	*nàats' ti'*
	'far'	*náach*	*náach ti'*
SR2	Dimensional		
SR2.1	Upper vs. lower side		
SR2.1.1	Superior		
	'on, above, over'	—	*óok'ol*
SR2.1.2	Inferior		
	'under'	—	*áanal*
SR2.2	Front vs. back side		
SR2.2.1	Anterior		
SR2.2.2	Posterior		
SR2.2.3	Citerior		
SR2.2.4	Ulterior		
	'in front'	*táan-il*	*táan-il ti'*
	'opposite'	*ak+táan*	*ak+táan ti'*
	'behind'	*pàach-il*	*pàach-il ti', t-u pàach*
SR2.3	Left vs. right side		
SR2.3.1	Lateral		
SR2.3.2	Dextral		
SR2.3.3	Sinistral		
	'beside'	—	*t-u tséel*
	'at the side (touching)'	—	*t-u nak'*
	'right'	—	*t-u x-no'h*
	'left'	—	*t-u x-ts'íik*

A complete description would account for the deictic vs. intrinsic perspective (SR3) in the referential interpretation of some region expressions such as 'in front of' (localized object is either at the intrinsic front of the reference object or between the deictic center and the reference object).

3.2.2. *Local relations*

A local relation is the orientation of the situation core as to the reference point, combined with rest or motion, as detailed in the following classification:

LR1 Dynamicity
LR1.1 Rest (essive)
LR1.2 Motion (incl. transport) (lative)
LR2 Orientation
LR2.1 Direction away from orientation point
LR2.2 Direction towards orientation point
LR2.3 Direction past orientation point

In most languages, including YM, there is a grammatical expression of different orientations of the situation core only in dynamic situations. As a result, we get one essive and three lative local relations (r.o. = 'reference object'):

dynamicity	rest	motion		
orientation	at r.o.	to r.o.	away from r.o.	passing by r.o.
		(allative)	(ablative)	(perlative)

Examples (18)–(21) illustrate each of these four local relations in turn, with the interior of the reference object serving as the spatial region:

(18)
le	ch'o'-e'	ti'	yàan	ich u		y-áaktun-e'
DEF	mouse-D3	there	EXIST	[in	POSS.3	cavern-D3]

'the mouse is in its hole'

(19)
le	ch'o'-e'	h	òok	ich u		y-àaktun
DEF	mouse-D3	PAST	enter(ABS.3SG)	[in	POSS.3	cavern]

'the mouse went into its hole'

(20)
le	ch'o'-e'	h	hóok	ich u		y-àaktun
DEF	mouse-D3	PAST	go.out(ABS.3SG)	[in	POSS.3	cavern]

'the mouse came out of its hole'

(21)
le	ch'o'-e'	h	máan	ich u		y-àaktun
DEF	mouse-D3	PAST	pass(ABS.3SG)	[in	POSS.3	cavern]

'the mouse passed through its hole'

It is readily apparent that while the preposition changes in the English translations, it remains the same in the YM examples. In YM, the preposition expresses exclusively the relevant spatial region, never the orientation of a situation towards the reference object. The latter is always coded in the semantics and grammatical properties of the governing verb. While no existing grammar of YM mentions this property of the language, it emerges automatically from the twofold approach of our framework for descriptive grammars.

NOTES

(1)   Comrie and Croft's work is supported in part by the National Science Foundation under grants BNS-9013318 and BNS-9013095.

(2)   The organization will be particularly useful for those fieldworkers that do not have an extensive background in linguistic analysis.

(3)   We also expect the construction to be illustrated by an example. In future versions, the example can be cross-referenced to an on-line collection of texts. We have slightly revised Lehmann's (1982) conventions for interlinear morpheme glosses for examples.

(4)   When a construction is indexed for a particular formal parameter, other parameters that have been demonstrated to be associated with it typologically will be suggested to the fieldworker.

(5)   We follow the convention established by Comrie (1976) and Bybee (1985) of using capitalized terms for formal categories and lower-case terms for functional categories.

(6)   The abbreviations are also standard, to be used in interlinear glosses and in schematic descriptions of constructions.

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TABLES RONDES / PANEL DISCUSSIONS

TITRE : MÉTAPHORE ET ICONICITÉ
TITLE : METAPHOR AND ICONICITY

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METAPHORICAL ICONICITY IN LANGUAGE

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According to Charles Sanders Peirce (1955[1902]:102), an icon is defined as a sign which represents an object mainly by its similarity to that object. Icons are divided into three subtypes: images, diagrams, and metaphors. An image (e.g., a portrait of a person) achieves similarity by partaking of some of the simple qualities of its object (e.g., the person portrayed). The relation between the image and its object is based on a monadic, simple, sensory or mimetic resemblance. Diagrams (e.g., maps) exhibit structure similar to the structure of their object (e.g., territories). The similarity between the diagram and its object is a dyadic, relational or structural analogy. Metaphors represent a parallelism in something else. A metaphorical icon (e.g., "My love is a rose") signifies its object (e.g., 'my love') by pointing to a parallelism between the object (e.g., 'my love') and something else (e.g., 'a rose'). The degree of abstraction increases from images to diagrams, from diagrams to metaphors. At the same time, an icon may involve all the three subtypes with predominance of one over others.

Metaphors, in Peirce's definition, are different from images and diagrams in that they require the existence of "something else," i.e., a third thing in addition to a sign and the object. In this sense, it is by a triadic relation that metaphors achieve their signification. In theory, this distinction between metaphors on the one hand and images and diagrams on the other seems clear. However, in concrete examples of any iconic sign, the distinction appears to be fuzzy as we often encounter a mixture of these subtypes of icons. The particular classification thus often depends on the stance of the researcher. The following discussion of metaphorical iconicity will demonstrate also its diagrammatic aspect.

1. GRAMMATICAL METAPHOR

The manifestation of diagrammatic iconicity in grammar can also be interpreted as metaphorical iconicity, because it involves a mapping of one domain onto another, such as the experiential (temporal and spatial) onto the formal, or the conceptual (cognitive) onto the formal. The iconic correspondences display both diagrammatic and metaphoric aspects and the difference is a degree of predominance of one over the other.

Metaphorical transfers/extensions are observed both synchronically and diachronically in vocabulary, in grammatical structures, and in pragmatic discourse cross-linguistically (cf. Talmy 1978, Sweetser 1990, Ohori 1991). One of such metaphorical transfers is a SPATIAL-TEMPORAL-CAUSAL extension in polysemy and in subordination. The Japanese particles 'kara' ('from') and 'ni' ('to'), for example, display a polysemy which can be explicated by a metaphorical

extension from SPACE to TIME, to CAUSATION, and to PURPOSE (cf. Ohori 1991).

 1.a. Watashi wa Tokyo <u>kara</u> ki-mashi-ta.   [SOURCE IN LOCATION]
     I TOPIC Tokyo from come-POLITE-PAST
     'I came from Tokyo.'
 1.b. Kaigi wa san-ji <u>kara</u> hajimari-masu.   [SOURCE IN TIME]
     meeting TOPIC three o'clock from begin-POLITE-PRESENT

     'The meeting begins at three.'
 1.c. Yoi hon da <u>kara</u>, yomi-nasai.   [SOURCE IN LOGIC]
     good book be because, read-IMPERATIVE
     'Because it's a good book, read it.'

Note that 1.a. and 1.b. have '<u>kara</u>' as a postpositional particle, whereas in 1.c. it is a subordinate connective conjoining two propositions. It is as if the subordinated proposition in 1.c. were taken as a spatial/temporal entity. Another particle '<u>ni</u>' behaves similarly with respect to GOAL in LOCATION, TIME, and LOGIC. This leads us to assume that there are cognitive metaphors such as TIME IS SPACE, REASON IS SOURCE, and PURPOSE IS GOAL behind the grammatical constructions produced by the polysemic metaphorical extension of Japanese particles. Thus, in the words of Lakoff & Johnson (1980), "metaphor gives meaning to form" and "syntax is not independent of meaning, especially metaphorical aspects of meaning" (Lakoff & Johnson 1980: 138).

2. CONVENTIONAL METAPHOR

Metaphors are pervasive in language in both conventionalized and creative manifestations. When particular metaphors become conventionalized, they are felt as if they were literal. That is, the burden of discovering the parallelism is no longer felt between the object of the metaphor and "something else." Then the parallelism looks like a diagram, bearing a one-to-one correspondence decoded by convention.

Cognitive linguistics is particularly concerned with conventionalized metaphors. It claims that metaphors are not mere expressions, but that they are rooted on the cognitive plane where human concepts or thoughts are formed, processed, and developed. In other words, the concept is structured, in large part, metaphorically. The relationship between metaphorical concepts and metaphorical expressions is defined in such a way that "metaphors as linguistic expressions are possible precisely because there are metaphors in a person's conceptual system" (Lakoff & Johnson 1980: 6). Here we can point out two parallel diagrams -- one to be held between metaphorical concepts and metaphorical expressions, the other between the two domains of concepts (and of expressions) in conventional metaphors -- because both presuppose a one-to-one correspondence between the two elements compared.

Let us take a metaphor, LIFE IS A GAME, for example. The structure of the domain to be understood (i.e., LIFE) and the structure of the domain in terms of which we are understanding (i.e., GAME) have a fixed correspondence such as: Both life and game have a beginning and an end; there are rules you must observe; you win or lose, etc. Thus, the way the cognitive structure of the GAME domain corresponds to that of the LIFE domain is just like a diagram which bears a structurally analogical relationship. The relationship of the conceptual metaphor LIFE IS A GAME and the metaphorical expressions such as "He is a real *loser* in life," "He *won every game* of life to reach the top," "You must observe the *rules* in doing anything," etc. also shows a diagrammatic correspondence, where the properties highlighted by the metaphor take linguistic manifestations.

Cognitive metaphors bear a property of Peircean metaphor, too, in that they represent a parallelism between the two domains combined by association. In the LIFE IS A GAME metaphor, we understand the object, LIFE, by the mediation of "something else," i.e., A GAME. It is not just a direct sensory understanding of LIFE through imagery, nor just a coded isomorphic understanding of LIFE as A GAME. For a metaphor to 'make sense,' it requires a discovery of the similarities brought into light by the parallelism represented by the metaphor.

3. CREATIVE METAPHOR

Iconicity in general, and metaphor in particular, is foregrounded in poetic language as one of the principles governing the structure of the poetic text. This principle was identified in Jakobson's definition of the poetic function as the projection of "the principle of equivalence from the axis of selection into the axis of combination" (Jakobson 1960: 358). According to Jakobson, Language has a bipolar structure based on similarity (selection, metaphor) and contiguity (combination, metonymy); the polarity of similarity is heightened in poetry.

Unlike in conventional metaphor, the similarity relation in a creative metaphor is ambiguous, yielding multiple possibilities of interpretation. At the same time, as Lakoff and Turner (1989) have shown, there is an intimate relationship between conventional and creative metaphor. The metaphoric conceptual schemata of conventional metaphor are fluid in that they provide unlimited possibility for extension in creative expansion, in which the potential imagery of "dead" metaphor becomes activated (e.g., "The darkness of his despair was dispelled by her smile"). As Haley (1988: 53) has shown, creative metaphor in its fullest form bears the characteristics of Peirce's "complete sign," i.e., combines aspects of symbol, index, and icon, and in its iconic aspect manifests all three subtypes of iconicity: image, diagram, and metaphor.

4. CONCLUSION

Iconicity manifests itself on all levels in language. The degree of iconicity may vary from example to example, from language to language. It seems legitimate to assume that there is a continuum of bipolarity between iconicity and arbitrariness, on one hand, and a blending of triadic aspects of symbol, index and icon, on the other. Metaphor represents the most abstract degree of iconicity on the bipolar continuum, and the fullest blending of the three aspects. The most abstract and the fullest blended, however, comes around full circle and points towards the most concrete, and the most complete, through the mind's inner eye. Therefore, we hope that an approach to metaphor and iconicity, which integrates the cognitivist and the structuralist perspectives, might help us to understand the functioning of language as the basic apparatus of human intelligence and feeling.

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'DISTANCE' AND 'DISCOURSE SITUATION' AS METAPHORICALLY INTERRELATED PROTOTYPES

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1. INTRODUCTION

This paper offers a framework which treats properties of the code related to iconicity, metaphorization and the speaker's perspective in systematic fashion. The framework is then applied to solving some morpho-syntactic problems of Russian spatial constructions with seemingly optional variations in or unmotivated restrictions on their selectional properties. Limited space allows me to present only the framework here.

2. THE FRAMEWORK

2.1. Key concepts

Prototypical Situation (henceforth PS), as used by Fillmore 1977 and 1985 and elaborated by Zaitseva 1992. Each PS is an idealized set of certain components with a set of the components' possible characteristics, and thus can be thought of as a partly visual, partly informational "script." A PS may be associated with a substantial number of lexical items (e.g., Fillmore's 1977 "commercial situationn), but is not fully represented by any of them. PSs encase generalized human experience (knowledge of the world) and are used as a cognitive tool for the speaker's conceptualization of the particular extra-linguistic experience. Thus, the PSs to which one refers by using the verbs 'drop' and 'burn' are clearly very different, but one can conceptualize the same real situation--a house burnt to the ground--as either 'X burnt down the house' or 'X dropped a cigarette on the porch'.

PS of discourse is understood as equivalent to the Transactional Discourse Model (TDM) presented and described in Yokoyama 1986. In TDM, each individual in discourse is viewed as a large set of knowledge with a smaller knowledge subset containing the individual's matter of current concern (activated knowledge). The status of a knowledge item as sharedlnon-shared, activated/ non-activated at a given point in discourse is defined through "mathematically possible intersections of the sets of knowledge constituted by the interlocutors" (Yokoyama 1987: 2265). Every discourse exchange is viewed as a series of knowledge transactions, accompanied by transfer of metinforrnational knowledge, i.e. the interlocutors' knowledge of the state of content of all four knowledge sets brought into contact 1. It is precisely this metinformational status of a knowledge item that is instrumental for the present framework, since PS of discourse requires the speaker to assess whether the item is in the addressee's sets, is activated, is shared.

The stage of *pre-linguistic conceptualization* of a real event involves both the speaker's interpretation of the event and his/her assessment of the

addressee's state of knowledge sets. These two aspects of conceptualization are reflected in the speaker's choice of a PS, in focusing on some components of the PS and omitting others, in assigning one characteristic to a prototypical component and suppressing another. The outcome of conceptualization is a set of prototypical components and characteristics; this set will match an existing Semantic Invariant of a code item.

The Semantic Invariant (henceforth: SI) of a code item is composed of the arbitrarily fixed set of components and characteristics of two PSs, one of which must be a PS of discourse. SI serves as another important cognitive tool: the speaker matches the prototypical components/characteristics to a specific SI of a linguistic structure. By virtue of choosing a specific linguistic structure the speaker informs the addressee of the type of conceptualization performed with regard to the real event and to the present discourse situation. Thus, although all the lexical items in the lexicon are context-free, they carry information of the sort "whoever chooses me must possess such-and-such information about the event, about its participants, and about the way the event is related to the whole of the prototypical situation." For example, the SI of the expression barge in' is related to the PS of motion, specifically to its two components "X" (agent) and "final point of motion," components shared by the verb 'enter'. However, the charaf~teristics assigned to "X" are different: while "X" of 'enter' is not specified, "X" of 'barge in' is characterized as "a person imposing his/her unwelcome presence." The same person can of course be conceptualized either as "unwelcome" or as a dear friend. Note that in order to designate the event with 'barge in' the speaker must first assess the addressee's possible reaction (i.e., match the SI to the PS of discourse). Thus the variant 'And then your daughter barged in' might be rejected by the speaker out of consideration for the addressee's feelings. Furthermore, since knowledge of the code and, therefore, of all the SIs of code items are also a matter of knowledge shared with the addressee, the speaker will reject any two expressions with conflicting characteristics in their SIs. Hence, the variant 'The lecture starts at 10. And exactly at 10 the professor barged in!' will be rejected as ill-formed because of the conflicting characteristic in SIs: in the SI of 'lecture' 'professor' fills the role of "X = lecturer" and, therefore, cannot be conceptualized as having the "imposing" characteristic of the component "X" required by the SI of 'barge in.'

Any SI is inherently ambivalent: on the one hand, a SI is related to a PS (iconic relationship), on the other, only a certain number of components and/or their characteristics may compose the SI of a code item (arbitrary relationship). Note that the notion of invariant meaning (much in the spirit of Jakobson 1936) does not translate into the famous "one form--one meaning" formula, but rather into "one invariant form--one invariant meaning." This correction is necessary since the same feature/characteristic of a SI may be encoded at different levels of an utterance, either lexically or syntactically, connotatively or denotatively (see Zaitseva 1990 for details).

2.2. The metaphoric nature of coding

I suggest that the process of coding itself has a metaphoric nature, since:

a) the process of coding is based on the speaker's conceptualization of some extra-linguistic reality, achieved through matching certain segments of the real event to a PS of the speaker's choice;

b) metaphorization can be defined as the mapping of components or characteristics of one PS onto another;

c) the process of coding regularly involves mapping any PS onto the PS of discourse.

3. CONCLUSION

The ultimate goal of any linguistic framework is to establish a mechanism allowing for the rendering of subjective, individual meaning through objective means. The present framework's contribution to this goal is in providing a useful distinction between subjective and objective statuses

of knowledge 2: the objective PSs and SIs of the code items and the subjective knowledge of the event and of the actual discourse situation. It also establishes the links between the two, focusing on the speaker's active role in the process of coding. Furthermore, the framework offers a system of primitives (i.e., components and characteristics of PSs) which operate both at the pre-linguistic level of conceptualization of the event and at the linguistic level, where they comprise the invariant meaning of code structures.

NOTES

(I) In Yokoyama 1986 Russian word order and intonation (as well as deaccentuation in English) is shown to be dependent on the location of knowledge items in the intersections of the interlocutors' knowledge sets. In Yokoyama 1991 TDM is used to determine the predictive rules of reflexivization in Russian.

(2) The extent of the confusion between the subjective and objective status of knowledge is illustrated by a passage in a recent textbook for introductory linguistics courses (Monica Crabtree and Joyce Powers, **Language Files**, Ohio State University Press: Columbus, 1991, p. 212): "... different people's mental images may be very different from each other, without the words really seeming to vary much in meaning from individual to individual. For a student, the word *lecture* will probably be associated with an image of one person standing in front of the blackboard and talking, and may also include things like the backs of the heads of one's fellow students. The image associated with the word *lecture* in the mind of a professor, however, is more likely to consist of an audience of students sitting in rows facing forward, and may include things like the feel of chalk in one's hand, and so on. (. . .) It's hard to see how a word like this could mean essentially the same thing for different people, if meanings were just mental images." Indeed, PSs are not "just mental images", for their components are associated with non-visual information/characteristics. However, other objections to the value of ·mental images" are ungrounded. First of all, people are never just 'students' or 'professors.' The speaker's naming of the same agent as 'a professor' or 'that goof is a result of his conceptualization of his referential knowledge and of the actual discourse situation. Second, the speaker's focusing on either component of the PS associated with lecture' (i.e., "lecturcr" or "audience') is communicable linguistically through other elements of a sentence, as in 'John gave a lecture' vs. 'John attended the lecture'. Finally, such associations as "feel of the chalk in one's hand" belong entirely to the personal experience of an individual, rather than to the idealized experience reflected in a prototypical situation. It is precisely their ideal nature that renders PSs and SIs similar for all speakers of a language.

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METAPHOR, MYTHOLOGY, AND EVERYDAY LANGUAGE

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It has long been a familiar fact that mythologies involve metaphorical and symbolic structures. This paper will attempt to expose some of the relationship between those structures and the metaphorical structures commonly found in everyday language. Although this is part of a project which will eventually involve more crosscultural comparison, I focus here on one particular and well-documented mythological tradition within the Indo-European linguistic and cultural community: namely, classical Greek mythology. It will become evident that this tradition has striking parallels with everyday metaphorical structures even in such a distant branch of Indo-European as English.

ONOTOLOGY AND FAMILY STRUCTURE.

Hesiod describes the world as consisting of the Sky God (or the succession of Sky Gods) and the Earth Goddess, Ouranos and Gaia. This is at least partly an image-metaphor, a mapping of the physical structure of the earth (seen as flat, not globe-shaped) and the sky onto a man lying on top of a woman. Further image-metaphoric structuring maps precipitation, which falls from the sky onto the earth, onto ejaculation of semen from the male body into the female one during intercourse. Vegetation's need for rain, in order to live and grow (making the earth fertile), is mapped onto the need for semen to enter the womb for conception of a child to take place.

This metaphor is not only about creation, but about ontology. The earth and sky's physical configuration is not a one-time past event: since they remain permanently in the same physical proximity, they are forever copulating, forever re-creating the universe by their fertile intercourse. The other gods are all descendents of this first and eternal mating. And those gods metonymically represent nearly all the other parts of the universe: the sea and the underworld, the sun and the moon, and different kinds of people (smiths, warriors, lovers, etc.). So the universe is ontologically dependent on the Gaia/Ouranos pairing.

As Turner (1987) has shown in great detail, progeneration is a basic Indo-European (if not universal) metaphor for causal structure and for ontological priority. Children cannot exist without parents causing them to come into existence by intercourse and child-bearing. Parents, of course, have no such causal dependency on children. This basic causal link is a metaphor for many less obvious connection. For example, humans could not live without an earth

and a sky and the rest of the physical structure of the world, while the environment does not require humans. Although this is not a causal relationship, it is a one-way dependency. This is the relationship expressed by the assumption that earth and sky are PARENTS of CREATION.

Turner's CAUSATION IS PROGENERATION metaphor is profusely manifested in language, outside of mythology. Turner has presented literary examples from much of Europe and from many different periods. From proverbs like "Necessity is the *mother* of invention" or poetic examples like "the wish is *father* to the thought" (i.e., wishing causes us to believe the wish is true), to everyday usages like calling Einstein the "*father* of modern physics," we regularly represent causal structure in terms of physical progeneration.

The family-structure metaphor goes further than just creation as progeneration, however. As Turner points out, family ties can be used as a metaphor for any resemblance or relationship. The "Divine Family" of Earth, Sky, Sun, Moon, and Sea presents them as (1) alike in being eternally present natural phenomena (hence immortal, not like humans), and (2) interrelated with each other: nature is a harmonious whole made up by different related parts. It also expresses the belief that their common eternal ancestors (Earth and Sky) have bequeathed to them their immortal status, as mortal children resemble their parents in being mortal. There are further causal dependencies to be discerned. We experience the sky with no sun or moon in it, but never the sun or the moon with no sky: this unidirectional correlation is appropriately expressed by the Sun and the Moon's descent from the Sky, rather than the other way around.

Once again, these aspects of kinship metaphors are by no means restricted to mythology. When Hilary Clinton said, "Gennifer Flowers is the daughter of Willie Horton," she was adducing not so much causality as resemblence between the two cases, coupled with temporal precedence of the Horton case. Poetic examples where kinship (especially siblinghood) means similarity abound: "Sleep is the *sister* of death" means that it resembles death, not that it is caused by the same things. And a "*grandfather* clause" simply gives special exemptions to cases with temporal priority.

Cycles of light, growth, and life.

Lakoff and Turner (1989) pointed out that one of our most salient metaphors for life is cycles of light and heat. Thus, life is a day, as in Catullus' famous poem where he tells his beloved that once life is over, "There is one single everlasting night which must be slept." Or life is a year: youth is springtime, old age is winter. These, and references to the lunar cycle as well, are structuring metaphors of the Greek mythological corpus.

Demeter (the Divine Mother) is a later-generation Earth goddess, sister of the latest-generation Sky god, Zeus (the Divine Father, as we see in his Latin name, Jupiter). She is the cause of a yearly cycle of seasons. Her daughter (or her younger self), Persephone (or Demeter Kore, Demeter the Maiden) is stolen by the underworld god of death, and compelled to remain underworld as its queen for half the year. This half the year is Fall and Winter, while the fertile Summer and Spring happen when Kore is above ground. Besides Kore, there is another Underworld goddess, Hecate, who is an old crone, rather than a young maiden or a mature fertile woman. In the spring, Kore returns and makes the earth fertile again. There are thus three separate female figures associated with

the Earth, and these have been seen by analysts as aspects of the same goddess. The youngest, Kore, is a maiden and is associated with spring. Demeter, the mother, is associated with summer and harvest: the period during which plants bear fruit. And Hecate, the old woman, is associated with the end of fall and the winter, when plants die, branches are bare, and there are neither flowers nor fruit. The structure of the agricultural year is thus mapped onto the human life cycle (as it is also with Christ, in Christian ritual). The woman's fertility at the relevant point in the life cycle is mapped onto the state of fertility of the vegetation at the relevant season: potential in spring, actually fertile in summer and at harvest time, and no longer fertile in winter. Interestingly, the lunar metaphors inherent in Artemis (lunar cycle = menstrual cycle and also female life cycle) are absent from English; one reason for this may be the way artificial lighting has made the phases of the moon irrelevant to a technological society.

Lakoff and Turner point out the experiential bases for these metaphors. The seasons provide a cycle of heat and light which covary with our experience of life and death of vegetation; but human life likewise requires heat and light to exist. Sexual activity increases body heat. Female fertility does correlate with age. As Lakoff and Turner likewise observe, these same metaphors are common in language, not just in English but at least in European languages and cultures generally. Artistic portrayal of Spring as a young woman and of Winter as an old man was common throughout the European Middle Ages and Renaissance. Shakespeare's famous "That time of year thou mayst in me behold" treats old age as autumn.

CONCLUSIONS.

These are only a few of the metaphors which are basic to both the Indo-European mythological tradition and English linguistic usage. Image metaphors abound in both mythology and linguistic usage. Just as the Sun's rays are arrows, or rain is ejaculation in mythology, so in everyday English rain can be urine ("It's pissing down"), and a disliked male can be a *prick* (a metaphor for the genitals, metonymically referring to the person). Space, not lack of material, forces the list to stop.

The crucial point is that many of the same metaphorical structures are evidently at work in very different realms of human cultural structure. This is no surprise to anyone who believes that human culture and cognition and language are all part of a single whole, but would pose major problems for any analyst eager to treat linguistic usage as separable from culture and cognition, or mythology as separable from everyday thought and language.

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ON MAPPING

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The basic position underlying this panel is that language is to some extent iconic. Everyday language is iconic because it can reproduce a fragment of objective reality and figurative language is iconic because it creates images (albeit in a "special" way) of reality.

Almost all the papers at some point in their argumentation used the word "map" to explain this relationship between language and the world, whether it was used in the semiotic sense, as an example of a diagram, a subtype of Peircean cateogry icon, or cognitively as in the image-schematic metalanaguage of cognitive linguistics.

It is this word "mapping" that I take issue with in this discussion.

As a first point, I would like to recall that Umberto Eco (1975) questions the definition of an iconic sign as that which possesses some relational properties of the represented object. Is the diagram drawn on the basis of what one sees or what one knows? The diagram reproduces the relational properties of a mental schema. Moreover he is sceptical about the "naturalness" of iconic signs which often respond to codes in use in a specific historical period or in a specific social or artistic formation. Therefore iconic signs can be constrained by convention and context. He states that the organization of expression is motivated not by the object itself but by the culturally-coded content which corresponds to a given object.

But is this mental image visual or verbal?

Now Alan Paivio (1979) reminds us that to understand the cognitive workings of the image, we must understand how it exists in memory. Is the image encoded in long-term memory as an iconic structure or a propositional structure? His research points to the possibility that there is a dual coding system, both iconic and verbal. Visual imagery contributes to the speed and flexibility of the search for information that perhaps provides the basis for the relevant interpretation. However, relevance itself is largely determined by the verbal system whose sequential nature assures an orderly and logical flow of ideas. Both verbal-associative and visual-perceptive processes might contribute somehow to the construction of an integrated symbolic image.

And the emphasis on the symbolic aspect of the image brings us around to some postmodern critics who refuse to think of language in terms of identity relations. For Baudrillard (1979) sign theory posits equivalence and reduces the possibility of symbolic ambivalence, thereby implying a metaphysical vision which idealizes both the sign and reality, the first as form, the second as content, in a formal opposition. Baudrillard adds that the question of the "arbitrariness" of the sign is a false problem which can be eliminated only by destroying the possibility of semiology itself. He proposes the substitution of simulation with simulacrum, of reality with ritual, of production with seduction.

But this apparently extremist position finds an echo closer to our linguists' home. Lakoff and Johnson (1980) dedicate several chapters of their volume Metaphors we live by to what they call the "objectivist myth" in Western philosophy and linguistics, based on an identity relation between words and the world and on the truth conditions of those relations. If the utterance fits the world it is true; if it doesn't fit, it is false. That is not how language works, - nor how the mind works. Lakoff and Johnson claim that human thought processes are basically metaphorical. Linguisitic metaphors are possible because the human conceptual system is metaphorically structured.

T. De Mauro (1974) has also stated that metaphor is a characteristic not of language but of man. What constitutes historically natural languages as a coding system is precisely metaphoricity, which is the direct consequence of the non-calculability of synonymic and hyponymic relations. It implies indeterminacy and inventing the rules, "as we go along", explicitly citing Wittgenstein.

Therefore, if, when talking of iconicity, we intend a notion of similarity that is fixed and static, then metaphor is hardly iconic. A metaphor is built on multiple images. It suggests similarities, not a similarity. It is something heterogeneous and plural and therefore open-ended. "Put a tiger in your tank" elicits diverse images: mass and muscle, speed and power, but also agility and aggressiveness, confidence, success and even victory. It suggests that gasoline is in some way, and in several ways, maybe, like a tiger. If a metaphorical image represents at all, then it does so at most in a way similar to what Docherty (1990) calls the most typical of photographs, the blurred image, being the result of what I would call the astigmatic eye. As a cognitive structure, it is the focusing mechanism which regulates the appearance and disappearance of images, how they emerge and fade, what is seen and what is not, --- images that have fuzzy edges because they are continually shifting.

So rather than give us a map, metaphor seems to promise one. It is an ambivalent construction, suggestive and provocative, --- not a solar eclipse, to borrow Paivio's meta-metaphor but, more tritely, a veil. Rather than reveal reality, metaphor obscures reality. Poetic metaphor is exemplary because it is maximally multiple and ambivalent, seductive and ritualistic, a demonstration that perhaps language is magic not mapping.

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TABLES RONDES / PANEL DISCUSSIONS

TITRE : TERMINOLOGIE, DISCOURS ET TEXTES SPÉCIALISÉS
TITLE : TERMINOLOGY, DISCOURSE AND SPECIALIZED TEXTS

ORGANISATEUR(S) / ORGANIZER(S) :
Rostislav KOCOUREK \ Louis-Jean ROUSSEAU
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TERMINOLOGIE, DISCOURS ET TEXTES SPÉCIALISÉS [1]

Rostislav Kocourek, Louis-Jean Rousseau et collectif [2]

Dalhousie University, N.S. / Office de la langue française, Québec
CANADA

1. LA TABLE RONDE TERMINOLOGIQUE (RK)

Cette table ronde du CIL 92 a réuni neuf rapports, présentés par des spécialistes de cinq pays (Allemagne, Canada, France, Finlande, Suisse). Ces rapporteurs représentaient les domaines suivants: la linguistique générale et française, la lexicologie et la phraséologie, la sémantique lexicale, la sémiolinguistique et la sémiostylistique, et plus particulièrement les divers courants de l'étude terminologique: la terminologie descriptive, néonymique, normalisatrice et l'aménagement linguistique, la terminotique, la socioterminologie, la terminographie et la truductologie spécialisée. Ces spécialistes apportaient à la Table ronde l'expérience de deux types fondamentaux et complémentaires d'approche: 1° expérience des universitaires (Berne, Dalhousie, Laval, Leipzig, Ottawa, Turku), 2° l'expérience des terminologues de plusieurs organismes prestigieux, nationaux et internationaux (Office de la langue française, Délégation générale à la langue française, Centre de terminologie et de néologie, Comité technique 37 "Terminologie" de l'ISO, le Réseau international de néologie et de terminologie, RINT). La Table ronde a eu lieu les 10 et 11 août 1992. Conformément à la règle établie, on a réservé un temps égal aux rapports et aux discussions. Il y a eu environ six questions/réponses par rapport. Les séances ont attiré plus de 30 spécialistes (un maximum de 55). La présidence des séances a été assurée, alternativement, par M. Rousseau et par M. Kocourek. On a fait lecture d'une notice bio-bibliographique de chaque rapporteur avant son exposé. Voici les idées pricipales des neuf rapports présentés. Le texte et la perspective de ces rapports sont ceux des rapporteurs. On n'a pas essayé d'harmoniser les points de vue présentés, ni de retenir le consensus, les différences et les précisions qui se sont dégagés de la discussion.

2. LES TEXTES SPÉCIALISÉS ET LA TERMINOLOGIE EN TANT QU'OBJETS DE L'ANALYSE LINGUISTIQUE (R. Kocourek, Canada)

La composante terminologique et technolinguistique accompagne les congrès internationaux des linguistes depuis leur debut. Au premier congrès, à La Haye en 1928, Ewald E. J. Messing présentait sa linguistique économique (*Wirtschaftslinguistik*), qu'il considérait comme une science économique; et au 3ᵉ Congrès, à Rome en 1933, Walter Porzig proposait sa conception technolinguis-

tique plus axée sur la langue. Il définissait la langue de spécialité comme «la totalité des moyens d'expression qui se rapportent à une spécialité donnée» (Préactes), une définition dont diverses paraphrases et variantes circulent jusqu'à nos jours. L'influence de Porzig s'ajoutait à celle de Eugen Wüster et de son ouvrage pionnier sur la normalisation internationale de la langue dans les techniques, paru en 1931. C'est donc dans les années trente que s'est formée une étude technolinguistique équilibrée (W. Porzig, Z. Vančura, B. Havránek) qui peut être considérée comme une partie intégrante de la linguistique.

En organisant la Table ronde terminologique CIL 92, on voulait assurer une présence visible de la technolinguistique (= de la linguistique de spécialité) et de la terminologie au plus grand congrès mondial de linguistique théorique (non appliquée). On peut se réjouir d'avoir atteint la meilleure représentation terminologique dans l'histoire des congrès internationaux des linguistes. Au XIIIe Congrès, à Tokyo en 1982, le groupe de travail technolinguistique de Theo Bungarten comptait six participants. Au XIVe Congrès, à Berlin en 1987, les communications terminologiques étaient dispersées dans les différents groupes de travail. Cette année, à Québec en 1992, il y avait au moins 28 communications terminologiques et technolinguistiques prévues au programme; neuf dans le cadre de notre double Table ronde, huit au cours du Colloque des étudiants et étudiantes diplômés [voir le rapport de synthèse de M. Kocourek et Mme Cormier], et onze en dehors de la Table ronde au sein des sections 2, 9 et 13 (2: L. Mercier, P. Martel, E. Anglada Arboix, R. Kocourek, F. Gaudin, Y. Gambier; 9: D. Daoust, L. Guespin et F. Gaudin, A. Martel; 13: T. Célestin, M. Ogrin).

Cette présence terminologique importante convient très bien au génie du pays où a eu lieu le XVe Congrès. C'est que, au cours de ces dernières décennies, on est parvenu, justement au Canada et au Québec, à développer d'une manière remarquable les structures terminologiques et technolinguistiques: à Québec, à Ottawa, à Montréal, à Sherbrooke et ailleurs, dans les universités, dans les organismes gouvernementaux linguistiques, terminologiques, et traductionnels.

Tout en acceptant l'importance de la linguistique pour l'analyse de la langue de spécialité et de la terminologie, nous nous rendons compte que la linguistique n'est qu'une des disciplines connexes qui explorent la langue et la terminologie de spécialité. La linguistique ne peut ni ne veut s'arroger toute seule le droit d'explorer ces objets, qui sont--de par leur nature--pluridisciplinaires. En plus de la linguistique, il y a les disciplines thématiques, la sémiotique non verbale de la communication spécialisée (la technosémiotique), l'étude terminologique non linguistique, la philosophie, la logique, la psychologie, la sociologie, la pragmatique et d'autres. Bien que notre rapport adopte naturellement le point de vue de la linguistique, nous soulignons que c'est dans l'esprit d'ouverture, de tolérance et de coopération qu'a été conçue notre table ronde. La linguistique peut cependant contribuer de deux façons importantes; elle peut approfondir et élargir la connaissance et la description des aspects langagiers de la langue de spécialité (langue naturelle) et de la terminologie, et elle peut servir de lieu de rencontre et d'entente pour des disciplines connexes complémentaires.

Dans la conception épistémologique qui semble être de plus en plus fréquentée, ce sont les textes spécialisés qui constituent les données premières de

la linguistique et de la technolinguistique. Les analyses, les descriptions, les caractéristiques sont plus adéquates et plus fructueuses si elle découlent de l'observation des textes. Dans un petit dépouillement sommaire de 2059 publications du périodique *Livres du mois* du février 1989, nous avons constaté que 55 publications appartenaient à la poésie (environ 3%), 756 à la prose littéraire (env. 37%) et 1248 à la prose spécialisée (env. 60%). Ceci nous permet de supposer que les textes spécialisés constituent une composante majeure des textes publiés disponibles d'une langue comme le français. Cette prédominance quantitative des textes spécialisés renforce l'importance épistémologique de l'analyse des textes spécialisés. Elle aide à justifier, ou du moins à inspirer, l'effort de mettre sur pied et de développer l'étude de la terminologie et de la technolinguistique basée sur les textes de la prose spécialisée en langue naturelle, c'est-à-dire de la composante linguistique et non sémiotique non verbale (symboles, images, graphiques) de ces textes. C'est dans ce sens que la technosémiotique pourrait devenir encore plus pertinente pour la technolinguistique que les autres disciplines connexes.

C'est ici qu'il faut parler de l'aliénation ou de l'hésitation de nombreux terminologues et technolinguistes par rapport à la linguistique. La solution semble être peu compliquée; toute théorie, toute approche linguistique n'est pas capable de saisir la spécificité de la langue de spécialité. Il s'agit de bien choisir parmi les approches linguistiques disponibles, ou d'être conscient des caractères de la terminologie en construisant sa propre théorie. Déjà sur le plan grammatical, les terminologues qui s'intéressent à la charpente grammaticale de la langue de spécialité sont souvent déçus par l'indifférence ou par l'impuissance de certains courants linguistiques devant le fait technolinguistique. Cependant, cette indifférence et cette impuissance caractérisent surtout bien des courants qui se réclament de la grammaire universelle ou de la linguistique générale. La grammaire spéciale par contre, par exemple la grammaire française, dispose d'un nombre important d'analyses monographiques et d'ouvrages d'ensemble dont peut s'inspirer la description technogrammaticale.

Puisque c'est sur les plans lexical, sémantique (sémantique/pragmatique), textuel et graphique que l'on trouve les marques les plus caractéristiques de la langue de spécialité, il est important de ne pas trop dépendre des théories linguistiques qui chassent la problématique lexicale, sémantique, textuelle et graphique en dehors de la linguistique. Quand je proposais cela à Montréal en 1978, au 5ᵉ Congrès de l'AILA, le réductivisme antigraphique, antilexical, antisémantique et antitextuel était toujours encore très bien vu. Aujourd'hui, l'univers linguistique est changé, la route est ouverte. La linguistique a considérablement élargi son domaine et elle dispose d'approches capables d'explorer la spécificité de l'objet technolinguistique.

La graphématique a fait des progrès notables. La lexicologie et l'étude technologique ont raffiné leurs descriptions de la formation et de la sémantique lexicales et terminologiques et leur réflexion métalexicographique et métaterminographique. Les domaines où le progrès est particulièrement frappant, ce sont les disciplines linguistiques et pragmatiques qui analysent les textes: la sémiolinguistique et la sémiostylistique, la linguistique et la sémantique textuelles, l'analyse textuelle, l'analyse du discours, la pragmalinguistique, la néorhétorique,

la stylistique fonctionnelle, etc.

Tous se rendent compte du rôle que jouent aujourd'hui deux domaines auxiliaires par excellence: 1˚ l'informatique linguistique et la linguistique de corpus nous permettent de saisir et de manipuler les vastes masses verbales des textes spécialisés; 2˚ les données quantitatives constituent des outils de vérification, des moyens heuristiques et des éléments ayant une fonction descriptive et contribuant à une caractéristique de la structure de la langue. La recherche terminologique moderne est solidement appuyée sur le traitement informatique et sur le dépouillement quantitatif.

Quelques-uns des rapports de notre Table ronde et du Colloque des étudiants diplômés nous rappellent encore trois aspects peu observés de la langue de spécialité. La saisie des textes spécialisés est plus solide, plus profonde et plus humaine si elle note les contrastes entre les quatre grandes classes textuelles (langue quotidienne, prose spécialisée, prose littéraire, poésie), si elle ne fait pas abstraction de leurs caractères historiques et diachroniques, et si elle observe le côté stylistique, esthétique, littéraire de ces textes.

La technolinguistique terminologique et textuelle commence donc aujourd'hui à disposer de nombre d'outils et d'approches théoriques et techniques pour atteindre des résultats importants. Elle commence également à faire preuve d'une prise de conscience de son histoire et de son propre univers. Les communications qui suivent et la contribution des intervenants à la discussion témoignent l'état actuel de notre discipline.

3. LA TERMINOLOGIE SELON UNE APPROCHE TEXTUELLE: UNE REPRÉSENTATION PLUS ADÉQUATE DU LEXIQUE DANS LES LANGUES DE SPÉCIALITÉ (LSPs)

(Pierre Auger et Marie-Claude L'Homme, Université Laval)

Introduction

Traditionnellement la lexicographie et la terminographie ont été isolées du strict domaine de la linguistique en partie à cause de l'exclusivité mise par ces disciplines à traiter du seul mot (ou du terme), en partie aussi à cause de l'empirisme de leur approche, les deux disciplines préférant s'en tenir aux pratiques artisanales séculaires. La place récente accordée en informatique au développement de systèmes d'information basés sur une formalisation des connaissances et de leur exploitation, particulièrement pour des domaines relevant des sciences ou des techniques a remis en lumière la question du rôle fondamental du terme (et a fortiori des systèmes terminologiques) dans le processus cognitif humain. Dans cette approche le mot (terme), loin d'être traité comme une unité isolée, est indissociable du texte qui le contient et lui donne son sens (contenu cognitif). Ainsi, de nombreuses applications de la linguistique moderne utilisent entre autres outils linguistiques des dictionnaires terminologiques structurés, les systèmes experts sont de ceux-là. Ici le terme est le véhicule garant du contenu cognitif du message spécialisé et, en aucune façon, on ne peut lui substituer l'unité-mot (non-terme) qui appartient à la langue générale et dont le contour sémantique est trop flou. Le fait également que l'analyse de discours jouisse ces dernières années d'une grande popularité au sein des études linguistiques modernes, a influencé le champ d'étude des LSP au point même de modifier les pratiques terminographiques traditionnelles.

Dans cette perspective, l'unité lexicale constitue l'une des composantes linguistiques du texte spécialisé (les autres composantes formelles étant le texte lui-même, la phrase, le syntagme, le morphème et le graphème). Les composantes du texte spécialisé sont étudiées dans le cadre de la linguistique de spécialité qui tient pour acquis que la langue de spécialité (LSP) peut être étudiée comme un système linguistique et opposée à des ensembles mieux connus, comme la langue commune. Nous donnons l'étiquette *linguistique de spécialité* au mouvement d'intérêt pour l'étude de la langue de spécialité. Les ouvrages les plus diffusés dans ce domaine sont Drozd, Seibicke (1973), Hoffmann (1979, 1980, 1984), Kocourek (1982, 1991) et Sager, Dungworth et McDonald (1980).

État de la question

Le lexique est certes le niveau linguistique de la LSP qui a fait l'objet du plus grand nombre d'études mais ces études sont peu harmonisées à cause des objectifs différents poursuivis par les disciplines qui s'y intéressent.

C'est le lexique spécialisé - l'ensemble des termes - qui a retenu la plus grande attention des chercheurs. L'étude du terme est abordée dans un cadre particulier, celui de la terminologie qui vise à développer des méthodes pour sa contrepartie appliquée, la terminographie. On a mis l'accent, notamment, sur les rapports notionnels du terme avec un sujet spécialisé et les relations qu'entretient le terme avec d'autres à l'intérieur d'un domaine de connaissances. Cette démarche explique qu'on se soit attardé davantage sur la définition du terme par rapport au mot de la langue générale ainsi que sur sa signification et sa finalité conceptuelle. Les aspects fondamentaux du terme sont abordés dans Wüster (1979), Rondeau (1983) et Sager (1990); certains de ces aspects mais avec accent mis sur le français dans Guilbert (1973, 1981) et Kocourek (1982, 1991). On s'est attardé en outre sur la formation du terme (presque exclusivement sur la formation du terme à vocation nominale) mais encore dans un cadre restreint. On a considéré le terme extrait du contexte linguistique dans lequel il fonctionne. À noter quelques études encore marginales qui rompent l'isolement dans lequel on a considéré le terme en terminologie traditionnelle: l'étude des collocations ou phraséologismes (Picht, 1987; Heid et Freibott, 1991): l'étude des rapports du terme avec le texte spécialisé (Kocourek, 1991a, 1991b). En conclusion les aspects touchant les autres aspects lexicaux (vocabulaire autre que terminologique); le fonctionnement du terme dans le texte spécialisé et les rapports qu'entretient le terme avec le texte ont été négligés.

La terminologie a considéré le terme comme une entité conceptuelle s'opposant à une entité linguistique, le mot (relevant de la langue générale). Des travaux ont montré cependant que la division binaire pratiquée par la terminologie ne rendait compte que d'une partie de la réalité. Nous faisons allusion ici aux travaux de Phal (1968, 1970, 1971), qui a démontré à l'aide de méthodes statistiques, fondées sur les méthodes de Gougenheim, que le lexique de la langue de spécialité fonctionnait avec une troisième compostante intermédiaire: le vocabulaire général à orientation scientifique (V.G.O.S.) (défini comme «l'ensemble des mots et expressions de faible spécificité mais de grande diversité qui constituent, à un niveau élémentaire, les fondements indispensables de l'expression scientifique quelle que soit la science ou la technique étudiée» (Phal 1970). Phal a abordé la question sous l'angle didactique et propose une liste de

fréquence de quelques centaines de mots qui appartiennent à ce V.G.O.S. La description de Phal reste partielle puisqu'elle ne couvre qu'une partie du vocabulaire de la LSP et qu'elle ne fournit que des indices fragmentaires sur son fonctionnement et sa signification.

Enfin, on a considéré le lexique de la LSP dans un autre cadre, celui de la langue de spécialité (en particulier Hoffman 1980, 1987) où on s'est surtout intéressé à la fréquence de certains phénomènes (relevés de mots par catégories grammaticales, relevés des morphèmes lexicaux les plus utilisés dans la formation du vocabulaire savant). Hoffmann, bien qu'il fait quelques allusions au français, s'est surtout penché sur le russe et l'allemand.

Propositions pour l'étude du lexique

L'unité lexicale de la LSP doit être envisagée comme une composante linguistique fonctionnant dans un système plus grand, c'est-à-dire le texte de spécialité. C'est dans ce cadre et dans ses rapports avec des unités linguistiques plus grandes (le texte, la phrase, l'unité syntagmatique) que l'unité lexicale devra être appréhendée. Cela dit, une étude du lexique peut se situer à plusieurs niveaux.

Études sur le lexique de la langue de spécialité (propositions):

Le domaine strictement lexical: Composantes lexicales (vocabulaire général, vocabulaire général d'orientation scientifique et vocabulaire terminologique); catégories grammaticales (distribution des mots par catégories grammaticales; référents conceptuels des mots par catégories grammaticales); rapports mots simples/mots complexes.

Le domaine intra-lexical: morphologie et formation des mots.

Le domaine extra-lexical: phraséologie (environnement linguistique des mots - notamment le niveau terminologique); comportement grammatical des mots, notamment du verbe; rapports de l'unité lexicale avec le texte (répétition, anaphore, définition, etc.).

Les descriptions envisagées outre le fait qu'elles serviront directement à caractériser préalablement à leur traitement les différents types de textes de LSP (ce qui est fondamental pour établir un corpus de dépouillement terminographique), serviront à générer des solutions pratiques à des problèmes terminologiques ou terminographiques (généraux ou spécifiques) jusqu'ici non résolus de façon satisfaisante. Ainsi, la décision d'entrer un terme dans la nomenclature du dictionnaire terminologique pourra s'appuyer sur une description de la stratification lexicale (niveaux) des textes de LSP; la représentation des autres catégories que celle du nom dans les textes de LSP pourra elle profiter d'analyses terminométriques (fréquence, distribution et répartition des unités) effectuées sur un large corpus de LSP. D'autres aspects comme l'analyse des formants morpho-lexicaux de termes, le traitement des éléments anaphoriques dans le texte ou l'analyse du contenu conceptuel du texte de LSP (rapports du terme au texte) peuvent également guider le travail du terminologue-terminographe. Il y a lieu d'attendre des développements importants pour la terminologie du traitement automatique des LSP.

Ceci étant posé, il appert que tout le domaine de la description et de l'analyse terminologique se fonde de plus en plus sur l'analyse textuelle à base computationnelle en utilisant des principes de la lexicométrie. Cette approche nou-

velle favorise un traitement terminologique (et terminographique) plus robuste et exhaustif. L'analyseur textuel est au centre de ce type de traitement, un logiciel qui permet d'effectuer diverses manipulations sur des textes en version électronique (i.e. saisis avec un traitement de texte ou numérisés à l'aide d'un lecteur optique (scanneur) assisté d'un logiciel de reconnaissance de caractères. Ainsi, ces manipulations consistent le plus souvent en la recherche d'informations ponctuelles ou systématiques dans un texte. Les concordances sont des produits issus de ce type de manipulation. Elles permettent également de quantifier divers éléments du texte (p. ex. la fréquence d'une forme, le nombre de mots différents etc.). Axés principalement vers le repérage ou le traitement de chaînes de caractères, les analyseurs se sont vite perfectionnés en sciences humaines, entre autres, avec la généralisation de la micro-informatique et l'omniprésence du texte dans le circuit de l'information à tous les niveaux sociétaux.

C'est ce modèle d'analyse que nous voulons adopter pour notre projet d'Atelier interuniversitaire d'analyse assistée par ordinateur des textes de LSP. Dans un premier temps, c'est la composante lexico-terminologique qui sera ciblée par les analyses, étant entendu que dès que des fonds de recherche pourront être dégagés, les autres composantes du texte de LSP seront étudiées à leur tour. Ce que nous avons tenté de dégager précédemment vise à affirmer que l'approche textuelle est un fondement d'une représentation adéquate du lexique des LSPs.

4. LES APPORTS DE LA SÉMIOSTYLISTIQUE À L'ANALYSE DE LA DESCRIPTION SCIENTIFIQUE   (Marc Bonhomme, Suisse)

Discipline issue de la sémiotique du récit et de la stylistique générale, la sémiostylistique concentre son attention sur la spécificité des structures textuelles et de leur écriture. En particulier, elle les envisage comme des totalités relationnelles et dynamiques, réglées par leurs fonctions et leur rendement dans la communication. À travers son programme même, la sémiostylistique s'avère très intéressante pour l'examen du texte scientifique. En effet, celui-ci est ordinairement abordé d'une façon atomistique, dans une perspective plutôt lexicale, comme une combinaison de termes techniques. Or la sémiostylistique nous paraît pouvoir dégager ce qui fait que le texte scientifique est un texte, bref un système global que son auteur doit manipuler, dans lequel les termes techniques sont de simples éléments en liaison avec le reste.

Vu le cadre limité de notre communication, nous centrons notre propos sur le genre de la description technique dans le discours naturaliste, avec le cas exemplaire de l'*Histoire naturelle* de Buffon, l'un des textes scientifiques fondamentaux du XVIIIe siècle. La sémiostylistique éclaire le conflit intrinsèque qui se pose à un naturaliste comme Buffon: comment actualiser syntagmatiquement dans les descriptions les nomenclatures paradigmatiques à présenter, qu'il s'agisse du monde animal ou minéral? Si au premier abord les centaines de descriptions animalières de Buffon semblent être faites grosso modo dans le même moule, l'approche sémiostylistique permet d'en dresser une typologie fonctionnelle, déterminée par le dosage Énonciation-Nomenclature et par la nature des animaux étudiés. C'est ainsi qu'on peut répertorier cinq possibilités de descriptions scientifiques à partir de l'*Histoire naturelle*:

1) **La description encyclopédique**: Offrant le minimum d'énonciation et le maximum d'informations, celle-ci exploite les paradigmes descriptifs dans tout

leur volume, recourant à des nomenclatures exhaustives et objectives. Sur le plan de la communication naturaliste et de l'équilibre textuel, ce genre de description s'applique à des animaux déjà connus--ce qui fait qu'on peut les détailler avec précision, mais pas trop familiers au lecteur--ce qui explique la nécessité de leur dévidage systématique.

2) **La description focalisée**: Buffon adopte alors une perspective partielle et filtrante, source de descriptions trouées qui dégagent la spécificité d'un animal selon un paramètre généralement proxémique, lié à la distance cognitive avec l'animal examiné:

- L'animal familier est plutôt focalisé sur son utilitarisme, grâce à des prédicats situatifs qui le cantonnent dans son rapport à l'homme.

- L'animal très peu connu est prioritairement sélectionné par le biais de prédicats analogiques qui le ramènent à des repères connus, moyennant diverses balises assimilatrices.

3) **La description dialectisée**: À ce moment, on relève une forte infiltration de l'énonciation dans les paradigmes, l'acte descripteur prenant le pas sur la descriptions elle-même. Plus précisément, on découvre un processus polyphonique, avec la présence de plusieurs énonciateurs aux côtés du locuteur Buffon, selon deux orientations:

- Soit on assiste à une concordance entre les énonciateurs naturalistes, ceux-ci collaborant dans l'acte de décrire par des reprises citationnelles ou par des ajouts techniques.

- Soit on note des discordances et des débats polyphoniques, l'acte descripteur devenant polémique, surtout avec les animaux problématiques dont la classe ou les propriétés étaient peu fixées au temps de Buffon. Tantôt celui-ci conteste le répertoire d'une espèce en contre-argumentant sur l'un ou l'autre de ses paradigmes. Tantôt il se fait l'écho de certaines descriptions anarchiques et contradictoires, ce qui rend hypothétique toute stabilisation des animaux concernés.

4) **La description subjectivée**: Avec elle, ce n'est plus seulement l'énonciation qui envahit les paradigmes descriptifs, mais les composantes psychologiques et intellectuelles du descripteur. Subjectivèmes et idéologèmes prolifèrent alors à deux niveaux:

- Au niveau évaluatif, avec la prépondérance de l'axiologie qui génère de nombreuses descriptions appréciatives ou dépréciatives. De plus, Buffon ne résiste pas à la tentation de créer artificiellement des couplages axiologiques antithétiques, instaurant des polarités oppositionnelles à remplir à tout prix, ce qui fausse immanquablement les paradigmes descriptifs en question.

- Au niveau idéologique, les présupposés culturels de Buffon réorientant la déclinaison des nomenclatures d'après des canevas préconçus qui transforment ces dernières en fabrications conceptuelles. On remarque notamment dans l'*Histoire naturelle* toute une idéologie du modèle selon laquelle certains animaux représentent le prototype d'une espèce, les autres animaux du même groupe n'en étant que des déviations décrites en termes de manque ou d'excès. De même, les descriptions de Buffon s'imprègnent volontiers de toute une idéologie déterministe qui infère péremptoirement l'obligation des traits partitifs ou qualitatifs d'un animal en vertu de sa seule localisation géographique.

5) **La description poétique**: À un stade ultime, l'oeuvre naturaliste de Buffon soulève le problème plus général de la fonction poétique dans le texte scientifique. Certes, à maintes reprises dans l'*Histoire naturelle*, la poéticité renforce la fonction référentielle, le travail stylistique améliorant le rendement des descriptions, entre autres lorsque la mise en écriture mime les prédicats des animaux étudiés. Mais à côté de cela, on relève fréquemment chez Buffon une excroissance de l'expression qui opacifie les paradigmes par une métaphorisation factice, laquelle surqualifie en général les animaux les plus familiers et les plus chargés symboliquement.

Au terme de nos errances avec Buffon, nous pouvons synthétiser les apports de la sémiostylistique pour l'analyse du texte scientifique. Globalement, elle en montre les limites: comment harmoniser la réalité à décrire avec l'acte même de l'écriture qui distord peu ou prou les paradigmes? Distorsion minimale chez Buffon avec la description encyclopédique; distorsion qui s'accentue chez lui avec les descriptions subjectivées et poétiques. En somme, jusqu'où le locuteur scientifique peut-il aller sans pour autant être noyé dans sa propre parole? Plus précisément, la sémiostylistique nous donne une idée sur le statut de style dans le texte scientifique: au degré faible des descriptions encyclopédiques le style n'est qu'un support relativement transparent. Au degré intermédiaire des descriptions focalisées ou fonctionnellement poétiques, le style bonifie le projet scientifique. Au degré fort des descriptions sur-métaphorisées, le style envahit la référence jusqu'à altérer l'organisation des nomenclatures. En outre, la sémiostylistique met en évidence le fait que le texte scientifique constitue un équilibre à gérer dans la circulation du savoir, l'écriture dépendant de l'orientation argumentative des énoncés, selon des lois sémiotiques que l'on a pu entrevoir avec Buffon: écriture à dominance poétique avec les animaux très connus; écriture polyphonique pour les animaux difficilement saisissables... Une telle variance de facteurs nous confirme finalement que l'expression est une dimension incontournable du discours scientifique, le fond et la forme s'y régulant en un véritable écosystème.

5. RELATIONS BETWEEN PHRASEOLOGY AND TERMINOLOGY IN SPECIALIZED LANGUAGE (Rosemarie Gläser, Germany)

In every province of discourse, the individual concepts of the specialist's notional system are designated either by words or by phrases. Words may be simple or complex words (e.g. compounds, derivatives). Phrases are word group lexemes which may range from string compounds (*hit-and-run driving; under-the-counter sale)* to terminological word groups (*Caesarian operation; consolidation of bone fracture*.

Terminology constitutes the core of the specialist's vocabulary. Within the notional system of a specific subject area, terms designate a defined concept. Thus, they have both a denominative and a defining function. A definition is an equation between *definiendum* and *definiens*, with the definiens being expanded into the *genus proximum* (the next higher generic item in the conceptual hierarchy) and the *differentia specifica* (the distinctive characteristics). In addition to terminology, a specialist vocabulary may include nomenclatures and professionalisms. Nomenclatures are designations of physical objects or abstract entities in an ordered and homogeneous system, without having a defining func-

tion (e.g. the medical nomenclatures of anatomy and physiology, the periodical system of chemical elements, etc.). Professionalisms are often colourful everyday words which designate tools, materials, vehicles, or particular phases of the working process.

In previous LSP (language for special purposes) research, more attention has been focussed on terminology than on phraseology. In the specialist's vocabulary, however, these two types of denomination processes and patterns are closely interlinked. As linguistic terms, *terminology* and *phraseology* ar ambiguous in that they both belong either to object language or to metalanguage. Thus, the term *terminology* designates:
a) the inventory of technical terms, and
b) the theoretical categories, principles and rules for correlating words and phrases to defined concepts, and the recommendations for the lexical material thought eligible for denominations.

As for the linguistic term *phraseology* it may designate:
a) the inventory or stock of phraseological units, i.e. fixed expressions which may be denominations or propositions, and as a whole constitute what we call the phrasicon of a language, and
b) the linguistic discipline which investigates the properties of idioms and phrases from a theoretical angle, classifies them according to their constituent structure, and codifies them in dictionaries.

In British and American phraseological studies, the umbrella term for word-like and sentence-like fixed expressions (denominations and propositions) is *idiom*, irrespective of their semantic properties, whereas in continental European studies the umbrella term is *phraseology*, and the idiom is understood as the prototype and largest sub-group of phraseological units.

As is evident from the present state of the art of phraseological research, more emphasis has been placed on idioms and phrases of the language for general purposes (LGP) than on the language for special purposes (LSP). So far, fixed expressions (idioms and phrases) and semi-fixed expressions (collocations) in specialized vocabularies have been mainly the concern of terminology and terminography (cf. L. Hums 1978; H. Picht 1989; R. Gläser 1989; R. Müller 1990; B. Kissig 1991).

On closer inspection, phraseological units in LGP and LSP share the following linguistic features: lexicalization, reproducibility, semantic and syntactic stability. They differ, however, in the following way: LSP phrases are not common usage, but chiefly serve the communication among specialists, and thus are linked to a discourse community. Moreover, LSP phrases hardly ever have stylistic and/or expressive connotations because they often function as terms. It is a principal requirement for terms that they should be stylistically neutral (i.e. without style markers like "colloquial", "slangy", "folksy", "humorous", or "euphemistic").

In a similar way, LSP phrases are seldom figurative idioms. A phrase with a terminological status is expected to have intrinsic features and to be self-explanatory from the meanings of its constituents. Thus, in the recommendations for terminology harmonization and standardization, metaphors and proper names in designations of new technical concepts are not encouraged.

The phraseological system of the language for general purposes is fully developed and comprises denominations in its centre (with the predominance of idioms), phrases of a partly propositional status in its transition area (irreversible binomials, stereotyped comparisons, proverbial sayings, fragments of proverbs, allusions and fragments of quotations), and propositions on its periphery. With respect to the structural patterns, semantic types and the representation of classes of set phrases, the phraseological system of LSP is markedly reduced and restricted. Denominations in the centre of LSP phraseology are set expressions like:

- in medicine *malignant tumour, benign tumour, multiple pregnancy, consolidation of bone fracture, Hodgkin's disease, Alice-in-Wonderland syndrome*
- in law: *innocent trespass, global insurance, malice aforethought, burden of proof*
- in economics: *intermittent dumping, exceptional price, American option, Arrow's impossibility theorem, Gossen's law.*

Latin phrases are to be found in the special vocabularies of law, linguistics, medicine, and the natural sciences, e.g. *persona non grata, status quo, casus belli, in camera, de jure, de facto; tertium comparationis, consecutio temporum; corpus luteum, homo sapiens; post mortem, in statu nascendi; in vitro, in vivo, ab initio*. The transition area between denominations and propositions is chiefly represented by irreversible binomials (*terms and conditions, privileges and immunities, hit-and-run driving, ball-and-pillar structure, dig-and-turn time, man and environment*).

The majority of LSP phrases, in opposition to those of the system of LGP phraseology, are non-idioms. Although idioms are not a typical phenomenon in specialist vocabularies, their occurrence varies greatly between the individual subject areas:

- in astronomy: *black hole, white dwarf, red giant*
- in medicine: *to go cold turkey, green cancer, blue drum*
- in economics: *high flier, idle funds, jump in prices, to jam the credit brake.*

In the phraseological inventory of LSP, propositions are chiefly limited to a typical state of affairs which is codified in an unambiguous way. Sentence-like phrases which are self-explanatory are, e.g.

- in the language of air-traffic control: *cleared into position. cleared for take-off. standby for take-off.*
- in the language of (international) law: *if death occurs; pacta sunt servanda.*

6. IDENTIFYING THE PHRASEOLOGY OF LANGUAGES FOR SPECIAL PURPOSES   (Roda P. Roberts, Canada)

In the introductory chapter, the terms *phraseology, compound, collocation,* idiom, etc., are discussed with a view to their interest in LSP. The main chapter deals with the extraction of phraseology during text scanning.

In order for phraseology to be incorporated into a term bank, specialized dictionary or lexicon, it obviously has be to extracted from corpora. However, since, as Sager points out in his *A Practical Course in Terminology Processing* (1990, 130), systematic terminology compilation is now firmly corpus-based, i.e.

terminology is no longer extracted from previous lists or by individual searches but from a representative body of texts of a subject field, phraseology extraction can be done using the same materials, either concurrently with or subsequent to terminology extraction.

The starting point is obviously term extraction. These terms will serve as key words which will normally constitute the nodes of the collocations and fixed expressions, although, in some cases, they may serve as collocates.

Once the terms have been identified, the contexts in which they are found need to be extracted. This step is also a part of terminology compilation, for contexts provide material for definition of the concept underlying the term and also illustrate usage of the term. But it needs to be carried out more systematically for phraseology than for terminology. For the terminologist often notes only defining contexts or contexts revealing specific linguistic peculiarities, while the phraseologist is interested in every context, since frequency of occurrence of a given word combination is an important criterion for the identification of collocations and fixed expressions.

In terminology, "the linguistic environment of the context should be so chosen that it complements the information provided by the definition and the usage note" (Sager 1990, 150); therefore terminological contexts vary in length, from one clause or sentence to several. The environment within which collocations and fixed expressions are recognized (the span) is relatively fixed, since the "influence" of a word serving as the node extends only to a certain point into its syntagmatic environment. John Sinclair and others undertook a study whose major concern was to give precision to the category of span upon which the whole notion of the lexical patterning of text rests. Their conclusion was that the influence of the node does not extend appreciably beyond a span of four orthographic words on either side of the node, i.e. no significantly interesting information about the behaviour of the node is gained by taking into account its co-occurrence with words occurring at distances greater than this threshold. Sinclair's finding, validated to a large extent by Martin Phillips in this *Aspects of Text Structure* (1985, 63-64), provides a suitable span size for the extraction of contexts for phraseology.

If the corpus is in machine-readable form, contexts for a given key word can be extracted by computer, using a suitable text searching system such as the University of Waterloo's PAT. The result will be a list of contexts such as those found for the word *immersion* in English. (Since PAT displays contexts by the number of characters desired rather than by the number of words, the span size has to be calculated approximately.) Contexts for all senses of *immersion* are extracted by the computer, which searches for patterns of character in a textual data base. While the possibility of contexts for senses other than the one being examined is reduced by limiting the search to a specialized data base, it cannot be completely eliminated. So the next step would be to examine the contexts and eliminate those that treat senses other than the one under study (in this case, the method of language teaching). Doubtful contexts (where the precise sense of *immersion* is not clear) must be elucidated by extracting a longer context, before they can be used.

The next step would be to examine all the contexts to identify general fea-

tures that may be significant for phraseology. The first characteristic that strikes the reader is that *immersion* as an educational term generally appears in close proximity to another education-related term (e.g. *class, program, teaching, grade*) or to a language designation (e.g. *French, English*). The second characteristic that can be noted is that *immersion* is often followed immediately by an education-related term, which it modifies (e.g. *immersion classes, immersion programs*). In this case, *immersion* may be a collocate of another node, or may be the first element of a compound. This distinction can be made at a later stage.

At this point, all likely collocations or fixed expressions need to be identified in the contexts. This step cannot be done completely by computer, for the latter cannot determine what does or doesn't constitute a fixed or habitual word combination. In order to ensure that no important word combinations are ignored in the contexts, the terminologist/phraseologist would be well advised to work systematically at this stage. He could work his way through all the types of lexical collocations listed by Benson, Benson and Ilson to see which ones are found with *immersion* as a node and which ones contain this term as a collocate. He would begin by pinpointing the lexical collocations with *immersion* as a noun (with a verb, as in *to be enrolled in immersion*, or with an adjective, as in *French immersion*) or in phrases where *immersion* has an adjectival function (for example in *immersion program*).

A list of all expressions found can thus be established. The components of the elements are lemmatized to a large extent during this process. Thus, in cases where both the singular and plural are possible for the noun element, the singular is used (e.g. *immersion school*). Where two different spellings are possible for a component (e.g. *program/programme*), one - generally the most frequent - is used. Conjugated verbs are transformed in the infinitive. Such lemmatization allows for the reduction of the contexts to their simplest and most useful forms, and presents the expressions in a form suitable for their inclusion as entries or subentries in dictionaries. etc.

The list of expressions can then be formally established using the computer, with each expression noted along with its frequency of occurrence in the textual data base, and its relevant contexts. Now comes the time for decisions. First, which of these expressions should be retained for further processing? This decision can be based on frequency of occurrence and/or distribution of the expression in the corpus. Ideally, both would be used as criteria. However, given the fact that the corpus I have consulted is a general one, no distinction has been made between the various texts. Hence, frequency is the only criterion that can be used in this case. The number of occurrences necessary to retain an expression can vary depending on a variety of factors: the nature of the corpus; the size of the corpus; the type of users who will use this phraseology; etc. In the case of *immersion* under study, I have fixed the number of occurrences required for retention of an expression at five. On the basis of frequency of occurrence, I would retain in the lexical collocation category of adjective (or noun used adjectivally) + noun the following 5 of the 9 expressions identified at the start: *immersion class, immersion course, immersion program, immersion student, immersion school.*

The four that have been eliminated are *immersion movement, immersion*

pioneer, immersion experience, immersion education. Next, a decision would have to be made whether complex units such as *immersion class* and *immersion program* should indeed be considered as collocations, with *immersion* as the collocate, or rather as independent terms. This is a delicate decision and could well give rise to arguments among terminologists-phraseologists. The fact that the units under consideration here are often preceded by a language designation (e.g. French immersion course, and sometimes even attached to the language designation by a hyphen (e.g. *French-immersion program*) has made me retain them as lexical collocations (of the adjective, or noun used adjectivally, + noun variety), rather than as compound terms.

At this point, the terminologist-phraseologist has a final list of collocations and fixed expressions, along with suitable contexts, to present to users in the form he deems most useful for them.

What I have tried to establish here is the importance and the feasibility of going beyond the narrow limits of the term and analyzing all expressions and phrases in which the term plays an important semantic role. Such an extension of focus from terms to phraseology is essential if LSPs are to become the true "means of communication required for conveying special subject information among specialists of the same subject" (Sager) and if LSP texts are to have the necessary macrostructure arising from collocational patterning.

7. IMPLICATIONS MÉTHODOLOGIQUES DE LA SOCIOTERMINOLOGIE   (Yves Gambier, Finlande)

La terminologie peut-elle faire un retour au discours sans remettre en cause certains de ses postulats?

Orientations diverses de la terminologie

«La» terminologie est souvent divisée entre une terminologie prescriptive et une terminologie descriptive--une telle coupure est trop figée.

On peut plutôt distinguer *deux approches fondamentales*:

- celle issue de la réflexion des techniciens, à partir des années 1920-30, qui a vite débouché sur la problématique de la standardisation, contrainte par une certaine idéologie de la communication spécialisée et des sciences.

- celle prise dans le cadre d'interventions officielles, à partir surtout des années 60, marquée elle par une certaine idéologie des rapports langue-nation-Etat.

Les deux approches n'ont pas les mêmes buts et n'impliquent pas la même division du travail.

La terminologie dominante actuellement--de type wüstérien-- a certaines limites, parmi lesquelles on peut citer: sa tendance logiciste, ses définitions par hypostase et éclectisme, sa clôture sur des a priori touchant le domaine, le spécialiste, le terme comme entité transparente, univoque, ainsi que l'acceptation de dichotomies comme celle qui opposerait langue dite générale et langue(s) dite(s) de spécialité, celle qui opposerait monosémie et usages.

Vers une socioterminologie

Pour dépasser les limites et les lacunes signalées, nous pensons qu'il faut réintroduire la terminologie dans les pratiques sociales que sont les discours, qu'il faut l'interroger à la fois comme activité sociale et comme activité cognitive. Les discours dans cette perspective ne sont pas mis en séquence formelle de mots-termes, réceptacles d'informations, d'idées, de concepts, sans contraintes

d'énonciation, mais lieux et formes de rapports de force, de négociation de sens, d'équilibre toujours précaire entre besoins et modèles de dénomination, lieux et formes produits par certaines positions socio-idéologiques et les produisant aussi.

Quelles sont les tâches, les problématiques d'une telle socioterminologie? On peut les regrouper en trois ensembles, sans être ici exhaustif:

a) décrire les usages réels dans leurs variations, en prenant en considération le fonctionnement, la logique des lieux de production, en interrogeant les rapports entre sciences, techniques et industries;

b) identifier les réseaux de diffusion, des notions et des termes, notamment en dégageant les situations discursives qui favorisent leur circulation, leur implantation;

c) définir la place, les enjeux de la terminologie comme discipline.

Implications méthodologiques

Le niveau de la terminologie officielle (intervention même explicite) sera ici délaissé.

a) *Dans le travail terminographique*, la socioterminologie vise entre autres à réinterroger:

- la notion de *domaine*, issue des classements documentaires plutôt que des réalités complexes que sont les échanges interdisciplinaires (ex. en intelligence artificielle), l'intégration à l'heure actuelle entre savoir, savoir-faire et production (ex. en biotechnologie);

- le rôle de l'*expert*: il n'appartient pas à une catégorie homogène mais parcellisée, hiérarchisée dans laquelle les membres ne sont pas tous légitimés de la même façon. Surtout la relation avec la terminologie mérite d'être réévaluée: dans cette coopération construite, où chacun a certaines représentations des compétences de l'autre, l'expert est mis en position métalinguistique inhabituelle, en condition de formulation inédite. Son expertise n'est pas qu'un contenu--elle prend des formes d'énonciation qui peuvent placer l'expert en situation d'insécurité linguistique.

- le problème de *corpus*: l'assertion que les termes doivent être pris en contexte doit être davantage creusée. Notamment, les interactions orales n'ont pas encore la place qui leur revient dans l'émergence, la circulation des termes et des notions. Par ailleurs peut-on affirmer que tout énoncé a le même effet terminologique, que dans la division sociale du travail, tout énoncé remplit le même contrat énonciatif?

b) *Avec les terminologies spontanées*, c'est-à-dire négociées dans les interactions au laboratoire, à l'atelier, devant une console etc.: la socioterminologie propose de s'interroger, entre autres, sur:

- l'*organisation* comme lieu d'action collective, de paroles structurées où coexistent des systèmes de signification;

- l'*ordre du discours* (M. Foucault) marqué aujourd'hui par sa techno-logisation (imposition du *discours d'expert*; projection de techniques de discours; pression pour standardiser les pratiques discursives);

- l'*interactivité*: savoir et savoir-faire se font en partie en (se) parlant; chacune des interactions varie selon des enjeux plus ou moins conscients/explicites; les termes dans leur fonctionnement discursif (interactif) et par rapport à la fois aux réseaux conceptuels où ils prennent place et aux potentialités de la langue ne

sont plus dans cette perspective des entités isolées des processus d'énonciation, à sens unique.

Pour réaliser ses tâches, la socioterminologie peut recouvrir aux apports:

- de la *sociologie* (sociologie de l'organisation; sociologie des sciences--notamment sur les communautés de pairs; sociologie de la communication--en particulier avec la dynamique des groupes);
- de l'*ethnographie de la parole* (sur la nature des situations de parole, la position des interlocuteurs);
- de la *sémantique cognitive* (concepts de système de catégorisation, d'implicite, de prototypes sémantiques);
- de l'*analyse de discours* et de l'*analyse conversationnelle* (processus de construction des sens; rapport entre l'énonciateur et la communauté interprétative; stratégies rédactionnelles); dans l'ensemble des méthodologies de l'analyse de discours, on citera surtout les apports de la lexicométrie, mis en évidence jusqu'à maintenant sur des textes politiques, syndicaux, des archives, mais que rien n'interdit de tester sur des énoncés dits spécialisés:
- de la *textologie*, c'est-à-dire de l'étude des transformations, des reformulations aux niveaux référentiel, logique, énonciatif, rhétorique, terminologique, quand on passe d'un type de texte à un autre, traitant du même sujet, quand on réécrit un texte afin de satisfaire aux conditions de sélection éditoriale.
- de la *sémiotique narrative*: le discours savant est un faire-connaître, un savoir ou savoir-faire qui cherche à se faire savoir; il vise à la transposition explicative du sens. La manière dont ce sens se met en scène, dont, par le texte, il éclaire l'évolution des connaissances, les processus aussi de métaphorisation, d'analyse. Une telle sémiotique concourt donc à mieux savoir l'histoire des notions et des termes, autre tâche de la socioterminologie.

8. CONTRIBUTION DE L'EXPÉRIENCE FRANÇAISE À UNE MÉTHODOLOGIE DE L'AMÉNAGEMENT TERMINOLOGIQUE
(Loïc Depecker, France)

La France poursuit depuis plus de vingt ans une expérience originale d'intervention de l'État sur la langue, et plus particulièrement dans le domaine de la terminologie. Par le biais de commissions ministérielles de terminologie, l'administration intervient ainsi directement sur le corpus de la langue, traçant des directions et orientant l'usage. Après un aperçu historique des textes de constitution de ces structures sont esquissés dans l'étude les champs d'intervention et les différents objets sur lesquels devraient intervenir prioritairement ces commissions (concepts scientifiques, concepts techniques, concepts de société, ou socionymes, concepts règlementaires, anglicismes en général, etc.). Dans une seconde partie sont notamment évoqués les modes d'intervention de ces commissions, leurs liens avec la normalisation technique du type AFNOR, et la politique de publication très diversifiée de ces travaux; à cette activité est liée celle de la diffusion des termes traités, l'articulation étant faite entre publication, diffusion, et implantation des terminologies. Voici la troisième partie du rapport qui a pour sujet le choix des termes et les perspectives nouvelles.

L'un des phénomènes marquants du travail des commissions ministérielles de terminologie--et là nous rejoignons la notion de normaison évoquée par Louis Guespin--est que, généralement, ces commissions n'ont pas véritablement créé de

termes. Il est notable d'observer que lorsqu'un concept est abordé, sa forme anglaise est souvent déjà en circulation ainsi qu'une ou souvent plusieurs équivalences françaises qui existent déjà dans les milieux professionnels, presse et milieux d'ingénieurs notamment. Le travail a souvent consisté à recueillir ces équivalences françaises, et à choisir parmi elles celle qui convenait le mieux, voire à s'appuyer sur l'une d'entre elles pour créer le terme français paraissant le plus adéquat. De fait, on peut croire que choisir un équivalent qui existe déjà dans un milieu professionnel ne peut que contribuer au succès du choix, si l'on choisit ledit terme. Mais il convient à cet endroit de faire la part des choses: choisir en 1982 pour *compact disc, disque audionumérique*, terme, à l'époque, des professionnels français de l'audiovisuel peut paraître un bon choix, qui fait cependant abstraction de certains critères de sélection qui s'avèrent opératoires, tels que notamment:

- la proximité morphologique du terme français avec le terme anglais: l'usage grand public a eu vite fait de transformer *compact disc* en *disque compact*; cette proximité se renforce d'ailleurs dans le cas de paradigmes du type *low-pass image/high pass image: image filtrée passe-haut/image filtrée passe-bas*, etc.,
- la fondation, corrélativement, de paradigmes rigoureusement équilibrés, du type *parrain/parraineur/parrainage/parrainer*;
- la résonance non technocratique du terme français: choisir *bande promotionnelle* pour *clip* fut à l'évidence une erreur que l'on peut s'étonner que des gens dont certains étaient de professionnels des médias aient pu faire;
- la brièveté du terme français: *polymorphisme de taille des fragments de restriction* ne court le risque de s'imposer que s'il est proposé avec son sigle *PTFR*;
- le caractère imagé du terme français: *baladeur* pour *walkman* fait se rejoindre sous la forme d'un homonyme français deux sèmes du terme anglais: *balade* (la promenade), et *ballade* (la chanson); cet exemple peut contribuer à faire mieux comprendre la dimension psychanalytique dont j'ai parlé hier, qui devrait être une des voies que devrait prendre en compte la socioterminologie;
- l'inscription du terme dans une réflexion d'ordre épistémologique: il est en effet souvent nécessaire de réfléchir à la logique dont procèdent les choix que l'on fait entre différents synonymes. Ainsi ce serait introduire une fausse fenêtre que de proposer une solution du type *libriciel* pour *freeware*, le fait que *le freeware* est cédé à un utilisateur de façon gratuite ne changeant rien à sa nature informatique; il est préférable dans ce cas de choisir une solution du type *logiciel gratuit*. De même, il est possible aujourd'hui de proposer le néologisme *texteur* en réduction de *logiciel de traitement de texte*, en raison du fait dont j'ai parlé tout à l'heure à savoir l'émergence dans le domaine informatique d'une série de termes à suffixe-eur pour désigner des logiciels d'application (*grapheur, tableur, dessineur*, etc.).

Indépendamment de ce dernier critère, qui est fondamental, il convient parfois de relativiser certains des autres critères, plusieurs domaines recourant à des dénominations extrêmement rigoureuses et non réductibles, tel celui des assurances: *excédent de sinistres* (pour *excess of loss*) y restera *excédent de sinistres* sous peine d'induire gravement en erreur; le droit à l'image est ici très limité, et la tentative faite de proposer sur une belle image *part du feu* pour

burning cost (grandeur exprimant la charge de sinistres qui incombe à un réassureur telle qu'elle résulte de la statistique des sinistres enregistrés par l'assureur) a échoué au profit du terme jugé plus juste de *taux de flambage*.

À partir de ces critères, d'autres éléments de caractère factuel peuvent intervenir pour guider le choix de l'équivalent français. Ainsi des attestations, que le centre de néologie et de terminologie commence à fournir, mais celles-ci doivent être analysées soigneusement. On peut de fait trouver plusieurs bonnes attestations d'un équivalent français non satisfaisant. Le critère quantitatif n'est ainsi pas forcément prévalent. En revanche, trouver un équivalent français opératoire au regard des critères ci-dessus énoncés, et cela sous la plume de deux journalistes qui ne se sont pas forcément concertés pour l'employer, ou sous la plume d'une personnalité reconnue peut être un élément fort. Le critère de représentativité de l'attestation, en raison notamment de l'inexhaustivité inévitable des relevés, peut à cet égard jouer un rôle, même s'il n'est pas toujours facilement appréciable.

L'analyse de la presse est un élément significatif aussi bien au regard du choix des termes et de la réceptivité de l'opinion à l'entreprise d'aménagement linguistique, (cf. par exemple l'article «À quand la fin du ghetto terminologique» dans *le Monde informatique* de janvier 1991), qu'a posteriori de celui de l'implantation des termes. Il est de fait que l'emploi quasi systématique aujourd'hui par *le Monde* du terme *voyagiste* pour *tour operator*, montre qu'au moins dans cette partie de l'opinion le terme est sinon employé, du moins connu. Mais ce ne sont là toujours que des indices, le fait de trouver *parraineur* (pour *sponsor*) en première page de *Libération* ne signifiant pas nécessairement que le terme passe dans l'opinion. L'équilibre qui s'installe à ce moment est affaire de détermination des uns et des autres, aussi bien très certainement de la presse, que des milieux de spécialistes de ce domaine. La socioterminologie devrait aller aussi loin dans l'analyse pour consolider l'implantation des termes, les équilibres qui s'installent étant en général relatifs et changeants.

L'autre perspective que nous commençons d'explorer est celle de l'enquête d'implantation, dont les premières ont été lancées en France par la délégation générale à la langue française en 1991. Il s'agit d'examiner grâce à elles la façon dont les termes officiels sont véritablement implantés, c'est-à-dire utilisés. Ces enquêtes sont pour l'instant menées généralement par des départements de langues étrangères appliquées des universités, mais il n'est pas exclu que d'autres départements, de sociologie par exemple, puissent intervenir. L'enquête d'implantation est de fait un bon guide pour l'aménagement terminologique en ce qu'elle contribue à apporter des explications sur les succès et les échecs de l'aménagement terminologique. Elle contribue à montrer également que les aménageurs doivent tenir compte de l'état de l'opinion, et travailler non pas seulement sur la langue elle-même, mais aussi sur l'image de la langue. Tout est à faire en ce domaine, et en priorité la méthologie, qui se construira progressivement au fur et à mesure des résultats, eux-mêmes dépendants de cette dernière et réagissant sur elle. L'une des premières constatations résultant de ces enquêtes est la grande labilité des discours techniques, et par conséquent, la diversité des termes employés. Il est clair que le technicien n'emploie que le terme qui lui convient, et ce qui peut apparaître a priori comme un bon terme ne

sera pas forcément employé, soit différence de point de vue (ce qui est *stérilisation* d'une cuve de biotechnologie pour un scientifique est *taux de contamination* pour un ingénieur de procédé), soit connotation mal venue (*chatoiement* pour *speckle,* qui désigne un effet de scintillement gênant sur un écran radar, est un terme trop valorisant pour rendre adéquatement cet effet de gêne), soit abandon à l'anglais. Constater l'éminente variation des usages dans les spécialités et entre spécialités, variation qui peut éventuellement rebondir sous forme de césure entre discours parlé et discours oral, doit nécessairement faire réagir. Ainsi, ce que les normalisateurs s'efforcent de réduire, la variation, ne semble cesser, dans la pratique, de diverger. On ne peut donc tant songer à réduire cette variation qu'à lui donner un statut véritable comme c'est progressivement le cas aujourd'hui pour les variantes géographiques, particulièrement francophones (qui sont peu à peu intégrées dans les arrêtés ministériels de terminologie français). Cette prise en compte, et la multiplication des passages de langue à langue nécessaires aujourd'hui font qu'on doit d'abord penser l'aménagement terminologique en France sous la forme de réseaux terminologiques dont la mise en place se fait peu à peu sous l'impulsion notamment du ministère de la recherche et de la technologie, et de la délégation générale à la langue française. La création en cours d'un réseau interuniversitaire, d'un réseau interentreprise, et d'un réseau aménagement terminologique vise à la coordination, l'harmonisation, et la mise en partage des savoir-faire des uns et des autres.

Dans cette présentation d'un aménagement terminologique tel qu'il est conçu actuellement en France au niveau d'un organisme de politique linguistique tel que la *délégation générale à la langue française*, se rejoignent ainsi la triple nécessité de statuer sur les termes importants, de diffuser ces résultats, et d'en expertiser profondément l'implantation, chacune de ces étapes réagissant l'une sur l'autre réciproquement.

9. REMARQUES SUR LE CENTRE DE TERMINOLOGIE ET DE NÉOLOGIE   (John Humbley, France)

Le Centre de terminologie et de néologie a été créé le 4 septembre 1987 à la suite d'une décision interministérielle et placé dans le cadre du Centre national de la recherche scientifique comme équipe de l'Institut national de la langue française, organisme de recherche et de production lexicographique, et auteur, entre autres, du *Trésor de la langue française*. Les missions du CTN sont les suivantes: "recherche appliquée, valorisation et transfert de la recherche, information scientifique et technique dans le domaine de la terminologie et de la néologie" (Contrat de recherche du 27.07.1987).

La mission du CTN est donc d'observer et d'analyser la terminologie et la néologie scientifiques et techniques. Il poursuit certaines activités confiées aux Associations AFTERM et FRANTERM, notamment en services terminologiques. Il est expert auprès de la Délégation générale à la langue française notamment dans le cadre du Réseau international de néologie et de terminologie. Les activités de recherche du CTN se développent sur trois axes principaux: veille terminologique et néologique, documentation terminologique, évaluation des outils terminologiques.

Les activités d'observation, de description et d'analyse terminologiques et

néologiques constituent l'axe central de la recherche du CTN. La terminologie est par nature sectorielle, c'est-à-dire limitée à un domaine à la fois, et systématique, visant à rendre compte de tous les termes d'un secteur et à décrire les liens qui les unissent et qui les définissent. La néologie peut être sectorielle ou multi-domaine; c'est cette deuxième option qui a été retenue au CTN, mais le dépouillement néologique se fait selon des principes qui concilient lexicographie (description des mots) et terminologie (description des concepts). Elle peut être exhaustive, à l'intérieur d'un corpus donné, ou aléatoire.

L'objectif de la recherche est de comprendre les mécanismes qui concourent à la constitution des terminologies et des vocabulaires des langues de spécialité en général, et de proposer des outils théoriques et pratiques qui facilitent leur gestion. C'est ainsi que le choix de la terminologie sectorielle s'est porté sur l'intelligence artificielle et les domaines connexes, car ces vocabulaires en constitution reflètent une activité dont un des buts est l'accès aux connaissances par le langage. En néologie, l'effort s'est concentré sur le passage entre la recherche première et la vulgarisation de haut niveau: comment les scientifiques présentent à un public éclairé les concepts pour lesquels les destinataires n'ont pas le vocabulaire requis. Une part de plus en plus importante de la création terminologique se fait aujourd'hui par le biais de la traduction, et pour cette raison le CTN s'est associé à plusieurs projets dont le but est l'adaptation d'une terminologie élaborée dans une autre langue.

Le résultat de ces recherches se présente sous différentes formes: d'abord sous forme de bases de données, dictionnaires du futur proche; ensuite, comme ouvrages imprimés, généralement comme dictionnaires papier. Les réflexions théoriques qui se font à partir de cette expérience directe sont diffusées sous diverses formes: conférences, communications dans des colloques, articles dans des revues spécialisées. Le CTN dispose depuis 1988 d'un numéro spécial annuel de *La banque des mots*, revue française de terminologie, diffusée par le Conseil international de la langue française. Le numéro comporte régulièrement des comptes rendus d'ouvrages théoriques de terminologie, y compris ceux qui sont publiés en dehors de la francophonie.

Dans le cadre de la production de terminologies de pointe, le CTN a été chargé de rédiger un *Vocabulaire de l'intelligence artificielle,* dont une présentation est parue dans *Terminometro* 11. L'intérêt de ce chantier pour le CTN va bien au-delà du produit réalisé, compte tenu de ce que l'intelligence artificielle peut apporter à l'automatisation de la terminologie. Le CTN poursuit cette recherche, en particulier en direction du génie logiciel et des réseaux neuro-mimétiques. Cet apport, ajouté au *Dictionnaire* déjà publié, fournit la matière à une base de données terminologiques développée avec le soutien de la Direction de l'information scientifique et technique du Ministère de la recherche et de la technologie.

Le CTN a été sollicité en 1990 pour collaborer à une terminologie trilingue de l'éducation, dirigée par le *Gabinete de Estudios e Planeamento* du Ministère portugais de l'éducation, présenté dans le numéro 9 de *Terminometro*. La responsabilité du CTN est de proposer des équivalents français ou de faire expertiser ceux qui sont proposés par les partenaires portugais.

L'institut pour l'information scientifique, documentation et encodage

VNIIKI est à la recherche de partenaires européens afin de rendre accessibles ses travaux de terminologie et de documentation en traduisant et en validant les termes dans les principales langues de l'Europe de l'Ouest. Le CTN, en tant que membre de TermNet, auquel le VNIIKI s'était adressé, s'est proposé d'assurer la traduction et la validation de quelque 700 titres de recueils de termes normalisés. Ce projet, dont l'utilité est reconnue par l'Organisation des nations unies pour le développement industriel (ONUDI), marque un premier pas dans la coopération avec une instance importante de terminologie, gestionnaire d'un vaste gisement de termes, qu'il convient d'exploiter.

Le projet du *Dictionnaire des organisations panafricaines francophones* a été conçu dans le cadre du Réseau international de terminologie et de néologie, et réalisé par Zezeze Kalonji. Ce travail a été réalisé en appliquant des méthodes terminologiques. La version définitive, publiée en 1991 par le Conseil de la langue française et comportant plus de 300 pages, a fait l'objet d'une présentation dans *Terminometro* 11. L'Agence de coopération culturelle et technique envisage actuellement la poursuite de ces recherches, notamment sous forme de base de données.

En ce qui concerne la veille néologique, le CTN alimente, depuis 1987, une base terminologique et néologique, TERNEO, à partir du dépouillement systématique de *La recherche* et *Sciences et technologies*. La publication de deux volumes du *Cahier de termes nouveaux* (en 1990 et en 1991) est une valorisation directe de ce travail, qui sert aussi de corpus de référence pour la terminologie ponctuelle (pour l'Institut national de la propriété industrielle en particulier) ainsi que pour des exploitations ultérieures envisagées dans le cadre des projets de mise à jour des dictionnaires.

Constituée de fiches de type terminologique très complètes (voir l'article de Pierre Lerat «Terminologie et sémantique descriptive», *La banque des mots*, numéro spécial CTN 1988, pp. 11-40), cette base fonctionne sur micro-ordinateur avec le logiciel FOXBASE PLUS (clone de DBase III). Les fiches vont au-delà d'une simple observation, car elles comportent des champs notionnels et sémantiques, supposant une analyse poussée. La base TERNEO s'oriente surtout vers la néologie terminologique factuelle, où l'accent est mis sur l'observation, la description et l'expertise de l'émergence de concepts nouveaux et de leurs dénominations. En plus de la base issue de dépouillement systématique, le CTN a créé des bases annexes qui fonctionnent selon le même système et qui sont consacrées à d'autres aspects de la néologie, soit par domaines (économie et transports, notamment), soit par type linguistique (emprunts).

L'état des recherches du CTN est présenté tous les ans dans un numéro spécial de *La banque des mots*.

Grâce aux enquêtes canadiennes, et québécoises en particulier, il est possible de bien connaître la production terminologique de langue française de l'Amérique du Nord. Les terminologies européennes sont moins bien connues, surtout celles des pays non francophones qui incluent le français dans leurs ouvrages. C'est pour cette raison que le CTN a entrepris, avec le soutien du ministère de la Recherche et de la Technologie, un inventaire thématique des dictionnaires spécialisés dont une langue est le français. Ce travail complète ainsi les inventaires du Rint, aussi bien que la bibliographie de Quemada et

Menemencioglou, arrêtée en 1975. Une première version, concernant uniquement les ouvrages, était présentée au ministère en décembre 1991. Une édition est prévue pour 1993, comportant en outre de la terminologie grise, en particulier celle issue des revues spécialisées.

10. L'ACTE DE LANGAGE, SOURCE ET FIN DE LA TERMINOLOGIE
(Ch. Loubier et L.-J. Rousseau, Canada)

Depuis les essais de théorisation de la terminologie par Lotte et depuis les travaux de Wüster relatifs à l'établissement des principes et méthodes de la terminologie systémique, la terminologie a été conçue avant tout comme un discipline vouée à l'étude des notions, à leur classement et à leur dénomination. En bonne héritière de la logique, de l'ontologie et de la documentation, la terminologie, dans sa théorie comme dans sa pratique, a été confinée dans l'univers de la cognitique, de la classologie. Il y avait en effet une discipline à construire qui étudierait le lexique des langues de spécialité en le considérant comme un système, ou plutôt comme un sous-système à l'intérieur du système linguistique proprement dit, en traçant des frontières bien nettes entre vocabulaire spécialisé et lexique général d'une part, et entre système terminologique et système linguistique d'autre part.

L'élaboration de cette théorie et des pratiques qui en découlent s'est également faite sous deux autres influences non négligeables : celle de la normalisation technique, c'est-à-dire la normalisation de «choses», et celle du monde de la documentation, qui privilégie, dans le classement des connaissances ‒ ou plutôt dans le classement des documents supportant les connaissances ‒ la structuration du savoir en systèmes hiérarchiques du type genre-espèce.

Ces principes de base se reflètent dans la documentation produite par le Comité technique 37 de l'ISO (Terminologie : principes et méthodes). En effet, bien que la norme 1087 (Terminologie - vocabulaire) énumère parmi les tâches de la terminologie l'étude des aspects phraséologiques des langues de spécialité, on peut constater que la norme 704, intitulée *Principes et méthodes de la terminologie*, ne traite que des notions, des systèmes de notions, des définitions et des termes, à l'exclusion de toute autre considération linguistique.

Ces options et influences ont eu pour effet, pour une large part des travaux terminologiques menés à ce jour, d'amener les terminologues à étudier l'objet de leur domaine - les ensembles terminologiques - indépendamment ou isolément des systèmes que constituent pourtant les langues de spécialité, ne répondant ainsi que partiellement aux problèmes de la communication scientifique et technique qui avaient en quelque sorte donné naissance à cette discipline qu'est la terminologie.

Cette pratique de la terminologie, majoritaire mais heureusement non universelle, privilégie les fonctions cognitive et classificatoire au détriment des fonctions langagières qui sont pourtant à la base de la communication et de l'expression et qui sont omniprésentes dans le transfert des connaissances.

Par ailleurs, sous l'influence de la sociolinguistique et dans la perspective de l'aménagement linguistique, s'est développée une école «aménagiste» de la terminologie qui constitue à la fois une critique et un redéploiement de la démarche cognitive, dans la mesure où l'ensemble des fonctions de la terminologie est pris en considération, notamment la fonction socio-économique et les fonctions langagières.

Dans cette approche, la terminologie [ensemble de termes] devient une composante de ce que l'on appelle les langues de spécialités, lesquelles sont constituées de beaucoup d'autres éléments linguistiques (que l'on peut appeler «phraséologismes») qui sont demeurés à ce jour fort mal décrits (du moins dans le domaine français) et qui forment ce que d'aucuns appellent les technolectes. Ces technolectes sont à la base de la communication spécialisée qui est le véritable objet des travaux d'aménagement terminologique et, de ce fait, la fonction langagière (communication et expression) de la terminologie devient primordiale, au côté de la fonction cognitive. C'est l'acte de langage qui, dans cette perspective, devient la source et l'aboutissement de la démarche terminologique.

La terminologie doit alors évoluer, non seulement sur le plan théorique, mais aussi dans ses pratiques, en prenant obligatoirement en considération les besoins des usagers, observés sur le terrain, et en favorisant la participation des locuteurs au choix et à l'élaboration des outils terminologiques mis à leur disposition. En ce qui a trait plus particulièrement à l'aménagement du corpus, il est de toute première importance que ce soient aussi les besoins concrets des utilisateurs qui guident le choix de l'élaboration d'un outil terminologique. Cela suppose l'élargissement de la gamme des produits offerts, dans la forme et dans le contenu. Les produits terminologiques doivent, autant que possible, correspondre aux pratiques réelles des locuteurs, et s'adresser autant aux usagers, qu'aux spécialistes de la langue, si l'on désire qu'ils soient bien accueillis, et surtout utilisés dans les différents milieux de travail.

Toujours dans une perspective aménagiste, les terminologues, s'ils désirent répondre à de véritables besoins sociaux, et surtout s'ils ne veulent pas produire seulement des répertoires ou des inventaires de mots reliés à un savoir isolé du discours de langue de spécialité, devront concevoir des produits terminologiques qui s'intègrent dans les milieux de travail et plus spécialement dans le réel des actes de langage des locuteurs engagés dans une activité socioprofessionnelle.

Cette exigence nécessite que s'opère un glissement à la fois théorique et méthodologique de la langue au discours, du terme à la phrase et par voie de conséquence, des dictionnaires terminologiques aux outils paraterminologiques, ainsi dénommés parce qu'ils font ressortir le contexte d'utilisation des termes. Ces aménagements méthodologiques portent notamment sur l'identification, la collecte, le traitement et la consignation des données terminologiques et phraséologiques.

Cela suppose également une démarche essentiellement socioterminologique, laquelle exige du terminologue, lorsqu'il procède à l'analyse des faits de discours, qu'il prenne en considération certains facteurs présents dans tout acte de langage : le locuteur, l'allocutaire, le phénomène de l'interaction verbale en relation avec les actes de parole, sans oublier la situation de communication.

Quant au corpus analysé, il doit être constitué d'échantillons représentatifs de discours spécialisés tant à l'écrit qu'à l'oral. Le corpus écrit doit être élargi, sans négliger aucun type de documentation, selon le type de locuteurs visé. Ainsi, on pourra s'intéresser non seulement à la documentation «savante», mais également aux manuels d'entreprise et aux documents technico-commerciaux, aux

bons de commandes, aux notices d'entretien, etc., ce large éventail étant d'autant plus important que la syntaxe et le style de tous les fragments de discours spécialisés ne sera pas la même d'un texte à l'autre

Aux données terminologiques traditionnelles, il conviendra d'ajouter les données phraséologiques dont la typologie et la description doit être affinée. Il reste à définir des critères d'identification et de découpage avant de créer des systèmes susceptibles d'effectuer leur repérage dans des textes. Les banques de terminologie devront par ailleurs évoluer pour permettre la consignation et le repérage de ces nouvelles données. Les banques deviendront ainsi de véritables outils de production textuelle en langues de spécialité en fournissant aux usagers l'ensemble des données nécessaires à l'élaboration du discours en langue de spécialité.

De nombreuses avenues de recherche s'ouvrent donc aux terminologues et aux linguistes qui s'intéressent aux langues de spécialité, notamment en ce qui a trait aux questions phraséologiques évoquées ci-dessus et aux questions socioterminologiques telles la question des niveaux de langue en terminologie, la question de la variation linguistique et celle de l'alternance de code selon la situation de communication, etc.

11. CONCLUSIONS (LJR)

En proposant cette table ronde, issue en fait de la convergence de deux projets, l'un intitulé «Terminologie et pragmatique» et l'autre «Linguistique, terminologie et textes spécialisés», les organisateurs souhaitaient relancer la réflexion sur la terminologie dans la perspective de deux tendances actuelles, soit d'une part, l'étude de la terminologie dans ses rapports avec le texte, donc en regard des fonctions langagières de la terminologie, et d'autre part, la terminologie dans ses rapports avec les fonctions socio-économiques et sociolinguistiques.

Ces préoccupations nouvelles de la terminologie viennent à point nommé élargir le champ d'expérience de la terminologie qui a pour origine les problèmes d'efficacité de la communication dans les langues de spécialité. Aux premiers travaux théoriques et méthodologiques qui portaient sur les fonctions classificatoires et cognitives de la terminologie s'est ajouté, dans les années soixante-dix, un apport important de la linguistique qui a permis à la terminologie de trouver sa place dans les sciences du langage et plus particulièrement dans la linguistique appliquée où l'on classe habituellement l'aménagement linguistique, qui a été constitué en domaine au cours de la même période. Dans les années quatre-vingt, les observateurs ont pu noter une pause dans les travaux théoriques et méthodologiques, alors que les terminologues se sont surtout intéressés à l'informatique et à ses applications possibles aux travaux terminologiques, dans l'environnement des industries de la langue qui ont alors fait leur apparition.

La variété et la complémentarité des sujets choisis par les rapporteurs de la table ronde «Terminologie, discours et textes spécialisés» mettent en relief la vitalité du domaine et annoncent les tendances de la terminologie des années quatre-vingt-dix. Une bonne partie des exposés abordent la terminologie soit sous l'angle textuel, qu'il s'agisse de l'analyse du discours spécialisé ou de l'étude des questions phraséologiques, soit sous l'angle de la sociolinguistique.

L'étude des questions phraséologiques relance par le fait-même le besoin

de réflexion théorique relativement aux langues de spécialité, dont on ne connaît pas encore très bien la nature et dont le contenu reste à décrire, malgré les travaux des vingt dernières années. On a d'ailleurs longtemps douté de l'existence de l'objet «langue de spécialité», prétendant qu'il s'agissait d'éléments de la langue générale associés dans le discours aux terminologies, lesquelles devaient constituer le seul objet de préoccupation des terminologues. Malgré l'existence de travaux importants tels ceux du professeur Kocourek[3] cette opinion est encore largement répandue chez certains linguistes. Fort heureusement, les travaux présentés lors de la table ronde apportent une très bonne contribution à la définition du domaine et de son objet et signalent des pistes de recherche. Cette table ronde se situe dans la continuité d'un important colloque tenu à Genève en octobre 1991 intitulé *Phraséologie et terminologie en traduction et en interprétation*. Elle sera suivie en 1993 et en 1994 d'au moins deux autres rencontres scientifiques sur ce même thème.

L'aménagement des communications dans les domaines spécialisés du savoir et de la pratique rendent donc nécessaire la poursuite accélérée de travaux susceptibles de conduire à la description des langues de spécialité, l'objectif ultime étant la constitution d'ensembles de données nécessaires à la production textuelle spécialisée, dans la perspective très pratique de développer soit la compétence linguistique des locuteurs visés, soit d'alimenter éventuellement les systèmes d'information producteurs de textes spécialisés

Par ailleurs, d'autres pistes de recherche s'ouvrent dans un domaine relativement nouveau : la socioterminologie. Ce nouveau champ d'étude et d'expérimentation se crée et se déploie sur les bases de la sociolinguistique et des travaux d'aménagement terminologique qui se pratiquent depuis une vingtaine d'années soit dans certains pays où l'on met en oeuvre des politiques d'aménagement linguistique, soit à l'échelle internationale au sein de certaines organisations[4].   L'élaboration   de   méthodologies   d'intervention socioterminologique suppose d'importants travaux de recherche sur des questions comme la communication spécialisée, les conditions de production du discours spécialisé, l'implantation des innovations linguistiques, les sociotechnolectes, les niveaux de langue, l'alternance de code terminologique, les rapports entre terminologie et production économique, l'enquête terminologique sur le terrain, etc.

D'autres champs ne cessent de se développer en rapport avec la terminologie et les langues de spécialités, notamment ceux de l'informatique et des industries de la langue. Deux exposés présentés lors de la table ronde illustrent la poursuite de travaux sur la mise au point de systèmes permettant le dépistage, le traitement, la consignation, et le repérage des données en langue de spécialité. Ces travaux s'appuient sur ce qui a déjà été fait en terminologie, qu'il s'agisse d'outils informatiques pour l'élaboration des terminologies ou des banques de terminologie.

Ces quelques avenues illustrent bien le caractère interdisciplinaire de la terminologie. Déjà Wüster situait la terminologie au carrefour de la linguistique, de la logique, de l'ontologie et de la documentation. La terminologie et l'étude des langues de spécialité, dans leurs perspectives actuelles, se développent par l'augmentation des champs sur lesquels les travaux se fondent. Il est permis de

penser que ces domaines originaux s'enrichissent également des travaux sur les langues de spécialité où ils trouvent leur application.

NOTES

1. Les textes complets de tous les rapports de la Table ronde, et une douzaine d'autres articles ayant trait à la langue de spécialité et à la terminologie, paraîtront dans le volume 7 de la revue savante *ALFA (Actes de langue française et de linguistique)*. Écrire à: The Editor, ALFA, French Department, Dalhousie university, Halifax, N.S., Canada B3H 3J5.

2. **Pierre Auger** et **Marie-Claude l'Homme** (Université Laval, Canada)
   Marc Bonhomme (Université de Berne, Suisse)
   Loïc Depecker (Délégation générale à la langue française, France)
   Yves Gambier (Université de Turku, Finlande)
   Rosemarie Gläser (Universität Leipzig, Germany)
   John Humbley (C.N.R.S., France)
   Christiane Loubier (Office de la langue française, Canada)
   Roda P. Roberts (Université d'Ottawa, Canada)

3. Kocourek, Rostislav, *La langue française de la technique et de la science*, Wiesbaden, O. Brandstetter Verlag, 1982 [2e éd. 1991].

4. Voir notamment les travaux du Réseau international de néologie et de terminologie (Rint), du Réseau ibéroaméricain de terminologie (Riterm) et de Nordterm.

La Table ronde a été organisée avec le concours du Conseil de recherches en sciences humaines du Canada (643-92-0193).

TABLES RONDES / PANEL DISCUSSIONS

**TITRE : HISTOIRE DE L'ÉTUDE DES LANGUES
AUTOCHTONES DU CANADA
TITLE : THE HISTORY OF THE STUDY OF THE NATIVE
LANGUAGES OF CANADA**

**ORGANISATEUR(S) / ORGANIZER(S) :
Konrad KOERNER
(University of Ottawa - Canada)**

PANEL DISCUSSION ON "THE HISTORY OF THE STUDY OF THE NATIVE LANGUAGES OF CANADA"

Organized by
E. F. Konrad Koerner

University of Ottawa, Ottawa, Ontario, CANADA

The 500th anniversary of the 'discovery' of the Americas by Christopher Columbus has not only led to a variety of celebrations both in Europe and in North America (and corresponding protests by the various indigenous peoples who have suffered from European oppression ever since), but also turned the focus of attention to the languages and cultures of the original inhabitants of this continent. The realization of the continuing loss of many of the world's languages, a process which has been particularly acute in the Americas, has only heightened this awareness. So when the Comité International Permanent des Linguistes (CIPL) chose "Endangered Languages" as the main theme for the 15th International Congress of Linguists in Quebec City, it was only natural that a panel discussion was organized that dealt with the situation of the indigenous languages of Canada, the history of their study in this country and the present state of affairs.

In anticipation of the Quebec Congress alone two major publications were prepared: A collective volume of 10 papers devoted to endangered languages and the phenomenon of language death world-wide edited by the president and the secretary of CIPL (Robins & Uhlenbeck 1991), which also contains a contribution by M. Dale Kinkade on "The Decline of Native Languages in Canada" (pp.157-176), and an impressive 450-page volume on *Les langues autochtones du Québec*, which was launched by a governmental agency of Quebec during the Congress (Maurais 1992), a publication which is not without its ironies, given the fact that it emanated from the official French-language watch dog, the Conseil de la langue française, and that particularly Quebec has traditionally had a rather poor relationship with her aboriginal citizens. The volume itself, however, has several redeeming features, including the innovation to have native speakers of Algonkin, Cree, Huron, Inuktitut, Mohawk, and other languages report on what they perceive as the prospects for the future of their native tongues, and summaries of all the contributions to the volume in these American Indian languages (pp.419-451).

Since there are plans to publish several of the papers presented at the Congress at a later date (and in fuller form than would have been possible in the proceedings), only summaries of the presentations will be given below. They have been arranged in alphabetical order by author, although the order of presentation was as follows: Darnell's and Rath's papers, dealing with what appears to be the same tradition, but

with diametrically opposed judgements on the Boasian method of text-elicitation and interpretation, were part of the first session, followed by a brief discussion. The next group of papers consisted of those by Faribault and Hewson, as both dealt with the history of the study of American Indian languages inside and outside Quebec respectively. Following the lively discussion of these two papers at the well-attended panel meeting, MacKenzie gave her presentation of recent organized efforts in Canada, notably in Quebec, to maintain and to encourage the retention and promotion of native languages.

Regna Darnell (University of Western Ontario, London, Ontario, Canada)
"The Inseparability of the Boasian Text-Based Grammars and Ethnographic Descriptions in the History of Native Canadian Linguistics"

Throughout the history of linguistics in Canada with reference to the description and comparison of aboriginal languages, there has been an integral connection between the study of these languages to produce a dictionary, grammar and texts and the use of the same text-elicitation method for ethnographic purposes. The text-based method was imposed on anthropology in North America as part of the systematic research agenda of Franz Boas (1858-1942). Its motivation was similar for linguistics and for ethnography, i.e., texts reflecting the spontaneous speech of 'informants' avoided imposing Western/Indo-European categories on the 'other'. Since the same texts were used by linguists ad ethnographers, they were closer as colleagues and collaborators than their counterparts in Britain or on the Continent. It is no accident that scholars of American Indian languages were central to the emergence of linguistics as an autonomous discipline in North America. This paper will explore the connection between the text method and the connection between linguistics and anthropology in North America, with particular emphasis on Canada.

Marthe Faribault (Université de Montréal, Québec, Canada)
"Les oeuvres linguistiques des missionnaires de la Nouvelle France (XVIIe et XVIIIe siècles)"

Le corpus linguistique des missionnaires de la Nouvelle France, c'est une quarantaine de manuscrits allant de quelques pages à plus de mille, composés entre 1660 et 1800. Il comprend quelques grammaires et traités de conjugaison, mais surtout des dictionnaires à métalangue généralement française, parfois latine. L'étude d'ensemble qu'en a donné le regretté Victor Egon Hanzeli (1925-1990) dans sa monographie *Missionary Linguistics in New France: A study of 17th- and 18th-century descriptions of American Indian languages* (La Haye: Mouton, 1969) demeure inégalée. Ce sont des documents fondamentaux pour l'histoire des langues amérindiennes; mais ils le sont tout autant pour l'histoire de la linguistique européenne et pour l'histoire du lexique français d'Amérique. Dans la présente communication, je (1) décrirai brièvement le corpus, tout en donnant un aperçu de sa valeur philologique; (2) donnerai un bilan de l'exploitation qui en a été faite jusqu'à maintenant, et (3) tracerai une esquisse des pistes de recherche qu'il ouvre en ce qui concerne l'histoire des lexiques amérindiens et français.

John Hewson (Memorial Univ. of Newfoundland, St John's, Nfld., Canada)
"An Early 18th-Century Grammar of Micmac: Father Pierre-Simon Maillard (published 1864)"

Until the publication of the Micmac grammar of Father Pacifique (1939, 1990), the only published grammar was that of Father Pierre-Simon Maillard, written in the early 18th, but not published until the middle of the 19th century (1864). An indefatigable worker and vigilant observer, Father Maillard produced a grammar that is a remarkable first step in the analysis of a language whose typology is very different from the Indo-European languages that he was accustomed to. His work has formed the basis of all subsequent linguistic analysis of Micmac, since the missionary priests used it to help them learn the language, and Father Pacifique, in his own grammar (which is today used as a handbook by those learning the language) acknowledges his profound debt to his distinguished predecessor. In this paper we shall examine Father Maillard's analysis and presentation of the typically Algonkian linguistic categories to be found in Micmac that would be outside the linguistic experience of an 18th century European. A brief examination of the 1939 grammar of Father Pacifique will also show how he continued the two hundred year old traditions of his predecessor.

Marguerite MacKenzie (Memorial Univ. of Newfoundland, St John's, Canada)
"The 'Project for the Amerindianization of the Schools': Bringing linguistics into aboriginal classrooms in Quebec"

In response to the demand by Native groups across Canada for increased linguistic and cultural content in the school curriculum, the Quebec regional office of the Department of Indian Affairs launched, in 1972, a major teacher training project for Aboriginal people. A curriculum for a certificate in teaching was set up through the Université du Québec à Chicoutimi and summer courses were offered for the first year. Professors then visited students in their home communities during the winter sessions. In following years summer courses were offered on the campus of Manitou College in the Laurentian region north of Montreal. From the perceived need for grammatical and lexical resource documents a number of projects developed. Lexicons were produced for Montagnais, East Cree, Naskapi, and Micmac; grammatical descriptions appeared for Algonkin and Micmac. A description of Attikamek morphology and a lexicon were produced by the linguist working with this group. The presence of speakers from all dialects of a given language led to the realization that standard orthographies were needed. It is no understatement that without influence of the Amerindianization of the Schools project, the last twenty years of the study of Native languages in Québec and Labrador would have been much less extensive.

John Rath (Saskatchewan Indian Federated College, Regina, Saskatch., Canada)
"On the Significance and Deficiencies of Traditional Fieldwork on Western American Indian Languages in Canada: Notes on Boas–Hunt's North Wakashan text materials"

Recently several authors have examined the authenticity and cultural and linguistic significance of Pacific Northwest coast text materials published by Franz Boas. Focusing on materials Boas claims are from Bella Bella and Rivers Inlet, this paper confirms the nascent consensus that Boas is from evasive to downright deceitful about his informants and inaccurate in his translations of culturally important names. First the particular case is studied of an informant Boas describes as a bilingual (Heiltsuk and Kwakwala) native of Bella Bella but who is remembered by Bella Bella elders as a native from the Kwakwala speaking area. The question is raised if it is due to this informant's speech that Boas uses Kwakwala or Kwakwalized names for non-Kwakwala people and places. The second case study concerns the Kwakwala name of *Baxⁿbakwáʹlanxⁿsiwēᶜ* for which Boas has produced history-making glosses referring to eating people at the river mouth or at the north end of the world. Utilizing comparative morphological evidence, it is argued that linguistically speaking the name has nothing to do with river mouths or eating, and quite possibly not even with people.

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TABLES RONDES / PANEL DISCUSSIONS

TITRE : LA MÉTAPHORE ET LA STRUCTURE DANS LE TEXTE POÉTIQUE
TITLE : METAPHOR AND THE STRUCTURE OF THE POETIC TEXT

ORGANISATEUR(S) / ORGANIZER(S) :
Joanna RADWANSKA-WILLIAMS
(State University of New-York - United States)

"CATCH[ING] THE NEAREST WAY": PATH AND CONTAINER METAPHORS IN *MACBETH*

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In both Shakespeare's *Macbeth* and the critical writings about the play over the centuries, a strong metaphorical pattern exists best characterized under the emerging theory of cognitive metaphor (for discussion and basic terminology, see Lakoff & Johnson: 1980, Johnson: 1987, and Turner: 1991). That pattern consists of metaphors projected from the image-schemata of CONTAINER (e.g., Lady Macbeth's famous soliloquy, "Come you spirits / That tend on mortal thoughts, unsex me here, / And fill me from the crown to the toe top-full / Of direst cruelty." [I.v.38-41]) and PATH (e.g., Macbeth's "I am in blood / Stepped in so far that, should I wade no more, / Returning were as tedious as go o'er." [III.iv.136-8]).

The most striking results of this analysis arise in two famous soliloquies where both the CONTAINER and PATH image-schemata operate simultaneously. In the first of these, the "If it were done when 'tis done" soliloquy[1], Macbeth hopes that his assassination of Duncan can contain, can "trammel up," its consequences within a trapper's net, containing in addition to Duncan's death or "surcease" his succession, that one-dimensional line or PATH that necessarily implicates time (see Everett: 1989), because successors succeed only over time. If Macbeth fails to "trammel up" Duncan's corpse and the succession in one container, Duncan's successors will, as Macbeth later observes of Banquo's, "stretch out" as a "line...even to the crack of doom" (IV.i.117). Thus the terminal point of the royal succession-path is that of all time. But if Macbeth can "trammel up" both Duncan's corpse and his succession, if the blow Macbeth is about to strike will make Duncan's murder the source point not in the path of Duncan's succession but in Macbeth's ("be-all"), and will annihilate any possible retribution on Macbeth ("end-all"), Macbeth will be in full and final control of time and what it implies: the PATH of the succession. Thus Macbeth, uniquely, will be able to travel from, e.g., Point E to Point G in the journey of his life without passing through Point F either topologically or chronologically. He will stand on the bank of the river symbolizing the death that is a point through which every journey of life must lead. Macbeth will "jump" that river just as earlier in the play he sought to "o'erleap" Malcolm, to the immortality that is for Macbeth a kingship gained not by divine grace or blood succession, but by his own sole effort. The "life to come" (what is ahead of him in the PATH-derived LIFE IS A JOURNEY metaphor that underlies this speech) if he overleaps nothing, if he "fall[s] down," is his own death and the death of his line (he has no legitimate succession of his own). But if he can "jump" that river that ordinary mortals must wade, if he can murder Duncan, control the succession, and get away with it, Macbeth can become

immortal without dying, he can become king without traveling the path of the ordinary journey of a life, passing the points that one must pass in order to become a king and the progenitor of kings to come. Macbeth will then live what Lady Macbeth in Act I can only feel, "The future in the instant" (I.v.56).

But Macbeth cannot "jump the life to come." The PATH of his career requires him to "step" through a bloody river that he cannot jump, in a horrific parody of Christian baptism. Although he laments that he has "stepped in" as far as the middle of that river, we know from the LIFE IS A JOURNEY metaphor that Macbeth could not return even if he wished. He must continue wading through the river of blood to what awaits him, human and divine retribution, on the other side.

Macbeth's "stepping," later fused with the LIFE IS A YEAR metaphor as he plods through the isolation of the "sear, the yellow leaf," of life's autumn, becomes, in the famous "to-morrow" soliloquy[2] the final dramatic articulation of time as a necessary sequence of events that he can neither contain nor "o'erleap."

Now time, "the life to come," "tomorrow," is not something that Macbeth can o'erleap. The path along which time has traveled so freely has become "trammel[ed] up" within the container of a "petty pace." Time and Macbeth march not in measureless "o'erleap[s]," but in measured steps along each point, each day, of the "way to dusty death," as inevitable an end to that path and that journey as the pen of a civil servant recording a legal document. Time will scratch along its line until it has reached its very last written syllable.

Two vague measures of time that are, in cognitive-linguistic terms, continuous and unbounded, become discrete and bounded (see Talmy 1988: 174-82—both "tomorrow" and "yesterday" are pluralized and reified). As they "light...fools the way to dusty death," our yesterdays (the source point in the LIFE IS A JOURNEY metaphor) illuminate a PATH forward that is now constrained by a clearly visible terminal point. The path has become a progressively shortening cylindrical CONTAINER, and the metaphors LIFE IS LIGHT and LIFE IS A JOURNEY become fused. This precise horizontal spatial representation now is rotated 90 degrees to its vertical representation in the figure of a candle.

The PATH now has its source point the candle's flame, which replaces the light of "all our yesterdays." The brief distance down that path from the fools to "dusty death," now visible, becomes the distance from the candle's wick to the terminal point of its base. As a candle burns down, it flickers, and we become more conscious of the shadows cast by the objects it illuminates and less sure of their size. The light, hence the life, of the LIFE IS LIGHT metaphor now is reduced to a shadow, and the steps of that shadow are constrained to the very short distance that an actor can "strut" (itself a very short step) upon the confined space of a stage, and for a very short time (now even less than the one-day minimum implied by "tomorrow" and "our yesterdays").

Macbeth finally invokes the common LIFE IS A STORY metaphor, describing life as a "tale," one of the shortest prose literary forms, prototypically a straightforward narrative. But this is a "tale told by an idiot"; Macbeth's mature career is, finally, a disordered discourse whose narrative line traces a meaninglessly contorted and convoluted PATH. What should have come at its end ("honor, love, obedience, troops of friends" [IV.iii.25]) has already come at the beginning, at a time when we think the natural movement is upward from where we are. Such a state of affairs leaves nothing for "the life to come" except unanchored "vaulting ambition" and its perils, or tedium, decay, aridity, and death. Now the PATH of Macbeth's career is trapped in a shrinking CONTAINER, ironically echoing his own effort to "trammel up" the paths of succession and time by Duncan's murder.

The PATH and CONTAINER schemata explain elements of the plot as well. Birnam Wood travels a path toward its terminal point of Dunsinane. Lady Macbeth sleepwalks—like that "tale told by an idiot," the PATH of her life's

journey is deranged: it has no coherent beginning or end. And Macduff as the agent of retribution brings the CONTAINER and PATH schemata full circle. He finally forces Macbeth to turn back on the PATH of his career ("Turn, hellhound, turn"). In having been born by Caesarean section, Macduff leaves the container of his mother's womb by "o'erleaping" the conventional path of vaginal birth when he begins the journey of his life. That path is the necessary condition for his ability—not literally, but, more important, metaphorically—to stop Macbeth in his tracks.

We understand *Macbeth*—its language, its characters, its settings, its events, its plot—in terms of these two central bodily-based image-schemata: PATH and CONTAINER. We understand the play in these terms precisely because the bodily experiences these schemata implicate are so universal and so central. The unity of the language of and about *Macbeth*, as well as the unity of opinion about that unity, arise directly and consequentially from this embodied imaginative human understanding.

NOTES

(1)   If it were done when 'tis done, then 'twere well
It were done quickly. If th'assassination
Could trammel up the consequence, and catch
With his surcease success, that but this blow
Might be the be-all and the end-all—; here,
But here, upon this bank and shoal of time,
We'ld jump the life to come.
                                                            I.vii.1-7.

(2) To-morrow, and to-morrow, and to-morrow
Creeps in this petty pace from day to day
To the last syllable of recorded time,
And all our yesterdays have lighted fools
The way to dusty death. Out, out, brief candle!
Life's but a walking shadow, a poor player
That struts and frets his hour upon the stage
And then is heard no more. It is a tale
Told by an idiot, full of sound and fury,
Signifying nothing.
                                                            V.v.19-28.

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        Princeton: Princeton University Press, 298 p.

METAPHOR MAKING MEANING: DICKINSON'S CONCEPTUAL UNIVERSE

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1. INTRODUCTION

Emily Dickinson wrote the following to her sister-in-law in 1865: "You must let me go first, Sue, because I live in the Sea always and know the Road" (L306).[1] To understand the full implications of this statement, one needs to recognize that the metaphorical expressions "sea" and "road" are components of idealized cognitive models that structure our reasoning (see Lakoff and Johnson, 1980, Lakoff and Turner, 1989). If we are to understand how a poet like Dickinson structures her experience of the world, then we need to look at the way she structures her metaphors of that world.

2. THE PATH SCHEMA AND THE LANGUAGE OF TIME

We structure much of our experience of the world through the metaphor of LIFE IS A JOURNEY (Lakoff and Johnson 1980). For Calvinist religion, the goal of life's journey is heaven. And man's purpose in life is therefore just as simple: to get there. The Calvinist view necessarily devalues life and the things of this world. Death, the physical termination of life's journey, is seen merely as a gate to the afterlife. But this is exactly where Dickinson balks. As one who once wrote, "I find ecstasy in living—the mere sense of living is joy enough" (L342a), Dickinson found it impossible to accept the notion that "death" was at the "end" of a linear progression of a "lifetime" and that "eternity" somehow came "after." For Dickinson, eternity was "in time" (P800). In "Forever—is composed of Nows—" (P624), time and eternity seem to collapse into one.

The metaphor LIFE IS A JOURNEY is ostensibly grounded in spatial orientation, embedded in the notion of "passage." However, since "passage" reflects in the aging processes of life the notion of time, the metaphor is actually temporally constrained by the target domain, life.[2] More accurately, then, the full metaphoric construct is that of LIFE IS A JOURNEY THROUGH TIME. It was not simply the Calvinist view of life's journey toward heaven that Dickinson could not accept; she could not accept traditional notions of time, either.

The metaphor of the JOURNEY was problematic for Dickinson because it presumes a specific destination.[3] Although "the voyage of life" was a commonplace conception in her culture, Dickinson transformed it into a metaphor that created a coherent model for her conceptual universe, that is, LIFE IS A VOYAGE IN SPACE. She accomplished this by invoking two metaphorical strategies: the image metaphor of AIR IS SEA and the schema of CYCLE.

3. THE AIR IS SEA IMAGE METAPHOR

Throughout the poetry, sea substitutes for air: "A soft Sea washed around the House/A Sea of Summer Air" (P1198). With the AIR IS SEA image metaphor, other

components of the source domain sea are mapped onto the target domain air. Thus EVERYTHING THAT FLIES IS A SAILOR, including human beings: "Straits of Blue/ Navies of Butterflies—sailed thro'—" (P247); "Down Time's quaint stream/Without an oar/We are enforced to sail" (P1656). Sometimes, EVERYTHING THAT FLIES IS A BOAT, including the sun: "A Sloop of Amber slips away/Upon an Ether Sea" (P1622).

    The AIR IS SEA image metaphor transforms the "voyage" of life, common to conventional views, from one that is earth-bound to one that takes place within the context of outer space. Dickinson completes this transformation by the additional schema of the CYCLE.

4. THE CYCLE SCHEMA AND THE LANGUAGE OF SPACE

    Although "a cycle is a temporal circle" in which "backtracking is not permitted" (Johnson1987:119), Dickinson spatializes the temporal construct of the CYCLE schema by changing the linear trajectory of things that move, EVERYTHING THAT FLIES; SUN, STARS, AND PLANETS; and HUMAN BEINGS, into a circular one: "See the Bird.../Curve by Curve—Sweep by Sweep—/Round the Steep Air—" (P703); "And all the Earth strove common round—" (P965). Dickinson found the schema of CYCLE more productive than the schema of PATH because it accorded more closely with her conception of the physical world. Although Johnson identifies the CYCLE schema with time, it is also closely associated, as Dickinson saw, with the movement of the earth in space.[4]

    By revealing the metaphorical connections between TIME and SPACE, Dickinson created a world view in which physical location and temporal constructs come together. Thus TIME IS LOCATION: "A Music numerous as space—/But neighboring as Noon—" (P783); "Past Midnight! Past the Morning Star!/.../Ah, What leagues there *were* " (P174).

5. DEATH AND IMMORTALITY: INFINITY AND ETERNITY

    With such a metaphorical restructuring of the linear, temporal characteristic of the journey into a circular, spatial orientation, Dickinson formulated a vision of a world in which the dead have no place. In a cyclical universe, the geographical metaphors of goal, location as up or end have no physical, bodily grounding, with the consequence that it no longer makes sense to speak of "destination after" death. Dickinson contemplates the seemingly infinite reaches beyond the solar system as she defines eternity in terms of space: "Eternity is there/We say as of a Station" (P1684). "How infinite—to be/Alive—" Dickinson exclaimed (P470). It might be: "Finite—to fail, but infinite to Venture—/For the one ship that struts the shore/ Many's the gallant—overwhelmed Creature/Nodding in Navies nevermore—" (P847).

    Dickinson lived in the sea of infinity/eternity, death/immortality: "You must let me go first, Sue, because I live in the Sea always and know the Road."

6. CONCLUSION

    Dickinson's LIFE IS A VOYAGE IN SPACE metaphor enables us to understand that her so-called "abstract images" are grounded in her experience of the world and the universe around her. The problem she faced in accepting the religious import of the LIFE IS A JOURNEY THROUGH TIME metaphor and the way she replaced it with LIFE IS A VOYAGE IN SPACE is graphically displayed in the following poem, with its contrast between the static image of the dead in a location in space "untouched" by time, in the first stanza, and the movement of time through space, with the associated images of circle and sea, in the second (P216):

    Safe in their Alabaster Chambers—
    Untouched by Morning—
    And untouched by Noon—

> Lie the meek members of the Resurrection—
> Rafter of Satin—and Roof of Stone!
>
> Grand go the Years—in the Crescent—above them—
> Worlds scoop their Arcs—
> And Firmaments—row—
> Diadems—drop—and Doges—surrender—
> Soundless as dots—on a Disc of Snow—

Infinity in time, eternity in space. Poets have, through the ages, been credited with the ability to speak truths, to capture, somehow, the "truths" of the universe through a different path from the ones scientists take. "Tell all the Truth but tell it slant—/ Success in Circuit lies" (P1129) was Dickinson's way of putting it. In attempting to describe what poets do, however, we reach the "fudge factor" when we try to explain *how* poets "tell truths," how their work somehow illuminates for us the nature of the world and the nature of human understanding. We fail in our explanations when we impose the false theoretical construct of "objective reality" on physical—and poetic—reality. What I have tried to show in this paper is how the constructive power of metaphor enables a poet like Dickinson not to describe but to create her own individual world truth, a truth that is grounded in a physically embodied universe.

7. NOTES

(1). References to Dickinson's works in this paper are drawn from Johnson 1955, 1958. Letter numbers in the text are preceded by the letter L; poem numbers by the letter P.

(2). The word *journey* itself, in its original meaning, meant the distance one could travel in a day (from the French *jour*).

(3).Consider the commonplace assumptions in our use of the two words. When we say we are "going" on a journey, it is assumed we have a particular destination in mind; when we "take" a voyage, it is the travelling itself that seems more important than any possible destination we might have in mind.

(4). Just as the etymology of the word journey includes the element of time, as we have seen, so the etymology of the word voyage includes the element of space: the morpheme [voy] comes from the Latin *via*, meaning path or way.

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METAPHOR IN SEFERIS CYPRUS POEMS

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The beginning of the Aristotelian influence on modern literary theory may be traced to the renaissance period and then it permeated the seventeenth and eighteenth centuries. In the Poetics only Tragedy is discussed in detail but other literary forms are also included. The purpose of tragedy is to purge the soul by exciting and exhausting the passions of fear and pity. For this purpose the muthos (the poetic or legendary tale as opposed to the historical account), the ethos (the character, or temper of peoples' qualities in virtue), the lexis (the metrical arrangement, the diction, the style), the dianoia (thought, the rhetorical thought in poetry), the opsis (spectacle or sight), and the melopoiea (the lyrics, the making of lyric poetry), are the basic requirements for an artistic work, linguistic or otherwise. Also unity, poetic truth and probability are applicable to any form of poetry. (Aristotle: Poetics Passim) These are the ideas that have occupied literary critics from the renaissance to the present. With Aristotle poetic images take on a formal order in contrast to the chaos of actual historical events. The poet's mimesis (imitation, representation of life) improves the image of the original by ennobling the ethos and thus raising the spectator's own inner life. Poetry, as well as other artistic means are modes of mimesis or imitation.

Seferis does not simply reproduce the history of Cyprus in its 'natural' state; rather, he restructures it for certain esthetic ends calculating the effect of the literary devices used.In traditional historico-literary methods one would study the poems only in terms of their cultural structures and the constraints imposed upon them by the author and the concrete situation in life. But a theory that draws inferences from the politico-historical situation of language is necessary to comprehend how the Cyprus poems function. It is, indeed, necessary to understand the notion of history that the poems manifest. The language of the poems mediates power and it mirrors and transmits the mythological assumptions upon which they proceed as an absolute category. Meaning is attained without ambiguity, since the metaphorical dimension may be temporarily ignored with the antinomies and tensions based on the rulers and the ruled. From ancient times to contemporary (1953) and to future conflicts is the insurmountable and destructive attempt of one people to control another.

In the Princeton Encyclopedia of Poetry and Poetics, Preminger defines metaphor "neutrally" as a relation of "comparison, contrast, analogy, similarity, juxtaposition, identity, tension, collision, fusion." (Preminger 490). Metaphor is "the radical process in which the internal relationships peculiar to poetry are achieved... a condensed verbal relationship in which an idea, image, or symbol

may, by the presence of one or more other ideas, images, or symbols be enhanced in vividness, complexity or breadth of implication" (Ibid 490). This definition of metaphor is derived from Aristotles' Poetics "metaphor consists in giving the thing a name that belongs to something else; the transference being from genus to species, or from species to genus, or from species to species, or on grounds of analogy." (Ibid 490). With this in mind, I wish to view the Cyprus poems as dealing with problems of verbal structure both diachronic and synchronic at the same time. Certain features are timeless. Certain features raise the poems from specific events, and personal political views to universal features. Personal experience, local historical and political events and mythology become universal statements or metaphors. For example the poem "The Cyprus Salamis" injustice and its punishment refer not only to the British occupation of Cyprus, World War II, and Xerxes' battle at the Island of Salamis, but it is rather a universal statement of any war in the past, present, or future. "Friends of the other war, on this deserted cloudy seashore, as the day ends I think of you, of those who fell fighting and those who fell years after the battle, those who saw dawn in the hoarfrost of death, or, in the wild isolation under the stars felt on them the large dark eyes of total destruction." (Seferis, 268) (my translation). At the heart of this poem lies a conception of language, signs, and images that grants a complex historically conditioned subjectivity. In spite of wars and occupations and destructions justice somehow prevails and those who commit injustice are punished and thus end up being destroyed themselves. This theme runs throughout Greek culture.

But war is not the only theme of this poem, love and a mystic sacredness are just as important. "The earth does not have linking rings so that they can put her on their shoulders and carry it away, nor can they, no matter how thirsty, sweeten the sea with half a dram of water. And these bodies made of clay they do not know they have souls...they collect tools to change them but they will not be able..there is an island." (Ibid 267-268). It is futile to attempt domination and control of an island that has managed to survive conqueror after conqueror. As Seferis walks on the ancient town of Salamis by the seashore he does not see any faces but he hears voices, the voices of history warning that occupation leads to violence. In 1953 the violence he was referring to, was between the British, the rulers, and the Greek Cypriots, the ruled. But the time or the place does not really matter. The image of, "corn does not take long to ripen and that yeast does not require a long time to puff up the bitterness," (Ibid. 268) is drawn from the Persians by Aeschylus. Those that suffer may turn to retribution. "And those who prayed when flaming steel sawed the ships..." Seferis is quoting from Lord Hugh Beresford, R.N. "O God our loving Father ...Help us to keep in mind the real causes of war: dishonesty, greed, selfishness, and lack of love, and to drive them out of this ship, so that she may be a pattern of the new world for which we are fighting..." "He fell at the battle of Crete. " (Ibid.281). Seferis had read it in a North African newspaper. This prayer was a direct appeal to the British from Seferis but it could apply to any number of similar situations. This poem is perhaps the most direct anti-war statement that has universal application but unfortunately what the powerful decide who can change? The answer is not a passive one. Humanity cannot accept injustice and the oppressed cannot accept the oppressor. "...the messenger is running, and no matter how long his road, he will bring to those who have tried to chain the Hellespont the dreadful message from Salamis. The voice of the Lord on the waters, there is an island." (Ibid 269).

In virtually all of his poetry Seferis exploits the folk and the mythic tradition. It is especially so in the Cyprus poems and one in particular, Helen. She never went to Troy, the war was fought for "a phantom image." This is the

Euripedes version of the Trojan War which is quite different from Homer's. According to this version Zeus had the real Helen sent to Egypt and only her phantom went to Troy and both the Greeks and the Trojans were involved in an extremely destructive war just for a phantom. The poem begins with "Teucer:...in sea-girt Cyprus, where it was decreed by Apollo that I should live, giving the city the name of Salamis in memory of my island home...Helen: I never went to Troy; it was a phantom... Servant: What? You mean it was only for a cloud that we struggled so much? "The nightingales won't let you sleep in Platres." Teucer and Seferis are forced to live in exile; Teucer in the city of Salamis in Cyprus away from his home island Salamis and Seferis in Greece and elsewhere away from his homeland Smyrna in Asia Minor.The song of the nightingales in Euripides' Helen is invited by the chorus to lament the dead of the war in Troy. "The nightingales won't let you sleep in Platres.""Platres: where is Platres? And this island: who knows it? I've lived my life hearing names I've never heard before: new countries, new idiocies of men or of the gods; my fate , which wavers between the last sword of some Ajax and another Salamis, brought me here, to this shore. The moon rose from the sea like Aphrodite, covered the Archer's stars, now moves to find the Heart of Scorpio, and changes everything. Truth, where's the truth? I too was an archer in the war; my fate: that of a man who missed his target." (Keeley and Sherrard: 355,357). Platres is a beautiful resort village in the Troodos mountains that has suffered the devastation of war and it will again. The gods are just as irrational as people. In the whole Trojan war in Euripides both gods and humans are mad and destructive. The moon rises from the sea like Aphodite the goddess of love rose from the sea. Aphrodite with her sensuality is at the root of the disaster in Troy; the moon by blotting out the "Archer's stars" causes him to miss his target.

The mythology of the ancient world and the medieval oral tradition are used as metaphor to deal with contemporary problems not only in Cyprus, but universally. The poems dedicated to the people of Cyprus and inspired by Seferis' visit to Cyprus in the 1950's deal with specific events both diachronic and synchromic that reflect universal themes. Cyprus politics, personal experience, specific historical events, and mythology become a metaphor of universal themes of love, war, destruction and exile. At the heart of the Cyprus poems lies a conception of language, signs, and images that grants a complex universal representation. The mimesis (imitation) of history gives literature a historical being. War and resistance to oppression tear apart the image of political power universally. The story of individual characters and specific events conform to the same structure. War destroys. Power continually shifts. The ruled seek freedom either through death in which case they reach permanent nothingness or through temporary means where nothing is attained permanently. In this light, time is seen as an interpretant in a paradigm of sameness. Time is not necessarily sequential; rather, the poems are structured temporarily. The socio-political situation in Cyprus in the early 1950s serves simply as a temporal boundary on the effect of war and destruction in the past, the present, and the future. Simultaneity is thus made coherent. References to historical events assume a temporal sign-junction and become indices of sameness.

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DISCUSSION

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First of all I would like to express my gratitude to Professor Hiraga and Professor Williams for including me shortly before the Congress as discussant (alas, the only official discussant) in their panel.

I must say that after reading those papers presented at this nanel which Prof Hiraga kindly sent me before the Congress, I found my task extremely difficult. There is, unfortunately, very little which I can add to what has already been said here. I have been impressed by the linguistic and literary learning and the insightful analyses contained in each of these papers. I have enjoyed reading them and I have learnt an awful lot from them.

Even though my comments will perhaps not add much that is new, I hope they will serve at least the purpose of suggesting some possible directions for the general debate.

The first impression one gathers from the papers is one of healthy diversity. This diversity is evident, first of all, in the semantic tradition or framework adopted by each author. Although most of the speakers explicitly set out to illustrate and confirm the theory of metaphor created by Lakoff, Johnson, Turner and others, one speaker (Prof. Haley) has used Peirce's semiotics as his theoretical framework, and another (Prof. Ross), who unfortunately could not come to the Congress, intended to present a bright and thought provoking approach to the study of the interaction of sound symbolism and other linguistic levels in the literary work of art.

The diversity is also evident in the scope of these studies: two embrace the whole or most of the production of one author (Prof. Margaret Freeman or Prof. Tsiapera), one takes a complex literary form -a complete play (Prof. Donald Freeman)- as its object of inquiry, and finally another two do a microscopic analysis of individual poems or works of art (Prof. Deane and Prof. Haley). This diversity is revealing because, in the first place, it indicates

the wealth of approaches that are possible in cognitive linguistics, and, in the second place, it demonstrates the usefulness of cognitive approaches to the study of poetic metaphor for the study of a wide variety of literary forms and aspects.

But the links connecting the studies reported here are stronger than the differences. An obvious link is what Lakoff calls the 'cognitive commitment' (Lakoff, 1990:40): "the commitment to make one's account of human language accord with what is generally known about the mind and the brain". This commitment accounts for the insistence in most papers upon basic cognitive models or schemas (image-schemas) as the nuclei of poetic metaphor, just as they are the nuclei of conventional metaphor.

There is also one more specific link. In most of the case studies presented here we find a basic similarity: what starts out as one or two basic image schemas -center/periphery (Deane), path and container (Donald Freeman), path and cycle (Margaret Freeman)grows into a number of metaphors (either conventional like LIFE= JOURNEY, or conventional metaphors used in novel ways) which then, thanks to the unifying force of the common basic schema(s), grow into successively 'larger' metaphors, which might be called 'suprametaphors'. There is, indeed, a striking parallelism between the way in which this 'growth of meaning' is handled in Prof. Haley's paper -in which an icon, driven by its index, grows into a metaphorical icon and this in turn into a 'cognitive symbol'- and in, say, Prof. Deane's paper, in which we learn how the center/ periphery schema becomes in Yeats's poem in successive stages of interpretation a symbol for the shift from a unified Christian social order through anarchy to tyranny. And we find similar cases of semantic growth in M.H. Freeman's and Donald Freeman's admirable papers.

Is it then accurate to conclude that a poetic text gains in power and forcefulness to the extent that it manages to lead us all the way from one or two basic image schemas to a complex metaphorical symbol (a suprametahor)? This is after all, I think, a different way of formulating the common belief of many literary critics that a work of art's greatness is at least in part a function of its flexibility to be interpreted simultaneously and with equal reasonableness at several distinct, though interrelated levels of meaning.

Before concluding I would like to touch very briefly upon two further issues that suggest themselves in the papers presented here.

One of them springs directly from Prof. Haley's stimulating paper. I find some very interesting similarities between the Peircean notion of index, in Prof. Haley's formulation, and the notion of metonymy as put forward by Lakoff and Johnson: 1) in the contiguity between concepts connected by metonymy and index; 2) in the 'stretching' function of the index: concepts connected metonymically to the propositional structures mapped through

metaphor can be and are often used as metonymies for the whole metaphorical concept, but, at the same time, they point in new directions for the application of the metaphor via their association with other, often fairly removed, concepts.

The second issue is an old issue in literary criticism, linguistics and philosophy. To many of us that are aware of the danger lurking in Reddy's conduit metaphor and in objectivist linguistics and psychology, there is probably a ready-made answer for it. But I feel we could perhaps take advantage of this opportunity to clarify that answer both to ourselves and to others outside cognitive linguistics. The issue is the one of the limits of interpretation. In other words, is there a methodology that can guarantee that two different analyses of a literary work will arrive at the same conclusions? Is that methodology provided by cognitive linguistics? If it is not possible to arrive at such a methodology, how should we view this fact? As an unfortunate or as a fortunate limitation?

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TABLES RONDES / PANEL DISCUSSIONS

TITRE : LA PRAGMATIQUE FONCTIONNELLE
TITLE : FUNCTIONAL PRAGMATICS

ORGANISATEUR(S) / ORGANIZER(S) :
Jacob MEY
(Université d'Odense - Danemark)

WORKSHOP FOUNDATIONAL QUESTIONS IN PRAGMATICS

Jacob L. Mey, organizer

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Introductory remarks (Jacob Mey)

The appropriateness of discussing the problem of representa-
tion in the context of the present Congress became even more e-
vident as we heard Walter Hirtle, in his plenary talk today
(August 11)' quote Gustave Guillaume, the linguist whose name
is eminently and inextricably conjoined with the linguistic tra-
d ition at our host institution, the Université Laval.

Guillaume says:

"The human principle underlying language is that expression
i s possible only if something has first been represented. The
 necessity of representing something before expressing it is uni-
v ersal in space and time." (Guillaume 1984:94-95; quoted Hirtle
1992:42).

While we can subscribe to this view, and in fact share the
basic viewpoint expressed by Guillaume and Hirtle, we must be
v ery careful not to confuse, let alone conflate, representation
with its manifestation(s), in case the word(s) - or, in the
l anguage used by the target article of this workshop, an 'encod-
ing'.

Bickhard and Campbell have the following to say on the subject
of encoding:

"Cognition involves representation, and representation is usu-
ally assumed to be some form of encoding. What we wish to show is
t hat assuming the equivalence of representation with encodings
involves an internal contradiction - it is an incoherent concep-
t ion of the nature of represntation. As such, it cannot ground a
v alid approach to language." (1992:402)

For this reason, Hirtle's argument (again following Guillaume)
that the word is a "representational mechanism" may, at best, cause
an ambiguity; at worst, it could be misleading. If we put too much
emphasis on the representation itself, we could end up forgetting
what its primary function is, what it represents and how. If we go
too far in the other direction, and consider representations as
things, concrete, reified objects, then we end up in the eternal
quagmire of unanswerable questions such as: 'What is (in) a word?',
'Qu'est-que c'est qu'un mot?', 'Was ist ein Wort?', to quote three
of the formulations that have been most frwquently used over the
years to charcterize the dilemma.

The importance of Bickhard and Campbell's target article, and
of the (hopefully vigorous) ensuing discussion here today is that
it puts its finger on this ambiguity and tries to show a way out
of the quagmire - or even better, tell us how to avoid it. I look
forward to a fruitful and exciting debate on these matters.

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FOUNDATIONS OF LANGUAGE STUDIES

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There are two major parts to the position that Robert Campbell and I are proposing: 1) a set of related criticisms of the presuppositions involved in contemporary studies of language, and 2) an alternative model of cognition and language that avoids these criticisms, and yields many additional results. The criticisms focus most fundamentally on the notion of representation as being constituted as encodings, and the related conception of utterances as transmitted encodings of mental contents — to be decoded into mental contents by the audience. This is the classic backbone of contemporary cognitive science: perceptual encodings of the world yielding cognitive encodings, which, in turn, yield utterance encodings. Our critique undercuts this progression at all levels.

Specifically, we argue that, while encodings certainly do exist — such as Morse code — and can be immensely useful — such as computer codes — a logical incoherence is encountered if it is assumed that all representation is constituted as encodings. The problematic that we point to is not unknown — it is referred to by such terms as "the empty symbol problem" or "the symbol grounding problem" in the literature. But we offer a much deeper critique — that the encodingist notion of representation is *incoherent* as an account of representation, not just that it is *incomplete* in its account of representation — and we offer an alternative.

Neither the critique nor the alternative can be developed here. Instead, I offer outlines of some parts of each. A core variant of the critique is that, while encodings can be defined in terms of other encodings, such a definitional progression cannot proceed indefinitely on pain of infinite regress. Therefore, a basic level of encoded representations is required, at which atomic encodings are available for defining other encodings but are not themselves defined in terms of other representations. This level is often construed as being innate, but that does not address the fundamental logical problem (Bickhard, 1991a, 1991b, in press-a). The logical problem is that it is impossible for any such atomic basic level encodings to represent anything at all — any

specification of what they represent either violates the assumption of their being at a basic level, or it is empty, such as : "X" represents whatever it is that "X" represents. The presupposition that representation is constituted as encodings, then, rests on an impossibility of their being such basic level encodings — it is an incoherent presupposition.

But, if representation is not fundamentally encodings, then utterances cannot be either. Encodings, such as Morse code, require that both the encoded and the encoding be already known — e.g., ". . ." stands-in for "S" in Morse code — in order for the encoding to exist. Encodings, then, cannot provide new representation; they can only change the form of already available representation. Encodings are representational stand-ins, not representational emergents. Consequently, they cannot be the source of perceptual information about the world, nor the source of utterance information about mental contents. Further developments of these considerations can be found in (Bickhard, 1980, 1987; Bickhard & Campbell, 1992; Bickhard & Richie, 1983; Bickhard & Terveen, in preparation; Campbell & Bickhard, 1986, 1992).

Our alternative model is interactive and pragmatic — pragmatic in a general Piagetian (Bickhard & Campbell, 1989; Campbell & Bickhard, 1986; Piaget, 1954, 1971, 1977) or Peircean sense (Rosenthal, 1983), not in the sense of Morris. It is a version of "knowing how", of skill knowledge, as being fundamental, rather than "knowing that" (Bickhard, 1992, in press-a, in press-b; Dreyfus, 1991). Utterances, similarly, are interactions with the world; they interact with, operate on, the world — they don't emit encodings into the world. Specifically, we propose that utterances interact with and operate on social realities, in the form of what we call situation conventions. Situation conventions, in turn, are constituted as certain forms of convergences among the representations of the participants in the social situation (Bickhard, 1980, 1987). Directly, then, utterances operate on situation conventions; indirectly, they operate on the representations of the individuals involved that constitute those situation conventions.

Many interesting properties of language depend on the special nature and properties of the objects of interaction of utterances — on situation conventions. We focus here, however, on the characteristics of language that derive from utterances being operations per se rather than encodings. For one, the result of an operation depends inherently on what the operation is performed upon as much as it does on the operation itself — this view of utterances, then, renders them intrinsically context dependent. This is in strong contrast to the typical view in which context dependence is an additional observed property that must somehow be accounted for on top of the basic encoding nature of utterances (e.g., Kaplan, 1979a, 1979b, 1989).

For another consequence of this view, note that the situation conventions that utterances operate on are constituted by (relationships among) representations. The results of utterance operations, then, will be representations, with truth values. The utterances themselves, however, will *not* be representational at all! Utterances are no more representational than are functions on the integers prime or non-prime or

odd or even. This point scrambles the properties that are normally collected into syntax, semantics, and pragmatics as natural divisions in the study of language. This categorization of language studies cannot be reconstructed from within this utterances-as-operators model. Therefore, it is not a theory neutral way of conceiving of language studies: it is implicitly committed to encodingism, in which syntax becomes the study of well-formedness rules for encoding strings, semantics is the study of the encoding rules themselves, and pragmatics is the study of the uses to which such encodings can be put (Bickhard, 1980, 1987; Bickhard & Campbell, 1992).

Other consequences derive from the different nature of interactive representations from presumed encoded representations. One class of such consequences has to do with a sense in which such interactive representation is intrinsically *modal*, and in which interactive representations *differentiate* the world, instead of naming (encoding) parts of the world. These characteristics make indirect connection with possible world semantics, while utterances as operators make indirect connection with categorial grammars as ways of understanding partial and constituent operators. It is these connections that serve as the focus of our target article for this symposium (Bickhard & Campbell, 1992).

One last consequence that I would like to point out here is that, in standard views, syntax and semantics constrain each other only in the sense that sentences and semantics must be inter-encodable, and the source of information about semantics derives primarily from the sentences into which semantic structures must be encoded. This is a very weak set of constraints. In the utterances as operators view, in contrast, there are very strong constraints on the properties of interactive representations, and these constraints are completely independent of language. Furthermore, as operations on such representations, utterances are very strongly constrained to honor, to be sensitive to, those properties of what they operate on, in order for the operations to succeed. The general message here is that there are much stronger sources of constraint for language studies from within the interactive view than from the standard view. Among other consequences, standard issues and claims of underdetermination are undercut. Many properties are derivable from the inherent constraints on these interactive representations, situation conventions, and operations on them.

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PANEL DISCUSSION
FUNCTIONAL PRAGMATICS:
EPISTEMOLOGY OR SCIENCE?

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There is much that I welcome in the paper by Bickhard and Campbell which I should like to elaborate on before turning to some of the problems I have with it.

I am excited about this work because I see in it a number of points that agree with my own position. The paper presents what it is doing in terms of epistemology. I would like to reinterpret it in more linguistic terms for this linguistic audience. The paper operates with an interactional approach; I think it is important that linguistics turn to an interactional approach. Such an approach would be dynamic, not static. It would not be a linguistics focused on writing grammars for languages. Nor would it focus on a semiotic view of the word 'tree' standing for a tree, or for a concept of a tree. Nor would it focus on the linguistic knowledge of a speaker-listener in a perfectly homogeneous speech community. Instead it would focus on two or more people interacting communicatively with each other—linguistic behavior generally involves two or more people interacting. It would be a view in which interactive behavior dynamically changes the state of the people involved.

A good example is the greeting 'Hi'. The person to whom this is said changes: he has now been greeted and his subsequent linguistic and nonlinguistic behavior would be different than it would have been had he not been greeted. And the person who says 'Hi" also changes: he may have discharged an obligation, for example. We do not have a static sign concept here. These are dynamic changes of the people that are different for the different people involved. These changes depend on the different contexts as represented in the properties of the people involved and they result in changed contexts, different in the different people.

Another example is 'OK', very frequently used in America. It is highly context dependent and can only be handled adequately in an approach which, like an interactive approach, can handle context. And, as Bickhard and Campbell also realize, if we can handle such examples dynamically in an interactive approach we can go on and handle all the rest.

My main published criticism of the paper was that it still accepts many unexamined assumptions from the ubiquitous semiotic-grammatical tradition. This was not idle carping but serious criticism from someone who has a somewhat similar interactive approach that does *not* rest on unjustified and scientifically unjustifiable special subject-matter assumptions. The paper could have made use of these freely-available results. The published response by Bickhard and Campbell did not answer the criticisms, which are unanswerable within the framework of the target paper. Instead it accused me of being a

positivist for asking that its assumptions be justified scientifically. It does claim to be doing science.

Now as someone with three degrees in physics I do not need the positivists to tell me what science is, and I recognize as well as anyone their misguided attempt to apply scientific criteria to answer questions that are properly philosophical. Even the ancient Greeks understood the difference between science and epistemology. The Stoics already in 150 B.C. understood the difference between theory and metatheory and that criteria of observation by the senses could be applied in the physical domain but not in the logical-semiotic-epistemological domain where the criteria were unclear. And where they are still unclear.

This paper appears to be doing philosophy, not science. It views people interacting communicatively with each other not as systems modeling people as talking animals in the physical domain but as epistemic agents.

In taking an interactive approach, the paper could have been scientific. Instead it continues the tradition in locating its research in the philosophical domain of epistemology where one cannot apply scientific criteria. The positivists could not do it and the approach of this paper, despite its claims to be doing science, can't do it either. But, as I have pointed out in this Congress and elsewhere, it *is* possible to study linguistic questions scientifically if one locates one's research in the physical domain and studies people as real talking animals. Interactionism, if conceived in the physical domain, is part of the key to doing this.

Nothing I have said here negates my appreciation for the contribution of Bickhard and Campbell in knocking down a widely-held insufficiently examined assumption. I prefer an approach to widely-believed assumptions from the semiotic-grammatical tradition that discards them in the foundations and builds without them; in science the burden is properly on those who would accept special subject-matter assumptions to try to justify them scientifically. Nevertheless, a program of systematically knocking down traditional assumptions explicitly one at a time serves a very useful function because they are so widely and uncritically believed. Bickhard and Campbell have shown that they are particularly talented at this.

A REMARK ON THE INTERACTIVITY OF LANGUAGE
AND ON THE MEANING OF SENTENCE

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Natural language differs from a code in that it contains its own meaning. In European structural linguistics, language has been understood as a system of bilateral signs, which pattern the domain of cognitive content as a network of oppositions of (literal, conventional) meaning as well as they pattern the domain of physical sounds as a network of phonological oppositions. This hypothesis has been made plausible by a large amount of experience in describing languages for pedagogical and other practical aims. The patterning of meaning is the prism through which human beings perceive the world (if one does not rely on the primitive ontological view according to which we perceive independent objects constituting the world). With a functional approach, the patterning of meaning is viewed as a level of the language system that has a foundational character, not consisting in encoding, and may serve as a starting point for semantic-pragmatic interpretation. The conventional meaning thus can be viewed upon as a disambiguated underlying structure of the sentence, offering a basis for a division of labor between linguistics as such and the interdisciplinary interpretation (which includes the logical analysis of language, aspects of cognitive science, of psychology, and so on).

If the utterance is specified as an occurrence of a sentence, then it is connected not only with its conventional meaning, but also with a specific reference assignment (which depends on contextual and other knowledge, on figurative meanings, and so on); without this, it would not be possible to distinguish from each other two utterances differing in their speaker, listener, place and/or time.

We may then say that the cognitive content, the 'sense' of an utterance, or the situation meaning, which includes reference assignment, and perhaps other aspects of the impact of verbal and situational context, represents that factor that is immediately responsible for the operational character of the utterance. The mental state (the contents of the memory, the current attitudes, and so on) of the listener is modified in accordance with her/his interpretation of the utterance, not directly by its outer shape.

We can conclude that the ultimate aim of the description of language is to capture the regularities of the way in which utter-

ances operate, abstracting from certain features of the discourse situations. The stock of the information and attitudes possessed (a) by the speaker, and (b) by the listener (with a specific impact of what the speaker assumes to be their intersection) is then to be analyzed as the core of the domain and the range of the mentioned operations. The regularities of these operations concern the conventional meaning as one of the sources of situation meaning or of sense. Therefore, linguistics studies the relationships between meaning and the phonologically expressed grammatical structure of sentences. The interactive turn certainly should not just have the character of superposing the operational view of utterances on traditional grammar. Even in the core of grammar, in syntax, the impact of communicative interaction on the structure of sentences has to be reflected: without accounting for such contextually based although semantically relevant and grammatically expressed phenomena as the topic-focus articulation or the anthropocentric subject-predicate relation we cannot achieve an adequate and economical description of language.

A VIEW FROM PRAGMATICS

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Bickhard and Campbell (1992) stress the indeterminate, relativistic, constructed quality of linguistic knowledge, challenging the idea that information 'epistemically crosses' from world to mind via perception, or from mind to world via language. The locus of information, from their point of view, is inside the mind, in subjective representations arising from people's active, goaldirected interaction with the environment. For Bickhard and Campbell, the mind does not passively pick up information, but actively picks it out, constructing the world as it goes on the basis of its own internal needs and goals. Linguistic knowledge is thus not necessarily a mirror of nature. In their approach, the representing and the represented, the knower and the known, are co-implicated.

Bickhard and Campbell's critique of foundational encodings is a critique of meaning-based theories of language in general. It is also a critique of the assulllption that language emergence and use can be explained in purely formal, logical, linguistic terms, without reference to further psychobiological or sociocultural considerations of any kind. Bickhard and Campbell say that understanding utterances as essentially pragmatic actions 'ties linguistics to psychology, social psychology, and sociology, at both the empirical and formal levels of analysis. This isn't a new idea in linguistics, of course. Still, Bickhard and Campbell's version of this standpoint can be read, at least at one level, as an attempt to develop an epistemologically based, psychologically plausible, pragmatic conception of human interaction as a sort of 'meeting of the minds'.

The focus of Bickhard and Campbell's approach is not on the transmission of information from person to person, as in encoding/decoding models of communication; and 1t does not presuppose a logical, 'like-minded' world.

A ⟷ B

Rather, the approach focuses on complex, goal-directed, interactive processes <u>between</u> people, in an intersubjectively constructed approximate world, where 'minds change', and 'meanings' are implicitly dependent on the negotiation of converging interpretations.

A————✕————B

Bickhard and Cambell's idea of situational conventions as 'convergences of representations' reminds me of Malinowski's notion of communion. Malinowski distinguished between communication and communion as two central, complementary concerns of human interaction and identified the latter with pragmatics. Among some modern biologists of cognition, we find similar notions of structural coupling or structural intersection. These are attempts to step back from ideas of 'information', 'instruction', 'selection', 'inside/ outside', etc., and to try to suggest how cognitive systems and environments could interactionally define each other.

The conceptual focus of Bickhard and Campbell's approach is not on <u>what</u> specific knowledge of the world is represented in the mînd, but on (1) <u>how</u> knowledge of the world arises in the mind, (2) <u>how</u> this functionally relates to people's interactional choices in different contexts, and (3) <u>how</u> such choices come to have intersubjective significance for the partners. Bickhard and Campbell reduce the old epistemological problem of how knowledge of the 'outside' arises in the 'inside' of the mind to the pragmatic problem of how knowledge of the 'other' arises in the 'self'.

Although it can be argued that Bickhard and Campbell's conception lacks concepts related to meaning and goal-directedness, I would argue that it raises at least some of the kinds of questions that need to be asked in pragmatics about linguistic interaction. Linguistic pragmatics, in addition to being a functionally oriented approach to language use and interpretation, is concerned in a broad sense with human interaction. This includes an interest in the prerequisites for, the influences on, and the functions of, human linguistic interaction in different contexts. And it includes the embeddedness of linguistic interaction in other processes (e.g., social, semiotic, psychological, biological, etc.). In this broader sense, its ultimate subjects are not language, grammar, or linguistic knowledge in isolation, but people making different types of linguistic and other interactional choices. The study of these requires integrative frameworks.

Bickhard and Campbell's criticism of foundational encodings, which emphasizes individuals as unique centers of experience, seems to me (almost in spite of their terminology) to be a step toward delineating something characteristically <u>human</u> in human interaction. Bickhard and Campbell locate the roots of interactional choice in intersubjective experience: (1) experience rather than logic is the locus of linguistic choices, (2) goals rather than rules provide the motivation for choices in specific instances, and (3)

intersubjectivity rather than meaning is the basis for negotiating understanding. However imprecise these concepts may seem to be from a formal linguistic point of view, they nevertheless refer to important underlying social and psychological aspects of human interaction. And ultimately, there is nothing inherently less respectable about a model of interactional choices that ignores symbolically encoded linguistic knowledge, than about a model of encoded linguistic knowledge that ignores people making interactional choices.

Bickhard and Campbell's attack on foundational encodings is bound to elicit indignant reactions. Still, a radical critique like this can, in my opinion, be a constructive act leading to an opening of possibilities. If we view their conceptualization as a net, somewhat after Karl Popper, and judge its usefulness in terms of the different types of phenomena it might someday enable us to 'catch' and approach from a unified point of view, it seems reasonable to tolerate, and even welcome, the controversy that this critique of foundational encodings could introduce into linguistics.

To paraphrase Duerrenmatt (1990), linguistic knowledge, as a thing in itself, will continue to remain a borderline concept: something thought up and aimed at, from which linguists' reflections rebound as formulas, theories, and hypotheses. Nevertheless, reflections on foundational questions like those raised by Bickhard and Campbell have an important place in linguistics. Bickhard and Campbell's discussion of foundational encodings is, I think, a serious attempt to outline an alternative epistemological perspective on linguistic knowledge, and to stimulate new discussion of basic issues in linguistic theory. It will be interesting now to see if linguists and others working in neighboring fields take up this conceptual challenge, and begin to investigate its further implications.

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TABLES RONDES / PANEL DISCUSSIONS

TITRE : L'AMÉNAGEMENT LINGUISTIQUE POUR LES LANGUES MINORITAIRES EN CHINE
TITLE : LANGUAGE PLANNING FOR MINORITY LANGUAGES IN CHINA

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BILIGUALISM AMONG THE BUYEIS

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The Buyeis has a population of 2.12 million living mainly in the southern part of Guizhou. They live both mingled together with the Hans, the Miaos, the Dongs and the Suis in a larger society and in separate compact communities in their own villages. The distribution pattern accounts geographically for the bilingualism among the Buyeis. The historical contact with the Han people, which has lasted for several thousand years, and in particular, the growing harmonious relations between the Buyeis and the Hans at the present, can account historically for it. And the recent dozens of years' social development, especially the development of rural economy and the popularization of mass communication, accounts for it socially.

LANGUAGE AND OCCASIONS

The Buyei language and the Chinese language are used in different occasions. In the following occasions, people tend to use the Buyei language: (1) daily life in household and village; (2) public fairs in compact communities; (3) religious activities; (4) primary school in compact communities; (5) administration at or below the county level.

Here are some notes to them:

1. The language used in the primary school. In small towns within the Buyei compact communities, the teaching language at junior grades is the Buyei, with Chinese as the supplement. And in mixed communities, Chinese is used as the main teaching

language at the junior grades and the Buyei as the
supplement, when the students of the Buyei origin
make up a larger percentage of the class.

2. The language used in mixed communities. At
the public fairs in the mixed communities, Chinese
is not the exclusive language used. The Buyeis and
the sellers, being both of the Buyei origin, would
use their native language as a rule. And more
interesting, if the seller happens to be of the
Buyei origin, then, the buyer, whatever nationality
he belongs to, would rather used the Buyei, if he
can, in his bargaining with the seller. This might
be explained as a posture of intimacy and a hope to
get something at a better price.

3. The language used between different dialect
speakers. The Buyei language can be divided into
three dialects: southern Guizhou, central Guizhou
and western Guizhou dialects. The speakers between
the former two dialects can be intelligible with
each other, whereas the western dialect speakers
have difficulty in communication with the other two
dialects' speakers and Chinese is used as the medium
in this case.

LANGUAGE LEARNING AND VARIATIONS
Among the bilingual Buyei adults, most people
have learned their Chinese in the contact and
communication with the Hans, rather than through
schooling. For this reason, Chinese learning is
closely related to the living surroundings.

1. In underdeveloped compact communities, only a
few adult male Buyeis are bilingual, with the others
using their native language exclusively. In our
stratified survey in Zhenfeng County, 106 persons
are investigated, 97 of them being Buyeis and only 9
being Miao. Of the 97 Buyeis, only 12 are bilingual,
one of them being a middle school student aged 17, 8
persons in the 18-45 age group and 3 persons in the
46-59 age group. All of the 12 people are male.

2. In more advanced compact communities, the
Buyeis are mostly bilingual. Some young people can
even understand and speak Mandarin, or the standard
Chinese language. only a few women who have seldom
gone out speak no or little Chinese. Among the 127
people investigated in the stratified sampling
survey in Longli County, as many as 118 people are

bilingual, with only the rest 9 using their native language exclusively. And of the 9 people, 5 are women aged 60 or more, 4 are girls aged from 7 to 17.

3. In cities and towns, almost all the Buyeis inhabitants are bilingual, and the young students have adopted Chinese.

These surveys show that among Buyei bilinguals, the young are more than the old, and the male than the female.

STABILITY

The bilingualism among the Buyei is stable. Because of the long existance of it, linguistic influences have been brought about, which can be found from the Chinese loan wrods in the Buyei language. As a result, the Buyei language has been influenced in phonology, grammar and vocabulary to various degrees.

THE USE AND DEVELOPMENT OF MONGOLIAN,
AS A MINORITY LANGUAGE, IN CHINA

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HISTORY

In the middle 13th century, Mongolian became an official language after Khubilai established the Yuan Dynasty in China. However, as the Han people occupied a dominant position in population and the Chinese literature was voluminous, the Chinese language was still in a strong postion, and Mongolian was in a weak position in the unbalanced bilingual environment, the use of which was restricted only within the Mongolian people or certain official occasions. And yet, it lost its official position again with the Yuan Dynasty destroyed.

After the Revolution of 1911 led by Dr. Sun Yat-seng, the Mongolian people's new style schools came to increase. In 1922, Temegetu was succeeded in developing Mongolian types, and set up the Mongolian Publishing House in 1923. Some Mongolian magazines were published in succession.

In 1947, the Inner Mongolia Autonomous Region was established. Mongolian became an official language together with Chinese, e.g., official documents were written in both Mongolian and Chinese. During that period, about 10 Mongolian newspapers were initiated, and about 20 to 30 Mongolian books were published per year.

EFFORTS

After the establishment of the Inner Mongolia Autonomous Region, the use of Mongolian language and writing gained legal protection, but there were

still many actual problems. Firstly, the population rate and distribution led to a situation to the disadvantage of the use of Mongolian. Secondly, the social division of labour restricted the use of Mongolian in scope. Thirdly, the use of the Mongolian language and writing remained at a rather low level in culture and education. Therefore, their functions were inevitably held in contempt by some people in society thinking that it's better to use the Chinese langauge and writing directly than to be engaged in the Mongolian with great efforts. In order to handle properly the relation between the Mongolian and Chinese languages and writings, the leaders of the Region made great efforts. In 1951, they conveyed a resolution to oppose the contempt for the Mongolian language and writing, carried out the inspection of the work on them, and took measures to improve it. The measures were: 1. to check up the work on them with achievements affirmed and errors corrected; 2. to popularize the learning of the Mongolian language and writing; 3. to eliminate Mongolian illiteracy unexcptionally in the areas where Mongolian was in common use; 4. to use Mongolian textbooks generally in the primary schools for Mongolian pupils; 5. to have all the government organizations' documents, instructions and meetings put into Mongolian as long as they involved a certain amount of Mongolian-speaking people; 6. to add Mongolian programmes to the broadcasting; 7. to have the name plates and price lists of railway stations, bus-stops, shops, banks, post offices and hospitals written in both Mongolian and Chinese; 8. to train officials to be engaged in the work on the Mongolian language and writing, and to set up training schools of Mongolian; 9. to give awards to the officials making achievements in it; 10. to set up organizations for the study of the Mongolian language and writing.

However, it's still a long-term task to oppose the contempt for them. The government of the Region inspected the implemetation of the policies about the Mongolian language and writing in 1956 and 1961. In 1977, by the State Council's approval, the "Coordianted Group for the Work on the Mongolian Langauge and Writing across Eight Provinces and Regions" was set up so as to plan as a whole for the

work in the Inner Mongolia, Liaoning, Jilin, Heilongjiang, Xinjiang, Qinghai, Gansu and other regions where there are the Mongolian people living, and to meet their needs for education, the publication of Mongolian books, the standardization of Mongolian terminology, the compilation of Mongolian ancient books, and so on.

ACHIEVEMENTS

Since the founding of the People's Republic of China, Mongolian has become one of the languages of the summit organ of the state power. Simultaneous interpretation in Mongolian is provided with at the plenary session of the National People's Congress, and the main documents have their Mongolian versions. In the Inner Mongolia Autonomous Region, there have been, according to the 1985's statistics, 2509 primary schools, 192 junior middle schools, 78 senior middle schools and 8 technical secondary schools where lessons are given in Mongolian, and 8 universities and colleges having the Mongolian department or section. There are 18 registered Mongolian newspapers and 41 registered Mongolian magazines. Besides the Central People's Radio and the Inner Mongolia People's Radio, there are 10 radios of leagues or towns also broadcasting Mongolia programmes concurrently in the Inner Mongolia, and 7 TV stations transmitting Mongolian programmes. The education publishing house has over 400 kinds of textbooks published each year, and other publishing houses 300 kinds of new books. The Inner Mongolia Film Studio has produced over 20 feature films and over 160 Mongolian-dubbed ones. There are 3 research institutions studying Mongolian.

ON THE RELATIONSHIP BETWEEN THE TIBETAN
WRITTEN LANGUAGE AND TIBETAN DIALECTS
IN CHINA

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Since the establishment of the People's Republic of China, the change of social system has greatly promoted development and progress of the society, especially, the development of science and culture. With the social development, the Tibetan written language, as the communication means, has been also enriched and developed itself.

As the publishing institutions concerned, except for the Nationality Publishing House located in Beijing to translate and publish all sorts of books in Tibetan language, the local publishing houses have been established early or late in each dialect area. For example, since the 1950s, the various books and newspapers in Tibetan language have been published in Gansu, Qinghai and Sichuan provinces and the Tibetan Autonomous Region. People of the various dialect areas make the written language more popularized and colloquialized in order to reduce the distinctions between the written language and colloquialism. For instance, there are obvious differences between the written language used in textbooks and the newspapers published in the Tibetan areas and the one used before the new China or earlier. On one side, quite a lot of new terms have entered into the written language, enriching the vocabulary of the written language and reflecting the colour of the times, such as "reform" (bcos-bsgyur), "patent" (ched-khe), "socialism" (spyi-tshogs-ring' lugs), "people's deputy" (mi-dmangs-vthus-mi), and so on; on the other, the written langague is more colloquialized especially

in newspapers and journals, such as, "Tibet
Daily"(the edition in Tibetan) in dBus gTsang
dialect area; Qinghai Tibetan Paper, Gansu Tibetan
Paper, and Minjiang Tibetan Paper in Amdo dialect
area; and Ganzi Tibetan paper in Khams dialect area.
These papers are full of their own dialect
vocabularies making the written language more
popularized.

Among the three major dialects in the Tibetan
language, 1.1 million people speak dBus gTsang
dialect, accounting for 29.48% of the total Tibetan
population, 1.4 million people speak Khams dialect,
accouting for 37.53%, and 1.13 million people speak
Amdo dialect, making up 32.99%. The Tibetan people
are widely distributed in the above-mentioned four
provinces and one autonomous region, which connect
one after another in geography, but there has never
been a standard language for the whole nationality
with the restrictions of political, economic,
transportation and some other conditions. However,
there is a standard vernacular in each dialect area,
for instance, Lhasa vernacular is taken as the
standard in dBus gTsang dialect area; sDe-ge
venacular as the standard in Khams dialect area
(whithin Sichuan Province); bLa-phrang vernacular as
the standard in Amdo dialect area in Qinghai
Province. In the process of the written language
colloquialization, the standard vernacular is the
basis in each dialect area. For example, the
colloquial parts in all sorts of books published by
the Tibetan People's Publishing House and the
newspapers and journals in Tibetan language in the
Tibet Autonomous Region are on the basis of the
Lhasa vernacular. In major middle schools and
colleges, the lessons are given by the Lhasa
vernacular; the colloquial parts in the books in
Tibetan language published by Sichuan Nationality
Press and the newspapers and journals in Tibetan
language distributed in the dialect area are on the
basis of sDe-ge vernacular. In the Southwest
Institute of Nationalities and othe colleges and
middle schools, the Tibetan language teaching is
given by sDe-ge vernacular; the colloquial parts in
all books in Tibetan language published by the
Qinghai Nationality Press and the Gansu Nationality
Press and the newspaper and journals in Tibetan

language distributed in these dialect areas are all according to their own vernacular. In the Northwest Institute of Nationalities and Qinghai Institute of Nationalities, the lessons are given by their own vernacular. Besides, the radio broadcasting and TV programmes in Tibetan language in the Tibetan areas are also on the basis of the different standard vernaculars.

Although no standard language was formulated among the various Tibetan dialects in the past, they are still the foundation and sources of the development of the Tibetan written language, because the existence and development of a witten language are based on the existence and development of its spoken language.

MULTIPLE WRITTEN FORMS OF
SOME LANGUAGES IN CHINA

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In China over ten languages have double or multiple written forms. These written forms are regional or folk, including both the perfect and offical writings with an important position in society and the imperfect written forms without legal status or important influence on society.

1. There are differences in legal status and social prestige between several written forms in one language: (a) The situations of the legal status and social prestige among the written forms in a language are identical or similar, such as the four Miao writings, which were ratified as the trial writings used in different dialectal regions. b) The legal status and social prestige among written forms in a langauge are not the same. It is usual that only one kind of written form is ratified as the formal or trial writing system in one language, while others are used informally by the people. Such as the Zhuang, Bai and Va languages.

2. There are usually disparities in the written form's types and features among the written forms in one language: a) The written form's types and features are different. The Zhuang and Bai languages respectively have a character system like that of Chinese and an alphabetic script. b) The two written forms are all the syllable written forms, but one is the ideograph and the other is the phonography, such as the traditional Yi writing and the Liangshan standardized Yi writing. c) Several written forms are scripts but with different alphabet systems, such as Uygur writings, Kazak writings and the Miao

written forms. d) Letters of several written forms derive from the same alphabetic system, but the forms of letters are different, such as the four Dai scripts.

3. The creating causes of multiple written forms are: a) Because of the influence of the Chinese characters, some characters were created and used by a few people, but they have many shortcomings, and are difficult to become standardized and popular writings. So the more systematic Latin alphabetic scripts were created; b) Several written forms in a language were created respectively for the different social needs; c) Because of the differences of dialects several dialectal written forms coexist in language; d) New writings occurred because of the reform of old writings.

The multiple written forms emerge only in a certain stage in the process of written forms occurring and developing. Proper language policies are made to deal with it, which is one of the important aspects in Chinese language planning. The flexible approaches and different measures are adopted when we cope with the multiple written form issue of various languages. At the initial stage in which written forms emerge in society, it is necessary to allow several written forms to coexist, and adopt effective policies to support them, because at this stage the key problem is to promote immature written form's perfection, and to impel people to accept the new tool of communication. After one of the writings is gradually perfected, generally accepted by the society and widely used in various fields, appropriate measures should be taken to determine and popularize it so as to eliminate finally the phenomenon of multiple written forms in daily use.

THE LINGUISTIC AND SOCIAL BASES OF USING DIALECT WRITING SYSTEMS BY THE ETHNIC GROUPS IN SOUTH CHINA

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The Constitution of the People's Republic of China stipulates that all ethnic groups enjoy freedom to use and develop their languages and writing systems. In accordance with the actual use of the native languages and writing systems, and the principle of "voluntary adoption and self-selection", each ethnic group can decide to use its own writing system or that of another nationality, and furthermore, members of each nationality may use the unified writing system of their native language or the writing system of their dialect. Judging from the current state and trends of the use of writing systems of all ethnic minorities in south and north China, the northern minorities that have their own traditional scripts, such as Mongolians, Uygurs, Kazaks and Koreans use their respective unified writing systems, and most of the sounthern minorities use dialect writing systems, with the exception of the Tibetans that use a traditional, unitary and supradialect script. For instance, the Dai people in Yunnan Province use four traditional dialect scripts; the Miao people use four dialect writing systems based on the Roman alphabet which were created in the 1950s; the Yi Script of Sichuan Province, which has been standardized since the 1970s on the basis of the old Yi Script, is used in the North Yi dialect areas.

From the view-point of linguistic factors:

(1) A unified alphabetic writing system is easy to learn and to be popularized in each of the northern minorities, where the dialect differences

are slight, to which, however, the case of the southern languages is just opposite. For example, the Miao people has a population of more than 7.39 million and are widely distributed in 7 provinces and regions. The Miao language is divided into 3 dialects, 7 subdialects and 18 vernaculars. The differences between dialects and between subdialects are great. Therefore, speakers coming from different dialect or subdialect areas cannot communicate with each other.

(2) The Han (Chinese) language is not only the common language of inter-ethnic communication, but also the intermediary language used within most southern ethnic groups which have a distinct difference of dialect. And naturally the dialect script can be regarded as one of the scripts of the ethnic group which represents a certain area. For this reason, it is really necessary to use and develop the dialect script, which is theoretically and politically irreproachable too.

In respect of social factors:

(1) The formation of a common language and the popularization of a unitary writing system for an enthnic minority in south China are restricted by the fact that most of the ethnic groups there, with the Han as the majority people, live in small compact communities mingled together largely, and that some minority peoples are distributed in different administrative regions. Therefore, the use of the dialect writing system has a practical significance.

(2) The writings of some ethnic groups, though used for hundreds of years, have been unable so far to be turned into the unified and common ones, such as the four traditional Dai writings in Yunnan. The reasons are: (a) the Dai language is divided into many dialects, none of which has become a leading dialect and an authoritative, standard pronunciation generally accepted by the whole group; (b) the four Dai writings have different alphabetical forms, so the goal of their unification is hard to be attained; (c) more than one million Dai speakers are distributed in over one hundred and forty counties and cities in Yunnan, being separated by mountains and rivers, and not in close contact. Having been used to using their native dialect writings or the

Chinese characters, they don't feel it necessary to use a unified Dai writing, so they don't have a demand for it.

THE LANGUAGE STATUS PLANNING
AND CORPUS PLANNING OF CHINA

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1. NATURE

The broadest exposition of the state language status planning of China is "all nationalities have the freedom to use and develope their spoken and written languages". In order to correct the unequal relationship and situation evolved historically, the Chinese government has formulated a policy towards nationalities which purpose is to achieve the equality, unity, aid mutual and joint prosperity of all the nationalities, in which it is defined clearly that all the nationality languages are equal, and the minority languages and writings, habits and customs and religious beliefs should be respected and protected. This policy is not only recorded in explicit terms in the Constitution but also stipulated and explained, through various state laws and local regulations, for the scope of using minority languages and writings in administration, legislation, judicature, education and etc.. Thus Chinese can not be regarded as the only official language of China according to the language status planning and policy even though Chinese has, in fact, become a common language for all the nationalities of the country.

The language corpus planning of China aims at the internal standardization of Chinese, minority languages and the variants of both. As for the Chinese corpus planning, the Constuction of the P. R. of China stipulates that the state promotes the nationwide use of Putonghua(common Chinese). The policy of Putonghua is mainly suitable now for the

communities of Chinese dialects and the minority
areas where people use only Chinese. Chinese is one
of the languages with the most different dialects in
the world. The dialect differences affect seriously
the communication among the people from different
regions and groups. China, as a country with a
history of more than 2,000 years' centralized state
power, has been facing the problem of the choice and
standardization of the Chinese standard speech. The
Tongyu(general speech), Yayan(esteemed speech) used
in ancient China, especially the Mandarin formed
over the past several hundred years, were all the
quasi-standard Chinese formed gradually through the
traditional educational and political systems. The
relationship between the Mandarin and the local
speeches had been formed in diglossia. The Putonghua
defined and standardized after 1949 is the immediate
successor of Mandarin according to either the
linguistic identity or social fuction.

The Chinese government has also made a great
contribution to the corpus planning for the minority
languages. For examples, for the minorities who have
their traditional written languages, some alphabet
systems have been reformed and perfected, the common
languages within each nationality has been
standardized and promoted, the standardization of
modern terms has been discussed and laid down, some
laws and regulations on using and developing
minority languages have been made in the minority
autonomous areas, etc.; for the minority without
writing systems, some new writing systems have been
created, chosen and reformed, the bilingual
education of minority languages and Chinese has been
developed in the compact minority areas.

2. INTERRELATION

China is a multinationality country. A general
trend of natural assimilation and acculturation
among the China's nationalities was led in history.
Chinese becomes a nationwide language used by all
nationalities of China due to the superiority of its
population, geography, culture and politics. Some
national or local governments which were mainly
controlled by minority peoples were established
after the Dynasty of Qin and Han(B.C.221- A.D.220)
in China. The rulers of the governments had to

choose Chinese as the offocial language to adiminister their state affairs in order to follow the political and cultural systems of their predecessor. In the course of the assimilation and acculturation, a wide scope of bilingual community of minority languages and Chinese had taken shape. Now the minority population of monolingual and bilingual Chinese speakers has amounted to 36,770,000 (calculated according to the data of 1982 census), making up 55% of the total minority population in China. In a sense, those minority languages and Chinese have a relationship of diglossia or unbalanced bilingualism. It can be predicated in brief that the bilingual nationalities and communities will grow up naturally from strength to strength along with the continuous economic and cultural development in the minority regions and the more and more minority people's participation in state affairs and social activities. In view of the present trend, the state laws regarding on the minority languages and writings claim that, on the premise that the freedom and right of minority laguage are protected and respected, the government encourages cadres and staff of different nationalities to learn and use other nationalities' languages and writings, the pupils at primary school in minority areas to learn course in Putonghua.

TABLES RONDES / PANEL DISCUSSIONS

TITRE : RÉCENTS DÉVELOPPEMENTS DANS LA GRAMMAIRE FONCTIONNELLE (DEPUIS CIL 1987) TITLE : RECENT DEVELOPMENTS IN FUNCTIONAL GRAMMAR (SINCE CIL 1987)

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NOMINALIZATION AND LAYERING

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1. LAYERING, COMPLEMENTATION AND NOMINALIZATION

The layering approach to utterance structure advocated for Functional Grammar by (Dik 1989) and (Hengeveld 1992) -- see also my 'What is Functional Grammar?', this vol. -- allows a straightforward account of the differences in form and meaning among the various types of finite and non-finite complementation in English: direct-speech complements are analysed as level-4 units, whereas complements referring to propositions and States of Affairs are treated as level-3 and level-2 units respectively. In this paper I will consider the analysis of higher-order nominalizations in this framework, arguing that the term in bold print in (1a) contains a (level-3) proposition and in (1b) a (level-2) predication:

(1a) What did you think of **Andy's mowing of the lawn**?
(1b) What did you think of **Andy mowing the lawn**?

Nominalization will be taken to comprise (a) nominalization proper, i.e. the assimilation, partial or total, of a non-nominal predicate to the class of nominal predicates; and (b) the assimilation, again partial or total, of the utterance to the term. In Functional Grammar [FG], this is reflected, on the one hand, in a gradual transition from the category V to the category N, possibly via V(erbal) N(oun) and, on the other, by a progression from the 4th level (E), via X and e, to x, with a parallel switch from π-operators to ω-operators.

2. NOMINALIZATION AS A FUNCTIONALLY MOTIVATED OPTION

In language use, nominalization appears to possess a number of communicative functionalities: all of these appear to be connected to its allowing brief and concise reference to a higher-order entity.

Syntactically, a nominalization represents an attractive alternative to a finite complement by virtue of its versatility. Whereas a finite complement

clause can only either appear in clause-initial position [P1] or be drawn by dint of its weight to a clause-final position [Special Principle 7 of FG], nominalizations, being categorially lighter, are free to show up in S(ubject)-position, O(bject)-position, and after prepositions.

Semantically, the slim form of a nominalization equips it well for achieving abstraction, as in *Seeing is believing*. (Lehmann 1982) considers this 'typification' to be the major function of nominalization: by leaving out information that might individuate, nominalizations achieve a transition from thought to concept. At the same time, (Kress and Hodge 1979: 27) make us aware of the dangers of 'mystification', showing how such typification may serve to alter 'the perceptual and cognitive inventory of the language' in ideologically manipulative ways; 'we no longer see or believe in the world of physical events'.

In discourse terms, too, nominalization has a number of interrelated functionalities, notably that of allowing, in the staging of information (i.e. the 'front-to-back' dimension of discourse) concise reference to peripheral but communicable information. This backgrounding function of nominalization is well attested for English (Mackenzie 1984). There are of course also stylistic norms both within and across languages influencing the extent to which use is made of higher-order nominalizations.

The conclusion that nominalization is inherently associated with conciseness suggests that this functionality ought to be reflected in the underlying representation employed in FG.

3. HIGHER-ORDER NOMINALIZATIONS IN ENGLISH

Corresponding to the paratactically linked discourse sequence (2), English offers five possibilities for a hypotactic relationship (3a-e):

(2) My horse won the race! What a surprise!

(3a) A: *That my horse won the race* came as a great surprise
(3b) B: *My horse winning the race* came as a great surprise
(3c) C: *My horse's winning the race* came as a great surprise
(3d) D: *My horse's winning of the race* came as a great surprise
(3e) E: *My horse's victory in the race* came as a great surprise

Data such as (3a-e) suggest that the valency of win is retained in nominalization, but textual reality is different: in actual use, nominalizations of transitive verbs most frequently occur without associated adnominal elements, less frequently with one adnominal element, and only rarely with two. This, together with the syntactic, semantic and discourse functionalities mentioned in 2 above, suggests that nominalization is associated with valency reduction (contra Dik 1989 and Grimshaw 1990). Furthermore, (3a-e) displays a gradual transition from the verbal to the nominal; there is a corresponding gradual loss of π-operators and a gradual gain of ω-operators, and, in reference, a transition from proposition (level

3) to predication (level 2).

Let us consider these claims in somewhat more detail. Firstly, valency reduction. Assuming a transitive verbal predicate such as *shear*, we find that in construction-types A and B both arguments are obligatory, while in C only the second argument is required, the first being optionally specifiable as an *'s*-genitive, and in D neither argument is required, both being optionally specifiable as genitives (*'s* and *of* respectively).

As to the loss of utterance properties, reflected in the gradual disappearance of π-operators, note that none of the constructions tolerates level-4 operators (e.g. Inter(rogative)), but that A accepts Finite (level 3), Tense (level 2) and Aspect (level 1), whereas B and C have only Tense (level 2), reduced merely to the distinction Past vs. Unspecified; D cannot harbour any π-operator. As regards the acquisition of characteristic signals of term-status, we find that A lacks these entirely, B can be associated with a preposition, C additionally accepts a demonstrative ω-operator, D also allows a definiteness operator as well as number, whereas E takes the entire range of ω-operators. Note that only D and E permit restrictors, i.e. adjectives and relative clauses.

Finally, as to the reference of the various constructions, A, B and C can function as complements to *deplore*, which takes a proposition as its complement (Dik 1989: 249) but only A can contain a level-3 satellite such as *allegedly*; A, B and C cannot however be Subject to a to a predication-requiring predicate such as *took all morning*, whereas this is possible for D.

I conclude that A is to be shown as a full proposition, with level-3 π-operators and satellites; B and C as bare propositions, with no level-3 π-operators or satellites, C differing from B in the status and valency of the predicate and the acceptance of the ω-operator prox(imate); and D as a predication with ω-operators, and level-2 satellites; E has all the properties of a prototypical term:

A: $(\text{Fin } X_i: [\text{Tense } e_i: [(\text{Prog}) \ \phi_V \ (x_i)_{A1} \ (x_j)_{A2} \ \sigma^n] \ \sigma^n] \ \sigma^n)$
B: $(X_i: [\text{Tense } e_i: [\phi_V \ (x_i)_{A1} \ (x_j)_{A2} \ \sigma^n] \ \sigma^n])$
C: $((\pm\text{prox}) \ X_i: [\text{Tense } e_i: [\phi_{VN} \ (x_j)_{A2} \ \sigma^n] \ \sigma^n])$
D: $(\text{d, number, (prox) } e_i: [\phi_N \ (: \text{restrictors}) \ \sigma^n] \ \sigma^n)$
E: $(\omega \ e_i: [\phi_N \ (: \text{restrictors}) \ \sigma^n] \ \sigma^n)$

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"NUMBER" DISAGREEMENT

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1. INTRODUCTION

In many languages there is no strict correspondence between the number (Sg/Pl) of a lexical noun phrase (NP) and the number indicated in the agreement marker in the verbal complex (VC), which is usually a cross-referencing pronominal element. Consider, for instance, this remark on "number disagreement" in Afar (or: Qafar): "The surprising thing [..] is that the head of almost every simple (that is neither conjoined nor quantified) noun phrase in subject position controls either masculine or feminine singular agreement" (Corbett 1988: 264-265).

This article has three aims: (i) to show that "number disagreement" is rather common among the languages of the world, (ii) to explain this phenomenon in terms of a new grammatical category, viz. *nominal aspect*, (iii) to propose a position for nominal aspect in the underlying structure of the NP.

2. SOME DATA

It appears that, in a representative sample of the world's languages (on the sampling procedure, see Rijkhoff et al., to appear in *Studies in Language*), most languages display consistent "irregularities" with respect to number agreement between certain NPs and an agreement marker (usually a pronominal element) in the VC; note that we will only be concerned with NPs that are used in connection with first-order individuals (e.g. 'chair', but not 'water' or 'meeting').

To give some examples; in some languages certain (sometimes all) NPs are not or only optionally marked for plural number, whereas the cross-referencing pronominal element in the VC obligatorily indicates singular or plural number. This is the case in e.g. Asmat: "There is no way of determining the plural of substantives; there is no strict need of it because the number of the subject, and sometimes the object is expressed in the conjugated form [of the verb-JR]" (Drabbe 1959: 55).

In other languages any lexical NP, whether singular or plural, is regularly cross-referenced by a singular pronominal element in the VC. This happens in Lango, where "[a] large number of nouns do not have distinctive plural forms. Names of body parts, locative nouns, names of fruits, trees and vegetables are in this class. [..]. Even when a noun has a distinctive plural, as subject it takes third person singular concord" (Noonan 1981: 75); compare *gwóggí òtÒÒ* (dogs [distinct plural form] 3Sg-die-Perf) 'the dogs died' and *gúlú àdÈk òtOO* (pot(s) [no plural form] three 3Sg-die-Perf) 'three pots broke'.

As a last example, consider this sentence from Bella Coola (Nater 1984:42): *nulikw'aak-i-lh wa-slaq'k-ts* (turn-3.Obj-1.Sub.Pl Art.Pl-fillet-non—demonstrative deictic) 'we turn the fillets over'. In Bella Coola both singular and plural NPs

headed by inanimate-inert nouns (i.e. nouns defining anything but living humans and animals, as well as vehicles equipped with an engine) are cross-referenced by the same pronominal element in the VC (-*i*- for objects, -*s* for transitive subjects, and -*s* or -*ø* for intransitive subjects). Singular and plural number are always indicated in the NP in the form of the compulsory proclitic 'article'.

To sum up, in a representative sample of 50 languages:
(i) no features of NPs are encoded in the VC in 12 languages: Babungo, Berbice Dutch Creole, Mandarin Chinese, Chrau, Gude, Korean, Gambian Mandinka, Miao, Nahali, Nama Hottentot, Ngiyambaa, Nung;
(ii) there is no clear evidence of "number disagreement" in 7 languages: Alamblak, (probably) Fula, Modern Greek, Krongo, Mangbetu, Monumbo, West Greenlandic;
(iii) number agreement is sometimes or always irregular in 27 languages: Abkhaz, Asmat, Basque, Bella Coola, Burushaski, Chukchi, Cuna, Boumaa Fijian, Galela, Gilyak, Guaraní, Hittite, Hixkaryana, Hungarian, Hurrian, Ket, Koasati, Lango, Mangarayi, Nasioi, Nunggubuyu, Oromo, Pipil, Imbabura Quechua, Sarcee, Sumerian, Tamil. For the 4 remaining languages (the two extinct isolates Etruscan and Meroitic and the two Taiwanese languages Tsou and Sedeq) the relevant data could not be obtained.

3. EXPLANATION

It appears that in nearly all languages in (iii) the nouns involved can head a NP, which —devoid of number marking— may refer to one or more individuals: number marking is either optional or non-existent. (For those languages in (iii) in which number is obligatorily expressed in the NP, the number marker is part of a portmanteau element; see e.g. Bella Coola above). This can be explained if we assume that the nouns in question are inherently coded for a certain *nominal aspect*: i.e. *the way the property as it is designated by the noun is represented in the spatial dimension* (cf. verbal aspect: the way a property or relation is represented in the temporal dimension).

SPACE	STRUCTURE unmarked	STRUCTURE marked
SHAPE unmarked	conceptual	mass
SHAPE marked	s e t	
	individual	collective

Figure 1. Nominal aspects (Rijkhoff 1991).

As indicated in Figure 1, properties designated by SET NOUNS are characterized as having a definite spatial outline (SHAPE), but they are ambiguous with respect to the feature STRUCTURE (meaning that the space for which the property holds is divisible). Because of the ambiguous aspectual setting, the referent of a NP headed by a SET NOUN can be an individual (only marked for SHAPE; individuals are indivisible: half car is not a car) or a collective (marked for SHAPE and STRUCTURE; half a bunch of grapes also consists of grapes). In other words, the referent of such a NP is a SET, which may contain any number of individuals (including 'one'). Thus we are not dealing with *quantitative* properties of the referent (hence not with irregular *number* marking or agreement), but with *qualitative* properties of the referent. The ambiguity can often be resolved by a (usually optional) marker which does not indicate number but rather COLLECTIVITY or INDIVIDUALITY, i.e. it marks individual or collective aspect (for a detailed discussion of nominal aspect (marking), see Rijkhoff 1991 and Rijkhoff 1992: 75-104). This explains, for instance why "singular" NPs (or NPs unspecified for "number") can have "plural" agreement

in the VC and vice versa. In the first case agreement in the VC is with the individuals in the set, in the second case agreement in the VC is with the (single) set as a whole.

4. THE UNDERLYING STRUCTURE OF THE NP

The recognition of nominal aspect as a new grammatical category in the NP permits us to analyse NPs and sentences (or rather: predications) in a similar fashion (cf. Dik 1989 and Hengeveld 1989 on the structure of sentences):

	π_3	π_2	π_1	verb + arguments	σ_1	σ_2	σ_3	Predication
quality								
quantity								
locality								
	Ω_3	Ω_2	Ω_1	noun	Θ_1	Θ_2	Θ_3	NP
quality								
quantity								
locality								

Figure 2. Mirror image of NP and predication structure.

Operators in the predication: π_3, π_2, π_1 are grammatical expressions of locality (tense), quantity (iterative aspect) and quality (verbal aspect), respectively. **Operators in the NP**: Ω_3, Ω_2, Ω_1 are grammatical expressions of locality (demonstrative, article), quantity (numeral, number), and quality (nominal aspect; Rijkhoff 1991, 1992), respectively. **Satellites in the predication**: σ_3, σ_2, σ_1 are lexical expressions of locality (e.g. 'She performed in the Opera *yesterday*'), quantity (e.g. 'She sang that song *twice*') and quality (e.g. 'She sang it *beautifully*'), respectively. **Satellites in the NP**: Θ_3, Θ_2, Θ_1 are lexical expressions of locality (e.g. 'the man *in the Volvo* was speeding'), quantity (as in e.g. Oceanic, Amerindian and Bantu languages), and quality (e.g. 'the *old* coat'), respectively.

In this simplified representation of the underlying structure of the predication and that of the NP, the referent (State-of-Affairs and thing, resp.) is first defined by material in the NUCLEUS (the verb and its arguments, and the noun resp.). This entity is in then further defined by quality operators and satellites. The entity as defined by material of the quality layer is the input for quantity operators and satellites. The entity as defined by material in the quantity layer, finally, is in the scope of locality operators and satellites.

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ANAPHORIC SUBJECTS AND DISCOURSE STRUCTURE IN LATIN

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1. INTRODUCTION

In classical Latin various alternative expressions are available for anaphorical Subjects. The most frequent are 0, the anaphoric pronoun is, and the two demonstrative pronouns hic and ille, which can also be used in spatial deixis with the meanings 'near the speaker' and 'not near the speaker nor the hearer'. This paper discusses which factors are relevant for the selection of expression means in coherent discourse. For this purpose a sample of 471 Subject expressions (SE's) from narrative and expository texts, analyzed in Van de Grift (1987) and Bolkestein & Van de Grift (fc), was screened for a number of parameters, among other (i) the discourse status of the antecedent entity in terms of the pragmatic functions Given Topic (GivTop), pretopical Focus (NewTop) and Focus as defined in Functional Grammar (see Dik: 1989); (ii) whether or not the SE continued the Subj of the preceding clause (SS or DS); (iii) the position of the SE in a thematic chain or episode. All of these parameters show statistically significant differences between the SE's involved (full quantitative data are available). The latter parameter brought to light that the selection of SE is not only sensitive to linear phenomena but also to the status of the discourse unit containing the SE in the hierarchical structure of the discourse.

2. THE PRAGMATIC FUNCTION OF THE ANTECEDENT

For the purpose of this parameter antecedents are classified with respect to their informational status in the message conveyed. Antecedents are assigned GivTop if their identity is well established in or clearly recoverable from the earlier context. The label NewTop is assigned if a constituent is introduced in the discourse in a recognizable way as a Topic-to-be, e.g. by a presentative construction (which in Latin often has a marked V-fronted word order). Focus is defined as forming the most important, salient part of the message, the part which the speaker contributes to fill in or correct some part of what he assumes to be the hearer's knowledge.

The results of checking the informational status of the antecedent constituent can be represented roughly as a preferential hierarchy (for reasons of space I do not give the total survey of frequencies):

(1)   GivTop <-: 0 > ille > NP > hic > is
        NewTop <-: hic > is > 0 > ille > NP
        Foc <-:   ille > hic > NP > is > 0

(where x <-: y means 'y refers back to antecedent x', and x > y means 'x occurs more frequently than y (in the conditions specified)'.
One conclusion is that GivTop, NewTop and Foc prefer to be continued by different SE's in Latin, and, consequently, that the distinction between these pragmatic functions is relevant.

3. SUBJECT CONTINUITY OR DISCONTINUITY

SE's were screened for whether or not they continued the syntactic Subject of the preceding clause (i.e. for whether they maintained or shifted the same perspective). The preferential hierarchy for this parameter gave the following results (numbers refer to the total of relevant instances:

(2)   SS (146):   0 > hic > ille/is > NP
        DS (229): NP > ille > 0 > hic > is

This shows that whereas 0 is the most frequent SS device and NP the most rare one, with the three pronouns in the middle, NP and ille prefer DS above SS, and 0 is more frequent for DS than e.g. hic and IS. A number of minority instances (e.g. SS pronoun or DS 0 turn out to be explicable in terms of either carrying Focus (which 0 can not, but pronouns can) or semantic and pragmatic status of the antecedent item (e.g. dative Possessors are continued as if they are Subj etc.).

4. POSITION IN A THEMATIC CHAIN (OR: EPISODE)

A thematic chain is defined as a stretch of discourse which forms a certain unity in terms of a continuity of time, place, participants, and the events described. Three positions in a chain have been distinguished: the first position (ch-1), the second (ch-2), and all other (ch(ain)-m(edial)). The three SE's behave as follows:

(3)   ch-1:   overwhelmingly NP
        ch-2:   hic > ille > is > 0 > NP
        ch-m: 0 > ille > NP > hic > is

While the extremely low 0 and NP in ch-2 and high 0 in ch-m are not surprising, high hic and ille in ch-2 and ille in ch-m deserve scrutiny. What precedes ille in ch-2 differs from what precedes hic in ch-2, namely not a NewTop antecedent, but Foc and DS. Moreover, ch-2 ille and ch-m ille share one phenomenon, namely what in Givón (1983) is called 'ambiguity': the presence in the context of other participants with the same semantic properties.

When trying to define and distinguish chains one is forced to realize that chains may be embedded in or be superordinate to other chains (e.g. stretches of discourse presenting background or intended as speaker's comments). A number of 'minority instances' of e.g. ch-m hic or is, turned out to actually be cases of 'postponed ch-2', because of the presence of interfering subchains, or to be motivated by other boundaries between discourse units, such as that between foreground and background or parenthesis. This is an indication that the hierarchical structure of discourse is relevant as well as the linear factors alluded to earlier. Support for this can be found in the cooccurrences (or lack of it) of some SE's with certain Latin sentence connecting particles (or: discourse markers) investigated in Kroon (1989; fc), which are indicative of the hierarchical nature of discourse structure as well.

5. CONCLUSION

The Latin data suggest that the variation in SE serves various functions. Speakers help their hearers by exploiting different SE's at 'problematic' points of the discourse, even if on a linear basis 0 would have been possible: switches of perspective (ille), switches between different level discourse units (hic, is). Incorporating the tendencies observed and the concepts involved poses serious problems for the apparatus of Functional Grammar, even if it justifies part of its pragmatic instrumentarium.

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PRAGMATIC FUNCTIONS AND THE PRAGMATICS
OF WORD ORDER IN FG: THE CASE OF POLISH

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The Slavic linguistic tradition as represented in the FSP approach considers the major factor underlying word order permutations in Polish to be the desire to maintain a distribution of information where by the topic is placed prior to the comment with the focal part of the comment being located in clause final position (see e.g. Jodłowski 1976; Huszcza 1980). According to the FSP tradition all six of the transitive patterns found in declarative clauses, i.e. SVO, SOV, VSO, VOS, OVS and OSV reflect topic → comment articulation. The topic is given a notional definition and is not associated exclusively with preverbal location. This means that not only the subjects in SVO and SOV and objects in OVS and OSV may be considered to be topics but also the subject in VSO and object in VOS. Such an analysis provides no explanation for the preverbal as opposed to postverbal placement of the topic in SVO as compared to VSO, and OVS as compared to VOS clauses and thus no basis for accounting for why one transitive pattern is used rather than the other. The paper seeks to explicate the pragmatic characteristics underlying the occurrence of the six transitive patterns in written Polish and to show how they can be accounted for in terms of the clause level pragmatic functions developed in Functional Grammar as presented in Dik (1989).

The pragmatic characteristics of the subject and object in the six transitive patterns are investigated on the basis of a corpus of 775 transitive clauses. Since clause level pragmatic functions are not open to quantitative as opposed to qualitative analysis, the subjects and objects in the six transitive patterns are considered with respect to their status in the discourse. Their discourse status is established on the basis of two factors: relative predictability and relative importance which are determined by means of the discourse measurements developed by Givón (1983), namely referential distance (RD) and topic persistence (TP), respectively. The results of the RD and TP measurements are confronted with the word order predictions of both the topic > comment principle interpreted as defining a preference for placing more predictable information before less predictable information and Givón's (1983, 1990) Principle of Task Urgency. The latter predicts a cross-linguistic preference for linearization patterns in which less predictable

information is placed before more predictable information (the converse of the topic > comment principle) and/or more important information is placed before less important information. The RD measurements reveal that predications of the topic > comment principle are more consistently borne out by the Polish data than those of the Principle of Task Urgency. However, they also show that there is an interdependence between relative RD level and clausal location along the lines predicted by Givón namely, while constituents with the highest RD levels occupy positions to the far right, constituents with the lowest RD levels do not occur initially, as the topic > comment principle would lead us to expect, but tend to be postposed to immediate postverbal location. By contrast, the TP measurements provide less support for the Principle of Task Urgency. High TP is found to correlate not with leftward placement as predicted by Givón, but with subject assignment, irrespective of the location of the subject. This finding is particularly significant in view of Givón's (1990:911) current claim that TP has a stronger conditioning effect on word order than RD rather than vice versa, as he had previously contended. The Polish data clearly show that this is not the case.

The most important observation emerging from the investigation of RD and TP is however, that both of the discussed word order principles leave a residual of word orders unaccounted for. This suggests that word order flexibility in Polish transitive clauses cannot be dealt with solely on the basis of the status of the subject and object in the discourse. What also needs to be taken into consideration is the pragmatic function of the relevant constituents in the clause.

The remainder of the paper outlines how the Polish data can be dealt with in terms of FG pragmatic functions. It is argued that the pragmatic characteristics of the six transitive patterns can best be handled by postulating two functional patterns, namely P1 SVO PØ and P1 VSO where the P-positions denote special pragmatic positions which may be filled by constituents bearing the pragmatic functions of topic and focus respectively. The choice of functional patterns is shown to be determined by the selection of one of four message management strategies in the sense of Hannay (1991). The SVO functional pattern is associated with one of three message management modes: the all new mode, the topic mode and the reaction mode each of which differ with respect to pragmatic function assignment. The all new mode is characterized by no pragmatic function assignment and default placement of the subject in P1; the topic mode involves obligatory topic and focus assignment and the placement of the topic in P1 and of the focus in Pø, and in the reaction mode there is focus but no topic assignment with the focus positioned in P1. The VSO functional pattern, on the other hand manifests the presentative mode which is seen to be fundamentally different from the other modes; unlike in the all new mode the speaker assigns special prominence to a future new topic of discourse, but this special prominence does not take the form of topic or focus assignment as in the

topic or reaction modes, but of a distinct pragmatic function which Dik (1989) labels NewTop. Moreover, the presentation of the NewTop is typically staged by a scene-setting element preceding the New Top. Support for the fact that VSO clauses do indeed constitute a type of presentative construction is provided by the high level of importance of the object in such clauses which is comparable to that of the subject in intransitive presentatives.

Though the properties of the object in VSO clauses could be accommodated by considering it to be a clausal focus, the difference both in the RD and especially the TP scores of the object in VSO clauses relative to any other object, and also any other final focal transitive subject, are better captured by assigning the special function NewTop to this constituent. Moreover, such an analysis provides a reason for why no special constituent is singled out for the 'ordinary' topic and a basis for linearizing constituents in terms of a special functional pattern. It thus constitutes an explicit recognition of different pragmatic motivations.

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TABLES RONDES / PANEL DISCUSSIONS

TITRE : GENRE GRAMMATICAL ET ACCORD
TITLE : GRAMMATICAL GENDER AND AGREEMENT

ORGANISATEUR(S) / ORGANIZER(S) :
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GENDER RESOLUTION

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A typology of gender resolution is established, followed by a typology of gender assignment. It is then demonstrated that there is an implicational link between the two: the type of resolution system found in a given language is predictable in part from the assignment system.

Gender resolution rules determine the form of agreement targets whose controllers are conjoined noun phrases. For example, if a feminine and a neuter are conjoined in Slovene, it is the gender resolution rules which specify the use of masculine agreements (on the participle, for example):

(1) ta   streha   in   gnezdo   na   njej   mi   bosta
    that   roof.FEM   and nest.NEUT   on   it   me.DAT   will
    ostal-a   v   spominu
    remain-MASC.DUAL   in   memory
    'that roof and the nest on it will remain in my memory'

It is established that gender resolution can follow two principles:
1. in a *semantic* system (as found in languages like Tamil, Archi and Luganda), the agreement form is determined according to the meaning of the nouns heading the noun phrases, irrespective of their gender;
2. in languages with a *syntactic (formal)* system (like that of Slovene or French), the agreement form depends on the gender of the nouns heading the noun phrases, irrespective of their meanings.
There are also some mixed systems (such as Polish and Latin).

When we come to predict which type of resolution system a given language may have, such predictions depend on the way in which nouns are assigned to gender in a particular language. Gender assignment is always based on semantics to some degree (there are no purely formal systems). But languages may have pure semantic assignment, as in Tamil, predominantly semantic assignment, as in Archi, or assignment in which formal factors (morphological or phonological) play a large part, as in French. It is claimed

that languages with semantic or predominantly semantic gender assignment will always have semantic gender resolution; languages with formal gender assignment may have semantic or formal gender resolution. Thus, gender resolution may not be determined by semantic considerations to a lesser degree than is gender assignment. This is illustrated in the Figure:
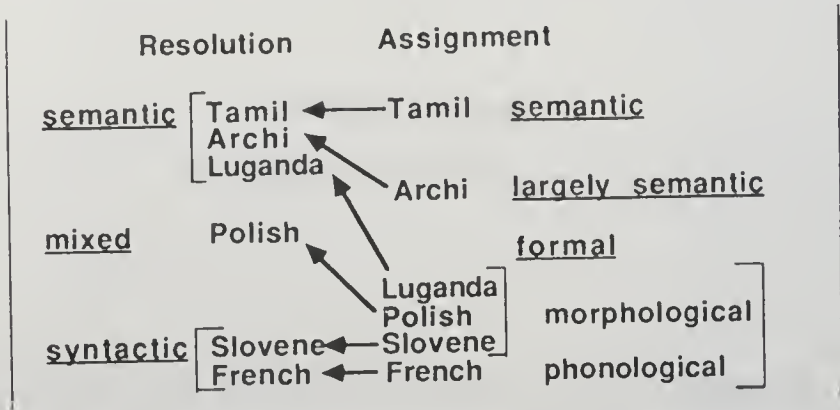
The direction of the implication, that is, the fact that resolution depends on assignment, can be explained as follows Assignment is central, since it is found in any language with a gender system and is invoked frequently. In contrast, resolution is peripheral, being absent from many gender languages and being invoked only for certain constructions.

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Gender "Variability" in English: What Can it Teach Us?

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My starting point is a problem touched on briefly by Corbett (1991) who, after classifying English as a language with semantic gender based essentially on biological distinctions, makes the following remarks:

> (...) careful observation in the right type of setting will reveal that the gender system of English, though certainly based on semantics, is not totally dependent on the straightforward criteria of humaness and biological sex, but may be affected by pragmatic factors. (1991:12)

This passage is significant because it raises an important question: if English gender does not correlate to sexual or other biological distinctions, just what does it correlate to and how does the system work?

The "Exception" Problem

Being rather perverse by nature, I collected data for my work on English gender by concentrating on the so-called "exceptional" uses, cases in which men are not HE, women are not SHE, and everything else is not IT. To my great satisfaction as a proponent of perversity, examples cropped up in all dialects of English with delightful frequency. However, to my great consternation as a proponent clear, plausible explanations, the amazing diversity of the examples collected seemed to defy all analysis. Alongside the predictable feminine ships and cars, I discovered a feminine wooden leg, cup of cappucino, sofa, bicycle, bicycle tire, lawn, election, ski race, space ship, fireplace, campfire, war, rhythm, song, play, cathedral, and even a backhoe hoist, to name but a few of the vast range of referents. There were even some referents which proved quite difficult to describe, let alone to name. These included prevailing meteorological conditions, current situations, and what could best be described as life in general. The masculine was also found to refer to biologically inanimate objects, albeit with considerably less frequency than the feminine.

As predicted by many grammarians, pronoun use in the case of animals and small children proved highly variable. Contrary to what most linguists had forecast, however, some examples turned up in which the sex of the referent was made quite explicit, without pronominal gender following suit. Even more surprisingly, the inanimate pronoun was found when adult human beings whose sex had been previously established were involved. The most revealing examples in my eyes, however, were those in which a referent was evoked by means of two and occasionally even three different pronouns, sometimes by a single speaker, a

situation which calls for a rethinking of the entire concept of pronominal agreement.

The Lessons of the Exceptions

The first lesson to be learnt from the study of my "exceptional" cases was that while the sex of a referent undoubtedly influenced gender use in many instances, it was not the sole factor at work, nor was it consistently a determining factor. This observation leads naturally into the following question: what common denominators could possibly be found to explain how a speaker could use SHE, HE, and IT to evoke such a wide rang of entities? Answers were slow in coming but some eventually emerged. In order to understand how they were arrived at, it is useful to keep the following points in mind. I worked on the assumption that in order to give linguistic representation to a referent, a speaker first needs to form a mental construal of it. After all, we can only talk about what we have first perceived. To maintain a clear distinction between the referent and the speaker's mental contrual of the referent, I decided to refer to the former as the *denotatum*, and the latter as the *designatum*.

Keeping this distinction in mind, it is now possible to take a closer look at the animate/inanimate opposition. After examining hundreds of examples of animate pronoun use, it became apparent to me that every time an animate pronoun was used at least one condition was met: the speaker was consistently able to contrast his impressions of the denotatum with an alternative set of impressions. In the case of human beings and animals whose sex is known, the contrasting of two alternatives is relatively easy to perceive: sexual differences give rise to a fundamental opposition in which the female of the species is defined with respect to the male and vice versa. As for animals of unknown sex and inanimate objects, the underlying duality is more difficult to make out, largely because, not being anchored in specific biological traits, it is more artificial and therefore more ephemeral in nature. In the case of animal denotata, it was found that creatures accorded animate grammatical representation were those which, standing out in some manner, attracted more than passing speaker interest. Now, in order for the speaker to perceive something to stand out, two set of impressions are required: one to serve as a foil to the other. It is these two sets of impressions that ultimately provide the dual foundation required for an animate representation.

In the case of inanimate objects an analogous situation exists: animate representation was found to be given to those denotata of which the speaker had previous knowledge or about which the speaker wished to convey an impression of expertise. In short, there seemed to be a consistent desire to set off the particular denotatum in question from the general experience of that type of phenomenon. For this to happen, the speaker has presumably accumulated sufficient experience or knowledge of the denotatum or type of denotatum in question to be able to distinguish a particular occurrence as being unique in some respect.

Inanimate gender, in contrast, is characterised by the more simple contrasting of the impressions evoked to all other possible impressions. There is an opposition established but it is of the most general type possible; one which merely meets the minimal condition for the existence of something to be recognized. There is no finer comparison of two sets of comparable impressions.

As for the masculine/feminine opposition, it is perhaps most easily grasped when sexual considerations do not play a role. In the case of both animals of unknown sex and inanimate objects, the masculine was found to evoke entities whose behaviour was unpredictable, out of the control of the speaker or quite atypical of the species or type of denotatum in question. In contrast, the feminine evoked entities whose behaviour, while worthy of attention, was predictable,

within the speaker's control or in keeping with what could be expected of the species or type of denotatum. The masculine/feminine distinction would thus seem to be determined by the nature of relationship existing between the two sets of impressions being compared. When the impressions being given linguistic expression are perceived to be immanent to or to "fall within" the impressions to which they are opposed, the feminine results, and when the impressions being given linguistic expression are perceived to transcend the impressions to which they are opposed, requiring further definition, the masculine results. The question that now remains to be handled concerns exactly how the male/female sexual opposition operates within this system. Given the long-standing practice of using the masculine as a generic, including both male and female referents, it is possible to see the feminine as "falling within" or being immanent to the masculine, but just how this came about historically remains to be explored, as do the socio- and psycholinguistic aspects of the question.

The next issue to be tackled concerns the problem of substantive/pronoun gender agreement. When two or even three different pronouns were seen to evoke a single referent, it became difficult to maintain that English substantives and pronouns agreed in gender for this would require arguing either that a substantive could change genders or that English substantives had no gender at all. Both positions were ultimately deemed to be untenable on the strength of a rather simple observation: anglophones have a strong sense of what constitutes both normal and "exceptional" gender use. However, if a substantive could have all three genders or no gender at all, native English speakers would have no basis on which to declare any gender to be exceptional.

Once I had been convinced that the substantive was not changing genders to keep up with the pronoun variation, the only conclusion left for me to draw was that substantives and pronouns do not agree in English, at least not directly. Although this came as quite a surprise initially, a bit of reflexion showed that it was not so far-fetched a conclusion as I had originally feared. Pronouns, with no inherent lexical content to speak of, are a means of giving linguistic representation directly the speaker's mental construal of in-coming impressions. If these impressions vary sufficiently from one moment to the next, there is nothing to prevent the pronominal representation given them from also changing. Substantives, on the other hand, are founded on concepts based our general knowledge of phenomena and thus convey a great deal more lexical information. This means that the notional content of a substantive cannot vary appreciably from usage to usage. Thus, while the gender of a pronoun is directly determined by the speaker's immediate mental representation of incoming impressions, unfiltered by any preconstructed conceptual structure, that of the substantive is essentially determined by the lexical content of the word, whence a native speaker's feel for what constitutes normal gender use. In most situations our immediate impressions of a phenomenon and the stored concept we associate with it agree, but on occasion a discrepancy can occur, with the result being apparent pronoun/substantive discord.

These observations and hypotheses have taken us a long way in a short period of time, but whatever distance that may have been travelled, we are still at the very beginning of a long quest for the meaning of gender. Many questions remain to be answered about gender in Modern English, in Middle and Old English, in the Indo-European group as a whole, and finally in the multitude of languages covered by Dr. Corbett in his study. The only consolation is that the tremendous amount of terrain remaining to be covered and the relative dearth of detailed gender studies mean that there should be a lot of open spaces out there somewhere with, I suspect, some pretty interesting vistas to admire.

GRAMMATICAL AND SEMANTIC GENDER:
THE OVERLAP IN FRENCH

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This paper examines various aspects of the relationship between grammatical and 'semantic' gender in French with the aim of indicating to what extent semantic gender is determined by sex and grammatical gender carries a semantic load.

1. HUMAN ANIMATES

In current French usage, the concept of 'semantic' gender, in the sense of sex-limited gender, is inappropriate to generics. Only in the case of identified individuals or exclusively sex-classed groups ('The man I was speaking to' or 'All women') can gender reflect actual sex.

French generics are overwhelmingly masculine. Oddly, however, the generic function of feminines is more secure than that of masculines. An excellent example of sustained gender clash with no apparent untoward effects is to be found in the dedication of Saint-Exupery's Le petit prince:

> Je demande pardon aux enfants d'avoir dédié ce livre
> à une grande personne. J'ai une excuse sérieuse:
> cette grande personne est le meilleur ami que j'ai
> au monde... Cette grande personne habite la France où
> elle a faim et froid. Elle a bien besoin d'être consolée...
> Toutes les grandes personnes ont d'abord été des enfants.
> (Mais peu d'entre elles s'en souviennent.)

Masculines appear to be always vulnerable to [+ male] interpretation, as is shown by constraints which reject potential sentences such as

> Le professeur est enceint.

Hence I suggest that masculine generics denoting humans be classified separately as having hybrid (semantic and grammatical) gender.

2. NON-HUMAN ANIMATES

Feminine generics are more common in the world of non-human animates. They are of two kinds: those which denote the female of a species but can also serve as a generic (chèvre), and those which function simply as a

generic (<u>souris</u>, <u>girafe</u>). Masculine generics, of course, also abound.

Attempts to explain gender assignment in terms of size or ferocity fail in the face of abundant counter-examples. However, two semantic links are perceptible from a broader viewpoint.

One such link concerns the groups of animals for which French provides sex-differentiated names. Examples found in a corpus of approximately 500 relatively frequent names of animals are as follows. Of the generics, some are special terms, separate from those distinguished according to sex (Type 1). A second group consists of pairs of names of which one also serves as a generic. These are divided into two sub-groups (2a and 2b), according to whether the masculine or the feminine form serves as the generic.

1. boeuf (taureau, vache); chat (matou, chatte); cheval (étalon, jument); daim (cerf, biche); mouton (bélier, brebis); porc (verrat, truie).

2a. âne (âne, ânesse); buffle (buffle, bufflonne); canard (canard, cane); chevreuil (chevreuil, chevrette); chien (chien, chienne); faisan (faisan, faisane); lapin (lapin, lapine); lièvre (lièvre, hase); lion (lion, lionne); loup (loup, louve); mulet (mulet, mule); ours (ours, ourse); paon (paon, paonne); pigeon (pigeon, pigeonne); rat (rat, ratte); renard (renard, renarde); singe (singe, guenon); tigre (tigre, tigresse).

2b. abeille (bourdon, abeille); chèvre (bouc, chèvre); dinde (dindon, dinde); oie (jars, oie); poule (coq, poule).   (Surridge, 1989)

These lists show a large preponderance of masculine generics: 24 out of 29. Furthermore, only one of the feminine generics (<u>chèvre</u>) denotes a mammal, generally considered to be the 'highest' form of animal life. French speakers clearly distinguish by sex those animals which are important to them. Masculine is associated in the animal world, as in the human world, with importance.

There is no indication of individual semantic motivation for the category of animal names for which there is no sex-linked noun. However, the study of French animal names already mentioned has shown that the gender distribution of these terms is remarkable. When the corpus was sub-divided into the traditional categories of mammals, birds, fish, insects and molluscs (the number of reptiles and amphibians was too small to be analyzed), it became apparent that here too masculine was powerfully linked to the "most important" category whereas the category having the lowest status (molluscs) was predominantly feminine. The percentages of masculines found in the Type 3 animal names were as follows: mammals 83.43%; birds 67.34%;   fish 57.14%; insects 59.72%; molluscs 39.47%. For molluscs, there is a femininizing tendency about as strong as the normal 61% masculinizing tendency of French vocabulary (Tucker et al.:1967). In Type 3, although at the individual level semantic and grammatical gender interfere little with each other, there is a predominance of masculine in the names of "higher" animals. We therefore conclude that the hierarchy of the real animal world as seen by Francophones finds expression in a corresponding hierarchy of linguistic gender. The fact that masculines diminish with status in the animal world supports the view that there is more to semantic gender than sex.

3. GENDER AND DISCOURSE: GENDER CLASH

Recent work has indicated that parameters for gender-matching are more subtle and precise than has previously been thought.

Surridge 1992 investigates the analogist claim that gender controls figurative usage. It shows that French nouns of opposite gender may be linked by copula or by anaphoric junction. Even personification, when in the form of apostrophe, may allow association with the opposite gender, as in

Ô Mort, vieux capitaine,

Il est temps. Levons l'ancre! (Baudelaire)

What appears to limit personification to the sex linked with the gender of the metaphorized word is the use of an anaphoric pronoun, as in:

La lune entre chez moi comme elle veut, avance à pas

de chat, étire une griffe blanche à l'assaut de mon lit:

il lui suffit de m'éveiller, elle se décourage tout de

suite et redescend. Vers le moment de son plein, je la

retrouve à l'aube, toute nue et pâle, fourvoyée dans une

froide région du ciel.   (Colette, quoted by Le grand Robert)

Another study, by Dorel and Sezer (1981), challenges the view of gender as firmly fixed in nouns denoting humans. They claim that certain conditions of discourse may preclude the generic function of nouns such as professeur.

Le professeur est très beau

may be uncceptable if the teacher has already been identified as a women. The same situation may result in the acceptability of normally unacceptable sentences such as 'Le professeur est très belle'. The presence of an 'adjective of physical scale' may prevent generic interpretation, as in the following, where they claim that the pharmacist must be a   man: 'On a rencontré le vieux pharmacien à la boulangerie'.

Both of these studies indicate a ready tendency in French for a connotation of semantic gender to assert its influence either when nouns denoting humans involve gender clash or when anaphoric reference vivifies the metaphorical potential of grammatical gender.

4. IS THERE MEANING IN GRAMMATICAL GENDER?

Although it is as yet incomplete, I must also refer to the work of Danielle Leeman, which is beginning to challenge the modern view of the gender of inanimates in general as having no semantic basis, reverting to the attitude of earlier French grammarians. Implying cause and effect, she cites an impressive array of feminine plurals which have senses related to childbirth, such as couches, douleurs, eaux, entrailles (= 'utérus'), menstrues, nausées, périodes, pertes, règles.   (Leeman: 1992)

5. CONCLUSION

These groups of examples support the view that in French, the categories of grammatical and semantic gender are by no means water-tight. Modern grammatical descriptions have hitherto been too rigid and simplistic.

TABLES RONDES / PANEL DISCUSSIONS

TITRE : GRAMMAIRES "CONSTRUCTIONNELLES"
TITLE : CONSTRUCTION GRAMMARS

ORGANISATEUR(S) / ORGANIZER(S) :
Charles FILLMORE
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CAPTURING RELATIONS AMONG CONSTRUCTIONS[1]

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Introduction

The repertoire of constructions is not an unstructured set. Generalizations *across* constructions must be captured. The aim of this paper is to give a quick picture of one way Construction Grammar can capture these generalizations. The crucial idea is that constructions themselves form a network, linked by inheritance relations which serve to motivate many of the properties of particular constructions. The inheritance network allows us to capture generalizations across constructions while at the same time allowing for subregularities and exceptions. I assume in the following that some familiar sentence types are directly associated with particular semantics, and are thus constructions (cf. Goldberg 1991, 1992a,b for specific arguments).

Normal Mode Inheritance

Following Flickinger, Pollard and Wasow (1985), the **normal** mode of inheritance is distinguished from the **complete** mode. The complete mode of inheritance, which Fillmore & Kay and Koenig (in this volume) adopt, is designed to capture purely taxonomic relations and constraints. In the complete mode, all information of the mother node is inherited by the daughter node. The daughter node's specifications may not conflict with the mother's specifications without resulting in illformedness.

The normal mode, on the other hand, is designed to allow for subregularities and exceptions, and it is the type that is adopted here. In the normal mode, information from the mother node is inherited as long as that information does not conflict with information specified by the daughter node. Conflicting information is simply not inherited.

Relating syntax and semantics

Generalizations across constructions concerning for example, the linking between semantics and grammatical functions can be captured by stating the generalization at a relevantly high node in the hierarchy of constructions. Such generalizations are then inherited through daughter constructions, unless a particular construction specifically prevents such inheritance by having a conflicting specification .

For example, Dowty (1991) has recently proposed the following linking generalization. If there is a SUBJ and an OBJ, then the role that is more agent-like the "proto-Agent" is linked with SUBJ and role that is more patient-like, the "proto-Patient" role is linked with OBJ. This generalization can be captured by specifying this pattern within a skeletal Transitive Construction, and allowing other constructions to inherit from this construction.[2]

As Dowty points out, there are many exceptions to this generalization. Lexical items such as *undergo, suffer, tolerate, sustain,* do not involve an agentive SUBJ or patientlike OBJ. Because the inheritance is normal and not complete, we can capture these facts. The lexical specifications of these items serve to block the inheritance of the semantics generally associated with the transitive construction.

Inheritance Links As Objects

In addition to adopting inheritance as a way to capture generalizations, by treating the inheritance links themselves as objects in the system, we can capture more specifically the types of relationships that hold between particular constructions (cf. also Wilensky 1991). That is, the links, like constructions, can be viewed as having content and being related hierarchically. Links are of several types, and each type has various subtypes. There are at least 4 major types of links, subsumption links, which Fillmore & Kay and Koenig (same volume) make use of, instance links, polysemy links, and metaphorical extension links.

Instance (I$_I$) links:

Instance links are posited when a particular construction is *a special case* of another construction; that is, an instance link exists between constructions iff one construction is a more fully specified version of the other. Particular lexical items which only occur in a particular construction are instances of that construction. They lexically inherit the syntax and semantics associated with a construction. For example, there is a special sense of *drive* which only occurs in the resultative construction. This sense of *drive* constrains the result argument to mean "crazy":

(1) a. Chris drove Pat mad/bonkers/bananas/crazy/over the edge.
    b. *Chris drove Pat silly/dead/angry/happy/sick.

Idioms that are of the same general pattern as other constructions are explicitly related to the more general constructions by instance links. The fact that the idiom does not inherit the semantics associated with the construction follows from the fact that the idiom is directly associated with a conflicting semantic specification.

Polysemy (Ip) Links:

A second type of link is the polysemy link. In my dissertation, I discuss the idea of *constructional polysemy* at some length. It is argued that constructions are often associated with a family of related senses, much like the polysemy recognized for lexical items and grammatical morphemes.

For example, ditransitive syntactic pattern is associated with a family of related senses, and not a single abstract sense. Ditransitive expressions typically entail "X causes Y to receive Z," e.g. *Joe gave Sally the ball.* However

in other cases, only the "satisfaction conditions" ~cf. Searle 1983) associated with the predicate entail: "X causes Y to receive Z, ' e g *Joe promised Bob a car*. Other cases entail only that "X enables Y to receive Z," e.g. *Joe permitted Chris an apple*. Still other cases entail, "X causes Y not to receive Z," e.g. *Joe refused Bob a cookie*. Examples such as *Joe bequeathed Bob a fortune* entail "X acts to cause Y to receive Z at some future point in time." Examples such as *Joe baked Bob a cake* entail "X intends to cause Y to receive Z."

Each of the extensions constitutes a construction that is minimally different from that of the central sense. The semantic relationships are captured by particular inheritance links and all information about syntactic specifications is inherited from the central sense. Therefore we don't need to state linking properties for each extension-they are inherited from the linking properties of the mother construction.

Another construction, which might be termed the "caused-motion" construction is exemplified by the following:

(2) a. Joe sneezed the napkin off the table.

b. Joe washed the soap out of his eyes.

This construction has a strikingly similar pattern of polysemy. Typical examples entail, "X causes Y to move Z," e.g. *Pat pushed the piano into the room*. In other examples, only the satisfaction conditions entail, "X causes Y to move Z," e.g. *Pat ordered him into the room*. Examples such as *Pat allowed Chris into the room,* entail "X enables Y to move Z " Examples such as *Pat blocked Chris out of the room* entail "X causes Y not to move from Z " And finally examples such as *Pat assisted Chris into the room* entail "X helps Y to move Z."

Several of the extensions of the two constructions are quite analogous. Both have extensions related by satisfaction conditions, enablement, and by the negation of causation. The particular verbs involved are different, but the relationship between the central sense of transfer or callsed-motion and the entailments of these extensions is the same. The fact that the patterns of polysemy are so similar raises the issue of whether the extensions are predictable from general principles, or whether they must be learned on an instance by instance basis

By treating the links as objects, particular links can be said to have different type frequencies, depending on how many distinct constructions they relate. A particular link which recurs often throughout the grammar therefore has a *high type frequency,* there being many instantiations of the same type of link. As has been argued by MacWhinney 1978 and Bybee 1985, high type frequency is positively correlated with productivity. Therefore links with high type frequency are predicted to be applied productively to new cases which share the particular semantic and syntactic factors associated with the existing cases. In this sense a highly recurrent inheritance link is analogous to a rule: the existence of one construction will predict the existence of an extension related by the productive link.

Metaphorical extension (I𝔪) links:

When two constructions are found to be related by a metaphorical mapping a metaphorical extension link is posited between them. This type of

link makes explicit the nature of the mapping. Thus the way that the mother construction's semantics is mapped to the daughter construction's semantics is specified by the metaphor. By treating the links as objects, it is possible to capture relationships among systematic metaphors and ultimately relate the metaphors via an inheritance hierarchy (cf. Lakoff, to appear), quite analogous to the hierarchy of constructions .

Conclusion

This paper has argued that we are able to capture several types of generalizations across constructions by allowing the use of normal mode inheritance, as well as the complete mode, and by treating the inheritance links themselves as objects in the system.

Notes

1-This paper is a much shortened version of chapter 3 of Goldberg (1992b). Copies of the longer chapter are available from the author: permanent address: Linguistics Dept., University of California, San Diego, La Jolla, CA 92093-0108. goldberg@bend.ucsd.edu.

2-In syntactically ergative languages, the Transitive Construction has the reverse linking so that SUBJ is linked with the proto-Patient role and OBJ is linked with the proto-Agent role; these linkings are then inherited by other constructions as long as those constructions' specifications do not conflict.

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SHARED STRUCTURE vs. CONSTRUCTIONAL AUTONOMY IN CG

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Construction Grammar views Grammatical Knowledge as consisting in a set of pairings of semantic and morpho-syntactic information (or constructions) of more or less general application, but which must all be handled within a single representational system. This paper shows how one can relate idiomatic and general constructions, by having idiosyncratic information block or exceptionally allow the application of general patterns, and how one can relate constructions of various productivity through an Inheritance Network of Grammatical Constructions, in the spirit of Flickinger et al. (1985), and Pollard and Sag (1987). I focus on the French clause-union constructions which present two major challenges to monotonic theories of the mapping of syntax onto semantics:

(1) They allow GF-assigning constructions to apply to a domain larger than a single predicate. At least a half-dozen constructions which ordinarily apply locally to a single predicate and a subset of its semantic arguments apply here to both arguments of a verb and arguments of one of its arguments.

(2) They are associated with many idiomatic Linking patterns to realize the complement verb highest role. Each of these patterns is restricted to clause-union structures.

The Construction Grammar analysis I adopt answers these two problems by positing (i) a general clause-union construction which insures a strictly local application of linking constructions; (ii) a set of special constructions which inherit the more general construction and add some more idiomatic information.

(i) The general clause-union construction applies to causative and perception verbs and (perhaps) *envoyer* 'to send'. Its statement is informally diagrammed in figure 1 top row, and its application to sentence (1) is diagrammed in figure 1 bottom row. Informally speaking, the clause-union construction adds the

valence (or subcategorization) of a complement verb like *tomber* to a valence of the clause-union verb, *faire* in (1).

Valences contain the subcategorization information of a predicate, where each argument is represented as a combination of semantic, syntactic, and functional properties. By opposition to ordinary subcategorization, though, the syntactic and GRAMMATICAL FUNCTION information corresponding to a given argument can be left underspecified in the valence of a lexical entry. It is added by general Linking constructions, which are superimposed to the lexical entry. The crucial import of the clause-union construction, then, is to increase the valence (subcategorization) of a clause-union verb, by adding to its valence that of its complement. It thus creates a larger structure where Linking processes can apply in a strictly local fashion.

This general clause-union pattern accounts for many of the interactions between clause-union verbs and general Linking constructions. I now give some such examples, using again informal diagrams for this abstract.

TRANSITIVE
(1) Jean a fait tomber Marc. 'Jean made Marc fall'

The transitive construction (represented in bold italics in figure 2, top row) requires the highest role of a verb to be linked to the SUBJECT GF, and another argument to the OBJECT GF. *Faire's* highest role is the argument corresponding to the causalforce, in (1), *Jean. Marc* can only be assigned the OBJECT function.

ARBITUARY OBJECT-PRO
(2) Les médicaments, ça fait dormir. 'Medicines make people sleep'

The pattern in (2) results from the application of the ARBITRARY-OBJECT-PRO construction represented in bold italics in figure 2, bottom row. This construction allows an argument that is semantically a PATIENT to be unexpressed syntactically, provided it receives a generic interpretation. The possibility of applying the GNC construction to *faire* argues in favor of an argument-structure analysis of clause-union over a purely syntactic analysis, as in Burzio (1986), Rizzi (1982). Rizzi (19863 shows that AOP is sensitive to the semantic properties of the verb's argument to which it applies. Since the verb licensing it here is *faire*, we must assume clauseunion to affect a verb's argument-structure by allowing *faire to* exceptionally have access to its complement verb's arguments.

Similar accounts can be given of the interaction of the clause-union construction with weather-verbs, the co-referential reflexive, Clitic-placement, Tough predicate, generic-se-moyen, and impersonal-*se*-moyen constructions. (ii) Special constructions are needed for patterns not accounted through the mere interaction of the general clause-union construction and one or more

independently attested Linking constructions. They all INHERIT the information contained in the clause-union construction, and add some more. Three examples are given below:

CLAUSE-UNION-A (see figure 3, top row, in bold italics): This construction insures the complement's highest role is realized as an indirect object, in case of a "(di)-transitive" complement verb:

(3)　　a. Jean a fait manger sa$_i$ soupe à Marc$_i$. 'Jean made Marc eat his soup'
　　　　b. *Jean a fait aller Marc à Paris. 'Jean made Marc go to Paris'

PASSIVE-CLAUSE-UNION (see figure 3, bottom row, information in bold italics): This construction allows the complement verb highest role to be unexpressed and not be assigned a GF value, provided the complement verb is dyadic. The highest role can in turn be expressed through an adjunct agentive *par*-phrase (4) or a stative *de*-phrase (5)-

(4) Jean$_i$ a fait manger sa$_i$ soupe (par Marc).'Jean made (Marc) eat his soup'.
(5) Nous avons réussi à le faire aimer (de ses collègues). 'We managed to make him liked (by his colleagues)'

　　　The *par*-phrase which can appear here is not the passive*par*-phrase, but the agentive *par*-phrase found in nouns, as examples like (6), first noticed by Comrie (1981) show. This construction also applies to cases where no passive can apply, and where there is an object position that can be filled, as shown in (7):

(6) *Marc a fait voir le tableau par ses invités. 'Marc had the painting seen by his guests'
(7) Le professeur a fait pisser sur les plate-bandes du proviseur par tous ses élèves. 'The teacher made all his students pee on the principal's flowers'

PASSIVE-*SE-FAIRE*: This construction is a subcase (it INHERITS) the PASSIVE-CLAUSE-UNION construction. But *faire* in (8) does not have its causal meaning it has'in all previous examples. To account for this fact, we can posit a special entry for *se-faire,* whose semantics is that of the complement verb to *faire.* Or, if we accept normal-mode Inheritance, studied in Goldberg's paper, we can let this construction inherit the DEAGENTIVE-*SE* construction exemplified in (9). We can then dispense with a special entry.

(8) Vingt mille personnes se sont fait licensier en l'espace de 3 mois. '20.000 people got fired in the last three months.'
(9) La branche s'est cassé. 'The branch broke'

　　　A representation of the Inheritance Network formed by Clause-Union constructions is given in figure 4.

A knowledge-intensive, and computationally miserly grammatical framework like CG, can capture actual generalizations by allowing complex relationships between patterns. A large set of exceptional patterns, like clause-union structures in French, is then reduceable to a few simple idiomatic patterns, which share predictable information with more general constructions. Assuming grammatical knowledge consists in a repertoire of unpredictable, direct association between semantic and morpho-syntactic information, does not therefore force us to forego the desire to capture generalizations concerning this mapping.
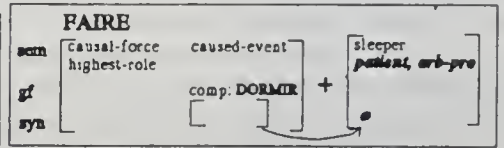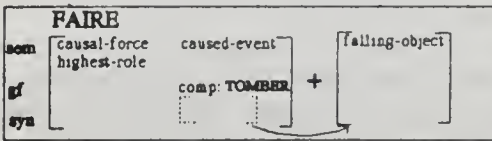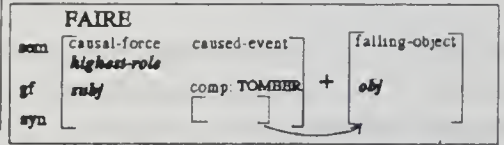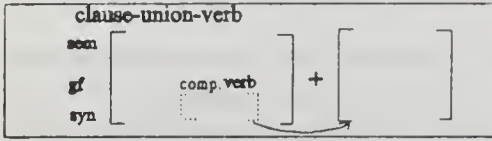
Figure 1

Figure 2
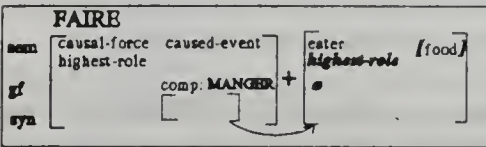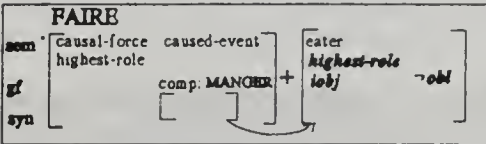
Figure 3
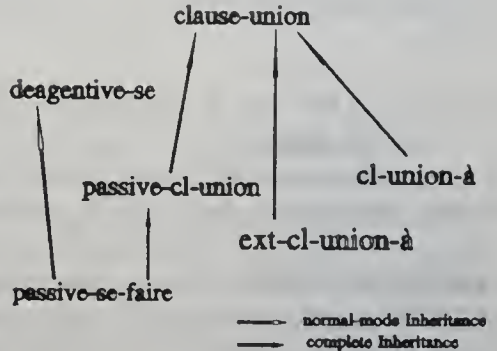
Figure 4

THE POST-FOCAL *COMME-N* CONSTRUCTION IN SPOKEN FRENCH

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1. Introduction

Through an analysis of one sentence type of Spoken French (SpF) I will describe a particular kind of fit between information structure (see Lambrecht forthcoming) and grammatical structure. The structure in question, which I analyze as a morpho-syntactic and prosodic template whose form and interpretation require independent description in the grammar of SpF, in the spirit of construction grammar (see references), has a number of unique syntactic and semantic features which are shown to correlate with specific discourse functions.

In previous work (1984, 1986, 1987, 1988) I have argued for the existence, in SlpF, of a highly general **preferred clause construction** having essentially the following form: [1]

(1) [pro + V XP]

The notation "pro + V" in (1) stands for a verb or verb-complex preceded by one or more incorporated case-marked pronouns. The "XP" represents an argument or adjunct to the verb. The structure in (1) reflects the distribution of **topical vs. focal** elements in the proposition: the preverbal pro has a **topic** relation and the postverbal XP (or the V alone if there is no XP - fn. 1) has a **focus** relation to the proposition expressed by the clause. The sequence V XP constitutes the syntactic **focus domain**, whose right boundary is marked by the **focus accent**.

Text counts show that the template in (1) accounts for approximately 95% of all sentences in spontaneous discourse (see Barnes 1984, Lambrecht 1987), replacing the canonical [NP V (XP)*] configuration in which the preverbal subject is a full (non-pronominal) noun phrase.

Among the constructions in SpF which exploit the template in (1) are those containing nonpronominal topical constituents to the left (as Topic, or TOP) or to the right (as Antitopic, or A-TOP) of the preferred-clause unit, forming with it a larger construction shown in (2a) or (2b):

(2) a. [[TOP$_i$] [pro$_i$+V XP]]   (TOP constructions)
     b. [[pro$_i$+V XP] [A-TOP$_i$]]   (A-TOP constructions)

The labels TOP and A-TOP in (2) designate structural positions which host various expression types whose denotata have a non-focal relation to the proposition. The phrases in the (A-)TOP positions are in most cases anaphorically linked to the syntactically obligatory pro element, which is an argument of the predicate. For either of these constructions to be appropriate in discourse, the denotation of the detached phrase must have a certain degree of pragmatic accessibility in the discourse. The construction treated in this paper makes use of the A-TOP position.

2. The A-TOP template.

The A-TOP construction in (2b) is exemplified in (3), where small caps indicate the focus accent. The parentheses after each example indicate the syntactic category of the A-TOP.

(3)

[[Ils$_i$ sont [FOUS]] [ces Romains]$_i$]   'These Romans are crazy' (NP)
[[J'y$_i$ pense [SOUVENT]] [à cette affaire]$_i$]   'I often think of this affair' (PP)
[[C$_i$'est [DOMMAGE]] [que tu ne puisse pas   'It's a shame you can't come' (QU-S)
venir]$_i$]
[[C$_i$'est [GENTIL]] [de dire ça]$_i$]   'It's nice of you to say that' (de-VP-inf)

In all cases the structure minus the A-TOP constituent, which I will call the clause, is a potential complete sentence. The 'flat' intonation contour of the A-TOP constituent reflects the high pragmatic accessibility of its referent in the discourse (see Lambrecht 1981).

2. The PFCN construction: syntax and semantics

The structure which I focus on here is a variety of A-TOP construction. Examples:

(4)

[[C'est assez INTERESSANT] [comme livre]]   'That's a pretty interesting book'
[[C'est pas CON] [comme idée]]   'That's not a stupid idea'

The focal accent in the clause and the position and contour of the post-focal constituent match the template in (2b). However, (4) differs from (3) in two important respects: the constituent in ATOP position (i) is not linked to the pro by anaphora; (ii) is not an ordinary referential phrase: it contains neither a determiner (3a|b) nor a nominalizer or complementizer (3c/d) which would mark it as a phrase capable of serving as the argument of a predicate. Instead, the phrase in A-TOP position is introduced by *comme*. I will refer to the construction illustrated in (4) as the POSTFOCAL COMME-N CONSTRUCTION or PFCN.

The standard French sentences corresponding to the PFCN in (4) would be as in (5):

(5) a   [C'est [un livre très INTERESSANT]].   (=(4a))
     b   [C(e n)'est pas [une idée CONNE]]   (=(4b))

Comparing (4) with (5), we see that the PFCN has the effect of "dividing up" the content of a standard indefinite predicate NP in such a way that a modifying adjective occurs in syntactic isolation from the noun it

modifies, the latter appearing in the mystery phrase (*comme* N). Thus the single NP constituent in (5), whose internal syntax is [DET[+indefl N AP], and whose external syntax is that of a postcopular predicate phrase, appears in (4) as two constituents separated from each other by a clause boundary.

The PFCN does not have the same meaning as the corresponding A-TOP construction. For example, (4a) is not synonymous with (4a'):

(4a')   Il est très intéressant ce livre. 'This book is very interesting.'

In (4a') the A-TOP NP *ce livre* corefers with the bound pronominal subject *il*. In (4a), however, the A-TOP phrase *comme livre* does not corefer with the subject: rather it is semantically linked to the predicate *très intéressant*. The difference between the A-TOP construction in (3) and the PFCN subtype in (4) appears clearly in examples such as (6), in which a referential topic constituent and a *[comme* N] phrase occur next to each other in the A-TOP position:

(6)
C_i'est vachement COURANT [comme boisson] [le thé]$_i$. 'Tea is a very common drink .'

In (6), the A-TOP NP *le thé* corefers with the bound subject pronoun *ç(a)*, while the *comme* N phrase does not. The fact that the A-TOP constituents in (7) ([comme boisson] & [le thé]i)can appear in either order agrees with the fact that constituents in TOP or A-TOP position may be freely ordered with respect to each other, in contrast with intraclausal constituents, whose order is more or less fixed (see Lambrecht 1981).

In the PFCN, the sequence *comme* N differs semantically, syntactically and prosodically from the same sequence in other parts of French grammar In many contexts, the phrase *comme* N has a 'role'-specifying function, as in (7):

(7)
Il a été engagé comme PROGRAMMEUR. 'He was hired as a programmer.'
Comme PROGRAMMEUR, il est pas MAL, mais comme LINGUISTE, il est NUL.

'As a programmer he's not bad, but as a linguist he's a total wash-out'. Syntactically we find that, unlike the role-specifying phrase, the *comme* N sequence in the PFCN cannot occur in initial position; and prosodically we find that it cannot be stressed. Consider:

(8)   a. Il est SYMPA comme mec.   'He's a nice guy.'
      b. ??Il est sympa comme MEC.

While (8a) is perfectly natural, (8b) seems to predicate of somebody 'niceness as a guy'; but *mec* ('guy') does not lend itself to a 'role' interpretation.

3. Information structure of the PFCN construction

The standard French versions in (5) are pragmatically ambiguous. For example, (Sa) can be used either to inform the addressee that the entity designated by the subject pronoun is a very interesting book, or it can be used to inform the addressee that the given entity, which the interlocutor already knows to be a book, is very interesting. (Sa) could be taken as answering either 'What's that?' or 'What do you think of this book?' The SpF versions

in (4) are not pragmatically ambiguous in this way. In the PFCN, the denotatum of the *comme* N phrase is necessarily **presupposed** in the discourse, while that of the intraclausal AP constituent represents the **focus** of the utterance. For (4a) to be appropriate in discourse two conditions must be satisfied: (i) the token designated with the subject pronoun *ça* must be a topic under discussion (e.g., as an object on a table in front of the interlocutors); (ii) the fact that this token belongs to the type 'book' must be assumed to be known to, or taken for granted by, the addressee. The speaker then utters the sentence with the intention of informing the addressee that the given token, which is of type 'book', has the property of being very interesting.

5. Summary and conclusion

The formal and pragmatic differences between the PFCN and the standard predicate construction are summarized in (9):

(9)

Spoken French $_S[_S[\text{pro}[+\text{subj}]\ V[+\text{cop}]\ AP[+\text{foc}]]]\ _{A\text{-TOP}}[comme\ N[-\text{foc}]]$

Standard French $_S[\text{pro}[+\text{subj}]\ V[+\text{cop}]\ _{NP}[DET[+\text{indef}]\ N[+/-\text{foc}]\ AP\ [+\text{foc}]]]$

As (9) shows, the PFCN is marked for a pragmatic feature for which the standard French equivalent is unmarked, i.e., the non-focal status of the denotatum of the predicate noun. This pragmatic feature is a grammatical property of the construction, not merely an implicature from the context. The particular form-meaning association in the PFCN can be correctly construed only in a discourse situation in which the designatum of a predicate NP is half focal and half presupposed.

While the PFCN must be described as a separate construction in the grammar of SpF, its features are by no means arbitrary or unrelated to the rest of the grammar. The construction belongs to a general template, the A-TOP construction in (2b), in which pragmatically highly accessible non-focal designata are coded to the right of the clause expressing the proposition in which these designata are arguments or predicates. The form of the A-TOP template, hence that of the PFCN, may be said to be pragmatically 'motivated', in the sense that it is a direct manifestation of a general information-structure principle ('focus in, topic out') concerning the distribution of phrasal categories in the French sentence. This principle is part of grammar, i.e. it does not follow from extralinguistic rules of pragmatic construal. Its manifestation in the form of the PFCN is specific to French (English has no PFCN). Pragmatically motivated syntactic configurations such as the PFCN are evidence in favor of a view of grammar in which the component of information structure interacts directly with the formal levels of morphosyntax and phonology, rather than being part of a discrete component of 'discourse grammar', which 'interprets' existing syntactic structures pragmatically.

Notes

1-The full formula for the preferred-clause construction is [(QU-) [pro + V (XP)*]] The optional "(QU-), corresponding to the WH- position in English, represents the fact that the construction is general enough to include various sorts of "WH"-clauses as well. The notation "(XP)*" indicates that there can be zero or more constituents following the verb, as arguments or adjuncts. In (1) above I show only one XP, since all of the examples in this paper illustrate just one post-verbal constituent.

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EVER SINCE BLOOMFIELD

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1. INTRODUCTION

Bloomfield's (1933) work on constructions, although usually ignored or else caricatured in the guise of phrase structure grammar, was in reality a sophisticated theory which (as shown in Manaster Ramer and Kac: 1990) provided for cross-classification, separation of linear and hierarchical information, discontinuity, zero elements, and unbounded branching, devices which have been getting reinvented ever since. This alone would be enough of a reason for relearning Bloomfield, but there is more.

2. MEANING AND FORM

Crucial to Bloomfield's theory is the idea that each construction is characterized by a fixed meaning and a set of formal features ('taxemes'). Just as morphemes are unique combinations of form and meaning, so, too, are constructions. Take the English passive, which has often been called a construction, but has also been argued (e.g., Chomsky: 1984) to involve features that are fundamentally independent: the 'logical subject' comes out as a prepositional phrase, and the 'logical object' as the subject, there is an auxiliary, and the lexical verb takes participial morphology. Each of these features would be a taxeme, but whether they combine to form a construction would depend on the meaning. If the meaning of the passive can be factored into the meanings of these taxemes, then each taxeme (with its meaning) will be a construction, and the passive will be an epiphenomenon. Otherwise the passive is a construction.

Bloomfield himself did not consider the English passive to be a construction, since in English (unlike Latin or Tagalog), he took the form of the passive as well as its meaning to belong to the active construction

(with its actor-action semantics!).

Yet, if we reject this bit of semantic legerdemain, we are forced by Bloomfield's principles to recognize the passive as a construction, because passives have distinctive meanings. Not only must we somehow be told that the passive, typically, is close to synonymous with the active (but with the arguments reversed), but also whether it has one of a number of possible additional nuances. Thus, English passives can refer to situations which arise without the agency of an external force (thus, John was killed can refer to a car accident), whereas Polish ones cannot (compare also the Japanese adversative and the Hindi abilitative passive).

It is hard to see how these semantics could be predicted from a description of the taxemes of the passive in different languages. It would rather seem that every language has some leeway in its choice of taxemes, and that the taxemes themselves have no meanings at all. The taxeme is like the phoneme, the construction like the morpheme. Constructions are formally made up of meaningless taxemes; morphemes, of meaningless phonemes.

Unfortunately, Bloomfield's ideas were obscured by many terminological problems, in particular, the fact that he used the term 'construction' to refer only to constructions made up of more than one constituent (although I will continue to use this term in its broader sense).

3. TAXEMES

A construction then (in the broader sense) is characterized by a specific meaning and one or more taxemes, of which Bloomfield recognized four basic kinds: (linear) order, modulation (suprasegmentals), phonetic modification (sandhi), and selection (agreement, government, and subcategorization). All four kinds could be involved in a construction (as in English WH-questions), but all that is necessary for a construction to exist is some kind of taxeme or set of taxemes and a meaning. This allowed Bloomfield to treat naturally free word order in languages like Latin, by simply not specifying any taxemes of order (Bloomfield 1933: 197). Also, unlike those modern theories in which position depends on constituent or dependency structure, Bloomfield's theory would allow a direct description of such cases as Turkish sultan + name vs. name + sultan (depending on the sex of the referent).

Even more interesting, perhaps, is the possibility of a construction that is formally distinguished from other constructions just in terms of highly specific taxemes of selection. For example, consider, French vocatives like

<u>mon capitaine</u> vs. <u>capitaine</u> (depending on the relative status of speaker and addressee as well as on the addressee's branch of service).

4. TACTICS

Finally, implicit in all this is the most important characteristic of Bloomfield's approach: the separation of those formal features which are distinctive (emic) and those which are not. This means, although Bloomfield did not discuss the topic explicitly, that alongside syntax (which in this respect resembles phonology) there must be something analogous to phonetics, something which I have taken to calling 'tactics'. For example, much as syllabification is phonetically real but usually subphonemic, so words are tactically real even if word boundaries are not typically distinctive. Likewise, the fact that a sentence of Latin must appear in some order, even if this is nondistinctive, is a fact of tactics. Yet another tactic phenomenon is the tendency of speakers to treat as reduplications many forms where the reduplication has no grammatical (i.e., taxemic) significance, e.g., English words like <u>lulu</u>.

For all these reasons Bloomfield's theory of constructions must be the starting point of all modern work on constructions (e.g., Fillmore, Kay, and O'Connor: 1988, Manaster Ramer and Zadrozny: 1992).

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TABLES RONDES / PANEL DISCUSSIONS

**TITRE : LINGUISTIQUE "INTÉGRATIONNELLE"
TITLE : INTEGRATIONAL LINGUISTICS**

ORGANISATEUR(S) / ORGANIZER(S) :
George WOLF / Roy HARRIS
(University of New Orleans - United States / Hong Kong)

INTEGRATIONAL LINGUISTICS:
AN INTRODUCTORY SURVEY

George Wolf and Nigel Love

Universities of New Orleans and Cape Town

Integrational linguistics is an approach to language study which grew out of work done beginning in the early 1970s at Oxford University, where the Chair of General Linguistics, first held by Roy Harris, was established in 1978. This approach starts from the premise that communication proceeds by means of signs which are created at and for the moment of communicational exchange. A number of corollaries attach to this basic position. Among them is the proposition that there is no possibility of systematically distinguishing between what is a language and what is not a language in a given communication situation. And connected to this is the proposition that what linguists generally call "a language," whether taken as the traditional notion or as what has been called "I-Language," is not a genuine object of scientific inquiry. Integrational linguistics as a program began as a project involving two aspects: (1) a thorough-going knowledge of Saussure, and (2) a critical analysis of the pronouncements of theoretical linguists since Saussure. Some results of that analysis are as follows.

Mainstream twentieth-century linguistics (the "orthodoxy") is committed to one or another form of structuralism, whereby languages are conceived as fixed codes of correspondences between forms and meanings, shared knowledge of which among interlocutors enables them to communicate. These interconnected ideas as to what a language is, and how a language permits communication, have been dubbed the "language myth" (Harris 1981). Integrational linguistics, in the sense intended here, rejects the myth and endorses an alternative conceptualisation of languages and communication.

Integrationalists reject the language myth because, in the first place, fixed codes of correspondences between forms and meanings do not figure among the first-order realia of linguistic phenomena. There are problems with the identification of both forms and meanings.

The orthodoxy postulates that every language may be analysed in terms of a fixed set of minimal meaningful forms (called e.g. "morphemes") that may be combined to form larger units (e.g. words, phrases, sentences). As far as twentieth-century structuralist linguistics is concerned, this idea goes back to Saussure's notion of the linguistic sign and his recommended procedure for isolating signs in the stream of speech (Saussure 1916 [1922]). But this procedure

has never actually been implemented. Indeed, Saussure himself is on record as doubting whether its implementation is practically feasible; and this doubt has been strongly supported by integrationalists (Love 1984, Harris 1987a). Similar doubts apply no less strongly *vis-à-vis* the methods of morphological analysis proposed by subsequent theorists in the orthodox tradition (see Harris 1973, Love 1990, Davis 1992). The idea of a fixed set of minimal forms at the meaningful level of articulation has never been vindicated by either (i) the elaboration of methods that reliably lead to the objective identification of such a set or (ii)--*a fortiori*--the objective identification of such a set. That such a set must nonetheless exist is an article of structuralist faith. The integrationalist proposes that it be abandoned.

Problems no less intractable beset the identification of higher-level units of meaningful form. But the higher-level units are for the most part not conjured into existence by nothing but the technical terminology of modem linguistics (as is the case with "morpheme"). Rather, they play an established role in the layman's metalinguistic understanding (a case in point is "word"). Here the integrationalist's task is to understand what that role is and how it affects first-order communication. Davis (1992) reports on an attempt to elicit from non-linguists what they understand by the concept "word." If it is true, as the orthodoxy has it, that "when exposed to some acoustic signal, a listener unconsciously analyses that signal into discrete elements (words...)" (Lightfoot 1982: 193), the results of Davis's experiment certainly do not suggest that the analysis into words is uniform for all the speakers of a particular language.

A comparable point applies above the level of the word, i.e. to the study of "how and why speaker/hearers put the elements of their language together in the way that they do" (Wolf 1992: 134). One point Wolf makes here is that despite the generative syntactician's avowed agnosticism on the question of how syntactically complex utterances are actually constructed and interpreted by speakers and hearers on particular occasions, a context-neutral answer rooted in the alleged syntactic structure of "the language" (in conjunction with the principles of Universal Grammar) nonetheless enters crucially into, specifically, the generativist's account of syntactic change (as outlined in e.g. Lightfoot 1981).

If it is difficult to identify the fixed forms and constructions of a language, it is no less difficult to identify the corresponding meanings. The notion that linguistic expressions, considered *in abstracto*, have an uncontextualised meaning has been seen as one of the "two foundation stones of Western linguistics" (Hopper 1988: 20; quoted in Toolan's (1991) comprehensive discussion of issues surrounding the concept "literal meaning"); and it has come under integrationalist attack from a variety of angles, for instance in connection with its role in an understanding of translation (Harris 1970) and of performative utterances (Harris 1973b, 1977), and in respect of the difficulty of accomodating within a semantic theory based on such a foundation an adequate account of irony (Farrow 1992), of "bad language" (Davis 1989), and, more generally, of the "fundamentally political nature of meaning" (Hopper 1992).

Within the language myth, the function of the fixed-code theory is to explain how communication is possible, given that communication is envisaged

as the transferring of thoughts from one mind to another. The speaker encodes his meaning in the appropriate forms; the hearer decodes the meaning from those forms. That communication is in fact to be understood in such terms has been widely contested: certain very general objections are voiced, for instance, by Love (1990: 53-4). More specifically, the radical inapplicability to pidgin languages of this account of communication is asserted by Mühlhäusler, who states that the use of such languages is subject to "notorious discrepancies between the messages sent by the transmitter and those interpreted by the receiver" (1986: 278); and a fascinating "systematic disjunction between linguistic form and meaning" (Morris 1981: 1) has been found to characterise the use of Spanish in Puerto Rico.

In short, both halves of the language myth are independently assailable. How and why, therefore, has it come to serve as the theoretical foundation for the orthodoxy in linguistics? Two aspects of a possible answer are worth considering.

One aspect has to do with the communicational medium in which linguistics itself is conducted. Every utterance is unique, both *qua* acoustic event and in terms of its communicative import (its "meaning"). The language myth, however, requires that the unique utterance be envisaged as an instance of an invariant form-meaning combination provided in advance by the particular language in question. What are the prerequisites for conceiving of the unique utterance in such terms? The most fundamental is a means of *citing* the invariant in question. That means is provided by the practice of writing. We may cite a particular oral utterance by writing this: "cats mew." But now we have ineluctably imposed a particular answer to the question what the utterance "cats mew" was an utterance of. The answer is: *cats mew*. The truth of the assertion that "cats mew" is an utterance of the invariant (the sentence) *cats mew* is guaranteed by the fact that the written form used to cite the invariant is also used to cite the unique utterance itself. The typographical differentiation afforded by the choice between quotation marks and italics does not disguise the fact that to write down an utterance at all is already to identify it as instantiating a particular abstraction (on abstraction and instantiation see Hutton 1990). Hence there is built in to any practice of written discourse about language an antecedent analysis of utterances as utterances of particular invariants. In fixing a set of invariants to which utterances can be referred, writing is, as e.g. Harris (1990) has pointed out, one important source of the fixed-code theory. As Harris further observes, the irony of the "consistently and irredeemably scriptist" orientation of modern linguistics lies in the fact that it is an article of orthodox faith to treat writing as a mere ancillary notation for representing speech (the real object of the linguist's attention) in another medium. From the integrationalist point of view, however, writing is an independently interesting phenomenon worthy of analysis in its own right, as in e.g. Harris 1984, Baron 1989.

A second aspect of the answer lies in the way the language myth idealises as a culture-neutral norm a state of linguistic affairs peculiar to (in so far as it obtains at all) a particular place and time. Theorising based on the myth at best marginalises and at worst ignores the various phenomena subsumable under the heading "linguistic variation," and treats bi- or multi-linguals, speakers of dying or otherwise radically impoverished languages, of pidgins, creoles, etc. as special

or exceptional cases. The "ideal speaker-hearer" of orthodox modern theory, who lives in a completely homogeneous speech-community, and who is "unaffected by such grammatically irrelevant conditions as memory limitations, distractions, shifts of attention and interest, and errors (random or characteristic) in applying his knowledge of the language in actual performance" (Chomsky 1965: 3) is transparently the result of projecting on to the theoretical plane someone who, in the world as a whole, has probably always been in a minority: the literate, exclusively monolingual speaker of a highly developed (and therefore self-sufficient) culturally dominant language, such as the standardised "official" languages of the nation-states of post-Renaissance Western Europe and other parts of the world to which Western culture has been subsequently exported. The covert normativity underlying such a conception (as witness the reference to "errors") is the product of a long Western tradition of prescriptive teaching of a written language; while the relevance of linguistic standardisation lies in the fact that such an idealisation would be self-evidently absurd, if not inconceivable, were there not in fact a large measure of linguistic homogeneity prevailing in the communities whose linguistic theory this is--a situation that does not antedate the introduction of compulsory universal education in Europe in the nineteenth century, and the inclusion in the curriculum of that education formal instruction in the standard national language. The socio-cultural provenance of the language myth is discussed e.g. by Harris (1987b); and the political nature of the process of linguistic standardisation is explored by Joseph (1987) and Crowley (1989).

What purposes does the myth serve in the political ecology of academe? Part of the answer is that it provides a conceptualisation of the object of study in all essential respects continuous with that of the Western grammatico-philological tradition of inquiry into language. For the traditional grammarian a language consists of a fixed inventory of micro-units (words) displayed in a dictionary as a set of correspondences between forms and meanings, which are combinable into macro-units (sentences) according to the rules laid out in a grammar book. The network of ideas underlying traditional grammar involves imposing on the continuum of linguistic differences between people at different times and places an analysis in terms of discrete linguistic systems (languages). Traditional grammar abstracts from the interactive behavior deemed to involve a given such system what it sets up as the strictly linguistic aspects of that behavior. It then projects this abstraction as a body of knowledge which, if acquired by a learner, might be put to use in interactive episodes with existing speakers of the languages in question. This conception of languages is indeed primarily a pedagogical tool, in use in Western educational institutions since classical antiquity, created in part for teaching them.

So one important academe-internal function of the language myth is to provide a respectable retheorisation of a reassuringly familiar approach to linguistic investigation (cf. Love (forthcoming)). Respectability is achieved in that, unlike the prescriptive studies of the past, modern linguistics is supposedly descriptive, and therefore objective--in a word, scientific. (See Taylor 1990 for critical analysis of the opposition "prescription" vs. "description".)

A descriptive science requires a stable *describiendum*. So perhaps the

single most important item in the traditional pedagogue's legacy to modern linguistics is the idea of a language as an object. Language-use as a form of behavior has always been treated as secondary to the object--indeed, as being founded on, and only possible because of, knowledge of the object. This feature of the grammarian's attitude is the basis for the well-known distinctions, in Saussurean and Chomskyan versions of structuralist linguistic science, between *langue* and *parole* on the one hand, and "competence" and "performance" on the other.

The scientific objectivity of linguistics is of course itself a myth, and has been attacked as such from a variety of standpoints. Cameron (1985) scrutinises, with particular reference to gender, the assumption "that the grammatical categories used in linguistic descriptions are neutral, objective and devoid of ideological significance"; and elsewhere (1990) offers an academico-political explanation of the explanatory ineffectuality of Labovian quantitative sociolinguistics. Joseph (1990) seeks to account in a similar way for fluctuations in Bloomfield's and Chomsky's accounts of their intellectual relationship with Saussure. Crowley (1990) is a general exploration of the political background to the quest for a "science" of language.

What would a demythologised linguistics look like? Integrationalism, as initially outlined by Harris (1981) involves, essentially, recognition of the contextuality, indeterminacy, creativity and, above all, the non-autonomy of language.

Recognising the contextuality of language involves acknowledging that linguistic acts are integrated into our experience with concurrent non-linguistic events and circumstances, and cannot be understood apart from that contextual integration. As Hopper puts it (1992: 223) "Linguistics...has adopted methods and assumptions that require a suppression of the temporality of speech." But there is no such thing as atemporal, uncontextualised language use, and therefore there can be no such thing, in the world of first-order linguistic realities with which the integrationalist is engaged, as uncontextualised language.

Recognising the indeterminacy of language involves recognising that communication does not proceed, as the language myth would have it, on the basis of what amounts to a prior agreement among speaker-hearers as to what they mean by the words that they use. For there is no such prior agreement.

If there is no such prior agreement, then it follows that language use must be a radically creative process. There is no antecedently given fixed linguistic system to determine what the language user may say or understand. It is, rather, by speaking and understanding that he creates and continually renews his language.

The non-autonomy of language is bound up with these considerations. Harris (1987c) makes the point that the communicational space inhabited by human beings is not neatly compartmentalised into language and non-language. The integration of language-use into context does not imply that context is just a sort of detachable backdrop against which the use of context-free linguistic invariants takes place. For as there are no context-free linguistic invariants, what happens in a given communicational episode cannot depend on their existence.

Context-free linguistic invariants are a metalinguistic abstraction from communicational episodes, not a prerequisite for them. Therefore, what in a given episode counts as language, and what does not, is not to be decided with reference to a predetermined metalinguistic analysis of the situation; language is not an automatically delimitable component of social interactions involving verbal behavior. If at the dinner table one silently passes the salt in response to a request to do so, that action has as much *prima facie* right to count as (part of the) "language" (being used) as would, in other circumstances, a verbal explanation of the impossibility of acceding to the request. To the obvious objection that language is clearly distinguishable from silence the answer is that the idea that the current use of the word "language" uncontroversially demarcates the subject matter of the linguist's inquiries is precisely the sort of myth-inspired prejudgment that stands in the way of an adequate account of our linguistic experience.

Growing as it has out of a critical analysis of modern linguistic notions, integrational linguistics has laid itself open to a double-edged complaint which has been frequently directed at it: that it has not provided a positive theory but is uniquely negative in thrust; that it is nothing but a sceptical attack on modern linguistics, and perhaps for that reason need not be taken seriously. This is an odd complaint, in the first place; for what might be called Platonic conceptual analysis is an even more ancient form of inquiry than is Aristotelian (but perhaps more appropriately Scholastic) theory-building. But secondly, even if such a type of analysis were completely new, it would have to be acknowledged that as a form of inquiry it is just as potentially suitable for providing enlightenment as is any other form of what has been known as modern linguistics. The notion that only one mode of investigation can elucidate the nature of language(s) is merely an article of prejudice. That is to say, that even if integrational linguistics never provided a program which looked like the kinds of programs on offer throughout orthodox modern linguistics in both the core and in the "hyphenated" sub-disciplines, it would be fallacious to reject a wholly different approach on that basis alone.

The complaint also ignores the fact that behind any genuinely critical--as opposed to genuinely sceptical--discourse is embodied by implication a program or the possibility of a program which might also be seen to be worthy of the epithet "positive." A genuinely sceptical discourse, by contrast, poses such questions as "How can we know so much, given that we have such limited evidence?", and "How can we know so little, given that we have so much evidence?" (Chomsky 1986: xxv). Such discourse is sceptical because it denies that we can really know what we think we can and do know. And with knowledge deemed not possible, the sceptical strategy is to replace what we thought we knew with structures--re-named "knowledge" or "cognition"--accessible only to "experts." (On scepticism see Taylor 1992.)

An integrational approach is not sceptical, for the reason that it does not require the inquirer to doubt, but instead reinstates, speakers' views about the forms in which they communicate. It thus rejects a view of knowledge, e.g. "cognizing," which "in the interesting cases is inaccessible to consciousness" (Chomsky 1980: 70)--this being, with respect to accessibility, a latter-day version

of the proposition that "the language is never complete in any single individual" (Saussure 1916 [1922: 30])--in favor of the position that "In order to determine to what extent something is a reality, it is necessary and also sufficient to find out to what extent it exists as far as the language users are concerned" (Saussure 1916 [1922: 128]). The goal of an integrational linguistics is thus one which Saussure failed to achieve: to fulfil this promise of the *Cours*.

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INTEGRATIONAL LINGUISTICS

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Integrational linguistics may be defined in terms of the acceptance of three principles which differ from those widely accepted by linguists belonging to one or other of the orthodox modern schools. These three principles are: (i) the integrational character of the linguistic sign, (ii) the indeterminacy of linguistic form, and (iii) the indeterminacy of linguistic meaning.

Principle (i) implies that linguistic signs are not autonomous objects of any kind, either social or psychological, but are contextualized products of the integration of various activities by individuals in particular communication situations. The continuous creation of linguistic signs to meet the exigencies of communication constitutes the first-order linguistic process which is the primary object of study in integrational linguistics. Principles (ii) and (iii) together imply that languages are not fixed codes but second-order social constructs of an intrinsically open-ended, incomplete and variable nature. They are consequently not amenable to the standard bi-planar analyses imposed by orthodox linguists.

The definition proposed is derived from two basic axioms of integrational semiology. The integrational approach is not restricted to those communicational activities traditionally designated by the term *language*, and *a fortiori* not to those traditionally designated by the term *speech*. The two semiological axioms are:

Axiom 1. What constitutes a sign is not given independently of the situation in which it occurs or of its material manifestation in that situation.

Axiom 2. The value of a sign is a function of the integrational proficiency which its identification and interpretation presuppose.

These two axioms apply to all signs in interpersonal communication, and more generally in the human environment; for they also apply to natural phenomena to which human beings assign a semiological value (as, for example, in medicine and meteorology).

The second of the two axioms quoted refers to 'integrational proficiency'. This is best defined in the following way. Human beings bring to their first-order communicational task, which is the creation of signs, capacities of various kinds. These capacities depend on three different types of factor, which may be called 'biomechanical', 'macrosocial' and 'integrational'. Biomechanical factors

pertain to the organic and neuro-physiological mechanisms which underlie communicative behaviour and their exercise in particular physical circumstances. Macrosocial factors pertain to culture-specific patterns of organisation within which communication situations occur. Integrational factors pertain to the fitting together of all these within a particular set of circumstances in ways which make sense to the participants involved.

The integrational assumption is that any episode of linguistic communication can be analysed in terms of these three sets of factors, and *must* be if the analysis is to be adequate, in the sense of answering to the actual experience of the participants. An analysis which fails to do this fails to capture the phenomenon, because the integration of these various sets of factors is precisely what constitutes the phenomenon.

In this respect, the concept of integration involved is akin to that encountered in various branches of biological and medical science concerned essentially with studying the continuous interaction of dynamic processes. In these areas, integration is the norm and disintegration is nothing less than a pathological state. For instance, in Parkinson's disease, there is disintegration of the labyrinthine, the proprioceptive and the visual processes. Analogously, one might say that a linguistics which treats speech solely in terms of the pairing of sounds and concepts, without regard for the communication situation, is proceeding as if *homo loquens* were a pathological case.

From a historical perspective, integrational linguistics may perhaps best be seen as one reaction to the problem of what has been called 'transcending Saussure'. To anyone familiar with the history of modern linguistics, it is evident that the Bloomfieldian approach, and subsequently generative grammar, conspicuously failed to 'transcend Saussure'. All three remain theoretically confined within the traditional Western dualisms that go back to Aristotle. But until there is a type of linguistic theory available that breaks out of this confinement, then there is no way that certain quite basic questions about language can be addressed within the framework of a discipline that claims to have language as its central concern. An integrational linguistics, by rejecting dualist assumptions from the outset, at least holds out the hope of progress; for within living memory there has been nothing but what what in economics is sometimes called 'theory fossilization'. (This is a process by which the analysis of what is observable is replaced by internal debate by experts about various abstract models, and the question of what any of these models can actually explain recedes into the background.)

Integrational linguistics 'transcends Saussure' quite specifically in replacing Saussure's twin principles of arbitrariness and linearity by the two axioms stated above. Furthermore, on the basis of these broader axioms, language may be seen as one type of communicational activity which conforms to certain requirements imposed on all forms of human communication.

Language, Wittgenstein once observed, 'sets everyone the same traps'. The trap into which linguistic theorists, from Saussure onwards, have repeatedly fallen involves treating the linguistic sign either as a macrosocial invariant or as a biomechanical invariant, or some combination of both: this is the type of sign theory associated with various versions of structuralism and generative grammar. By contrast, an integrational theory of the sign treats it as a contextual creation open to contextual renewal, because human beings inhabit a space-time

continuum which is permanently structured in a certain way. In the orthodox type of sign theory, the sign is a constant and the contexts, because they are infinitely variable, drop out of consideration. In the integrational type of sign theory, the contexts, for exactly the same reason, cannot be omitted. From an integrational point of view, no sign whatsoever exists except in its context. Sign and context are reciprocally defined.

By decontextualizing discourse, orthodox linguistics seeks to kill two birds with one stone: the problem of what A - linguistically - meant (or should have meant) and the problem of what B - linguistically - understood (or should have understood) *irrespective of context*. If it has no other merit of note, integrational linguistics can at least claim to call in question the validity of a model which postulates this communicational miracle as the basis for explanation.

The interdependence of context and discourse poses enormous problems for orthodox linguistics, because orthodox linguistics is more interested in qualifying as a science than it is in investigating language. In addition, orthodox linguistics espouses a concept of science which requires access to objects of inquiry which are presumed to exist independently of the mode of access adopted. From the orthodox point of view, the epistemological problem with the integrational approach is that it appears to undermine precisely that assumption. It seems to afford the linguist no neutral position from which to undertake the investigation of language.

Such misgivings are indeed well-founded. Anyone who adopts an integrational approach is *ipso facto* committed to recognizing that the discourse of linguistics is about as neutral as the discourse of politics. This conclusion is underlined by a study of the history of linguistic ideas. At the intercultural level, it is evident that any analysis of speech is dependent, in the first place, on the availability or non-availability of writing and, in the second place, on the particular type of writing system available. Writing, like all forms of communication, empowers those who master it. In linguistics we see the interesting case of a discipline whose authority in modern times has depended essentially on substituting analyses of its own written protocols for analyses of speech.

Western linguistics is pre-eminently a linguistics based on the alphabet. In itself, this is neither good nor bad, but simply inevitable. What may be good or bad is the recognition or failure to recognize this cultural fact. At the intracultural level, it is equally evident that the discourse of linguistics is dedicated in the first place to maintaining the academic expertise of its practitioners. There would be little hope for the subject were it not the case that the discourse of linguistics, like all forms of discourse, can change. An integrational approach will be well justified if it does no more than assist this process of evolution and, by so doing, change the way our cultural institutions view language. All that needs to be added - from an integrational point of view - is that to change the way cultural institutions view language is to change the culture in question.

When Marx made his famous pronouncement to the effect that hitherto philosophy had merely sought to interpret the world, whereas the important thing was to change it, this was widely - but wrongly - interpreted as a repudiation of philosophy. A parallel situation is likely to arise today with any radically new departure in linguistics. That, indeed, may be one symptom by which it is possible to recognize how radically new a departure it is.

WHAT'S WRONG WITH THIS PICTURE?
THE IMPACT OF DICTIONARIES ON NOTIONS OF MEANING

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Cartoonist Sidney Harris depicts the history of dictionaries this way: A cave man is painting columns of pictograms on a stone wall. As he works, he explains to a passerby, "Dictionary" (S. Harris 1991).

However humorous the drawing, this isn't how dictionaries got either their classical or modern start. Today's alphabetical listings of pronunciations, etymologies, and, most importantly, meanings, are, instead, fairly recent additions to the written record, having arisen in response to the emergence of printing and nationalism in Renaissance Europe.

Writing shapes our understanding of our circumstances and the language we use to describe them. Dictionaries, as a written genre, play a special role here. In my remarks today, I will explore how the rise of dictionaries not only has provided source books on definitions, pronunciations, and the like, but has molded our very understanding of word meanings. Focusing on the evolution (and use) of dictionaries first in England and now in contemporary America, I will review in broad stroke the contributions of integrational linguistics (essentially in the work of Roy Harris) and then suggest my own analysis.

An essential tenet of integrational linguistics is that the meaning of a word is not defined *a priori*, but rather, following the Wittgenstinian model, is a product of its use. Integrationalists go on to extend the role of context to include not only immediate circumstances, but social, cultural, and historical forces as well. Assuming this contextual stance, we will consider a spectrum of factors in assessing the impact of dictionaries on our notions of word meaning:

HISTORICAL ISSUES: How did modern dictionaries evolve?

COGNITIVE ISSUES: How does cognitive development shape children's learning of meaning?

PEDAGOGICAL ISSUES: How do educational strategies and policies shape meaning acquisition?

ISSUES OF CULTURAL PRAXIS: How will parental presuppositions, along with developments in technology, influence the next generation's acquisition of meaning?

Our journey into meaning and dictionaries begins with a review of Harris' arguments about the effect of "monolingual word-books" on modern understandings of what words mean.

I. HARRIS ON DICTIONARIES

Harris views the emergence of dictionaries as having a profound impact on human history -- "no less significant than the wheel, the steam engine, or the computer" (1980:127). According to Harris (1990:48-49), the rise of the modern dictionary has institutionalized the "myth of meaning", i.e., the Saussurean model in which language is a fixed system of correspondences between forms and meanings.

How have dictionaries managed this feat? Through decontextualizing meaning, and through functioning as an arbiter of language:

"by the systematic use of words to define other words in the same language, in such a way that no words are eventually left undefined, the monolingual dictionary demonstrated that meaning could be regarded as inherent in the language. No appeal to what lies outside is needed" (Harris 1980:140)

and

"once printing had ensured its ubiquitous accessibility as a work of reference, the dictionary could not fail -- for reasons of practical convenience -- to become accepted as a final court of appeal to which any disputes about diversity of practice, or 'correctness', could be referred." (Harris 1980:132)

Thus, for Harris, an understanding of the rise of dictionaries is important for exposing the roots of normativeness and stasis in contemporary theories of meaning.

But what else can the history of lexicography -- in its sociohistorical context -- tell us about "the meaning of meaning" (Ogden and Richards 1923) in the minds of ordinary language users?

II. HISTORICAL ISSUES

In its 400 year history, the English dictionary has undergone extensive redefinition in both audience and scope. The first English lexicon, Cawdrey's *Table Alphabeticall* (1604), was a listing of about 3000 "hard usuall English wordes, borrowed from the Hebrew, Greeke, Latine, or French. &c." compiled for the benefit "of Ladies, Gentlewomen, or any other unskilfull persons", that is, for the new readership generated by the explosion of printed books. For nearly a hundred years, English dictionaries were exclusively lists of "hard words". Not until the appearance in 1702 of *A New English Dictionary* and then, in 1721, of Nathaniel Bailey's *An Universal Etymological English Dictionary*, did dictionary compilers aim at providing comprehensive accountings of the language (Bailey's dictionary was closer to 40,000 words). During this same century-long evolution, the definitions themselves were transformed from simple synonyms to entries more closely approximating the intensional definitions of contemporary word-books. And despite the increasing use of quotations to illustrate word meanings (a hallmark of dictionaries from the early 18th century up to the present), the definitions themselves were offered as acontextual, free-standing entities.

The role of the dictionary as language arbiter arose as a natural consequence of nationalist political movements in 17th and 18th century Europe. Much as France and Italy launched dictionary projects through their national academies, the English, suffering from a long-standing inferiority complex about their language (Jones 1953; Leonard 1962), coupled with a rising middle class seeking education, seized upon dictionaries as arbiters of correctness and evidence of linguistic legitimacy (compared with Latin and even French). Lexicographers themselves have generally not seen their role as normative -- even Samuel Johnson, who had initially planned his great

dictionary to "fix" the language once and for all eventually abandoned the goal as futile (see Wells 1973). Rather, it is dictionary *users* who have cast the authoritative mantel upon dictionaries -- so much so, that when Merriam-Webster issued its *Third New International Dictionary* in 1961, which avowed contemporary usage, not doctrines of correctness, to be its guiding principle, the public was outraged (Sledd and Ebbitt 1962).

III. COGNITIVE AND PEDAGOGICAL ISSUES

How do speakers themselves conceive of word meanings? The ability to articulate formal definitions is often associated with literacy or schooling (Baron 1981). Studies of how young children acquire word meanings suggest a natural progression from functional meanings ("A chair is to sit on"); through descriptive ("An apple is round and juicy"), temporal-spatial ("A bed is used at naptime"), origin ("Food comes from animals"), or extensive responses ("Woofy is a dog"); to indefinite place holders ("A chair is something to sit on"); and eventually to definitions in terms of subordinate and superordinate classes ("An apple is a kind of fruit") (McGhee-Bidlack 1991).

Yet such progressions -- especially to the use of superordinate classes -- are shaped strongly shaped by children's practice (Snow 1990) and by adults' pedagogical assumptions. In the United States, the rampant "better baby movement" has resulted in an explosion of children's books, dispensed from a plethora of children's bookstores. Between "Sesame Street" and nursery school curricula, preschoolers are coached in the meanings of an astounding number of words. Once formal schooling begins, dictionary definitions are taught and practiced, with the predictable result that children come to believe, like good Saussureans, that words have static, acontextual meanings. And like good prescriptivists, they assume the dictionary is always right.

IV. ISSUES OF CULTURAL PRAXIS

Among the other factors influencing children's emerging notions of meanings are family and technology. American parents reflect their own dictionary-bound education by providing analytical rather than functional definitions to their offspring who ask, "What does such-and-such mean?" Yet at the same time, the proliferation of word processing programs and spellcheckers threatens to render the use -- even the ownership -- of dictionaries obsolete.

V. CONCLUSIONS

What is the future meaning of meaning? Pedagogical forces that nurture dictionary notions of meaning in young children are increasingly challenged by everyday language practices of adults. Just as many adults read to their children -- but don't read on their own, soon leading equity-minded children to eschew reading, adults' growing abandonment of dictionaries will likely be reflected in their progeny as they come of age.

Harris' own interest in the dictionary as a source of 20th century linguistic assumptions provokes broader inquiry into how dictionaries have, do, and might affect ordinary language users' understandings of words. Following Harris' integrational approach to linguistics as "a mode of inquiry ... into the everyday ... mechanisms by means of which the reality of the linguistic sign as a fact of life is accomplished" (1990:50), this paper has suggested the parameters for a sociohistorical understanding of how speakers and writers learn and use word meanings.

INTEGRATIONAL LINGUISTICS AND THE LAW

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Harris (1990: 51-2) writes that "The first step in the demythologizing process is simply to convince linguists that no disastrous consequences ensue from abandoning the hallowed assumptions of orthodox linguistic theory... Nor need anyone fear that a linguistics which abandons the writing of grammars and dictionaries has abandoned linguistic inquiry altogether. On the contrary, it is only when linguistics has advanced beyond the grammar and the dictionary that the serious business of linguistic inquiry will have begun." In spite of these soothing words, abandoning the assumptions of orthodox linguistic theory is itself the ultimate disaster that can befall the world of an orthodox linguist; it is, in effect, the end of that world. Grammars and dictionaries are what first nurtured the desire in us to continue as adults our childhood project of discovering and imposing order on human noise. I agree fully that linguistics must advance beyond the grammar and dictionary before the serious business of linguistic inquiry will begin; I only question whether this entails that we abandon writing grammars and dictionaries —— or rather *take up* their writing in order to subvert them. Because we won't make grammars and dictionaries go away in any other manner. Long after we're dead that vast majority of people will still be turning to grammars and dictionaries, or to things with other names that they expect will perform the same function; and if we abandon their writing, we abandon them to those whose views on language and communication appear to us so hopelessly naive and narrow.

We would be the naive ones, however, to doubt that as soon as integrationalism becomes widely enough known to be perceived as a genuine threat, the orthodox linguistics community will take steps to crush this heresy and excommunicate anyone associated with it. We should prepare for the siege as any good military strategist would: by taking the high ground. By this I mean following through on the integrationalist program's commitment to "dimensions of communicational relevance which apply to all forms of sign behaviour in human communities" (Harris 1990:

50), and to "the lay metalinguistic distinctions...in terms of which lay members of a linguistic community construe their own linguistic experience" (Harris 1990: 49; see also Taylor 1990). Among the very most relevant of these are a vast set of *moral* values placed on language and communication (among which the values of orthodox linguists might very well be ranged); a *legal* system based fundamentally on the twin conceptions of determinate meaning and indeterminate interpretation; and a tradition of *therapeutic* discourse that includes psychoanalysis and its offshoots, but also much of what transpires under the name of medicine.

What integrationalism would contribute is an analysis of how the construction of discourse is integrated with such basic moral and legal assumptions about language as "words have meaning". Integrationalism, which differs from orthodox linguistics in its commitment to problematizing such assumptions, has the potential for intervening in just those areas of linguistic experience which society at large deems most relevant —— law, medicine, religion, politics, aesthetics —— to all of which orthodox linguistics has little to contribute (apart from the one branch, discourse analysis, that shares the largest number of common purposes with integrationalism). However, the kind of intervention I am proposing does not rest simply on analysis of the discourse that takes place within each of these spheres, but rather on the *theories of language* underlying them.

The Anglo-American common law tradition, like most other modern legal systems, is based on the twin conceptions of *determinate meaning* and *indeterminate interpretation*. Determinate meaning in contract law means that if you and I draft a binding agreement, then have a dispute about the meaning of that agreement, one of us will ask a court to determine what the real meaning is. Not only is it assumed that a real, definite meaning exists —— but law enforcement agencies exist with the power to deprive you of many of your rights if your interpretation is not the correct one (all the more so in the case of criminal law). Indeterminate interpretation is equally presumed to be a founding principle of law —— were it not, the entire juridical system would not need to exist. But the fact is that trial by judge and/or jury is itself the very cornerstone of the Western secular legal tradition, and of most non-Western traditions as well.

These principles constitute a theory of language, one which holds that words and speech acts have a definite meaning, and that dispute about meaning is an inherent part of language, but also a breakdown of meaning that can be repaired. This theory has been institutionalized as the basis for our extremely complex system responsible for protecting and limiting rights. My ownership of a particular apartment in Washington, D.C. exists in the form of a written text. The basic determinateness of this text's meaning is the only thing which prevents the homeless people who live in the park across the street from coming in and taking occupancy. If one of them were to attempt this, I would summon a police officer, whose salary is paid with my taxes, to come and protect my rights —— that is, to enforce the socially

sanctioned interpretation of the meaning of my deed —— if necessary by killing the individual involved. That my right to enforce the meaning of that text outweighs his or her life is also guaranteed by other texts within this same system of texts and this same theory of meaning and language.

Imagine now the day when the Roy Harris School of Integrational Jurisprudence open its doors. When enlightened lawyers can stand up to orthodox judges and question the whole assumption of determinate meanings in contracts, not just whether a particular sentence in a given contract is ambiguous. When they can deconstruct the notion of confronting twelve naive people with two varying sets of well-cooked facts about a particular incident, plus a set of apparently determinate categories (murder one, manslaughter, etc.) —— determined by the logically empty principle of *stare decisis* —— and telling them that by their picking out the "true" facts and fitting them into the "right" category, justice will be done.

The faint-hearted among you are thinking: Anarchy! The end of social order, of the possibility of living! And that brings us back round to the reaction of the linguist when the hallowed assumptions of linguistic theory are questioned. Those assumptions are in their own way the deeds to our houses, our meal tickets. But what does that make us if we cling to them unquestioningly on that account? Not scientists, I think, but members of a much older profession. I myself am no anarchist, but a political moderate, yet it bothers me that even when doing "orthodox" linguistics I am professing a theory of language very much at odds with the one I pay one-third of my salary in taxes to enforce. And I don't believe society would collapse if integrationalism succeeded in integrating the law into its thrall. Society would be shaken up, though, and good things would fall out. Indeed, we might even end up with a concept of justice appropriate to modern, post-tribal societies. Furthermore, as Taylor (1992) points out, the specter of anarchy has been raised as a defense against scepticism since the beginning of human history. Let's not forget that linguistics itself counts among its founding documents the great sceptical dialogue *Cratylus* of Plato, and that sceptical voices have been heard, despite periodic suppression, throughout the entire history of our discipline. In this sense, Roy Harris and integrational linguistics represent the modern continuation of one of the oldest and noblest traditions in the history of linguistic thought.

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INTEGRATIONALISM AND LINGUISTIC THEORY

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The language myth postulates fixed systems of signs that enable their users to communicate by a process of encoding and decoding meanings. Such systems are in principle amenable to descriptive analysis; and providing linguistics with objects to analyse is the chief academic function of the myth. But suppose one demythologised linguistics, by abandoning the postulate of fixed sign systems? What, in that case, do linguists do? Reactions to Harris's answer, first proposed eleven years ago (Harris 1981), have ranged between indifference and inarticulate hostility. Far from having been eagerly adopted as the basis for a purified, myth-free linguistics, integrationalism is still today little more than a gleam in its author's eye.

Why should that be? It is unlikely to be because the principles and axioms of integrationalism, in themselves, are held to be incorrect or erroneous. Harris has presented a view of what it is for human beings to attach meaning to phenomena, and to create meaningful phenomena, derived from experience of, and reflection on, certain fundamental features of the human condition. Like many another important advance in thinking, those principles and axioms seem retrospectively like a statement of the obvious.

A more likely reason is that, on one ground or another, integrationalism is thought not to amount to anything recognisable as a linguistic theory.

In the natural sciences, according to one well-known formulation, a theory is a proposition or connected body of propositions about the world, in principle falsifiable in that it admits the logical possibility of states of affairs incompatible with its being true. Harris's proposal does not constitute or contain a theory in this sense. For instance, although the assertion that linguistic signs are not autonomous objects of any kind is incompatible with the assertion that linguistic signs *are* autonomous objects of some kind, we are not dealing with a conflict between two statements about the nature of certain antecedently identified portions of the world's furniture called 'linguistic signs' that might be resolved by careful inspection of the objects in question. On the contrary, whether or not one takes linguistic signs to be autonomous is one factor involved in deciding what counts as a linguistic sign in the first place.

However, to find integrationalism wanting on this score is hardly detrimental to its value. Despite the efforts of those who claim that linguistics might or should be counted among the sciences, the natural scientist's sense of 'theory' is relevant only to those aspects of linguistic phenomena (for instance, the physics or neurophysiology of speech production) that by any reckoning fall within the scope

of the natural sciences anyway. What concerns us here is the meaning and role of the term 'theory' in relation to what is left of the subject matter of linguistics once the areas uncontroversially amenable to natural-scientific treatment have been hived off.

The term 'theory' is heard constantly in the discourse of linguistics. But such clear and consistent meaning as it has in that context seems to be largely a matter of the implied contrast with 'practice'. A theorist in linguistics is typically someone preoccupied by philosophical or methodological issues whose successful resolution is seen as a necessary backdrop to the actual practice of whatever form of inquiry the theory in question is held to validate. The value of a linguistic theory depends not on how it fares when judged by external criteria (such as, for instance, whether it withstands tests of whatever claims it might be held to make about states of affairs in the world), but on how successfully it points the way to an academic practice that a sufficient number of linguists can agree to be worthwhile. The theorist's main intradisciplinary obligation is to provide a Kuhnian 'normal science' for the average practitioner to engage in. An acceptable theory underwrites and promotes a certain kind of activity on the part of the linguist, and an important part of its function is that it allows him to engage in that activity without necessarily taking personal responsibility for its general intellectual justification. That is left for the theorist to worry about. (This is not to suggest, of course, that the theorist and the practitioner are always different persons.)

It is far from clear that integrationalism constitutes a theory in this pragmatic, discipline-internal sense either. Every episode of language use is to be treated as a unique event, analysable in terms of the biomechanical, macrosocial and integrational abilities brought to that event by the participants. In any particular case one may expect some of these abilities to be either idiosyncratic in themselves, or deployed in an idiosyncratic way not explicable without reference to the personal life-history of the individual concerned, and perhaps not even then. Contemplation of such points lends an ironic air to the complaint Harris once voiced (1980: 162) about the 'dramatic expansion of the boundaries of linguistics' required by Bloomfield's conception of semantics. Moreover, some may think that, even if it were feasible, expanding the boundaries in this way threatens to reduce linguistics to the collecting of indefinitely many anecdotes.

The main problem is that integrationalism seems not to offer any fixed object of study. In general, doing that in linguistics boils down to justifying the appropriateness of abstracting from the incessant flux of particularities that constitute the first-order phenomenon some dimension (or, preferably, a number of dimensions) of linguistic 'sameness'. But integrationalism insists on the contextual uniqueness of every linguistic event, and thereby refuses to recognise any kind of invariance on which one might base a generalising discourse about language. In sum, because it offers neither an object to investigate nor a method of investigating it, Harrisian integrationalism conspicuously fails to discharge some of the most important intradisciplinary functions of a linguistic theory.

In fact, as presented in Harris's paper, integrationalism is not only not a linguistic *theory*, it is not a *linguistic* theory either. It is not a *linguistic* theory, in that the semiological axioms on which it is based apply, as Harris as observed, 'to all signs in interpersonal communication, and more generally in the human environment; for they also apply to natural phenomena to which human beings assign a semiological value (as, for example, in medicine and meteorology)'.

Now it does not matter if integrationalism is not a theory in the natural scientist's sense. That will bother only those who, as Harris says, are more

concerned to qualify as scientists than to investigate language. Nor does it matter if it fails to fulfil the intradisciplinary requirements of a theory. That will bother only those who are more concerned with the well-being of a particular academic community than with investigating language. But it does matter if integrationalism entails that we lose sight of what for a long time has been the object of study in linguistics: namely, languages. For the idea of a language is in itself the most important linguistic theory of all.

Integrationalism does not ignore languages. It relocates them. For the integrationalist a language is a 'second-order social construct of an intrinsically open-ended, incomplete and variable nature'. It arises, presumably, as a product of 'the first-order linguistic process', which is 'the continuous creation of linguistic signs'.

But how? What must it be for the participants in a linguistic event, in the process of creating a linguistic sign (let us say a vocal linguistic sign, in a pre- or non-literate community), to be engaged at the same time in the process of creating a language? Since a language is a system of abstractions, it must involve abstracting something from the first-order event. A memory of the vocal noise uttered is carried away from the context in which it was uttered and treated as a type of which the noise itself is seen as a token.

Now since, according to the integrationalist, languages are a second-order product of communication, they are presumably not necessary for communication. So an interesting question is why they should come about at all. The general answer must be that the creation of a language, in this sense, is the outcome of an effort to understand the communicational process itself. That is, the idea of a language is a linguistic theory. The theory in question is that linguistic communication is, among other things, a matter of recurrently deploying, in a succession of unique instances, a system (open-ended, incomplete and variable) of abstractions.

There is no doubt that this *is* a theory implicated both in the process of linguistic communication itself and in our efforts to understand that process. In speaking (or hearing, or reading, or writing) one thinks one is speaking (or hearing, etc.) a language; and this general idea is surely one of the more important factors in any linguistic event. But it seems to have no place within the integrationalist framework. The individual's awareness of *his own particular language* is accommodated, for that is presumably one of the macrosocial elements in his overall communicational proficiency: it is one of the 'culture-specific patterns of organisation' within which he conducts his communicational activities. But the theory in question here is a culture-neutral theory, grounded ultimately in the universal propensity to make sense of experience by generalising about it. Languages themselves, as products, are second-order constructs, but the idea that gives rise to those products is an inevitable concomitant of the first-order process itself, and should be given due recognition in any account of that process.

Doing away with the language myth need not imply doing away with languages as objects of study. On the contrary, it is only if we continue to focus on languages, and on the idea that gives rise to languages, that there is any hope of explaining how and why the language myth should ever have come about.

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INTEGRATIONAL LINGUISTICS

Discussion[1]

Hans-Heinrich Lieb (Freie Universität Berlin): I have two questions, one for Professor Baron. I think it is true that this preoccupation with dictionaries by the general public, or so-called educated public, is a typically Anglo-Saxon phenomenon. It simply doesn't exist in Germany; it never has. When I first started reading *Reader's Digest* translated into German they translated all these things-- "Improve Your Vocabulary"--I thought, God almighty, what for? It was an absolutely strange idea. And there are reasons for this in the character of the English language, and all sorts of things. Now if this is correct, how much can one really deduce from the role of dictionaries in the Anglo-Saxon world as to the conception of meanings by the lay public in general?

Naomi Baron (American University): It's a very good question. Let me set this in context a little bit. The reason that--if by the Anglo-Saxon world we mean primarily Britain--and I'll exclude some places just for the sake of discussion--and the United States--what you have in common there is long periods of social climbing where it became exceedingly useful to know something more of the language that you did not grow up with in order to change your social status. We know historically that in France and Italy you had dictionary projects that had a very different purpose, namely, to establish a national presence for the language. In societies where the dictionary has not played that role, either the role of nationalism or the role of improving your social standing, where does meaning come from? Basically, from childhood--which is in essence what I have argued as well: from whatever kind of context is used in the social surroundings that you grew up with. So, for example, it has long been said that people from literate cultures have different notions of meaning than people from non-literate cultures. Typically the variable is not literacy, it is schooling, as people like Scribner and Cole have shown with some of their work in Liberia. If one grows up in a circumstance--and I suspect from your discussion you may have and so may have many other people--when one learns notions of meanings, one comes to appreciate a definitional sense, an intentional sense, if you will, because that's the kind of thing one talks about at home, not because one goes to a dictionary. Then one

grows up with meanings because it's conversation, or later schooling, that sets the parameters; and in some cases those parameters are specifically set by this set of books for the reasons that, either you have insecure parents, as is true in the United States today, or you have people wanting to change social classes. But again, it's the context in which you grow, where dictionaries may be part of that context or they may not.

H-H L: OK, my second question is to Professor Harris. Does Professor Harris agree with Professor Love's reply? Because I do, concerning the role of languages as systems of abstractions, second-order products of communication. But my suspicion is, if Harris agrees with Love, then he has to give up some of what he said before. So do you or don't you?

Roy Harris (Ecole pratique des hautes études): Well, no, actually, I don't, because what I think is being done, as Nigel Love said, is a very important relocation of the place, the role, the function of the concept of a language, and what that entails in particular contexts; and it varies very considerably from one part of the world to another. It involves looking at the ways in which this concept is constructed, and the ways in which it's utilized by various social agencies in accomplishing particular tasks. You see, I think it's extremely uncontroversial for Professor Joseph to say, as he said, that the way our law operates is tantamount to the implementation of a theory of language. That seems to me absolutely correct. In fact, I don't see how the law could operate otherwise, given the kind of law that we have. But that's not seen as the way it is by, well--I'll say it, taking a big risk--the great majority of people who get involved in legal processes one way or another. So that, by this relocation--I simply take that as one example--by this re-understanding of how the concept of a language is created, what role it in fact plays in various social processes, you would lead, I think, to an important and gradual kind of social change, of changing of social perspectives. Now, as far as I can see, if I go along with it that far, there's nothing I've given up at all. Indeed, what I have done is spelt out some of the practical implications of an integrational approach to language.

H-H L: May I follow this up with one remark? I think that you didn't get part of what Professor Love was saying. He was not talking about conceptions of language, but about languages as having some kind of real existence as abstract entities, independently of what anybody thinks of what a language is.

RH: Let me rephrase what I take to be an integrational approach to the investigation of the phenomenon of languages to be. It would consist in examining the means by which--and I think the means are in large part terminological--the means by which people come to have a usage for labels like English, French, German, and so on, how they come to have a usage for things like, "That isn't good French," or "It's bad French," "You can say this in German" or "You can't say this in German," the way in which they come to have arguments about whether something is English, is French, or is German, the way in which these

issues can spark off social and political disputes. Now, that's what I mean when I talk about the concept of a language, that is to say, the way in which, integrationally, this concept and its associated terminology, which is very complicated, gets put to use in human affairs in trying to make sense of certain uniformities and certain conflicts.

Talbot Taylor (College of William & Mary): What does Professor Love think of that remark and of the reply?

Nigel Love (University of Cape Town): Professor Love doesn't disagree with any of the reply. All Professor Love was pointing out in his paper was that he thinks that among the principles and axioms of integrational linguistics there should be included some recognition that the first-order process of communicating includes from the outset the process of inventing languages. That is, Professor Harris didn't in his paper--if you think of the principles and axioms as they were set out there-- suggest anything about that topic.

RH: That's right, because the two axioms I quoted were general semiological axioms, and there wouldn't be a place within a general semiology for a special axiom of that kind. That would have to come within the set of axioms that you did integrational *linguistics* by.

NL: So does Professor Harris agree, then, that integrational linguistics would include such an axiom?

RH: Well, the problem I see is in actually formulating that axiom, because the problem is this: suppose you found out empirically that all communities use things that you're willing to call language names like English, French, German and so on. Now, in fact there might be some communities who don't have any, because they're so isolated they're not conscious that the way they speak isn't just a natural process, because they've never had to compare the way they speak with the way any other community speaks. So the problem as I see it is that it seems to me inadmissible to incorporate such terms as *language(s)* into any axiom. The effect of this would be either to presuppose that all communities somehow arrive at the same concept of what a language is, or else to exclude from integrational linguistics the study of any community which turned out to engage in verbal communication but without thinking of themselves as having a "language" in our sense.

NL: And what I was saying was that it must be a universal that we have the concept of a language, given what I mean by the concept of a language, which is essentially the notion that behind the individual speech event there is some invariant or some abstraction which is being reproduced on a particular occasion. I.e., linguistic communication couldn't exist without the notion that when you say something, there is something that underlies what you say such that it can be said again; that is, without the notion of recognizing the instance as an instance of

something, of something more abstract. I'm saying that that notion of what's going on, I'm suggesting that that notion as a universal, accompanies speech events from the outset.

RH: But my view would be that that notion, which you're obviously aware of and can articulate very clearly, is a product of certain cultural circumstances, and it's not at all clear to me that there have to be communities that have the notion of the exact repetition of what you call a word; because they may not have the notion of a word to apply the concept of repetition to.

Marshall Morris (University of Puerto Rico): I've got a pedagogical question. I teach translation, and I have a lot of difficulty persuading students of the integrational perspective, when they start from the position that words that they use everyday don't exist because they're not in the Royal Academy dictionary. What do I do, Professor Harris, to shape these minds, and make them integrationalist translators? How can I do that?

RH: Presumably, you want to disabuse them, in the first instance, of certain notions that they may have about translation; and the notions that they would have about translation, if they conceived of languages as fixed codes of some kind, would be that what's involved in the process of translation is a searching for semantic constants that correspond to the formal constants in another language. Now, I think it might be useful for your students to have it pointed out to them, or indeed get them to see themselves, to learn themselves, that if *that's* how your going conceive, if *that's* the linguistic theory that you're going to have underlying translation, that they're in queer street: they're just not going to be able to be translators if that's their linguistic theory. And this might disabuse them of the notion of thinking of translation in terms of equivalencies of a lexical or grammatical sort at all. If they then come back to you, having, I think, ideally proved to themselves that you can't do this--unless you happen to have languages that are pretty closely related and that are formally set up in phylogenetically connected ways, where it seems, if you make the example simple enough, that some such account of what's going on is feasable. Then you do have to teach them to see their job as a way of making sense in another language of messages that were delivered in a different one. Now, how you make sense of that, it seems to me, depends on the context in which the translation is supposed to function. And there may be very many different ways of suggesting, ways in which you could substitute a message in another language. Now, that might not end up being what a lot of people would want to call translation. You might find the criticism: Well, what you are doing actually is paraphrasing, or explaining in another language. Now, if those are intended as criticisms, it seems to me that they are quintessentially segregational criticisms, and your move then as teacher would be to say: Well, why don't you accept that? What do you think you *are* doing? And thus you're helping somebody to make sense in one language of a message which is formulated in a different one.

[1]The transcript of the discussion, which lasted about an hour, has had to be edited for reasons of space. (G.W.)

TABLES RONDES / PANEL DISCUSSIONS

TITRE : LA SÉMANTIQUE GRAMMATICALE
TITLE : GRAMMATICAL SEMANTICS

ORGANISATEUR(S) / ORGANIZER(S) :
Patrick J. DUFFLEY
(Université Laval - Canada)

ON THE SEMANTIC UNITY OF THE WORD *TO* IN ENGLISH

C. Guimier

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Grammatical semantics studies that part of meaning which is conveyed through grammatical means. A great deal of the overall meaning of a sentence comes from the morphological tools the speaker resorts to. The example chosen is the word **TO** in English.

TO is analysed as a preposition when it precedes a noun phrase (*to Paris*) or a gerund (*to take to doing something*); it is analysed as the infinitive marker when it precedes the base form of a verb (*to go; to think*). The grammatical nature of the word need not concern us here; its meaning, if any, being our sole preoccupation.

Moreover, it is commonly admitted that **TO** in some instances is a local preposition (*to go to Paris*), whereas it is a temporal one in other cases (*from morning to evening*). Many linguists consider that the temporal meaning of *TO* is derived, by means of metaphor, from its local meaning. However **TO** is able to express not only notions such as space or time, but also, to quote but a few, cause, purpose, comparison, recipiency, etc. My contention : in present–day English, **TO** in itself does not include any semantic feature relative to any one of these domains. Whatever its use, its meaning never varies. **TO** is a linguistic tool and as such it is a non–predicative word. Its fundamental meaning – what in psychomechanical terms may be called its *potential significate* – will be described as a mental impulse, or a movement of thought, from a *terminus a quo* to a *terminus ad quem*. **TO** is the sign of a *goal–oriented movement* by means of which an object1 is directed and carried over towards an object2, whatever the nature of these objects, spatial or temporal, concrete or abstract. Figuratively :

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                  ————————————————————————————————————>
terminus a quo                        terminus ad quem
      object1                               object2
     B(eginning)                            E(nd)
```
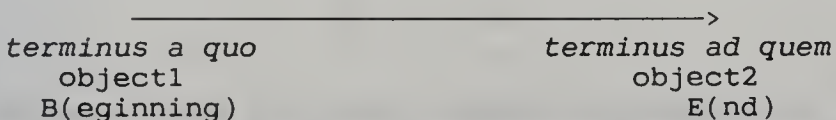
The only variation permitted to **TO** comes from the way the movement it signifies can be envisaged : at its beginning (B), in which case no real movement is triggered off, the goal being left totally in prospect; in its course (somewhere between B and E), after partial completion : the movement is then seen as partly actual and partly virtual and the goal is left in the offing; at its end (E), after completion : an actual movement, enrolling from B to E is then envisaged. The three possible interceptions of the movement signified by **TO** which have just been described (it is to be noted that there cannot be more) give rise, in discourse,

to the three *actual significates* of the word **TO**. The interception is chosen by the speaker in accordance with his "visée de discours" (what he intends to communicate). The insertion in a particular context of the sign and of the actual significate retained provides the whole expression with a definite *sense-effect*. In particular, it provides the cognitive domain in which the movement signified by **TO** is to be interpreted : space, time or a more abstract notion such as consequence, destination, etc. Figuratively :

Tongue	Discourse	
	intended message	contextualization
one potential significate	three actual significates	countless sense-effects
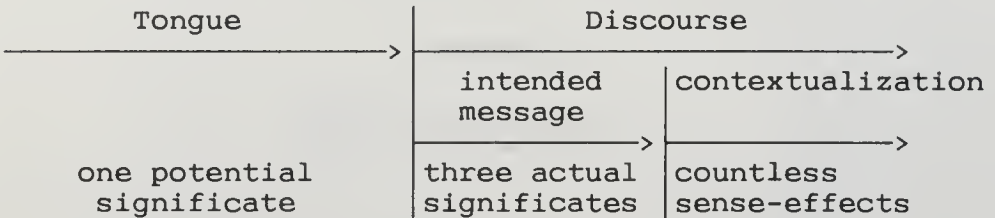
Much further research would be required to verify the hypotheses put forward. Whenever the word **TO** is used, the linguist must account for the idea of movement, the nature of the interception of that movement (initial, intermediary, final), the role of the contextual elements. In the examples given below, three types of context are considered : **TO** + spatial NP; **TO** + temporal NP; **TO** + V (base form of the verb).

   – initial interception :

```
        ↓
        - - - - - - - - ->
        B               E
```

space : *He turned to the window* / *He pointed to the door* (no actual movement)
time : *We've put the party off to Tuesday* / *Parliament was prorogued to the 10th of February* (prospective point in time)
infinitive : *I hope (want; desire) to do it* / *He is liable (fit; ready) to do it* (all conditions for the actualization of the event are fulfilled but the event may never be initiated)

   – intermediate interception :

```
                    ↓
        ------------- - - - >
        B               E
```
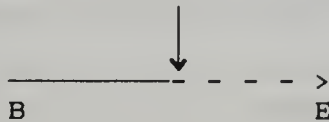
space : *He stretched out his hand to my purse* / *The aircraft, bound from Sao Paulo to Jacarezinho, disappeared after being sighted by watchers on the airfield* (motion towards a goal without implication of actual reaching)
time : *I have only a few years to retirement* / *How long is it to dinner?* (a transition in time which is merely engaged but not completed)
infinitive : *He tried (struggled; failed) to do it* (process engaged but not carried to its end)

– final interception :

space : *He went to Paris / He crept to the door* (actual reaching of the goal)
time : *He worked from morning to evening / To this day, I have not discovered what he meant by that remark* (actual transition between two points in time)
infinitive : *He managed to do it / I forced (persuaded) him to do it* (achievement of the intended process)

Further investigation should account for all the constructions in which **TO** is used.

Note : Numerous studies have already been devoted to **TO**. Needless to say I am greatly indebted to them. To quote but a few : BAILEY, D., 1992, "The Problem of the Alternation of *TO V / V ing* after 'aspectual' verbs", *Travaux du Cerlico* (Rennes 2), 5, 185-197; CHUQUET, J., 1986, *TO et l'infinitif anglais*, Gap, Ophrys; COTTE, P., 1982, "Autour de TO", *Travaux du CIEREC* (St-Etienne), XXXV, 57-80; DUFFLEY, P., 1985, *The Infinitive in Contemporary English; to or not to*; PhD. Diss., Univ. Laval, Québec and 1987, "The meaning of TO before the infinitive", *The 13th Lacus Forum*; LARREYA, P., 1987, "Peut-on porter un regard simple sur les formes impersonnelles du verbe anglais?", *Sigma*, 11, 7-30; LINDKVIST, K.-G., 1950, *Studies on the local sense of the prepositions IN, AT, ON and TO in Modern English*, Lund, Gleerup. I am also grateful to G. Garnier for reading a preliminary version of this paper.

TABLES RONDES / PANEL DISCUSSIONS

TITRE : PHRASÉOLOGIE ET IDIOMATICITÉ
TITLE : PHRASEOLOGY AND IDIOMATICITY

ORGANISATEUR(S) / ORGANIZER(S) :
Adam MAKKAI
(Hong Kong University - Hong Kong)

SUMMARY OF THE FIRST SYMPOSIUM ON IDIOMS

Adam Makkai

University of Illinois at Chicago
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The phenomenon of <u>idiomaticity</u> is ubiquitous in all natural languages and creates constant challanges and obsl-acles for the grammarian who wishes his material to run smoothly and if at all possible, without exceptions.

The nature of natural languages, however, is such that most human utterances make sense only in specific contexts. It is also becoming more and more apparent that a great many utterances of sentences lenght humans make are not newly re-assembled on each occasion, but are "on tap", as it were, and are learned and repeated as holons.

Sydney M. Lamb, of Rice University, argues in his paper that human memory is generally underestimated and our potential to make calculations is generally overestimated. He proposes that the term <u>LEXEME</u> be also used for multi-word utterances of an overlearned or routine nature that people utter under certain definable circumstances such as at a gathering of fellow professionals, etc.

Minoji Akimoto takes a developmental look at idiomatization and lists the major mechanisms known to general linguistics that bring about idioms. He thus discusses the evolution from the concrete to the abstract; reanalysis; incorporation; blends; productivity; metaphoricalization and ends up with a brief discussion of universals.

Senko K. Maynard examines Japanese discourse and finds that a great deal of knowledge about the speaker's and the addressee's status is necessary if one wishes to communicate correctly and effectively. Her conclusion is that such knowledge is not "grammatical" but heavily idiomatic.

Jean Casagrande and William J. Sullivan have examined "irreversible binomials" both in English and in French trying to find some common principles that render such binomials irreversible. Beside "male before female" (or occasionally the opposite) they find that the force of alphabetization exerts a fare greater influence on such forms in both languages than hitherto imagined.

In my own paper I argue that the essence of language is not syntax, but idiomaticity, a statement that I am making here for the first time, encouraged by S.M. Lamb. Beside lexical idioms we can also recignize <u>PHONEMIC</u>, <u>MORPHEMIC</u> and <u>GRAMMATICAL IDIOMS</u>. "Major idioms" are the "regular" (i.e. statistically prevalent) forms of a language, "minor idioms" are the residue, that is the "exceptions".

Professor Rosemarie Glaser of the University of Leipzig in Germany suggested in the discussion that followed that new terms should be kept to an absolutely necessary minimum as an unchecked proliferation of new terms would lead to confusion and misunderstanding on an international scale.

Professor Hartmann (UK) pointed out the necessary link between lexicography and idiomatology. Several listeners who unfortunately did not identify themselves asked questions concerning the teaching of idioms in ESL classes to which the panel responded jointly and severally suggesting the "scenario method" as worked out in the USA by the late Robert J. DiPietro first at Georgetown University and later at the University of Delaware.

In conclusion I would like to say thatthis first international symposium on idiomaticity and phraseology could not have been held at a timelier moment in the history of our discipline. The nearly universal availability of personal computers and advanced word processing has successfully reversed the relationship between <u>SYNTAX</u> and <u>STORAGE CAPACITY</u>. The essence of the matter is this: The larger one's data base, the less syntax one needs to access it. When Transformational-Generative Grammar was born in the mid-fifties, computers had small storage capacities and required complex syntax. This observation coincides with the point made by Lamb, that is his observation that human memory is generally underestimated while our computing activities are generally overestimated.

The time is near when we will be able to tell with considerable exactness just how much of a fluent speaker's competence to perform rests on memory and how much is due to syntactic sentenceforming activity.

IDIOMS, LEXEMES, AND SYNTAX

Sydney M Lamb

Rice University

This paper suggests that the role of lexicalization in language is generally underestimated while that of syntax is generally overestimated, and that the overestemaation of syntax is a direct consequence of the underestimation of lexicalization.

To begin, we must be clear about the distinction between lexemes and idioms. Although the term 'lexeme' is sometimes thought of as just an alternative to the term 'idiom', there is an important distinction which can be maintained by using these terms differently. In keeping with tradition, we may say that the idiom is characterized by its lack of semantic transparency. That is, its meaning is not just the combination of the meanings of its components. The lexeme, in contrast, is characterized by being present as a unit in the cognitive systems of its users; as a consequence, it does not have to be constructed anew in order to be used in speech, nor in order to be understood when received from another speaker. This definition is based on cognitive considerations, as we need to recognize that the only reality that can reasonably be ascribed to a human linguistic system is cognitive reality.

This definition of 'lexeme' is consistent with the notion that lexemes result from the process of lexicalization. This process is a gradual one: The first time a new combination is formed by a speaker, it must be constructed as a combination of units previously learned; in this case it is a 'nonce-formation'. But for subsequent uses it need not be so formed if it is remembered as a unit. We should also recognize that the choice between understanding a combination on the basis of its components and understanding a lexicalized formation as a unit is not an either-or choice at all, since these two processes may both operate, in parallel. It is very likely that such parallel operation is usual for combinations that are as yet only slightly lexicalized. Even after a lexeme has reached a state that we might call fully lexicalized and idiomatized, its components can still operate as such to provide connotations based on the meanings they have when occurring in isolation. Such paralled processing is easily accounted for if a relational

network model of the linguistic system is adopted.

It may further be observed that as the basis for defining 'lexeme' and 'idiom' is a cognitive one, the lexical structures and the idiomatic structures of each person may be expected to differ from those of all other people to some extent. Nonetheless, for groups of people who have shared large amounts of linguistic experience there ought to be similarity in those areas of lexicon which are connected to their shared experiences. For example, people in linguistics, are likely to share lexemes like 'morpheme', 'morphological', and 'pbonological' with one another but not with their friends who are not acquainted with linguistics.

From these definitions of 'idiom' and 'lexeme' it follows that any idiom is necessarily also a lexeme; but a lexeme need not be an idiom. On the other hand, a lexeme can begin to have a life of its own from a semantic point of view as soon as it is treated as a unit. There is no longer any necessity for its meaning to be transparent, since it is now present as a unit in the system and can have its own conceptual connections independently of those of its components. Thus, just as lexicalization is a gradual process, the idiomatization of lexemes is also a gradual one. For example, the term 'computer', when first used for an electronic data processing device, was fully transparent and of course not yet lexicalized. Its repeated use brought about its lexicalization and its repeated use in a specialized meaning (rather than for just anything or any person which/who computes) brought about its idiomatization; in this case, at the same time as its lexicalization rather than afterwards.

On the other hand there are probably a great many lexemes in any given cognitIve system which are only slightly idiomatized. These are combinations whose repeated occurrence has led to their being present in the cognitive system as units but which have remained semantically transparent simply because there has been no need for them to acquire meanings other than those provided by their components. Examples are:

I_would_be_glad_to
I would_like_to_say_that
Are_there_any further_questions?

Such non-idiomatic lexemes and their close kin, the slightly idiomatic lexemes, are easy to overlook simply because of their relative transparency. It is the contention of this paper that their presence in linguistic systems and their occurrence in texts is of far greater extent than is generally recognized. This observation is not made here for the first time, but it needs to be repeated as it is not yet appreciated and its implications for syntax have not yet been properly explored. The tendency of linguists to overlook the extent of lexicalization is part of a general tendency to underestimate the role of human memory in information processing. Along with others, linguists seem to have a tendency to underestimate the great capacity of the human mind to

remember things while overestimating the extent to which humans process information by calculation and other complex processes rather than by simply using prefabricated units from memory.

The data below are ordinary spontaneous statements made by linguists in their discussion of papers at a recent linguistics meeting, the annual meeting of the Linguistic Society of Canada and the United States, held in Montréal in early August, 1992. The various examples shown occurred in the discussion of various different papers. Each item is a complete sentence, produced by a different participant in the conference, with multi-word lexemes joined by underlines and with extra spaces between lexemes:

Well, that is_certainly_a_valid_question but
I'll_leave it_to the literary_scholars.

<div align="right">

(1)
(C.M.)

</div>

I_just wanted_to_say, I_very much loved the way _you
organized what_whose people_did.

<div align="right">

(2)
(R.B.)

</div>

I_really_liked_your_paper. I'd_like_to_say_that
I_think_that I_agree_with_you.

<div align="right">

(3)
(W.S.)

</div>

A_lot_of things here go_on_in_parallel.

<div align="right">

(4)
(I.F.)

</div>

The division into lexemes as shown is based on my judgment, as an acquaintance of the producers of these statements, that the units shown as lexemes are prefabricated units for these people. Having conversed with all of them at various times, and knowing their backgrounds in linguistics, I have estimated that the items shown as lexemes have been heard and used by them repeatedly, at least often enough for them to be present as prefabricated units in their respective]inguistic systems. The number of words and the number of lexemes for these samples, with punctuation not counted, are as follows:

Numbel of;	words	lexemes
(1)	15	5
(2)	17	4
(3)	17	4
(4)	9	3

This admittedly very preliminary look at sentences in English suggests that the quantity of lexemes in a typical linguistic system is far greater than the quantity of idioms. It also suggests that the need for syntactic operations in the production of sentences is not as great as is often supposed. But this is

just one of the reasons why the role of syntax is less than that usually ascribed. The other reason is at least as important: Even in the situations in which nonce formations must be constructed since prefabricated units are not available, it is likely that they are usually formed by analogy on the model of already existing lexemes, with substitution as needed, rather than by the use of syntactic constructions (see Lamb: 1992). Thus even in such cases the role of existing lexemes is very important while that of syntax as usually conceived is unnecessarg.

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IDIOMATIZATION

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1. GENERAL REMARKS

Idiom studies have been done extensively on the levels of syntax, semantics and to a far less extent on the levels of discourse and pragmatics. However, little research has been done into the process of idiom formation both synchronically and diachronically. The present paper attempts to clarify the various kinds of process and related issues under the cover term 'idiomatization'. In the discussion which follows, I shall consider some major causes for giving rise to idiomatization synchronically and diachronically; thereby capturing some generalisations of idiom formation.

2. WHAT IS IDIOMATIZATION?

The term 'idiomatization' appears sporadically in some literature (Leech (1983) and Traugott and Heine (1991)). As the term implies, it contains both synchronic and diachronic elements. On the synchronic side, Leech (ibid.) refers to the occurrence of hybrid sentences, such as Shut the window, can you? and Let's have a look at the head, may I? in the context of indirect illocution.

Traugott and Heine (ibid.) discuss idiomatization in relation to grammaticalization which is "the linguistic process, both through time and synchronically, of organization of categories and coding" (p. 1). As these statements imply, 'idiomatization' is more or less similar to such concepts as 'ossification' and 'conventionalization' as opposed to 'innovation'.

3. HOW DOES IDIOMATIZATION TAKE PLACE?

It should be borne in mind that the following factors by no means take any priority in the process of idiomatization. They are both causes and effects in the process.

3.1. From concreteness to abstractness

This phenomenon has been observed in many cases. The case in point is that of prepositions which, having expressed 'direction', 'place' and 'time' concretely, have come to be used as expressing grammatical/abstract concepts, such as in despair and in place of. Body part nouns such as 'foot' are often transformed from concrete to abstract meanings in idiomatic expressions as

in <u>drag one's feet</u> and <u>set foot on/in</u>.

This change has been seen in the history of language. According to Brinton (1988), verbal prefixes in Old English, such as 'be-', 'for-', 'of-', 'ofer', and 'up-' had a concrete sense of 'direction', but they came to have abstract/aspectual meanings in the course of time. As Ullmann (1963) notes, this tendency is very general and is too well-known to mention.

3.2. <u>Reanalysis</u>

'Reanalysis' has been quite extensively in the literature (Langacker (1977), and Lightfoot (1979)). Langacker defines 'reanalysis' as 'change in the structure of expression or class of expressions that does not involve any immediate or intrinsic modification of its surface manifestation '(p.58).

'Reanalysis' accompanies grammatical change, and according to Traugott and Heine (1991), there is a remarkable amount of iconicity between cognitive and linguistic patterning.

3.3. <u>Incorporation</u>

Mithun (1984) refers to 'incorporation' as a particular type of compounding in which a verb and a noun combine to form a new verb phrase. Whether the noun is incorporated into the part of the verb or not is clos~ connected with what Hopper and Thompson (1980) call 'transitivity' structure. In the similar vein, Hopper and Thompson (1985) discuss the low degree of categoriality of body part nouns when the possessor is strongly in evidence. Nouns with low categoriality, that is, non-referring nouns without determiners tend to be incorporated into the verb.

3.4. <u>Blend</u>

According to Crystal (1991), 'blend(ing)' is a process in which two elements which do not normally co-occur, according to the rules of the languages, come together within a single linguistic unit.' Bolinger (1975) gives the following blends of idiom: <u>take umbrage to</u> (take umbrage at + take exception to) and <u>keep track on</u> (keep tabs on + keep track of). In the phrase take heed of, 'to' was frequently substituted for 'of' particularly in Bunyan. This blend probably came from the meaning of 'heed' _ 'regard' and 'attention' on the model of which the idiom 'pay attention to' was created.

4. RELATED PROBLEMS

4.1. <u>Productivity</u>

Idioms are often said to be institutionalized or fossilized, and this characteristic seems to be contrary to the concept of ' productivity ' . Lyons (1977) mentions 'productivity' as a particularly important property of language. The question is how much productivity is rule-governed, and to what extent it is arbitrary.

Bolinger (ibid.) contrasts the idiom to be worth <u>while</u> with less idiomatic forms such as <u>to be worth the bother, to be worth the trouble</u> and <u>to be worth the effort</u>. That the substitution of nouns is probable indicates that the idiomatic form <u>to be worth while</u> is productive to a certain extent.

Fillmore et al . (1988) deal with formal idioms including <u>let alone</u> which they regard as productive on the levels of syntax, semantics and pragmatics. One property of the idiom <u>let alone</u> in relation to its productivity is that the idiom occurs with its several functions in various places in phrases and

sentences, giving rise to some implicatures from the context to reach the exact understanding of the idiom.

In connection with the productivity of idioms, there is another interesting area for idiomaticity where, by substituting one constituent for another (this is partly productive) and consequently by playing upon the literal and idiomatic meanings of idiom, the passage containing the idiom is made more interesting.

As Fillmore et al. discuss, the pragmatic functions of idioms should be taken into account. The interplay of maxims of quantity and relation in particular in terms of new/given information and relevance/appropriateness is worth considering for uses of idiomaticity.

4.2. Metaphoricalization

Much has been discussed on metaphors in the past, but still the distinction between metaphor and idiom does not seem clear-cut. Dictionaries differ in their treatment of such expressions as make a dent (in) and around the corner. However, one difference between metaphor and idiom is that the former has a more vivid image than the latter. As far as an expression maintains its vivid image (to be able to associate the expression with a concrete action/event), it is grasped as metaphor, but when the expression has lost its vividness together with syntactic tightening and semantic abstracting, it is going in the direction of idiom.

4.3. Universals

I should like to touch on some universal features relating idiomaticity. While the process of deciphering idioms seems universal, interpreting their meanings is culturespecific. For example, an English idiom pull a person's leg and the Japanese equivalent hito no ashi o hipparu indicate the same act of doing something bad to someone. But what they mean is rather different: the former means 'teasing', and the latter means 'standing in one's way'. On the other hand, as Lakoff suggests, there is a considerable amount of correspondence between cognitive associations.

5. CONCLUSION

I have discussed 'idiomatization' and its related problems in item-by-item ways, and have demonstrated the importance of the concept. Needless to say, there is more to be tackled than I have done in the present paper. However, I hope that the present argument will stimulate further investigation of the important area of language - idiomaticity.

INTERACTIONAL FUNCTIONS OF FORUMULAICITY:
A CASE OF UTTERANCE-FINAL FORMS IN JAPANESE

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As has been pointed out more than two decades ago by Chafe (1968) and Makkai (1972), the idiomatic nature of language has continued to haunt and defy the formal theories of language. Although the idiomaticity of language has often been marginalized in the field of linguistics, we are now in a position to appreciate that idiomaticity is a vastly more pervasive phenomenon in language and that this phenomenon--which has been identified in various terms in recent years, including "pre-patterning," "formulaic expressions," "conversational routine, linguistic routines" (Coulmas 1981), and so on--must be legitimatized within humanistic linguistics.

In this paper I expand the concept of idiomaticity into a broader context to refer to the routinized syntactic choice the speaker makes in communication; I call this "syntactic formulaicity." As a case of "syntactic formulaicity," I will focus on the utterance-final forms in Japanese, specifically the $n(o)$ (da) construction--what I call "commentary predicate."

Among the syntactic strategies a speaker can choose at the utterance-final position in Japanese are (1) "ordinary predicate," i.e., the expected use of verbals accompanied by a variety of modal features, and (2), "commentary predicate," i.e., the use of $n(o)$ $da/desu$ and no, sometimes accompanied by additional interpersonal particles. A cursory observation of the Japanese data reveals the ubiquity of $n(o)$ $da/desu$ and no--let me use for convenience $n(o)$ da to represent all the variants--expressions across various genres of modern Japanese. In fact it seems that Japanese speakers simply cannot end utterances with ordinary predicates alone without quickly feeling awkward, in which case the commentary predicate often takes its place. Thus, peculiar questions come to mind; why is there a need to use commentary predicate in the first place? And why is it used in such a routinized manner?

First, I characterize the $n(o)$ da expression itself and second, based on its frequencies, I establish the formulaic nature of this syntactic choice and third and most importantly, I ask the question of what interactional functions the syntactic formulaicity itself brings to the communication process.

Based on the examination of data consisting of dialogues taken from contemporary fiction, published face-to-face conversations, and transcribed

casual conversations as described in Maynard (1989), I characterize that the fundamental cognitive processes that are coded by the syntactic nature of *n(o) da* are two-fold; (1) objectification and stativization of the event/state described and (2) personalization of utterances through speaker-foregrounding. In terms of the cognitive activities speakers engage in, we can conclude that the messages *n(o) da* conveys are also twofold; (1) a marker of conscious judgment and (2) a marker of conscious mention, both of which serve as underlying sources for various meanings and functions as suggested by earlier studies.

The combinatory use of ordinary and commentary predicates produces an interesting mix of different types of communication. The tabulation of the frequency of commentary predicate occurring at the utterance-final position in 20 pairs of casual conversation and in 10 published conversations in Japanese *taidan* (face-to-face discussion) format results in the following. A point of caution here. I am concerned with the utterance-final position that is also sentence-final only in this study. Commentary predicates appearing within subordinate clauses are excluded from this study.

Table 1. *Frequency of Utterance-final Commentary Predicate Observed in 3-minute Segments of 20 Conversations*

Pairs	number of utterance-final commentary predicates	number of utterances	%
Female	137	546	25.09
Male	180	698	25.79
Total	317	1,244	25.48

Table 2. *Frequency of Utterance-final Commentary Predicate Observed in 10 Conversations Taken from Mukooda (1985)*

Speakers	number of utterance-final commentary predicates	number of utterances	%
Mukooda	234	854	27.40
Guests	286	1,160	24.66
Total	520	2,014	25.82

So far we have observed that the ordinary predicate and the commentary predicate are fundamentally different in its cognitive and stylistic

orientation. We have also found out that about one-fourth of utterance-final forms take the commentary predicate. Or, from the speaker's perspective, one simply cannot carry on conversation unless one routinely mixes two different types of utterance-final forms in the proportion of approximately 75% to 25%. Why is this the case? How is this routinized behavior functional in interaction?

The observed predictable choice of strategies, i.e., the syntactic formulaicity, functions on various levels of communication. First, on the cognitive level, the choice of commentary predicate conveys the speaker's conscious judgment and the resultant conscious mention. The fact that *n(o) da* expression occurs both in self- and other-repetition indicates that the identical cognitive processes have taken place frequently not only in the speaker himself/herself but also in the addressee's mind. This commonality of cognitive process expressed by the syntactic formulaicity encourages interactional involvement and rapport. The speaker and the addressee alike share a similar perspective or attitude toward what is expressed in communication. Thus syntactic formulaicity is functional on the interactional level by encouraging rapport and a sense of belongingness among participants.

Additionally, the sense of objectification and stativization on one hand and the sense of personalization and closeness on the other as reflected by the use of nominalization and the predicate *da* in commentary predicate operate on the emotional level. Commentary predicate can express complex feelings of distancing and closeness simultaneously in a routinized way across speakers. By using the same predicate type in similar proportions both the speaker and the addressee enjoy shared feelings of personal relationship.

I contend that syntactic formulaicity is functional and is particularly alive and well in terms of interactional rapport building and therefore should not be shunned aside to the intellectual backwaters of linguistic inquiries. Formulaicity is integral to language and is significantly "meaningful" in real life communication.

The syntactic formulaicity we observe in Japanese reveals that the language user does not create each utterance anew--does not, as it were, reinvent the wheel. Instead, the language user follows a routinized pre-fabricated predicate style to an extent we are now beginning to appreciate. This leads us to a view of language as a producing act of integrating memory in the form of formulaicity and creativity in the form of spontaneity.

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CAUSES OF IRREVERSIBILITY IN BINOMIAL IDIOMS:

A CASE STUDY IN ENGLISH AND FRENCH

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1. INTRODUCTION

Irreversible binomials are pairs of words (or phrases) conjoined by *or* or *and* that occur in only one order (e.g. *Abbott and Costello*, never *Costello and Abbott*). The logic of the conjunction is that both orders should occur, and there is no structural reason to exclude the latter sequence, but it does not occur. Panini noted that there seemed to be a reason in some cases (fewer syllables before more syllables), but this reason did not suffice everywhere, and no more general explanation offered itself. Malkiel 1957 and Cooper & Ross 1975 (hereafter CR) classified the relative order of large numbers of binomials according to semantic and phonetic reasons. Superficially appealing, their descriptions lack authority. The classification is often arbitrary (*Adam and Eve* is assigned to male-female and not to temporal sequence), and proof of causation is not given. Moreover, Malkiel especially does not distinguish irreversible pairs from nonce groupings, and CR give no indication of systematic effort toward this end. A non-arbitrary classification with proof of causation cannot result from these efforts, however well-intentioned.

Our research takes a different path. Makkai 1972 notes three types of binomials: truly irreversible pairs (*spick and span*), pairs that lose institutionality when reversed (*Adam and Eve*), and the rest. We seek proof of causation in Makkai's first two types, formulate hypotheses, and test them on his third type. The fixed binomials are classified according to all possible reasons. For every binomial we record whether each reason predicts the occurring order (+), the opposite order (-), or is irrelevant (0). Full statistical analysis of the findings will give the causal status of each reason in a given case.

2. THE PRESENT STUDY

Because of time and space limitations we did a pilot project using only four potentially causative factors: Panini's rule (short before long), temporal sequence (earlier before later), Malkiel/CR's male before female, and al-

phabetical order. No one has used this last factor, but it seems a reasonable possibility.

English binomials were classified in the above manner and the relative ranking of the four factors was determined from the results. French binomials were then classified in the same manner and the relative ranking of the four reasons was determined for the French data.

3. RESULTS FOR ENGLISH BINOMIALS

The results are summarized in table 1, where TM stands for temporal sequence, AO for alphabetical order, SL for short-long, and MF for male-female (*not* masculine-feminine, i.e. gender is disregarded in the French data). All figures are rounded to the nearest whole number.

Table 1 shows the distribution of potential causes over 214 English binomials. AO is universally applicable, but TM applies in only 52% of the examples, SL in 43%, and MF in 13%. As a result, only AO predicts the correct order over 60% of the time (cf line %N), and TM is the only other potential cause to top 50%. SL makes the correct prediction in 31% of cases and MF is correct 8% of the time. However, this is just one way of viewing the results. A somewhat different picture emerges if we factor out the cases where each potential cause is irrelevant. The figures do not change for AO, because of its universal applicability. But now TM has a correct prediction rate of 100%, SL improves to 72% and MF to 64%.

Table 1: Distribution of Potential Causes (N_E = 214)

	T M +	T M −	T M 0	A O +	A O −	A O 0	S L +	S L −	S L 0	M F +	M F −	M F 0
#Ap	112	0	104	132	82	0	66	26	122	18	10	186
%N	52	0	49	62	38	0	31	12	57	8	4	87
%Ap	100	0	−	62	38	0	72	28	−	64	36	−

With only four potential causes, analysis of covariance would be premature. However, we can gain an indication of what will happen. Since TM is a 100% predictor, it makes no difference what other factors predict the attested order (or its opposite): TM determines. Therefore we factored out all examples in which TM applies and determine the distribution for the rest. These results are summarized in table 2. The correct prediction rate of AO improves to 71% and of SL to 78%, but the rate for MF drops to 60%. Combining the three measures (%N, %Ap, %non-TM) ranks the four factors in order: TM > AO > SL > MF.

Table 2: Distribution of non-TM Causes (N_E = 102)

	A O +	A O −	A O 0	S L +	S L −	S L 0	M F +	M F −	M F 0
#	72	30	0	29	8	65	12	8	82
%N	71	29	−	28	8	64	12	8	80
%Ap	71	29	−	78	22	−	60	40	−

4. RESULTS FOR FRENCH BINOMIALS

We began with 100 French binomials, but we were unsure whether we had fully assigned potential causes in 37 cases. In the interest of accuracy, therefore, we disregarded those cases in the preliminary study. The results are summarized in table 3. Again TM and AO are the only two with overall prediction success over 50%, but here TM is the higher. SL and MF trail. Looking only at the %Ap line we again have a different picture, both from the %N line and from the English. Here MF is 100%, if with only four examples, TM is 94%, SL is 78%, higher than for English, and AO is only 52%. Two comments: all four MF examples are also positive for TM, and the 6% failure rate for TM results from our assumption that the top-down sequence is actually a realization of TM. Actual time sequences are always predicted correctly. We may need to reconsider some of the time assignments.

Table 3: Distribution of Potential Causes (N_F = 63)

	T M			A O			S L			M F		
	+	−	0	+	−	0	+	−	0	+	−	0
#Ap	43	3	17	33	30	0	14	4	45	4	0	59
%N	68	4	26	52	47	0	22	6	71	6	0	94
%Ap	94	6	−	52	47	0	78	22	−	100	0	−

If TM is a determinant predictor in French as in English, factoring out temporal expressions produces the results in table 4. Now SL reaches 100%, AO is 65%, and MF is irrelevant. Thus, by the same standards used in judging possible causes in English binomials, the relative rank of the four potential causes is TM > AO = SL > MF.

Table 4: Distribution of non-TM Causes (N_F = 17)

	A O			S L			M F		
	+	−	0	+	−	0	+	−	0
#Ap	11	6	0	3	0	14	0	0	17
%N	65	35	0	18	0	82	0	0	100
%Ap	65	35	−	100	0		0	0	

5. CONCLUSIONS

Because of the size of the sample, the indication of relative causation in French is not as striking as it is in English. Yet the parallels between the two languages suggest that our approach has the potential to provide a predictive description of the non-structural but no less fixed ordering found in irreversible binomial idioms.

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IDIOMATICITY AS THE ESSENCE OF LANGUAGE

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1. INTRODUCTION

For the past 35 years (1957-92) linguists working
under Chomsky's influence, believed syntax to be the
very essence of Language. I will argue here that the
essence of Language is idiomaticity. We were led astray
by syntacticism because, to quote Dr. George Egry of
Toronto, "linguistics got computerized before the
computer". Slow moving computers at MIT that moved
symbols from left to right suggested to Chonmsky in the
fifties that 'generative explicitness' resembles old-
fashioned computer output based on limited storage
capacity requiring a complex syntax. Modern computers,
by contrast, have large storage capacities and require
only a minimal syntax. In a natural language this
'storage space' is, of course the lexicon whose
properly modern treatment can describe the entire
language including idioms and set phrases.

2. THE MORPHOPHONEMIC AND GRAMMATICAL IDIOMS OF LANGUAGES

Human articulatory and auditive organs are
biological universals, yet English has no /ö/ and /ü/
like French, German and Hungarian; /r/ is an apical
trill in Spain and Eastern Europe, a uvular fricative
in French -- but in English it is a retroflex
approximative vowel (US variety). Phonemes, thus, can
be seen as idiomatic chunks of the universal phonetic
raw materials common to humankind.

Morphophonemes show greater arbitrariness than
phonemes and are, therefore, 'more idiomatic'. The /V-
F/ alternation of wife-wives fails to obtain in dwarf-
dwarfs and offers dialectal variation in roof-roofs-
rooves and hoof-hoofs-hooves. Rather than calling these
'exceptions', I call them morphophonemic idioms.

Idioms are not restricted to irregularities.
Consider the formula
Cv+,v-.....Cv+,v-; C(hom)+V(inserted)+Cv+

which explicitly accounts for (or 'generates') all
regular noun plurals and possessives; all regular verb
past tenses and past participles and pres. tns. 3rd p.
sing. forms as in /boy-boyZ/, /tent-tents/, /rentId/,
etc. This agreement rule is a major idiom. Minor idioms
are the residue, i.e., man-men, go-went-gone, sing-
sang-sung, etc.

With regular and irregular morphology having direct
ties with an accurate lexical statement of the language
considered, the lexicon is the natural place to handle
such phenomena.

Syntax itself is heavily idiomatic. S—→NP+VP is but
an Indo-European idiom with limited or zero validity in
Sino-Tibetan. Relativization, passivization, clefting,
etc. are all idiomatic schemata speakers fill with
appropriate lexis as situations warrant. Negation,
interrogation, imperatives, etc., are also schemata
statable in rule format. Their alleged universality is
a statistically validatable probability calculus
ranking them as major vs. minor idiom types.

Standard grammar leads directly to phraseology.
Expressions such as the fact that...,not to
mention,...last but not least,...just in case,...to
make a long story short,...the more the better,...why
dont you?,...to mention just the commonest ones, are
all lexicalizable multi-word expressions that speakers
learn in whole chunks. No sane human being generates
any of these from their elementary constituents. It so
happens that 75-80% of average English conversations
consist of such prefabricated units to quote Bolinger's
term (1976).

We used to be told by TGG grammarians that syntax is
the creative element of Language with semantics and
phonology being 'interpretive'. I see syntax as
restrictive and banal. The truly creative component of
any language is the lexicon, when it overrides standard
syntactic restrictions. This is why Dylan Thomas'
phrase a grief ago is so often quoted; here a non-
time word took the place of time words (minute, day,
year). What a grief ago violates, then, is not syntax
but the semantic category of a word in a certain
syntactic position.

True syntactic creativity only comes about through
historic change as for instance when the phenomenon of
do-insertion developes in English for interrogatives.
In Elzabethan English Lovest thou me no more? was
grammatical; today's English demands don't you love me
any more? TGG which placed do in the 'deep structure'
for just such phrases that have do in their 'surface
forms' ignored the obvious contrast between John speaks
French and John does speak French where the latter is
spoken with contrastive stress only and signals
reoteration or insistence. The use of modern do is,
therefore, an English grammatical idiom of high
frequency. I was born in X; that isn't done!; etc., are

primary passives without any 'underlying' active which must be learned as hole chunks. No sane speaker 'generates' any of these.

3. MORPHEMIC, LEXEMIC AND SEMEMIC IDIOMS

The notion of **morphemic idioms** allows us to take a more integrated and coherent look at the notion of 'accidental gaps' in lexis. The suffix -th of warmth and width won't stick on good and bad, but gives us a half-joke in the form *slowth. The prefix trans- introduces transfer, transpire, etc., but Art Buchwald had to create *transmote when describing what happened to MacNamara's job as Secretary of Defense under LBJ: he was made President of the World Bank, a lateral removal without 'loss of face'. The /i-a-u/ ablaut pattern is restricted to a handful of verbs, yet a playful child can say by analogy when the timer goes off in the kitchen that the dinger *dang. The morphemic idioms of English are those lexemes which the morphotactics arbitrarily allows as opposed to the ones it excludes. Creativity, once more, can only be seen as a historic process or as deliberate tampering by the literati.

When existing lexemes are redeployed in pairs or more to express new notions, **idiomatic lexemes** result: hot dog 'frankfurter in a bun'; white elephant 'unwanted/unmanageable property', red herring 'phoney issue', hammer and tongs 'violently', put up with 'tolerate', etc.

Chinese further complicates the situation as many of its written characters are **visual idioms** in addition to which Chinese abounds in both lexical and sememic idioms comparable to English.

A typical proverb-sized sememic idiom is the familiar Don't count your chickens before they're hatched going back to Aesop; French and Italian have ne vendez pas la peau de l'ours avant de l'avoir tué and no vendere la pelle d'oso prima di averlo preso. (Slavic and other East European versions abound). No sane person generates any of these just as no one generates How do you do? or May I ask who's calling? (Try to answer these logically for a simple test.)

4. CONCLUSIONS

The essence of language is not syntax, but idiomaticity, for syntax can be subsumed under idiomatic structures. This could not be achieved before the microchip computer, but the computerization of the OED in the early 80'ies can be seen as the dawn of of the age of idiomatic linguistics and the twilight of the syhntactic age. Ironically, it was done In Waterloo, Ont., Canada, with Chomsky the Napoléon of generative rules.

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TABLES RONDES / PANEL DISCUSSIONS

TITRE : TRENTE ANS DE GRAMMAIRE GÉNÉRATIVE : CIL 1962 - CIL 1992

TITLE : THIRTY YEARS OF GENERATIVE GRAMMAR : FROM ILC 1962 TO ILC 1992 THE LOGICAL BASIS OF LINGUISTIC THEORY

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CHOMSKY'S 1962 PROGRAM FOR LINGUISTICS:
A RETROSPECTIVE

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1. *THE LOGICAL BASIS OF LINGUISTIC THEORY*
1.1 The historical setting

Thirty years ago Noam Chomsky presented a paper at the IX International Congress of Linguists entitled 'The Logical Basis of Linguistic Theory' (henceforth *LBLT*). In this paper, he outlined his program for linguistic theory, an approach to language then known to all and still known to some as 'transformational generative grammar'. This paper was particularly memorable for a number of reasons. First, it marked the first international exposure for the theory and the first international recognition for the thirty-three year old Chomsky, whose fledgling theory had been encapsulated five years earlier in the monograph *Syntactic Structures* (Chomsky 1957). Chomsky was one of only five plenary speakers at the Congress, the others being the European luminaries Jerzy Kurylowicz, Emile Benveniste, André Martinet, and N. D. Andreyev. Second, *LBLT* introduced several important theoretical innovations that were to affect profoundly the shape of the theory and technical terms that were to become everyday generative parlance. And finally, the paper is famous -- 'notorious' is perhaps a better word -- for the internecine polemics that it engendered, though surely not over those aspects that Chomsky would have considered most central. It was primarily as a result of *LBLT* that generative grammarians acquired the reputation of relishing -- indeed, seeking -- intellectual combat to defend their views and challenge those of their opponents.

The goals of this paper are to present the *LBLT* theory and to discuss the extent to which its conceptions have been maintained in current generative work. It might be worth mentioning briefly the circumstances under which Chomsky came to give a plenary address. The Congress was held in Cambridge, Massachusetts, with the venue alternating between M.I.T. and Harvard. The organizers' original plan was to have Zellig Harris as a plenary speaker and therefore for him to represent, so to speak, American linguistics. But Harris wavered for weeks over whether or not to accept his invitation and by the time that he finally turned it down, the meeting was rapidly approaching. With time short, the three M.I.T. linguists on the local organizing committee, Morris Halle, Roman Jakobson, and William Locke, coaxed Chomsky into replacing Harris. Chomsky, never an avid conference goer, agreed, though his entire contact with the meeting was limited to the drive into Cambridge the morning of his presentation, staying for a late afternoon reception, and driving back that evening.

Thus, there was an element of serendipity in Chomsky's having the opportunity to come across as the de facto spokesperson for American linguistics, though the organizing committee had hardly chosen a relative unknown to replace

Harris. Not only had *Syntactic Structures* made a big splash, but Chomsky's review of Skinner's *Verbal Behavior* (Chomsky 1959) has extended his reputation far beyond the narrow circle of professional linguists. Likewise, his presentation and defense of transformational generative grammar at the Third Texas Conference on Problems of Linguistic Analysis in English in 1958 (see Chomsky 1962), a conference called 'an important historic event' by Koerner & Tajima 1986:10, had left no doubt as to his possession of the rhetorical skills that one would expect of a plenary speaker at an international congress.

1.2 The *LBLT* program for linguistics

To outline briefly the contents of *LBLT*, the first section elucidates Chomsky's conception of the goals of linguistic theory, stressing that speakers' unbounded ability to produce and understand novel sentences and learners' limited input leads to the conclusion that linguistic competence must be highly structured, abstract, and to a significant extent, innate. The section repeatedly stresses that the transformational model is a formalization of features implicit in traditional grammars, amply illustrated with untranslated quotes from von Humboldt.[1] In Section 2, 'Levels of Success for Grammatical Description', Chomsky introduces the trichotomy observational-descriptive-explanatory adequacy. Many concrete illustrations are given from phonology, syntax, and (to a limited degree) semantics to illustrate the character of an explanatorily adequate theory, that is one which provides a principled reason, independent of any particular language, for choosing the descriptively adequate grammar of each language. The brief Section 3 is methodological, challenging the then still widespread idea that operational criteria for establishing the 'correctness' of linguistic data enjoy a priviliged position. Chapter 4, entitled 'The Nature of Structural Descriptions', is just that -- an account of the levels and rule types in phonology and syntax. But it is remembered primarily for Section 4.3, 'Taxonomic Phonemics', a lengthy and blistering attack on post-Bloomfieldian and other structuralist approaches to phonology, an attack which practitioners of these approaches were equally strident in charging represented an utter misrepresentation on Chomsky's part (see for example Householder 1965, Lamb 1966,1967 and the replies in Chomsky 1966, 1967, Chomsky & Halle 1965, and Postal 1968). Section 5 concludes the paper with a brief discussion of the relationship between linguistic theory and models of perception and acquisition.

Any historical account of *LBLT* and its importance has to deal with the fact that no fewer than four versions of the paper were in circulation, three of them published. The preprint was passed around, mimeographed, and discussed for two years before the somewhat amplified presented version was published in 1964 as part of the Congress proceedings, along with a transcript of the discussion session that followed (Chomsky 1964c). But 1964 also saw the publication of the paper in two revised forms, both called 'Current Issues in Linguistic Theory', one a chapter in Fodor & Katz 1964 (Chomsky 1964a), the other a monograph published by Mouton (Chomsky 1964b). By comparing the latter two with the former, we can see the rapid pace of development of linguistic theory in that period and catch a glimpse of Chomsky's own evolving interests. The 'Current Issues' papers expand on his increased attention to the rationalist philosophical antecedents of generative grammar, give even more space to Humboldt and point to the importance of the views of Descartes and the Port-Royal grammarians. But more importantly, they incorporated the work of Jerrold Katz, Jerry Fodor, and Paul Postal devoted to the treatment of semantics within generative grammar and the determination of the level at which syntactic structures are interpreted semantically (Katz & Fodor 1963; Katz & Postal 1964). The 'Current Issues' anthology paper added discussion of the semantic component, while the book referred for the first time to the notions 'deep structure' and 'surface structure'.

1.3 Three decades of overall consistency

It is remarkable how constant Chomsky's explananda have remained in the past thirty years. In 1962, the 'central fact' to be explained was that 'a mature speaker can produce a new sentence of his language on the appropriate occasion, and other speakers can understand it immediately, though it is equally new to them ... On the basis of a limited experience with the data of speech, each normal human has developed for himself a thorough competence in his native language' (914-915). This fact has now been recast as 'Plato's problem', the fact that 'we can know so much [about language] given that we have such limited evidence' (Chomsky 1986b:xxv). The 'three basic questions' that arise in this regard, 'What constitutes knowledge of language? How is knowledge of language acquired? How is knowledge of language put to use?' (Chomsky 1986b:3) are posed as explicitly in *LBLT* as they were to be in *Knowledge of Language*.

Likewise, the essential structure of the program to answer such questions remains unchanged. The 'explanatorily adequate' theory to strive for of 1963 evolved into the maximally restrictive theory of universal grammar of later years, one 'learnable' on the basis of the limited and degenerate evidence presented to the child. Again, contrast passages from *LBLT* and *Knowledge of Language*:

> The learning model B is a device which constructs a theory G (i.e., a generative grammar G of a certain *langue*) as its output, on the basis of the primary linguistic data ... as input. To perform this task, it utilizes its ... innate specification of certain heuristic procedures and certain built-in constraints on the character of the task to be performed. We can think of a general linguistic theory as an attempt to specify the character of the device B. ... [An explanatorily adequate linguistic theory] can be interpreted as asserting that data of the observed kind will enable a speaker whose intrinsic capacities are as represented in this general theory to construct for himself a grammar that characterizes [his] linguistic intuition. (Chomsky 1964c:923-924)

> UG [i.e. universal grammar] may be regarded as a characterization of the genetically determined language faculty. One may think of this faculty as a 'language acquisition device,' an innate component of the human mind that yields a particular language through interaction with presented experience, a device that converts experience into a system of knowledge attained: knowledge of one or another language. (Chomsky 1986b:3)

Nothing has changed but terminology.

At a more rhetorical level as well, we see consistency in the tenor of Chomsky's writing. *LBLT* foreshadows the books he would write later with a broader audience in mind than those already committed to his version of generative grammar, that is, books such as *Reflections on Language, Rules and Representations, and Knowledge of Language*. In all of these works we find the broadest theoretical overview presenting the goals and and methodology of linguistic theory in something close to educated laypersons' language sandwiched around technical detail probably intelligible to few but his own advanced graduate students. We suspect that the reaction of the Congress participants of 1962 to Chomsky's formulation and discussion of the A-over-A principle was little different from that of later readers engrossed in the discussion of Plato's problem in *Knowledge of Language* who find themselves having to confront the spectacle of clitics moving in LF!

Chomsky has also been consistent in the selective manner in which he picks particular opponents to debate. One could argue that neither his post-

Bloomfieldian targets in *LBLT* nor the philosophers whom he takes on today have ever represented the views of the majority who misunderstand or reject generative grammar. It seems evident that Chomsky has always challenged publically, not those alien ideas with the greatest number of adhehents, but those he respects sufficiently to merit his attention.

2. THE *LBLT* PROGRAM FOR SYNTAX
2.1 The syntactic goals of *LBLT*
Syntax plays a relatively minor role in *LBLT* Nonetheless, it puts forward certain metatheoretical positions that continue to shape theoretical inquiry today, and it maps out certain empirical domains that were to prove central to syntactic research in the years following 1962.

At the metatheoretical level, the discussion of syntax -- like the much longer and more controversial discussion of phonology -- is grounded in an essentially polemical stance: the insistence that a simple parse of the surface string, and the organization of its elements into steadily more inclusive hierarchical groupings, will never suffice to achieve insightful analysis. If that is so, the argument goes, then a satisfactory syntactic theory will necessarily be more complex and abstract than the taxonomic model would lead one to expect. Indeed, the basic goal of syntactic inquiry is precisely the search for abstract organizing principles of grammar. As Chomsky puts it: 'The general theory...would have to make possible the formulation of the underlying generalizations that account for this arrangement of empirical data, and to distinguish these real and significant generalizations from vacuous pseudosimplifications that have no linguistic consequences' (928); it must find a principled basis for the factually correct description. One consequence of this goal -- also alluded to in *LBLT* -- is that a certain tension arises between the empirical coverage of the theory and the attempt to formulate principles that are sufficiently general and abstract. This tension has been, and will continue to be, a fact of life for generative syntacticians, for whom it is at times a source of great frustration. Nonetheless, it is one of the facets of the theory that make the generative enterprise intellectually challenging -- and one of the things that make the enterprise difficult.

This view of the fundamental goal of syntactic theory has, we believe, remained constant within generative grammar since 1962.[2] Another element of constancy has been the general program for syntactic research put forward in *LBLT*: the overall way of viewing what the task of syntactic analysis consists of. Many assumptions of the program we have in mind are quite specific, and can in no way be said to follow from the metatheoretical imperative just described. Despite this, the program itself has remained essentially unchanged over the last thirty years.

The program takes as its point of departure the idea that sentences exhibit complex arrays of overlapping grammatical relationships. A particular element of a sentence, Noun Phrase (NP) for instance, may enter into many such relations simultaneously. To take a somewhat oversimplified example, in the sentence*Who might eat everything?*, the NP *who* is the subject of the sentence and an argument of the verb *eat*. It is also an operator that can be assumed to bind a variable in subject position, and a quantifier that takes the NP *everything* in its scope.

The central assumption of the program is that there is a canonical way of representing these relations: all of them can (and should) be represented phrase structurally, via phrase structure trees annotated with indexings. It follows that if an element of a sentence participates in such a relation, this can only be because the sentence has some representation -- not necessarily one that directly reflects the audible surface string -- in which the relation is encoded in its canonical form. What do these representations consist of? Crucially, each is constructed from the

the sentence has some representation -- not necessarily one that directly reflects the audible surface string -- in which the relation is encoded in its canonical form. What do these representations consist of? Crucially, each is constructed from the same vocabulary as all the others, and by way of the same combinatorial processes. What counts as the full syntactic analysis of a sentence is then an ordered set of such representations. More generally, the study of syntax becomes, in large part, the attempt to uncover what those representations are, and what rules or other mechanisms of grammar relate them.

This overall conception of the objects of syntactic analysis is not much different in 1992 from what it was in 1962. This is not to say that nothing at all has happened within the intervening thirty years. To mention only those aspects of the program that have endured would be to pass over some of the most interesting developments that have occurred within the theory. It is to these that we turn next.

2.2 Syntactic developments since *LBLT*

To many syntacticians who entered the profession in the 1960s and 1970s (as did the authors of this paper), the task of syntactic inquiry now seems far more difficult and demanding than it once did. The observation immediately suggests two questions. Why should syntax be harder to do now than it was in the early days of transformational grammar? And, accepting that this is so, what might it reveal about the progress of generative grammar over the last thirty years? Exploring these questions is one way to assess what has happened to the program for syntax since 1962.

Although the representations that serve to encode syntactic relations within generative grammar have remained relatively constant since 1962, the way in which sentences are derived (that is, how the various representations associated with a sentence are licensed) has undergone a radical reorientation. During the 1960s and even the 1970s, inquiry was focused on achieving the goal of descriptive adequacy with respect to a broad range of syntactic constructions, primarily in English. The approach taken to this goal stressed the centrality of transformations and other language-particular rules in relating the different representations contained within a derivation; it also tended to analyze each individual construction more or less independently of all the rest. As a result, a veritable zoo of descriptive devices came to be invoked in syntactic analyses: several types of transformations, their associated conditions (some of these not formalized in any sense), global and -- even -- transderivational constraints, to name only a few. This was a zoo that it was clearly in the interests of the theory to tame.

Considerations of this sort led to several conceptual shifts within the generative program, the most radical of which occurred in the early 1980s; it can be localized specifically to Chomsky's *Lectures on Government and Binding* which was published in 1981. Today, well into the aftermath, the generative approach to syntax has a noticeably different feel. The older emphasis on rules has been replaced by a more exclusive focus on representations --representations constrained by principles and subtheories that are hypothesized to be universal. These universal principles interact with language-specific settings of their parameters to produce the constructions that were formerly derived by more parochial transformations. The task of the syntactician has likewise shifted, away from the discovery of language-particular rules and towards the investigation of principles that are, by hypothesis, universal -- yet another reason why syntax seems hard to do.[3]

The conceptual shift of the early 1980s grew out of aims articulated by Chomsky in the late 1950s and early 1960s, among them the goal of achieving

theoretical generality on the one hand and empirical coverage on the other. So it should come as no surprise that current generative syntax has experienced some losses at the descriptive end. Various constructions that once figured prominently in theoretical debate, including *wh*-clefts, comparatives, gapping, and other ellipsis processes, are today largely ignored (and unaccounted for), because the descriptive mechanisms they appear to require fall outside the reach of the principles recognized by the current theory. To be sure, some losses have been recouped: a notable example is the post-1980s analysis of English auxiliaries and negation initiated by Pollock 1989. Still, that there has been some overall empirical slippage is undeniable. A related development has been that, as the theory has tightened to exclude certain possibilities in principle, several constructions whose analysis was once thought to be settled -- including the famous *John is easy to please* -- now appear more recalcitrant.

On the more positive side, the increase in theoretical sophistication within the empirical domains that CAN be described has made it possible to account for facts of increasing subtlety. For instance, a major preoccupation today is a concern with varying degrees of grammaticality, which were often noted, but rarely analyzed, in the early transformational literature.[4] Further, the focus on universal principles has explicitly extended the range of inquiry to languages other than English. The extended inquiry has led to great advances in the understanding of so-called 'major world languages' (e.g. Chinese, French, German, Italian, Japanese), but has achieved far less where other languages of the world are concerned. The discrepancy can be attributed at least in part to the theory's reliance on the linguistic intuitions of the native speaker, a reliance that seems to require there to be a substantial pool of native-speaker linguists in order for serious syntactic investigation to proceed. Whatever the cause, however, the paucity of in-depth results on the 'nonmajor' languages of the world can only be viewed as regrettable.

What we have described so far goes a fair way towards explicating what we mean when we say that it seems hard to do syntax these days. The focus on general and universal principles, the subtlety of the level of description expected, the problems faced by those (like ourselves) who work on languages that they do not speak natively -- all contribute, in one way or another, to the difficulties faced by the working syntactician. At the same time, these are precisely the elements of current generative syntax that can make the enterprise challenging and exciting.

We should also observe that -- while by no means fully formed in the generative syntax of 1962 -- these particular elements of the program could probably have been anticipated then. As we have tried to suggest, their conceptual origins can be found in *LBLT*, and their subsequent development can, in some sense, be viewed as a natural consequence of the earliest metatheoretical commitments of transformational grammar.

Finally, it is worth mentioning that in certain ways, Chomsky's most recent work (Chomsky 1992) represents a RETURN to ideas that he held in *LBLT* and before, ideas that he then abandoned for two decades or more. Nowhere is this as true as in his latest views on grammatical organization, which explicitly reembrace many of the features he first proposed in *The Logical Structure of Linguistic Theory* (Chomsky 1955) and maintained until the 'standard theory' of 1965. In his current model, base recursion has given way to the older conception of generalized transformations, rendering a distinct level of D(eep)-structure unformulable. His current work also abandons the level of S-structure, which in a certain sense hearkens back to his *LBLT* view, given that S-structure, as a level more abstract than surface structure (itself proposed only in the revised versions of *LBLT* and then replaced by phonetic form (PF)) was a construct dating from the 1970s. However, since in 1962 there was no explicit characterizion of the syntax-

phonology interface, it is not quite accurate to write that Chomsky has 'returned' to the theory of *LBLT* in this regard.

3. THE *LBLT* PROGRAM FOR PHONOLOGY
3.1 From representations to rules
Chomsky's 1962 programs for syntax and for phonology necessarily differ in their later evolution as a consequence of the fact that Chomsky himself has not really paid a great deal of attention to phonological issues since the publication of *The Sound Pattern of English* (Chomsky & Halle 1968) As a result, it is difficult to address questions of the continuity (or lack thereof) in his subsequent development of this area. Plenty of other people have been more than willing to contribute to the exploration of what was essentially his program, however, and indeed we can well ask whether the field might not have been better served had he continued his interest in sound structure.

In 1962, syntax was a field that was just beginning to emerge from the rather inexplicit practices of the traditional grammarian to become part of the genuinely scientific study of natural language. Phonology, in contrast, was a vibrantly active field: the core of structuralist linguistics, and the home of its most significant claim to the status of a science, the phonemic principle. An understanding of the impact of Chomsky's paper on phonological research thus must start from a characterization of just what phonologists were actually doing in the 1950s and early 1960s. By and large, this consisted in elaborating the notion of (what Chomsky refers to as a 'taxonomic') phonemic analysis of the sound system of a language, and preparing analyses of particular languages in these terms. Such an analysis is a transcription system for the representation of utterances in the language. It consists primarily of a set of elements (phonemes) in terms of which the transcription is composed, each defined in terms of a relation to concrete phonetic segments which are its realization. Additional statements of the distribution of phonemes relative to each other were construed primarily as constraints on well-formed phonemic sequences. The entire theory was focused almost exclusively on questions of representation (in the terms of Anderson 1985).

Why was such a representational theory considered important? Because it was related to what was considered a fundamental scientific insight: the centrality of the contrastive function of linguistic elements. It was this notion that was being touted as the model for other behavioral and social sciences, which could achieve real scientific status if they could come up with a kind of analysis that resulted in contrastive invariants the way phonemics did. *LBLT*, of course, argued against this goal: such a representation probably is not coherent, and there is no reliable 'scientific' procedure for arriving at it on the basis of raw phonetic data.

It was this attack on phonemic representation that most outraged the structuralist establishment of the time. Indeed, Chomsky (and Halle)'s reorientation of phonological research did involve the abandonment of concerns for a level of representation that expressed all and only the contrastive functions of sound elements. But this was almost accidental: it came as a by-product of a more radical change, the shift of focus from questions of representation to questions of the nature of rules.

Part of the discussion of phonology in *LBLT* is directed toward showing that the conditions that were supposed to define a phonemic representation (including complementary distribution, locally determined biuniqueness, linearity, etc.) were inconsistent or incoherent in some cases and led to (or at least allowed) absurd analyses in others. But far more important than these were a series of arguments whose core was that interposing a phonemic level between the morphophonemic ('systematic phonemic') and ('systematic') phonetic levels led to a loss of

generality in the formulation of the rule-governed regularities of the language. The flavor of these arguments can be suggested by quotes such as the following: '...clearly in this case the critical factors are, once again, the generality and independent motivation of the rules [vowel length before voiced obstruents, intervocalic flapping], and the relation of the forms in question to others...' (959); 'Halle has pointed out that it is generally impossible to provide a level of representation meeting the biuniqueness condition without destroying the generality of rules, when the sound system has an asymmetry' (959); etc.

Arguments of this sort were a novelty: previous discussion of phonological structure had more or less disregarded the form of rules. But Chomsky's focus on language as a mental reality required that we treat a characterization of what a speaker knows as the central object of a description, and that meant paying serious attention to the formulation of rules. And thus a theoretical position that led to the impossibility of formulating rule-governed regularities in a satisfactory way is unacceptable.

Analyses of the sort Chomsky (and Halle) suggested were not in themselves new: Sapir, for example, had proposed similar accounts of various phonological facts. In fact, if one wanted to, one could perhaps even have maintained a taxonomic phonemic representation in parallel with the account advocated by Chomsky, so long as this was not required to be produced as an intermediate step between phonological and phonetic form. But what actually happened was that Chomsky's arguments convinced phonologists to shift their attention away from defining questions concerning a level of representation, to a focus on the formulation of rules. *LBLT* initiated a period in which research attention was devoted to the question of how to formalize phonological rules and their interactions. The two central projects that occupied phonological theorists in the period between roughly the early 1960s and the late 1970s were notational conventions for phonological rules and rule ordering in phonology.

A minor irony is thus to be found in the fact that by the late 1970s, paralleling the trend in syntax, concern began to shift back to questions of representation. This was due to the introduction of notions of autosegmental (and later, metrical) phonology, and results in today's focus on questions of feature geometry and prosodic structure. Questions of the explicit formulation of rules have come to be largely ignored, assumed to be trivial. Likewise questions of ordering. Now of course, the questions of representation thus addressed are extremely interesting and important, but it is worthwhile to speculate on why questions of the explicit formulation of rules seem to have disappeared from linguists' attention as a concomitant of the focus on representations. Was this because the issues of the 1960s and 1970s were resolved? No, rather the opposite is true. They were not resolved, and in fact seemed increasingly impossible to address in a satisfying way, and something more interesting came along and took people's attention. But there was another trend that converged with this.

3.2 Explanation in phonology and the evaluation metric

The other important redirection of research that came about from the program announced in *LBLT* was a concern with explanation. Previous phonologists had been concerned to develop a theory that was capable of describing the phonemic systems of all of the languages of the world. The problem is to have a theory that is rich enough to describe all languages, a problem that became more and more severe as the empirical basis of linguistic discussion expanded. But by focusing attention on knowledge of language as a mental reality, and on the problem of how that knowledge is acquired, Chomsky made it not only respectable but necessary to talk about questions of explanation. It was no longer sufficient to have a theory that could describe a set of facts: given a theory that could describe any of the languages of the world, it seemed likely

that it would provide many more than a single description consistent with a given finite set of factual observations. And that meant one had to account for why some particular description corresponded to a speaker's knowledge, while another one (allowed by the theory) did not.

Thus, as in syntax, a tension was born between questions of the descriptive coverage of a theory and questions of explanation. As more phenomena were uncovered, it seemed necessary to admit more possibilities within the system. But the more possibilities a theory allows, the more difficult the problem of accounting for the choice of some particular description as corresponding to the internalized knowledge of speakers.

Chomsky's proposal for dealing with this tension was to supplement the formal descriptive framework with an evaluation metric over descriptions framed in it. That is, given two possible descriptions, each consistent with the same set of observed facts, one needed a procedure for comparing them. Such a procedure should yield a preference in each such case for one or the other of the candidate descriptions.[5]

The concrete implementation of such an evaluation metric was the procedure of 'feature counting'. It would take too long to explore this here, but it should be pointed out that minimizing the length of descriptions was not at all an end in itself: rather it provided the basis of a descriptive language into which one could translate the statement of particular proposals for an appropriate evaluation metric. That is, the issue for an explanatory theory was the nature of 'linguistically significant generalizations'. A linguist argued that such-and-such a situation constituted a linguistically significant generalization by proposing a formalism in which descriptions embodying that state of affairs were formally more compact than observationally equivalent descriptions not embodying it, and then showing that given a choice, speakers actually do incorporate generalizations of the form in question into their internalized grammars.

This notion was not only rather subtle, but extremely difficult to work out in practice: only a tiny number of actual arguments of this form were ever produced. The best known was Chomsky and Halle's observation about the formulation of morpheme structure rules (more or less the same as phonotactic statements) in terms of features rather than atomic segments. They argue that the most compact description of English consonant clusters consistent with the observed facts, allows for some unattested forms, but not others. The fact that English speakers readily agree that *blick* is a possible (though unattested) word, while *bnick* is not, supports this conclusion. Thus one way to approach the resolution of the tension between concerns of description and of explanation is to supplement the descriptive framework with an evaluation metric, and phonologists paid lip service to this notion through the 1960s and 1970s. But arguments of this general sort are hard to construct, and few were actually offered (for some examples, see Anderson 1974) What is important to note about the structure of the theory Chomsky proposed is that matters of description and of explanation are treated as logically separable, though intimately related. A descriptive framework which allows for the formulation of a rich array of possible regularities is supplemented by an independent notion of linguistically significant generalization, with descriptions over the descriptive vocabulary taken to be plausible to the extent they embody such generalization (as assessed by the evaluation metric). Subsequent research, however, has tended to conflate description and explanation into a single set of questions.

And thus we arrive at a second irony in the working out of Chomsky's 1962 program for phonology. Recognizing the importance of explanatory concerns, there is another way to resolve the tension just referred to: limit the descriptive power of the theoretical framework directly. And it is in this form that the

program of achieving explanatory adequacy has been pursued. For instance, the descriptive power of rule ordering relations, which a good part of the phonological sections of *LBLT* is devoted to supporting, could be reduced if all ordering relations were predictable. So it is now widely asserted that 'extrinsic ordering' is an undesirable enrichment of descriptive capacity, and thus illicit. But that conclusion does not in fact follow in a theoretical context that provides another device which in fact excludes explicit ordering statements except when the facts require them --- thus allowing us a descriptive option which seems motivated in some instances, without weakening the explanatory account of the more natural state of affairs that obtains elsewhere.

In our opinion, much of the limitation that current phonology assumes about the descriptive power of phonological formalisms is arbitrary and ultimately illusory. It results in part from (and in its turn, reinforces) the general failure to provide explicit formalizations of rules. It also results in part from an arbitrary choice with respect to the concerns of explanation: instead of addressing the notion what constitutes a linguistically significant generalization directly through the development of a procedure for comparing alternative observationally equivalent descriptions, it simply assumes that the framework can be so constrained as to provide at most one description for any set of facts. Of course, if that can be achieved it would be a highly desirable result; but it is not obviously true.

One possible conclusion is the following: phonological theory might be better served by a return to the core of Chomsky's 1962 program, including (a) a concern for the explicit formulation of rules and their interactions, as well for the properties of representations; and (b) an approach to the tension between description and explanation that does not prejudge its resolution by assuming that only a single description will be provided for a given set of facts.

4. THE *LBLT* PROGRAM FOR SEMANTICS

One aspect of current linguistic theory that could not have been anticipated in 1962 is to be found in its discussion of semantics and its role in syntactic analysis. Semantics is dealt with only cursorily in *LBLT*. What little discussion there is seems to intimate that at least some semantic issues may ultimately fall under the purview of syntactic theory ('as syntactic description becomes deeper, what appear to be semantic questions fall increasingly within its scope' (936)).[6] At the time, there was little to indicate that a completely independent semantic theory -- so-called extended Montague grammar -- would come to occupy roughly the position within the study of semantics that generative grammar occupies within the study of syntax. Today, generative syntactic analyses are increasingly informed by advances in semantics made within the Montague program. A case in point concerns the intuition that interrogative phrases such as what are a type of indefinite -- a claim put forward, in fact, in *LBLT*. Chomsky's 1962 discussion offers some elegant argumentation in support of this claim, but cannot do much more than stipulate the result. Current discussions of the syntax and semantics of interrogative phrases (such as Aissen 1992; Berman 1991; Li to appear; Nishigauchi 1990) have pushed the analysis considerably farther by adopting certain ideas from formal semantics, particularly the theory of indefinites developed by Heim 1988. From the perspective of *LBLT*, this intrusion of semantics into syntax (rather than vice versa) is unexpected. It strikes us as a particularly welcome development.

5. CONCLUSION

Chomsky's address to the Ninth International Congress of Linguists was one of the events that helped create a new paradigm. It was surrounded by the

kind of acrimony, excitement, and agitation that often accompanies the birth of new paradigms. What we have seen in the past thirty years has been the working through of that paradigm. There have been conceptual shifts in that period which are interesting in their own right and which have had a major impact on the working lives of generative grammarians. But these shifts, important as they have been, had their origins in concerns and aims that were clearly articulated in 1962. When one steps back a little from the noise of debate, the picture that emerges is one of foundational stability and continuity.

6. NOTES

[1] One rhetorical change that one notes in Chomsky's writing between *LBLT* and the present is increasingly less emphasis on pointing to the theory's historical antecedents. This is of course natural, since the theory has had three decades to mature. Given that *LBLT* is remembered first and foremost for its attacks on post-Bloomfieldian phonology, it needs to be stressed that Chomsky goes overboard there to acknowledge the antecedents of many of his ideas in prior work. PAGES are devoted to defending the idea that the roots of transformational generative grammar lie squarely within traditional grammar, and that its goals are to a large extent congruent. Chomsky writes in the first footnote to *LBLT* that its account of linguistic structure in part incorporates and in part responds to 'many stimulating ideas of Zellig Harris and Roman Jakobson' (914). The first reference in the paper is an approving one to Hermann Paul and the copious acknowledgements to von Humboldt are noted above. Furthermore, Chomsky attributes to Saussure the competence-performance distinction and throughout *LBLT* gives later 'structuralists' credit for careful formulation of their ideas, where credit is due. The picture we get of Chomsky from a reading of *LBLT* is miles away from the image of the wanton destroyer of all that linguists of the early 1960s held dear, an image that he neither sought nor merited.

[2] It is well-known that Chomsky has of late tended to downplay any intrinsic interest in weak generative capacity and has attributed the considerable attention that *Syntactic Structures* devotes to that issue to the fact that the book was based on lecture notes for M.I.T. students, who were familiar with automata theory (see Chomsky 1982:63). Skeptics have tended to regard his professed lack of interest in such matters to a latter-day desire to deflect the criticism of such linguists as Gerald Gazdar, Joan Bresnan, and others, who have attempted to capitalize on the apparent greater restrictiveness of their models insofar as weak generation is concerned. But in fact, he dismissed in *LBLT* the idea that the question that what sets of strings that are generable is a particularly important one (916-917).

[3] As Chomsky has noted (Chomsky 1991a:20-24), this conceptual shift has resulted in the theory manifesting to a much smaller degree the flavor of traditional grammar. In *LBLT*, as in traditional grammar, grammatical constructions are paralleled in most cases by construction-particular grammatical rules. But in the current conception, constructions are simply artifacts, 'perhaps useful for descriptive taxonomy, but nothing more' (24).

[4] An idea that (rhetorically, at least) is central to the *LBLT* theory is that speakers have 'the ability to ... impose an interpretation on [deviant sentences]' (914), an idea that was approached by the grammar's assigning varying 'degrees of grammaticalness' to less than well-formed sentences. There have been a number of recent attempts to correlate degree of ill-formedness with the number and nature of constraints that have been violated, as in the discussion of subjacency and ECP violations in Chomsky 1986a: Ch. 7. More recently, however, Chomsky has remarked that the automatic assignment of a particular degree of grammaticalness to a deviant string is really a feature of a E-language, rather than I-language and that, in any event, the 'dimensions of deviance' are far more varied than can be captured in terms of structural distance from some particular well-formed sentence (Chomsky 1991a:10).

[5] In *LBLT*, as in all his earliest work, Chomsky hoped that the theory might provide an evaluation (or simplicity) measure, by which those grammars most highly valued according to some theory-internal criterion (e.g. in phonology, those minimizing distinctive feature specifications) would be those chosen by an explanatorily adequate theory. By the late 1960s, Chomsky had dropped discussion of such measures, only to revive it again in the 1990s, where he notes that such principles as 'full interpretation', which holds that representations should contain no superfluous elements, and the 'last resort' theory of movement, which reduces the length of derivations, have

the effect of the evaluation measures that were sought after 'in the earliest work in contemporary generative grammar forty years ago' (Chomsky 1991b:43).

[6]Chomsky's 1962 opinion has evolved but slightly to his *Knowledge of Language* view that 'the shift toward a computational theory of mind encompasses a substantial part of what has been called "semantics" as well ...' (45). Such is particularly apparent in his current approach to coreference and quantification (for remarks on the latter see Chomsky 1991b:38), but somewhat less so in those aspects of meaning related to the thematic structure of the sentence. Indeed, he would surely reject today the analysis in *LBLT* which in part motivated the opinion stated above, namely positing that the deriviation of the sentence *It was an intriguing plan* involves the string underlying *The plan intrigued one*. Furthermore, as is well known, he resisted vigorously the generative semantic attempt to provide a syntactic analysis of word-internal semantic relations (for discussion, see Newmeyer 1986:Ch. 5). And his recent ideas on deriving subcategorization from thematic role (Chomsky 1986b) seem a dramatic departure from the conception of a deepening syntax ever further encompassing what has been traditionally considered to be semantics. The current approach of Emonds 1991 seems much more 'Chomskyan' in this regard.

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TABLES RONDES / PANEL DISCUSSIONS

TITRE : POUR FAIRE DE LA LINGUISTIQUE UNE SCIENCE
TITLE : ON MOVING LINGUISTICS INTO SCIENCE

ORGANISATEUR(S) / ORGANIZER(S) :
Victor H. YNGVE

(United States)

ON MOVING LINGUISTICS
INTO SCIENCE

V. H. Yngve[1] (Organizer)
Th. R. Hofmann[2] and W. J. Sullivan[3]

University of Chicago,
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1. INTRODUCTION (V. H. Y.)

Our topic is moving linguistics more into science. In this panel we take science seriously. We are not using "scientific" as simply a "double-plus good term," as Ron Hofmann has aptly put it. We conceive of science in the same sense as in the more highly-developed physical and biological sciences. Our topic, then, is, How can we move linguistics more into science in this standard sense?

1.1 Linguistics and science

Many believe that linguistics already is a science. Efforts to build a scientific linguistics have extended over two centuries at least. Today, virtually all linguists see linguistics as scientific. Many nonlinguists see it as the most scientific of the social sciences.

But although we have made many strides in the last two centuries, some think that linguistic theory is in trouble, that the discipline is too fragmented into competing schools, that questionable appeals are used to advance one theory over another, and that there is no scientific way of choosing among them.

In view of this widely perceived inadequacy, there has long been an interest in probing to the foundations of the discipline. The suggestion we are exploring here is whether a more rigorous scientific investigation into the foundations of linguistics might lead to a new more adequate body of linguistic theory.

Since we are taking science in the sense understood in the more highly developed physical and biological sciences, our most reliable view of science will come from those disciplines themselves: from scientists and from the literature of science. The freshman physics text developed at the California Institute of Technology by the late Nobel Laureate Richard Feynman and his colleagues (Feynman et al. 1963), for example, is quite explicit about what science is and how scientists work. There are also works written by trained scientists that focus explicitly on how to be a scientist. Among these is my own effort (1987) and the more prestigious effort of a committee of the National Academy of Sciences (1989).

Scientific research proceeds by asking questions and trying to answer them. But in science not all questions are equal. Some, although they may seem sensible, are actually scientifically ill-posed in that they cannot be answered using the criteria of science. It is important to the progress of science to set aside scientifically ill-posed questions and replace them by scientifically answerable questions.

Questions always rest on assumptions. Some questions may be ill-posed because they rest on explicit or implicit assumptions that are false. An investiga-

tion of the sounds in an allegedly haunted house with a tape recorder to distinguish between ghosts and goblins, although seemingly scientific, is actually unscientific because of the false underlying assumption that there are ghosts and goblins. The eliminating of false special subject-matter assumptions often reveals previously unexamined assumptions at a still lower level that may also be false. It is important to the advancement of science that our assumptions be examined all the way down to the level of the basic assumptions of all science. None of the more highly-developed sciences rests on additional special subject-matter assumptions.

1.2 Some questions that linguistics faces

One question, then, that we face if we wish to move linguistics more into science is, Are there special subject-matter assumptions underlying linguistic research that are unexamined and possibly false? Some think that there are and that many of the questions we have been asking in linguistics are scientifically ill-posed.

An important question is, Can the grammatical tradition, with its roots in ancient logical and epistemological questions, be reconciled with the scientific tradition, with its roots in questions about the natural world? These two traditions have different and largely separate histories, and today they are quite different in character. It has often been assumed that scientific methods could be adapted to grammatical investigations, but it has been argued that this cannot be done because it leads to scientifically ill-posed questions. Some believe that if linguistics is to move into science it must give up many of the preconceptions and assumptions of the grammatical tradition. If this is the case, which ones must be given up? What could we rely on in their place?

A set of questions then asks what criteria should be used in linguistics in deciding what to believe. What is the role of observation and experiment? To what extent can scientific criteria be used? To what extent can grammatical criteria be used? To what extent can philosophical criteria be used? Some believe that the acceptance of scientific criteria would exclude a continuing reliance on traditional grammatical and philosophical criteria, although many of these excluded criteria will prove to be replaceable by scientific criteria.

Another question is, What are the appropriate objects of study in linguistics? Some candidates are words, sentences, and other grammatical entities, texts and discourses, communicative behavior, human conceptual and cognitive structures, logical representations, and people as hearers and speakers. Are these various suggestions mutually compatible, or do some of them exclude others? Which ones would the criteria of science eliminate and which would survive? If some are eliminated, how could we confront the phenomena that they question?

1.3 The task of the panel

These are some questions that face us if we are to move linguistics into science. There is a workshop by mail actively exploring some of these questions. Over 300 linguists have joined this workshop and to date over two dozen of them have contributed to the ongoing discussions published in a newsletter. In this panel we will present some of the efforts of three members of the workshop to come to grips with some of these questions.

The audience will have an opportunity to discuss some of these issues in the second hour, but there will be no room to include any audience discussion in the conference proceedings. You may, however, join the workshop and submit your comments for publication in the newsletter along with the full versions of the papers. Readers of the proceedings are also invited to enter into these ongoing discussions.[4]

2. IN DEFENSE OF PREDICTION (Th. R. H.)

It is becoming stylish in some quarters to downgrade the value of prediction and upgrade the value of explanation. See, for example, Chametzky (1992) or Bhaskar (1975), who argue that prediction is possible only in very limited circumstances and not really needed for scientific enquiry anyhow. I believe this devaluation of prediction to be wrong, not for logical reasons, but for pragmatic and sociological ones, and desire to present here a few points that should not be overlooked.

There is a popular belief that science attempts explanation, and thus that the goal of science should include, at least, explaining things. I hesitate to accept this, for at least the reason that the sciences that have progressed farthest have invariably subordinated the goals of explanation to the goals of description and prediction. Take physics or chemistry or even biology for example. Few articles are published to 'explain' something, though an explanation of a known phenomenon in terms of well-established theories is publishable, at least in *Scientific American*. Most published work is descriptive of observations made, and comparison of them with predictions based on theory. Theoretical work consists of showing that one theory but not another does predict known data correctly, and/or drawing out different predictions from different theories to identify crucial experiments.

Seeking explanations is a powerful motive that probably underlies most scientific behavior, but advanced sciences eschew explanation as a publishable aspect of research. It can be a major topic of conversation at cocktail parties and can be snuck in the back door as a speculation in summing up an article, but is directly publishable only in elementary textbooks.

To be sure, hard sciences do explain many things, more in fact than the soft sciences, but they do it in terms of theories that are well motivated on descriptive and predictive grounds. Like happiness, explanations seem to be attained best by not aiming directly at them.

This rejection of explanation by formal science needs to be understood, especially in the view of Hemple and Oppenheim (1948) or Suppe (1977), namely that both explanation and prediction are drawing a conclusion that describes an event from established premises. They differ only in whether the conclusion is drawn before the event (a prediction) or after it (an explanation). This sort of explanation is part of the normal business of science, but it rests on a slightly different use of 'explanation', which we shall get to shortly.

There are three points to be made: First, I think we can safely assume that human beings are generally endowed with a desire for explanations, though this may in fact be only a cultural endowment. It is a motivation for scientific activity and learning in general. It no doubt underlies the creation of many supernatural beings in ancient times to account for things such as lightening, volcano eruptions, movements of heavenly bodies, the capriciousness of the sea, ill fortune, or whatever affects human lives. Superstitions, still rife in athletics and other activities where important outcomes cannot be controlled, are (irrational) causal hypotheses (i.e. explanations) based on coincidences that have been observed.

It is notable that there is not an equal love of reliable predictions, for it is in the predictions (of the stock market, say) that one can affect his well-being most. An ability to explain well makes a teacher, or a story teller; being able to predict well makes an oracle or a rich man.

The second point is that explanations tend to end inquiry. Once a person has accepted an explanation for some fact, its basis does not receive further critical consideration. The fact that it explains seems to be enough to justify it and the principles that it is based on. This is why the learning of religion and basic

culture is most effective when done young, when explanations are accepted easily on the authority of the teacher.

The principles utilized in an explanation benefit automatically from its acceptance. If they are not obviously false, the fact that they explain is usually enough to motivate accepting them also. They are *NOT* examined in their own right. In fact, contrary principles or even negations of those same principles can also be accepted. However, once such a conflict is recognized, the principles needed for an accepted explanation are usually favored simply because they are needed for the explanation.

Science, or rather philosophy, may arise when there are competing explanations for the same phenomena, but because explanation has a tendency to end inquiry, i.e. to relieve the need for explanation, it is usually excluded from the formal system of science.

The third point is that explanations are, so to speak, a dime a dozen. For a well-limited domain, an ad-hoc explanation is easily found. Having just finished an elementary text on semantics that putatively explains most things in terms of basic principles, I must avow that one cannot trust any principle simply because it explains things.

From the second point that explanations tend to end inquiry, it follows that any study that is satisfied with explanations, that takes explanations as the primary goal—e.g. one that values explanatory adequacy higher than descriptive or predictive adequacy—is liable to stop there, with explanations. Indeed, and worse, is that *rather than verifying the principles on which the explanations are based, it will try to explain more things*. Furthermore, adding the third point that explanations are a "dime a dozen", such a study is liable to be embroiled in dialectic precession and suffused with a plethora of 'explanatory principles'. One can always devise principles to fit the facts in a limited domain, but as the domain expands, the task of limiting each principle to apply where it is needed, and only there, becomes increasingly harder.

Chametzky's attack on the proposition that sciences require predictions is based on the '(transcendental) realism' of Roy Bhaskar, where it is argued that sciences in general aim at explanation and not prediction. Arguments that prediction is not (logically) required are easily taken to mean that explanation is as valuable as prediction, which it is not.

I have not argued that predictions are logically necessary, but rather that prediction, where possible, is far to be preferred, and perhaps necessary for an effective science, for sociological and human reasons. The sciences that we normally take as models eschew explanation and confine formal work to description of observations and their comparison with predictions derived from a theory or theories. This can be understood in terms of human motivations, weaknesses, and abilities, taking productive science to be a sociological structure that has evolved to produce knowledge (and explanations) efficiently.

The fundamental weakness of explanation relative to prediction is that there is no way to submit an explanation to an empirical test, whilst prediction is open to immediate and obvious falsification. The theory that engenders predictions will fail if the predictions are not adequate, and must thus match the world to a high degree. The theory that only explains will meet no tests of adequacy until confronted by another theory that explains part or all of what it explains, and that confrontation can be far from conclusive, and even if conclusive, there is no guarantee of convergence with the real world. It thus follows, i.e. it is predicted, that a science based on prediction will make slow progress at first, but the progress will be cumulative, while one based on explanation will seem to jump far ahead, but will not stay there as competing theories confront it.

In its ordinary usage, 'explanation' means an account that satisfies curiosity; it answers the question "Why?" In this sense, "God wills it" explains a lot of things. Claiming that some process is random explain things in a (very) loose sense. Such accounts by their nature end curiosity and inquiry, and are accordingly eschewed by science. The formal notion of explanation in the work of Hemple and others, on the other hand, is simply prediction made after the facts are already known, i.e. deriving the known facts or accounting for them in terms of a theory. We can thus see theoretical science comparing theories on their (formal) "explanations" of known facts. I would prefer to call these 'post-hoc predictions' or simply 'derivations', for it does not satisfy the curiosity to derive, say, gravitational attraction from a curvature of space; it just pushes curiosity one step down.

Formal explanation, i.e. derivation from some theoretical apparatus, is not eschewed by model sciences, but is used in the limited area of comparing theories: if all the deductions from a theory can also be derived from another from which other true deductions can be made, it is automatically subsumed. These deductions are formal, not wordy explanations of occasional facts. These latter satisfy curiosity. The former applied to comparing theories do not, partly because they are formal and partly because competing explanations do not satisfy curiosity, but rather stimulate it. Even where there is no plausible competing explanation, deriving the known facts from deeper facts does not satisfy curiosity, but pushes it instead toward the deeper principles.

Thus we see why it is that model sciences eschew explanations in the ordinary curiosity-satisfying sense, but they do normally use derivations or post-hoc predictions (formal explanations in Hemple's sense). Ignoring this distinction suggests that explanation is the substance of science.

I conclude that linguistics is ill-served by attempts at explanation without equal attention being paid to descriptive accuracy, and where possible, predictions about how speakers or listeners behave, or about languages or language learners. Predictions are not easily made, to be sure, and are usually quite a bit harder to come by than curiosity-satisfying explanations, but therein lies their greater value and stability over time. Thus prediction and its prerequisite accurate description are found at the heart of all sciences.

3. THE USES AND LIMITATIONS OF LOGIC (W. J. S.)

Irving Copi (1967:177) defines science as a set of statements known to be true, so arranged as to make their logical interrelations explicit. Disregarding the possibility of a philosopher-logician's bias in this definition, we can identify two basic strands in it: empiricism and logic. Empiricism is the key to our knowledge of truth, to the extent such knowledge is possible. That is, the statements Copi refers to are "known to be true" by careful observation and measurement of naturally occurring phenomena and by controlled experiments. Continually ignoring empirical verification takes claims for facts and harms the profession by slowing its progress or even by leading it down a false trail.

The situation is parallel with logic. Logic is the basis of the systematic arrangement of true statements. It is the nature of their interrelations. But it is a good deal more than that. Most linguists nowadays bow to logic, generally through adherence to a theory and a methodology. Yet current practice often shows ignorance of the full functions of logic and worse, of the limitations attendant upon its use. Continually ignoring the consequences of a misuse of logic can also slow the progress of the profession or lead it down a false trail. Thus it is precisely the functions and limitations of logic that I cite, including its descriptive functions and their interplay with empirical research, its metatheoretical functions, its function in

formalization, and the logic of cause and effect. I want to begin by commenting on a misconceived notion.

Logic systems were developed partly in order to provide a rational approach to the determination of meaning in language. But any such effort is doomed. However, logic might help in testing similarity of meaning between two texts. If the two texts are suspected of meaning the same thing, logic can help. Each text can be translated into a predicate calculus and we can test whether the two complex propositions are equivalent, i.e. that each of them implies the other. Logic may help us determine the internal structure of an argument or verbal proof. Beyond that, nothing. Logic is too limited in sensitivity to determine the meanings transmitted in human communication.

There are, however, more promising possibilities, to which I now turn.

3.1 The descriptive function of logic

It is a commonplace that most or perhaps all significant scientific generalizations are inductive in nature. The same is true for linguistic generalizations. A study of observed data leads to a general statement that applies to subsets of the data as a whole rather than to individual, unrelated datum bits. Such a generalization is the English passive transformation (T_{PASS}) (Chomsky 1957:78). Formulated over 35 years ago, T_{PASS} is a general statement relating passive- and active-voice clauses as members of a marked-unmarked pair. So far T_{PASS} is consistent with the inductive use of logic in science, given certain foundational assumptions about language. However, in science an induced generalization immediately becomes a hypothesis which predicts yet unobserved data, which researchers then look for in the field and in controlled experiments. Should the predictions turn out to be wrong, the description is then altered or discarded and a new generalization is induced. Ignoring this procedure ignores both empirical and logical requirements of science. The former is obvious. The latter results from the fact that T_{PASS} is only a hypothesis. If it is wrong, it will lead to invalid conclusions. T_{PASS} was formulated under the assumption that passive is a freely optional and purely syntactic phenomenon. Then T_{PASS} predicts the occurrence of the ill-formed *five feet was jumped by John*. This is just a single example of the false predictions T_{PASS} makes. Worse, T_{PASS} was neither modified nor discarded, in spite of these false predictions. The "syntactic feature" [-pass] was added to the lexical specification of verbs like jump. In this way mere data are not permitted to falsify the hypothesis and the logical consequences of such falsification are avoided. So the mistake that passive is purely syntactic and freely optional is perpetuated.

Examples of this sort could be multiplied ad libitum, but the point is made. I turn now to the use of logic in metatheory.

3.2 Metatheoretical functions of logic

Logic has two major functions in metatheory: the construction of linguistic theories and the analysis and evaluation of linguistic theories. I leave discussion of the former to the full version of the paper and consider only a positive example of the latter.

An established theory can be subjected to logical analysis. The logical characteristics of the theory, including internal consistency and limits on its applicability to the object of study, can then be determined. From the start Chomsky insisted that the generative or structure-creating portion of the grammar be kept separate from the transformational component. The transformational component has always included deletion transforms, which destroy structure. If structure-creating rules and structure-destroying rules are in the same component of grammar it may be possible to create-destroy-create-destroy- . . . structure. This is what Gödel's Theorem calls a non-convergent statement. A theory with

non-convergent statements cannot be proved internally consistent. In short, Chomsky has been right to reject transformations that he sees as structure-creating.

Conversely, some of Chomsky's theory is logic deficient (cf. Sullivan in press). Examples of this sort can also be multiplied ad libitum. I turn now to the question of formalization.

3.3 Formalization

A description can be formalized in different degrees and in different systems of formalization. The two types of systems most common to formalized descriptions are found in mathematics and logic. Mathematical systems include matrices, sets, trees, reticula, and transformations. Logical systems include verbal exposition and various types of explicit logical description: Hjelmslevian and neo-Hjelmslevian, stratificational networks, and ordered couples. A given description can be formalized to different degrees. An example of differing degrees of formalization in the description of the same set of data is given in Sullivan (1986), wherein the data are presented in four degrees of formalization: a verbal description, a semantic distinctive feature matrix, an algebraic statement with a realizational algorithm, and a relational network diagram. Each degree of formalization is more explicit and better integrated than the one before but more difficult to follow. Which is chosen depends on the goals and understanding of the linguist.

3.4 Cause and effect

One of the most misunderstood of all proofs is the proof of cause and effect. Causation is of interest in all scientific disciplines and elsewhere. But to prove a cause-effect relation between p and q, i.e. that p causes q, two distinct proofs are needed, a positive proof and a negative proof.

The first of these proofs is a positive proof. Let q be a singular, isolable effect and p be a condition or combination of conditions or set of conditions that constitutes a potential cause of q. Then the positive proof must show that if p occurs, q always follows, logically [p => q]. This does not prove that p is the cause of q. Claiming causation at this point is a common error; the *post hoc ergo propter hoc* fallacy lurks. The positive proof only proves that it is possible that p is the cause of q.

The negative proof is also necessary to prove causation. That is, if p does not occur, then neither does q, logically, [~p => ~q]. The necessity of the negative proof is easily demonstrated. If q occurs with **AND** without p, the occurrence of q is not a necessary result of p. P is simply incidental to the occurrence of q, what logicians call "added condition": if q holds, then it is true, no matter what p is chosen (including ~p), and p is in fact irrelevant to q, not the cause of q.

The positive and negative proofs may be completed by empirical or logical means or by some combination of the two. But the logic of causation requires that both proofs be completed. (For a more complete discussion see the full version.)

3.4 Limits and conclusions

Logic is necessary to systematization in science. But it cannot determine meaning or substitute for data. Logic predicts what data should be possible under given conditions, but it is not by itself sufficient. The use of logic without empirical information is what Sherlock Holmes called speculation in the absence of data. In short, though logic can predict data, it cannot replace data. Thus logic and empirical verification are both necessary to a scientific linguistics, but neither is sufficient in and of itself: they are complementary.

4. THE SCIENTIFIC FOUNDATIONS OF HUMAN LINGUISTICS
(V. H. Y.)
In this section I would like to answer the challenge of moving linguistics further into science. The account here is necessarily brief, compact, and closely argued; additional details may be found elsewhere (Yngve 1986a).

4.1 Science
Science begins with doubt, as was emphasized four centuries ago by Bacon, Descartes, and Galileo. Science casts official doubt not only on newly proposed theories, but also on widely taught and believed received opinion. Scientific results are continually being put to the test and those that do not stand up are discarded. In this testing, (i) the criterion of acceptance of observational facts is their public reproducibility when questioned, and (ii) the criterion of acceptance of theories is their ability to pass appropriate tests against observational evidence when challenged. Theories that cannot be tested at all are in the realm of sheer speculation, and outside of science.

When we submit to scientific doubt the traditional assumptions of grammatical theories and the folk traditions on which they rest, they do not pass the tests. (See my "On the Criteria of Acceptance in Linguistics" in this Congress.) It may be traumatic, but if we take science seriously, the grammatical assumptions we have always counted on must be given up (Yngve 1983, 1986a:23). Where then can we turn?

We are left only with the standard assumptions of all science, namely: (i) that there is a real world out there to be studied—it is not simply an illusion; (ii) that it is coherent so we have a chance of finding out something about it—it is not simply random and inscrutable; (iii) that we can reach valid conclusions by reasoning from valid premises—we can trust our logical and reasoning powers; and (iv) that observed effects flow from immediate causes—where there's smoke there's fire.

Science studies the real world we assume is out there by observing the effects that we assume flow from the real world and applying the standard criterion of acceptance of observational facts. On the basis of the assumption that these effects flow from immediate causes and the assumptions of coherence and that we can reach valid conclusions by reasoning from valid premises, we propose theories that describe and explain the real world and subject these theories to test using the standard scientific criterion for the acceptance of theories.

Can we proceed in linguistics by building only on the standard assumptions of science and without relying on the grammatical tradition? Indeed we can, and there is advantage in doing so. We can start by accepting people, in all their linguistic complexity, as objects of nature that can be studied scientifically.

4.2 People and theories of people
We observe that people interact with each other and with the environment to form groups of many kinds. These interactions are communicative in that they directly or indirectly affect subsequent linguistic or nonlinguistic behavior. We observe that communicative interactions involve the flow of energy in the physical sense, mainly the sound of the voice. We are no longer discouraged by the grammatical tradition, however, from also treating nonverbal forms of energy flow.

As is often done in science, we set up systems to represent in theory the parts and aspects of the real world that we wish to study (Yngve 1985; 1986a:47). We set up systems called *communicating individuals* to represent individual persons, and systems called *linkages* to represent groups of persons and the relevant aspects of the physical environment.

Communicating individuals and linkages are theories set up in terms of *properties*, which are scientifically justified as follows: We observe communicatively relevant similarities and differences between different real-world persons and the same person at different times. We also observe communicatively relevant similarities and differences between different real-world groups including their environments and between the same group including its environment at different times. On the basis of these observed similarities and differences we propose an empirical law, the *law of componential partitioning* (Yngve 1984, 1986a:50):

> *The communicative aspects of a person, or of a group and the communicatively relevant parts of its environment, can be represented as a communicating individual, or a linkage, in terms of a set of component properties in respect to which different individuals or linkages show partial similarities and differences and in respect to which the same individual or linkage shows partial similarities and differences at different times.*

One notes that properties of communicating individuals and linkages are set up using similarities and differences in a way paralleling how Bloomfield (1933:78) set up significant features of speech-forms. But since these represent properties of people in the physical domain, not features of speech-forms in the phonological domain, we need only the standard assumptions of all science and the above empirical law. Bloomfield needed a special subject-matter assumption to set up the phonological domain, his fundamental assumption of linguistics, which, as he clearly understood, could not be scientifically justified (Bloomfield 1933:78) (Yngve:1983, 1986a:17). Bloomfield deserves great credit for making widely-held tacit assumptions explicit.

Note that we confront observed linguistic variation in the very core of the theory and build on it rather than starting with the grammatical and logical assumptions of uniformity and ideals of perfection that have impeded the handling of observed variation and historical change.

Note also that communicating individuals and linkages offer separate theories for the distinctly different phenomena associated with persons and with groups, whereas grammar provides only a single theory. This makes possible a formal treatment of the relations of persons to groups and of groups to the persons making them up, something impossible with grammatical theories.

4.3 Laws of communicative behavior

Since we observe that people and groups change with time, there are corresponding properties of communicating individuals and linkages that change with time. We can identify two kinds of properties to represent these changes, *categorial properties*, which are the categories or dimensions along which these changes take place, and *conditional properties* which are the changing conditions or values of these categories or dimensions. Some conditional properties are externally observable, others are postulated internal properties. There are also properties called *procedural properties* to represent the laws of change.

Communicative behavior is thus seen as lawful behavior governed by procedural properties and conditioned by the current state of the system represented in the conditional properties. In this view the procedural properties represent how communicative behavior depends on the changing conditional properties and how the conditional properties change. The conditional properties represent the changing contextual factors of all sorts that condition communicative behavior —phonological, syntactic, semantic, pragmatic, social, motivational, stylistic, aesthetic, moral, ethical, and others. This framework is relatively unconstrained by a priori considerations; it provides the linguist with the maximum of flexibility

in representing communicative behavior such as speech and the understanding of speech in terms of theories of the actual people and groups of people involved, including the physical environment.

The treatment of context, especially the context of situation, has always been a problem in grammatical theories, but here we have a place for context built right into the core of the theory, both at the individual and the social levels. This easily accommodates sociolinguistic variables as well as syntactic, semantic, subject matter, and other constraints and treats them all in a unified manner.

This is a dynamic causal state theory of communicative behavior. It is dynamic in that it envisions continually changing conditional properties along the dimensions of the categorial properties. It is a state theory in that at any moment the changing conditional properties represent the momentary state of the communicating individual or linkage. It is causal in that we see the procedural properties as representing causal laws of change of the conditional properties. This is justified by the standard assumption of causality of all science that observed effects flow from immediate causes.

Since this theory is dynamic in the physical sense, it handles naturally the relation of knowledge of all kinds to behavior, something that has been characterized by Chomsky as a real mystery. Being a dynamic theory of what people do, it is inherently pragmatic at all levels (Yngve 1986b).

4.4 A scientifically justified notation

Let us now consider how to represent the causal laws of communicative behavior. Since people and their communicative behavior are observed to be very complex, each procedural property in the general case would have to represent the conditioning effect of many conditional properties and would have to represent the changes of many conditional properties. There would also have to be a very large number of such procedural properties.

But there is considerable evidence that people and groups are quite stable communicatively over time. This implies a stability of their properties over time. On the basis of this evidence we are justified in proposing an empirical *law of small changes*:

> *Most of the properties of a communicating individual or a linkage remain stable and unchanged over considerable periods of time; thus only a few properties are changed at a time by the procedural properties.*

The law of small changes leads to the possibility of studying only one property at a time independently of all the other changes in the individual or linkage where that property does not change, usually a majority of them. Furthermore, there is considerable evidence that most of the properties of an individual or linkage are not immediately relevant to the change of a particular property. On the basis of this evidence we are justified in proposing an empirical *law of restricted causation*:

> *Although the number of conditional properties is very large, the number involved as causes of the changes of any given conditional property is small.*

This means that if we study the changes of any given conditional property, we will generally have to consider only a small number of other conditional properties as causes.

In the light of these general empirical laws we can set down relatively compact specific causal laws of communicative behavior. For this purpose a notation

has been introduced that is completely scientifically justified (Yngve 1986a:55ff.; 1986b) and that lends itself well to computer simulation for testing proposed specific laws against observed communicative behavior. This is a notation for causal laws, not for grammatical rules. Grammatical rules rest on unjustified assumptions from the grammatical tradition or from preconceptions about the nature of people that they "use" rules when they speak.

4.5 Conclusion

Human linguistics eliminates many of the difficulties we currently face stemming from the unscientific aspects of the grammatical tradition. It circumvents them by starting from a different foundation that provides greater insight. Being scientific in its core it interfaces naturally with the other sciences, physical, biological, psychological, and social, thus freeing linguistics from its insularity and relative lack of contact with other disciplines. It promises greater relevance to adjacent areas in the humanities such as literature, rhetoric, and applied linguistics, and thus a greater relevance also to the general public. Because it can handle context, both individual and social, it can handle learning in context. Rather than handling historical change in terms of unreal concepts of language and grammar, it handles it naturally in terms of groups of people taking into account variation, learning, and individual and social influences. Human linguistics represents a whole new relatively unexplored domain of linguistic investigation that will keep us busy for a long time. There is at last the possibility of getting some parts of linguistic theory right.

5. NOTES

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TABLES RONDES / PANEL DISCUSSIONS

TITRE : COLLOQUE TERMINOLOGIQUE DES ÉTUDIANTS DIPLÔMÉS
TITLE : GRADUATE STUDENTS' SYMPOSIUM ON TERMINOLOGY

ORGANISATEUR(S) \ ORGANIZER(S) :
R. KOCOUREK, M. CORMIER, A. DUGAS, R. ROBERTS

COLLOQUE TERMINOLOGIQUE DES ÉTUDIANTS DIPLÔMÉS [1]

Rostislav Kocourek et Monique Cormier, edd. [2]

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CANADA

1. INTRODUCTION

L'idée d'enrichir les congrès internationaux des linguistes d'une nouvelle dimension et de mettre sur pied un colloque des étudiants et des étudiantes diplômés est venue un peu tard pour permettre une organisation du colloque correspondant à l'échelle du CIL 92. Toutefois, une fois proposée, l'idée du Colloque a été chaleureusement accueillie par le comité d'organisation du Congrès, notamment par le président du XVe Congrès, Monsieur Pierre Auger, qui a bien voulu inaugurer le colloque, tenu le 13 août de 17 h à 21 h 30. Chaque présentation, d'une vingtaine de minutes, a été suivie d'une riche et vive discussion. Le nombre de spécialistes, qu'il s'agisse d'étudiants, de professeurs, de terminologues, de traducteurs, qui ont assisté aux séances et contribuaient à la discussion était important (une trentaine au minimum). La présidence des séances était assurée, alternativement, par Madame Cormier et par Monsieur Kocourek. Voici les résumés ou les extraits des huit communications présentées.

1. LA SÉLECTION DES TEMPS VERBAUX DANS LES TEXTES SCIENTIFIQUES: LA PRÉDOMINANCE ET LA VALEUR DU PRÉSENT
(Lise Lapierre, Canada)

Cette communication est une analyse statistique et fonctionnelle de l'emploi du présent dans l'oeuvre du grand physiologiste français Claude Bernard *Leçons sur les phénomènes de la vie communs aux animaux et aux végétaux*, publiée en 1878, peu après la mort de l'auteur. L'analyse permet une comparaison diachronique entre deux échantillons de textes scientifiques publiés à un intervalle de cent ans (1878 et 1978-80).

L'ouvrage de Claude Bernard s'étend sur quatre cents pages environ et renferme dix chapitres : une leçon inaugurale et neuf autres. Nous en avons recensé les verbes à l'indicatif en tenant compte des temps à chaque dixième page de texte typique (une page qui ne contient pas de sommaire, de diagramme ou de longue note); nous avons ainsi obtenu trente-deux pages de données.

Dans ce corpus de trente-deux pages, les temps se distribuent comme suit : le présent atteint 71 %; il est suivi du passé composé (12 %), de l'imparfait (6 %), du conditionnel présent (5 %), du futur (3 %), du passé simple (2 %) et du plus-que-parfait (1 %); le conditionnel passé et le futur antérieur ne constituent

qu'un infime pourcentage des temps (0,3% et 0,1% respectivement).

Les résultats caractérisant ce texte du XIXe siècle, et surtout les fréquences verbales de la leçon-résumé (9e leçon), diffèrent à peine de ceux qu'on a relevés dans des textes récents. Dans les *Leçons* de Claude Bernard, le présent atteint aussi un pourcentage qui en établit incontestablement la prédominance. Ceci semble indiquer qu'il existe, dans le texte scientifique, quelque chose de bien permanent, qu'exprimerait la sélection des temps.

Pour cerner la valeur du présent, nous avons d'abord consulté la grammaire traditionnelle, qui offre de ce temps une interprétation fragmentée et qui s'appuie en grande mesure sur des éléments extra-linguistiques et relativement subjectifs. Le présent est perçu comme historique, descriptif, gnomique, de permanence, de définition, de la réflexion scientifique, de la réflexion générale, etc. Notons qu'il est souvent difficile d'établir une distinction nette entre ces valeurs et qu'il n'est pas rare qu'une même occurrence revête plusieurs valeurs à la fois.

La perspective de l'énonciation, telle que proposée par Benveniste, est plus satisfaisante en ce que, malgré certaines lacunes, elle confère au présent une valeur plus unique et cohérente. Dans cette optique, on envisage le présent comme «un temps situant l'énoncé dans l'instant de la production du discours» (Dubois, Jean, et al., 1991, *Dictionnaire de linguistique*:391). C'est-à-dire par rapport au sujet de l'énonciation, qui laisse ou ne laisse pas son empreinte, sous la forme d'un signe bien concret (personne, temps), dans l'énoncé. La fonction principale du présent consiste à signaler le caractère commentatif de ce qui est dit, c'est-à-dire l'adhérence du locuteur à son énoncé.

Les quelques présents que nous avons relevés dans un extrait du *Docteur Pascal* de Zola et dans *La Ficelle* de Maupassant tiennent nettement du commentaire. Dans le roman plus contemporain (comme dans le «nouveau roman»), par contre, le présent est souvent dominant et a l'effet de désorienter. C'est peut-être qu'il paraît offrir («présenter») comme vrai ce qui ne l'est pas, comme le font voir les signes plus extérieurs de l'oeuvre (titre, nom de l'auteur, type d'ouvrage) qui ancrent le texte dans l'univers de la fiction. Il semble exister un lien entre présent et vérité. Signalons à ce sujet l'article de Marc Tukia (*Études de linguistique appliquée*, 1983) dans lequel l'auteur souligne qu'«[u]n discours scientifique s'oppose à un discours poétique ou romancé par plusieurs de ses caractéristiques. Il est souvent considéré *a priori* comme un *discours vrai*» (:34). Un trait syntaxique dominant doit avoir, nous semble-t-il, quelque lien avec le «type» du texte où il domine. Notons toutefois que dans *Le Temps*, étude où les temps sont envisagés comme des signes textuels à récurrence élevée, H. Weinrich affirme que «[c]omme signaux de la vérité, les temps sont absolument sans valeur» (:103). Weinrich propose certains exemples (textes de Robbe-Grillet), où des faits vrais sont relatés par les temps du récit, et inversement. Les temps, non pas seuls mais en conjonction avec d'autres signaux, devraient nous renseigner quant à la vérité du texte. Le passé simple et l'imparfait, par exemple, ne nous indiquent pas s'il s'agit d'un récit historique (au sens de «vrai») ou d'un récit fictif : ils apparaissent aussi bien dans le roman que dans le livre d'histoire; mais, considérés en relation avec d'autres signaux (certaines expressions comme «Il était une fois» ou, au contraire, des dates bien

précises, authentifiées), ils revêtent incontestablement des valeurs différentes.

Il nous semble intéressant, et à poursuivre, que le texte scientifique tienne ses deux traits syntaxiques les plus importants, le présent et la troisième personne, de plans d'énonciation différents et, en quelque sorte, opposés. Ceci pourrait indiquer que le présent n'est pas uniquement commentatif. Notons que, dans son étude (dans Langue, discours, société, 1975) sur la typologie des discours, J. Simonin-Grumbach se penche sur cette question. On peut également tirer profit des résultats de J. Heslot (*DRLAV*, 1983) quant à l'opposition commentaire/récit dans le texte scientifique.

3. POUR LE GRIFFAGE DES MOTS NON MARQUÉS
(René Tondji-Simen, Canada - Cameroun

René Tondji-Simen s'est intéressé particulièrement au problème de marques géographiques et de la notion de langue, variante centrale et variantes périphériques. Il a insisté sur le fait qu'actuellement, dans les dictionnaires de langue, on n'indique pas la marque géographique des mots appartenant à la langue centrale, donc à la langue de Paris. Les notions de variante centrale, de variantes périphériques et de marques géographiques seraient, selon lui, à revoir. On trouvera ci-après quelques extraits de sa communication.

En général, c'est en fonction de la culture qui a cours dans une communauté que la langue de la communauté se développe. La culture étant fort variée dans l'espace et dans le temps, la langue l'est aussi. L'influence de la culture sur la langue et son lexique est donc de grande importance.

Autrefois, la langue française venait tout droit de la métropole avec sa norme et s'imposait facilement, car elle apportait la «civilisation» aux colonies. Mais l'immensité des colonies, leur indépendance et leur développement technologique et culturel, ont changé le cours des événements. On ne saurait continuer à ignorer les différentes valeurs territoriales que présentent les variantes du français. On doit tenir compte des particularismes lexicaux territoriaux. Actuellement, le français qu'on présente dans les ouvrages est celui de Paris. Les expressions d'autres terroirs sont presque inexistantes. Et quand bien même il y en a, c'est juste pour satisfaire la curiosité des consommateurs de France.

Il est grand temps que les français «périphériques» reçoivent le même regard scientifique et donc, la même attention, que toute autre langue de culture, sans se voir imposer l'idéologie dominante et la tradition dictionnairique centraliste du français de Paris, car force est de reconnaître qu'il y a plusieurs français. Ainsi, le français, à l'image de l'anglais et de toute autre langue de grande culture, est un ensemble de sous-langues représentées par des regroupements d'idiolectes, de sociolectes, de topolectes et bien d'autres -lectes. Dans l'ensemble de ces regroupements se dégage un tronc commun, un sous-ensemble constitué de mots qu'on retrouve dans tous les regroupements. Ces mots appartiennent au fonds commun français et qu'on soit à Québec, à Paris, à Marseille, à Port-au-Prince, à Yaoundé ou à Abidjan, on les emploie.

C'est ce noyau commun qui doit être traité de langue centrale et non la langue de Paris. La langue centrale doit donc être le creuset où se rencontrent et se neutralisent les éléments culturels. Elle doit être le symbole de la communauté francophone. Les locuteurs des différents pays et régions francophones doivent enrichir le français avec leurs particularités linguistiques basées entre autres sur

leur passé, leur histoire, leurs habitudes, leur développement intellectuel et social, leur milieu physique et climatique et la nécessité de se comprendre eux-mêmes.

Les mots du «noyau commun» ne devraient pas porter la marque géographique car ils appartiennent à toute la communauté francophone. Tous les autres mots devraient en porter une ou deux. La première marque indiquerait le territoire national, la deuxième quant à elle, préciserait la région. Ainsi, on pourra avoir des mots marqués, par exemple :

FR - *Île-de-France*   *Sénégal - Sérère*

FR - *Occitan*   *Can - Qué*

Côte d'Ivoire - Bouaké   *Qué - Lac St-Jean*

4. LA TENSION ENTRE L'EMPRUNT ET LA NÉOLOGIE DE SOUCHE FRANÇAISE   (Emmanuel Aitokhuehi, Canada - Nigéria)

L'emprunt, surtout son aspect sociolinguistique, jouit d'une pertinence contemporaine, c'est un des phénomènes qui nous révèlent toute une gamme de comportements et de transmutations langagiers concrets. Les transformations s'effectuent et à l'intérieur d'une langue donnée et par rapport à d'autres langues.

La formation lexicale de souche française en terminologie se réalise par dérivation, par confixation, par composition et par lexicalisation. Mais ces procédés n'excluent pas le recours à d'autres procédés terminogènes dont font partie l'emprunt, l'abbréviation et l'emploi figuré. Une meilleure connaissance de l'emprunt, phénomème universel, est fournie en terminologie par la pratique et l'évaluation des termes d'emprunt. On sera donc capable d'appréhender leur intégration ou leur remplacement éventuel par les néonymes.

En terminologie, l'emprunt contemporain signifie les acquisitions contemporaines sous forme d'emprunt particulier ou savant visant les morphèmes plutôt que les unités lexicales. En français, l'emprunt contemporain est surtout l'anglicisme, car c'est l'anglais qui est pour le français moderne la langue prêteuse par excellence (voir aussi Darbelnet *Regards sur le français actuel* 1963:29; *Le français en contact avec l'anglais* 1976:75).

Darbelnet (1963:35) signale qu'il y a deux façons pour une langue de s'enrichir: ou bien se donner des mots nouveaux par voie de création ou d'emprunt ou bien ajouter des sens nouveaux à des mots déjà existants. Pour Ullmann, ce sont les créations arbitraires, les procédés autochtones et les emprunts. Pierre Trescases parle d'un infléchissment du mouvement néologique d'emprunt d'après le nombre décroissant des anglo-américanismes par rapport à l'augmentation des néologismes dans les dictionnaires néologiques de Pierre Gilbert (1971, 1980).

La néologie de souche française et l'emprunt sont caractérisés par le conflit entre l'homogénéité des langues et la tendance à l'internationalisation et l'uniformisation des terminologies. Les linguistes reconnaissent que la néologie fournit d'inépuisables ressources de création lexicale, comme Christiane Marcellesi qui note le souci dans le langage des techniciens de l'informatique de maintenir un certain purisme en gardant les racines traditionnelles savantes.

Trescases note la difficulté qu'il y a à cerner la notion d'emprunt, et il est de l'opinion que la retombée immédiate devrait être la normalisation de l'information étymologique face au manque de cohérence étymologique des

dictionnaires d'usage.

Pierre Agron parle du défaitisme et du fait que l'emprunt rend les sens des mots français restreints. Pour Blanchard, c'est la paresse qui est "mère du franglais" tandis que Chevry dit qu'il s'agit "aujourd'hui de dompter, de canaliser un véritable torrent d'anglicismes, d'établir des barrages [...]". Declercq pense que la réaction surtout négative est tardive car les mauvaises habitudes ont été prises. Pourtant, il songe à avoir un langage correct à l'exclusion des traductions défectueuses et s'il y a besoin, l'adoption judicieuse de quelques termes anglais. Jean Charles Sournia n'est pas aussi modéré que Declercq car il tient que l'anglicisme est nuisible et "doit être remplacé chaque fois que c'est possible par un équivalent français facile à comprendre et à prononcer et d'où il est aisé de tirer des dérivés".

L'emprunt et la néologie doivent répondre aux besoins d'usage dont les indices peuvent être la fréquence, et la récurrence. Puis, il faut qu'ils répondent à la biunivocité, c'est-à-dire l'univocité et la dénomination unique. L'emprunt résulte parfois d'un ou plusieurs procédés de formation tout comme le néologisme, et ils contribuent tous les deux à l'enrichissement de la langue. La langue explore et exploite toute ressource disponible. La néologie puise dans d'autres langues étrangères pour constituer ses modes de formation. Il ne devrait pas exister un conflit entre l'emprunt et la néologie car la francisation est un effort souvent efficace pour naturaliser le terme d'emprunt. L'emprunt néologique peut être soit un néologisme de forme soit celui de sens comme dans les exemples de **nylon** et **laser**, soit une association nouvelle d'éléments lexicaux préexistants comme **sit-in**.

Dans les ressources spéciales, il s'agit surtout de mots ou de morphèmes empruntés tels que des anglicismes ou des confixes gréco-latins de la terminologie médicale. Ceux qui exigent la formation à partir des ressources indigènes parlent de la facilité d'emploi et de mémorisation de ces termes et leur intégration aisée à la langue tout entière. Les partisans de la terminologie spéciale soulignent l'absence dans ces termes d'interférences de la langue usuelle. Ils insistent aussi sur la nécessité de désigner un sens spécial par une forme spéciale, et que la facilité des termes ayant une forme usuelle est fictive. On invoque là, l'argument que le sens d'un terme n'est jamais usuel, ni celui de l'usage usuel.

Les deux principes de formation sont efficaces et se complètent. Mais Kocourek remarque le recours aux ressources de la langue usuelle qui semble devenir plus fréquent. C'est l'impact du dirigisme constitutionnel qui rejoint celui des puristes. Cette tension assure la modération dans les deux camps qui entrent en opposition. En principe, l'évolution de la langue marquée par des transmutations ne répond pas à la législation rigide qui entre en conflit avec le dynamisme de la langue.

Point n'est besoin de rappeler la flexibilité et le dynamisme de la langue. Il faut le juste milieu, "l'entente cordiale" que recommande Sauvageot et non l'emprunt excessif ni le purisme stérile. Toutefois, il faut se rappeler ces mots de Rey mis en relief par Boulanger (1987:326) : "[...] toute langue est capable de tout nommer" et ce, nous estimons, en créant et en empruntant.

La tension entre ces deux processus linguistiques et pragmatiques provient de la concurrence de l'emprunt et du néonyme qui est censé remplacer celui-là.

L'emprunt et la néologie se complètent; la langue peut s'enrichir en profitant des ressources de la créativité lexicale qu'ils offrent.

5. MÉDECINE ET INFORMATIQUE: L'EMPRUNT
(Juan C. Rivas, Canada - Venezuela)

Dans sa conférence, Juan Carlos Rivas a traité de la question de l'emprunt dans le domaine des virus informatiques. Il a présenté d'abord l'hypothèse qui postule l'emprunt à l'anglais pour présenter, par la suite, une deuxième hypothèse suggérant l'emprunt interne en français. Voici un bref résumé de sa communication.

Nombreux sont les phénomènes que l'on peut observer lors des recherches néologiques visant à l'élaboration de dossiers terminologiques, quel que soit le domaine dans lequel on travaille. Arbre dont les branches n'ont pas cessé de pousser depuis sa naissance, l'informatique continue d'être l'un des plus grands casse-têtes de notre époque. D'ailleurs, des efforts remarquables ont été faits pour réussir à constituer une base de données terminologiques en français, ce qui a permis d'imposer des termes comme *logiciel*, face à la domination de l'anglo-américain *software*. Néanmoins, l'évolution effrénée de la technologie de l'informatique et l'insatiable soif terminologique qui l'accompagne font en sorte que des phénomènes comme l'emprunt demeurent en permanence sur le tapis.

Or, contrairement à la théorie qui veut que la terminologie française reste en état de dépendance à l'égard de l'anglais pour la plupart des sous-domaines de l'informatique, il est des cas, comme celui de la sécurité informatique, où cette théorie pourrait être remise en cause. À première vue, il semblerait que l'on soit en présence d'une terminologie française caractérisée par une profusion d'emprunts à l'anglais ou de formes calquées sur le modèle anglais. On pense, par exemple, à *antidote, détection, mutant* et *contamination* comme des emprunts provenant d'*antidote, detection, mutant* et *contamination*.

Cette hypothèse serait alors fondée sur la ressemblance indéniable qui existe entre les termes français et les termes anglais, les termes anglais étant nés avec la réalité qu'ils servent à dénommer ou à décrire, et les termes français n'étant que l'attribution des éléments de sens des termes anglais à des termes existant déjà en français. Or, tout en tenant compte de cette hypothèse, puisque dans ce genre d'étude tout élément d'analyse est important, les données obtenues ont permis la formulation d'une autre hypothèse : la terminologie des virus informatiques s'est développée parallèlement en anglais et en français à partir d'un terme «noyau» (*virus*) qui a ouvert les portes, dans les deux langues, à toute une palette de termes médicaux ou biologiques.

On serait donc en présence d'un phénomène de néologie que l'on pourrait appeler «emprunt interdomaines», c'est-à-dire que l'incorporation des éléments ne se fait pas d'une langue étrangère à une autre, mais plutôt d'un domaine spécialisé à un autre, à l'intérieur d'une même langue. Il en résulte une terminologie française dont le lien avec l'anglais serait réduit à un seul élément: le terme *virus*. Le français aurait alors emprunté à la langue anglaise le nouveau sens qu'elle avait donné au terme *virus* (ce qui correspond à un emprunt interdomaines en anglais) et il l'aurait attribué au sosie français dudit terme (soit *virus*), qui marquerait le début d'un processus d'emprunt interne en français.

Cela entraîne en français, au même titre qu'en anglais, un jeu de

métaphores (Quemada, «Technique et langage» 1978 : 1166 et Kocourek, *La langue française de la technique et de la science* 1991 : 169) qui permet l'entrée de plus en plus importante des termes médicaux dans le domaine de la sécurité informatique, parallèlement dans les deux langues. Il faut souligner que la créativité lexicale est facilitée, tant en anglais qu'en français, par le fait que les notions correspondant aux termes médicaux empruntés demeurent presque les mêmes en informatique.

En outre, il est fort intéressant d'observer l'évolution des néologismes une fois qu'ils sont ancrés dans le nouveau domaine. Des termes comme *virus informatique* et *logiciel antivirus*, par exemple, ont vu tomber peu à peu leur partie informatique formelle pour devenir simplement *virus* et *antivirus*. C'est ainsi que l'on trouve des articles «médico-informatiques» qui proposent des **vaccins** pour les logiciels **atteints d'un virus**, afin de l'**éradiquer** et d'en empêcher la **propagation** dans d'autres **corps** susceptibles d'être **infectés**.

On ne peut donc prétendre que la terminologie rattachée aux virus informatiques n'est pas qu'un simple calque de la terminologie anglaise. L'affirmer serait nier l'énorme capacité dont dispose le français de bâtir, de lui-même, une terminologie sur la base de ses propres ressources. Bien sûr, on ne cherche pas par là à effacer toute trace d'influence de l'anglais, une tâche par ailleurs impossible. Il ne faut quand même pas oublier qu'à l'origine de toute terminologie il y a une raison d'être, au moins une réalité, qui a besoin d'être dénommée. Dans le cas présent, cette réalité est représentée par la notion de «virus informatique», dont l'existence a d'abord été mise en évidence en anglais. Ce qu'il faudrait retenir ici, c'est l'idée que dans certains cas il suffit qu'un terme nouveau apparaisse, quelle qu'en soit l'origine, pour qu'un système terminologique se développe. L'entrecroisement de domaines occupe ici une place importante.

D'ailleurs, l'interrelation de plus en plus grande entre les différentes disciplines scientifiques et techniques favorise les emprunts interdomaines, ce qui permet l'enrichissement lexical des domaines en présence. Cet enrichissement est d'autant plus remarquable que le nombre de disciplines est élevé. L'intelligence artificielle en est un parfait exemple. Cette discipline est composée d'environ sept autres domaines dont l'informatique, la logique, les mathématiques, la psychologie et la sémantique. On peut donc se douter du torrent terminologique que provoque une telle diversité de domaines et des dérivations syntagmatiques qui en résultent.

Bien que l'hypothèse présentée semble juste, il pourrait être intéressant de faire d'autres recherches qui permettraient de relever, par exemple, les premières attestations des termes «médicaux» dans le domaine de la sécurité informatique, tant en anglais qu'en français. Même dans le cas où ces attestations montreraient qu'un terme est apparu en français ultérieurement à son homologue anglais, il n'en reste pas moins qu'il est tout à fait possible que les systèmes terminologiques se soient développés indépendamment dans chacune des deux langues.

6. AUTOUR DES PAPILLONS: LA DESCRIPTION SCIENTIFIQUE ET LA DESCRIPTION LITTÉRAIRE   (Nina Hopkins Butlin, Canada)

Afin d'entrevoir plus clairement les rapports implicites qui existent entre le discours littéraire et le discours scientifique, on a entrepris la comparaison de

deux textes visant la description d'un objet référentiel semblable. Il s'agit de deux versions, deux encodages, d'un noyau descriptif relatif à des papillons. Le texte objectivisant ou scientifique est tiré de «L'ordre des lépidoptères» par Jean Bourgogne qui figure dans le *Traité de zoologie*, publié sous la direction de Pierre-P. Grassé en 1951 (t. X, pp.437-438; Paris: Masson.) L'autre est un extrait de «Les papillons» tiré de *La paix chez les* bêtes de Colette [1989 (1916); in *Colette, romans, récits, souvenirs (1900-1919)*:1185; Paris:Robert Laffont].

Pour ce qui est du texte scientifique, on s'attend à une abondance de termes techniques porteurs du sens monosémique et à la suppression de la subjectivité de la part de l'auteur. Par contre, on considère le texte littéraire comme le lieu privilégié de la subjectivité autorielle. On s'attend à une richesse d'expressions figurées, à la construction d'un sens polyvalent et instable, à peu de termes purement techniques, et à une sensibilité esthétique très élevée de la part de l'auteur(e).

Alors que les deux textes choisis confirment en grande partie cette caractérisation de la différence entre les deux sortes de texte, un chevauchement capital entre eux se révèle. Les deux discours, malgré une différence frappante par rapport à leurs codes respectifs, sont des produits d'un projet scriptural semblable: celui de rendre possible, dans et par le langage, le contact humain avec un monde référentiel essentiellement «autre». D'une part, c'est la science et surtout le discours naturaliste qui a fait du langage un outil efficace pour le faire-voir et le faire-comprendre dont le discours littéraire a pu profiter. Depuis longtemps, la science a offert à la littérature une richesse lexicale extraordinaire et un espace discursif où se permet non seulement l'interrogation du monde réel dans sa diversité, mais aussi l'enquête moderne sur la subjectivité du moi face à l'objectivité du non-moi.

D'autre part, force est de se rendre compte des liens renouvelés de nos jours entre le discours scientifique et celui des sciences humaines. Comme le disent Ilya Prigogine et Isabelle Stengers dans *La nouvelle alliance: Métamorphose de la science* (1986), la science a commencé à reconnaître certaines contraintes. Le «je» de l'observateur scientifique autrefois considéré comme objectif, désintéressé, passif, est devenu, dans certains contextes du moins, un «je» conditionné par sa situation, limité dans sa perspective, bref, un «je» dont les observations portent désormais la trace de sa propre subjectivité.

Il est raisonnable de croire que cette relativisation historique de la science entraînera un intérêt approfondi à la textualisation des observations scientifiques. Selon cette perspective épistémologique, on ne peut plus étudier la portée sémantique d'un texte sans tenir compte des circonstances de son énonciation et des valeurs axiologiques implicites. Le texte scientifique devrait être vu comme un texte dont la compréhension exige des analyses pragmatique et sémiotique. Le texte scientifique est susceptible d'être *interprété*, car le sens qu'il semble porter s'avère, ainsi que celui du texte littéraire, largement négociable.

Bien qu'ouvertement description, le texte zoologique, regardé de plus près, se révèle un texte double. Nous avons affaire non seulement à une mise en discours des observations de l'apparence physique du papillon, mais aussi à une textualisation des traces archéologiques de l'histoire naturelle.

Le «je» énonciatif (ayant implicitement le caractère d'un scientifique

objectif) fait du papillon un objet cognitif en l'associant textuellement à l'histoire de la nomenclature et du processus de la classification scientifique. La série des unités descriptives portant sur l'objet décrit, des papillons, est interrompue par une autre série syntagmatique. C'est l'histoire du discours scientifique, celui qui a créé avec le temps la possibilité que le papillon soit vu, soit nommé, soit décrit, soit classifié, soit comparé avec tous les autres membres du règne animal.

Le «je» énonciatif se cache dans ce genre de texte, non seulement parce qu'une perspective «objective» est voulue, mais aussi pour mieux écouter le «nous» collectif où s'impliquent tous ceux ou celles qui contribuent ou qui ont contribué aux recherches. Il y a, quand même, des moments où le «je» singulier se révèle discrètement à travers certaines évaluations ou dans des traces expressives laissées par un signe de ponctuation.

Un autre indice très révélateur est l'emploi du mot «auteurs» dans le premier paragraphe. Le code scientifique n'opère pas exclusivement une communication à propos du référent: le discours de la science est distinctement auto-référentiel dans le sens qu'il est intensément conscient de son cadre énonciatif. Le ou la scientifique n'est pas seulement chercheur, observateur ou interrogateur, il ou elle est auteur. Si le langage poétique peut être caractérisé par son auto-référentialité sur le plan de l'énoncé, le langage de la science, tel qu'il s'offre dans ce texte du moins, est caractérisé par une référence frappante à son propre contexte énonciatif.

La description de Colette, malgré sa nature distinctement métaphorique, n'est pas aussi loin du texte scientifique qu'il le semble au premier coup d'œil. Dans une grande mesure, la description littéraire peut être vue comme une sorte de recodage ou comme une transformation d'un paradigme descriptif essentiellement littéral. Cette transformation caractéristiquement figurée sert à intégrer le noyau descriptif dans un plus grand réseau textuel et aussi à l'installer dans un nouveau contexte énonciatif: celui d'un réseau des genres littéraires.

Tout comme cette description scientifique prend comme sous-texte l'Histoire et les débats de la science, on voit que ce texte descriptif de Colette est non seulement descriptif, mais aussi narratif et réflectif. Au niveau littéral, l'interaction entre le «je» narratif et la nature est explicitement racontée. Au niveau de la connotation et de la figure, c'est un récit mythopoétique où la notion du paradis terrestre s'implique ainsi que l'exploration des polarités masculin/féminin.

Ainsi qu'il faut écarter l'Histoire du texte scientifique pour y voir la description, chez Colette il est nécessaire de chercher au-delà de la narrativité du texte pour dégager la description proprement dite. Malgré leurs différences par rapport à l'énonciation, les deux textes manifestent des noyaux descriptifs similaires.

La science a prêté à la littérature non seulement des ressources lexicales et un goût pour l'observation, mais aussi les moyens d'explorer, de nommer et de connaître un monde objectivé. Il est peut-être la tâche de la littérature et de la linguistique d'encourager la science de comprendre sa propre subjectivité et de sonder les profondeurs de ses métaphores et l'idéologie de son propre contexte énonciatif.

7. DANS QUEL SENS PEUT-ON DIRE QU'UN TERME TECHNIQUE EST MONOSÉMIQUE? (Aloysius N. Obiukwu, Canada)

Une étude interprétative perçoit généralement le terme technique comme monosémique, c'est-à-dire n'ayant qu'un seul sens dans le monde de référence. Il y a monosémie lorsqu'un signifiant ne renvoie qu'à un seul et unique signifié. Louis Guilbert en fait un caractère définitoire du terme technique. Mais en règle générale, un signifiant entretient avec le signifié un rapport complexe de sens. Suivant sa nature, un mot est soit dénotatif (référentiel) soit connotatif (évocateur). Compte tenu de ce double niveau de signification ainsi que d'autres facteurs linguistiques et extralinguistiques influant sur la communication, le mot présente alors un noeud de sens divers. En cela, il devient polysémique. La question se résume donc en ceci: le terme technique participe-t-il également à ce double niveau de signification? Autrement dit, en quoi consiste la monosémie du terme technique? Et ce terme défie-t-il toute interprétation polysémique?

Le premier argument que l'on pourrait avancer en faveur de la monosémie du terme technique, c'est celui de la spécialisation. Ceci explique l'abondance des dictionnaires et des lexiques spécifiques aux différents domaines techniques. Guilbert oppose la pluralité des vocabulaires techniques à l'unicité du lexique général de la langue. En effet, le terme technique rend compte d'un monde de connaissance et d'étude d'une valeur universelle, caractérisé par un objet et une méthode déterminés et fondé sur des relations objectives vérifiables, en général, par les lois (v. *Le Petit Robert 1*). Il s'agit d'un domaine où l'observation et l'exactitude ont une grande part. L'emploi du terme technique doit donc satisfaire aux exigences d'objectivité et de précision. Ainsi est-il le plus souvent d'usage restreint. Les termes 'photosynthèse' et 'chlorophylle' s'emploient en biologie où ils ont chacun un sens particulier. Ainsi le terme technique dénote-t-il les choses et les phénomènes naturels.

D'autre part, la néologie et l'emprunt contribuent à la monosémie du terme technique. Des inventions se réalisent constamment dans le domaine technique, et chaque nouvelle invention s'accompagne d'un nom. On citera ici trois exemples: 'phytochrome' (*Encyclopaedia Universalis*), 'lombriculture' et 'lombricompost' (Merle). En plus, les réalités scientifiques et techniques dépassent les frontières nationales; les emprunts interlinguistiques sont souvent nécessaires en langue technoscientifique. Citons l'exemple, en français, de 'design' et en anglais, de 'pasteur-ize', un verbe anglais dérivé de Louis Pasteur, le chimiste français. En outre, un critère formel révèle que le terme technique relève souvent de la formation savante (ex., 'photorécepteur') et se prête ainsi difficilement à la polysémie. Or, nous avons affaire avant tout aux signes linguistiques, régis dans leur rapport avec le signifié par l'arbitraire et le conventionnel. Il n'existe aucune ressemblance formelle entre le signe linguistique et l'objet qu'il désigne dans le monde de référence. On peut donc arguer que le terme technique aurait un sens suivant l'usage qu'en fait le spécialiste dans un domaine particulier et selon un but précis. Dans leur domaine particulier de spécialisation, le médecin, le biologiste et le mécanicien n'auront pas la même perception du terme 'organe'. En effet, le *Petit Robert 1* témoigne de la polysémie de ce terme par des sous-articles numérotés renvoyant à plusieurs domaines d'activité dont chacun rend compte d'une acception particulière du

terme.

D'autre part, la langue est un bien social commun et à mesure qu'un terme technique s'approche de la communication générale, il devient de plus en plus possible qu'il prenne des sens nouveaux suivant le niveau d'expérience et l'intérêt professionnel de l'usager, où et quand il emploie le terme, et dans quel but il s'en sert. Le terme technique récupère donc sa polysémie. Et où il y a polysémie, la communication peut être entravée sans l'intervention du contexte. On soulignera donc ici l'importance d'interpréter le terme suivant son contexte (ou milieu) d'emploi. Kocourek perçoit justement le terme comme une unité définie dans les textes de spécialité. Un contexte bien défini écarte d'autres acceptions du terme (v. Bréal).

En conclusion, pour déterminer la monosémie du terme technique, il conviendrait essentiellement de considérer son niveau de spécialisation dans la communication générale. La monosémie prime là où il y a un très haut niveau de spécialisation du terme, c'est-à-dire où le terme est restreint au seul domaine technique où il ne réfère qu'à une seule et unique chose ou à un seul phénomène. Cette restriction sémantique s'appelle la monosémisation.

8. LE LANGAGE SGML ET SES APPLICATIONS EN TERMINOLOGIE
(Jean Fontaine, Canada)

Dans sa communication intitulée «Le langage SGML et ses applications en terminologie», Jean Fontaine a présenté la norme ISO 8879 (1986), appelée *Standard Generalized Markup Language* (SGML), norme qui définit un langage pour décrire la structure d'un document à l'ordinateur. M. Fontaine a également passé en revue quelques formats d'échange de données terminologiques (MATER, MicroMATER, NTRF, TEI-TERM) dont certains sont conformes au SGML. Voici quelques extraits de son exposé.

Le SGML est un langage qui a pour but de formaliser la façon de décrire la structure d'un document, d'un texte, et ce, d'une façon qui soit indépendante de sa présentation visuelle et des systèmes informatiques utilisés pour son traitement. Ce n'est pas la façon de structurer ou de coder le texte qui est normalisée, mais plutôt le langage utilisé pour décrire la façon dont on a codé la structure du document.

Avec le SGML, il s'agit essentiellement d'ajouter aux données du document des marqueurs, des codes qui décrivent la structure de ces données. On doit préciser au préalable la forme et le sens que l'on donne à ces marqueurs et les relations structurales qu'on établit entre eux.

Le document est l'unité de base pour le SGML. Ses divers constituants logiques sont appelés éléments. Ainsi un document de type "vocabulaire" pourrait comprendre des éléments de type "article", "vedette", "définition", "note", etc. Le document peut également être divisé en constituants physiques appelés entités.

Le SGML permet de définir une seule fois la structure d'un certain type de document en définissant les types d'éléments qu'il doit contenir et les relations qu'ils doivent avoir entre eux. Une fois ainsi défini un type de document, chaque nouveau document créé ou échangé peut être, dans son en-tête, déclaré comme appartenant à ce type de document et être balisé à l'aide de marqueurs correspondant aux types d'éléments définis. Le programme chargé de reconstituer la

structure du document reçu vérifiera d'abord dans cette déclaration à quel type il appartient, puis lira, conformément à ce type de document, les données et les marqueurs qui lui permettront de reconstituer la structure du document.

Il existe plusieurs types de marqueurs: les déclarations de marquage (qui permettent de définir et structurer les types de documents et les types d'éléments), les marqueurs descriptifs ou étiquettes (insérés dans le corps du document, ils en délimitent les éléments), les références aux entités, les instructions de traitement (ces dernières sont particulières à chaque système). Ces marqueurs sont obligatoires bien que les caractères utilisés pour les représenter (la "syntaxe concrète") soient laissés aux choix de l'utilisateur.

Ces possibilités, et bien d'autres, font du SGML un langage puissant et souple pour représenter des structures de données. Les documents dont la structure logique est ainsi codée deviennent facilement convertibles en bases de données puisque les éléments logiques peuvent être distinctement traités. Le SGML peut également servir de base pour la définition de formats universels d'échange de données.

Les données terminologiques, dont la structure ne se conforme pas aisément au moule des systèmes de bases de données classiques, gagneraient à disposer d'un format universel d'échange qui soit conforme au SGML. Quelques efforts ont été faits dans ce sens depuis quelques années.

Le format MATER, conçu en fonction des gros sytèmes utilisant des bandes magnétiques, ne peut pas répondre aux besoins nés de l'essor de la micro-informatique. Le format MicroMATER, inspiré du précédent, a cherché à remédier au problème, mais il n'est pas en tous points conforme avec le SGML.

Le Nordic Terminological Record Format (NTRF) est un langage de marquage conforme au SGML et utilisé pour l'échange de fichiers entre les bases de données terminologiques de trois pays scandinaves (Finlande, Norvège et Suède). Tout comme MicroMATER, il prévoit une cinquantaine de codes de type de champ pour représenter les nombreuses catégories terminologiques. Il a l'avantage de permettre des structures hiérarchisées sans limite de niveau de profondeur. Les noms de champs, obtenus par concaténation de codes (comme pour MicroMATER), en font de plus, par analogie, une langue de type agglutinant, qui permet une certaine liberté dans l'ordre d'apparition des données.

Une autre voie poursuivie est la mise au point d'un format d'échange universel basé sur le SGML qui s'inscrive également dans le cadre de la Text Encoding Initiative (TEI), organisée en 1987, et qui se donne pour but d'établir, pour plusieurs types de données et de documents, des lignes directrices SGML pour leur échange, leur traitement, leur création. On vise également à faciliter l'extraction de données à des fins de recherche ou de gestion de bases de données. Le fait d'inscrire un format d'échange terminologique dans le cadre de la TEI augmente son potentiel d'interaction dynamique avec d'autres types de documents inclus dans la TEI, tels des formats d'échange pour les bases de données lexico-graphiques, documentaires, bibliographiques, textuelles, etc.

La format d'échange de données terminologiques proposé porte le nom de TEI-TERM. Selon les capacités des bases de données en présence, il permet trois niveaux de structuration des données. Leur syntaxe diffère, mais ils possèdent un contenu sémantique identique. La liste de noms de catégories prévue par le

TEI-TERM est plus complète que celles de MicroMATER et du NTRF. La structure des données est plutôt explicitée par l'ordre d'apparition des champs et des étiquettes, ainsi que par des pointeurs. Le TEI-TERM paraît plus puissant et souple que le MicroMAETER et le NTRF, bien qu'il demande en contrepartie un marquage plus lourd.

La nécessité de créer ces formats universels est une occasion de réflexion sur la nature et la structure des données spécifiques à la terminologie, sur les "universaux" peu discutés de la méthodologie terminographique et sur d'autres points faisant l'objet de divergences de méthodologie et qui par le fait même résistent à une normalisation trop contraignante.

9. MIKHAIL BAKHTINE: L'IMAGINAIRE DIALOGIQUE / LE DIALOGUE IMAGINAIRE   (H. Peter Edwards, Canada)

Le présent travail s'offre comme une réfraction fantaisiste du rapport légèrement polémique que les textes de Mikhaïl Bakhtine entretiennent avec d'autres textes à caractère académique ou scientifique. Étant donné la nature que nous appelons «dialogique» de la théorie bakhtinienne, j'ose croire qu'un dialogue imaginaire convient au tableau de mon impression de l'opinion bakhtinienne vis-à-vis de la terminologie.

Ce dialogue est donc composé de fantaisie. Le mode de représentation ou de réfraction fantaisiste utilisé — mode plutôt imposé que choisi — pourrait se qualifier de hypo-réel. C'est-à-dire qu'il n'y a pas de correspondance exacte entre le matériau sémiotique réfractant et le réfracté. Cela nous permet de mettre un peu de distance entre nous-mêmes et ce qui est réfracté, et le tableau reste en deça de la réalité, tout en atteignant l'exagération. Ainsi, mon Bakhtine ne parle pas avec un terminologue, mais avec un peu d'effort on en verra la réfraction. Je voudrais rappeler au lecteur, à la lectrice qu'il ne s'agit que de mon impression de l'idée que Bakhtine pourrait avoir du terminologue. Ce tableau s'offre donc à titre de distraction et de considération.

Cela dit, libre cours maintenant à la fantaisie, et nous sautons consciemment dans l'abîme réfractant ou réfracteur, pour ne pas dire réfractaire. Bakhtine, pour rester dans le courant de ce colloque, entamera une conversation avec un scientifique, en l'occurrence, un chercheur en sciences vétérinaires, le docteur Wittington.

[Ce qui suit est un bref extrait tiré d'un texte de treize pages. Bakhtine et Wittington parlent des recherches de ce dernier...]

Wittington: Mon travail?

Bakhtine: Oui, votre travail. Dites-moi comment vous procédez dans vos recherches. Le travail pratique est toujours intéressant, et souvent plus accessible au profane, comme vous le dites.

Wittington: Très bien, mon travail. J'essayerai de l'expliquer un peu plus lentement que je n'avais fait pour la théorie.

Bakhtine: Vous serez charmant.

Wittington: Je vais donc vous expliquer les recherches que je compte mener dans les Montagnes de l'Altaï. D'abord, il s'agira de trouver un troupeau de chevaux, et ensuite, je vais procéder à l'isolement d'un individu que je prendrai comme représentant de l'espèce...

Bakhtine:	Comment faites-vous pour le choisir, cet individu?
Wittington:	Normalement, je choisi un mâle qui a l'apparence d'être en bonne condition. Je ne pourrais pas baser mes travaux sur des animaux qui s'écartent des conditions optimales de santé.
Bakhtine:	Vous l'isolez du troupeau, vous dites?
Wittington:	Oui, je l'isole.
Bakhtine:	Vous ne l'observez pas en relation avec les autres membres du troupeau?
Wittington:	Écoutez, ce n'est pas le troupeau que j'étudie, c'est <u>le</u> cheval que j'étudie. Soyons précis.
Bakhtine:	Mais ce cheval que vous allez isoler ne vit pas normalement en isolement. Vous ne verrez pas les importantes distinctions et dépendances...
Wittington:	Je vous devance là-dessus, et si vous voulez bien faire preuve d'un peu de patience, vous verrez que mon travail est tout à fait scientifique, très précis, et qu'il me permet finalement de cerner la véritable nature du cheval. Je l'isole, donc, et je le prépare pour ensuite le rapporter à mon laboratoire en Angleterre.
Bakhtine:	Vous ne l'étudiez pas dans son environnement naturel?
Wittington:	Écoutez, ce n'est pas l'environnement que j'étudie. C'est le cheval. Autrement, je ne saurais pas comment arriver à faire un portrait représentatif et objectif du cheval, si on y mélange des facteurs qui dépassent les limites de la bête. Comment dire que ceci émane de la nature chevaline, alors que cela est dû à l'environnement? Je prépare l'animal pour le voyage...
Bakhtine:	Mais l'animal dans son environnement...
Wittington:	...je le prépare et je le mets dans des vases hermétiques qui le conserveront à l'état sanitaire jusqu'à ce je que puisse le considérer dans les conditions objectives du laboratoire.
Bakhtine:	Dans des vases? [...]

Ce dialogue s'offre comme un essai de rendre vivant le rapport qu'entretiennent les textes de Bakhtine avec d'autres textes à caractère scientifique, dans l'espoir de susciter, si possible, de l'intérêt pour ces textes aussi riches et complexes que l'auteur dont il est question.

Il ne me reste qu'à remercier le lecteur, la lectrice de sa participation active dans la compréhension de ce dialogue imaginaire.

10. CONCLUSION

Au delà l'intérêt et de la diversité des sujets traités par les conférenciers et les conférencières, au delà également des échanges fructueux et parfois animés auxquels ont donné lieu les débats, ce colloque aura été l'occasion, pour des étudiants de 2ᵉ et de 3ᵉ cycles, de faire leurs premières armes sur la tribune scientifique et, du même coup, de soumettre leurs travaux à la critique. Pour les présidents de séance et pour les participants, il aura été l'occasion de constater l'existence d'une relève dynamique, solide et volontaire. À une époque où la

concurrence est vive, où les critères d'excellence ne cessent de s'élever, il importe de penser à la formation et à l'encardrement des professeurs et des chercheurs de demain. C'est ce qu'ont voulu faire les organisateurs de ce colloque.

NOTES

1. Les textes complets de tous les rapports du Colloque constitueront le volume 14 de la revue savante des étudiants et des étudiantes diplômés *INITIALES*. Ecrire à l'adresse suivante: The Editor, INITIALES, French Department, Dalhousie University, Halifax, N.S. Canada B3H 3J5.

2. Voici les membres du collectif, des conférenciers et des conférencières du Colloque:

Emmanuel Aitokhuehi (Dalhousie University)
Nina H. Butlin (Dalhousie University)
H. Peter Edwards (Dalhousie University)
Jean Fontaine (Université de Montréal)
Lise Lapierre (Dalhousie University)
Aloysius Obiukwu (Dalhousie University)
Juan C. Rivas (Université Laval, Université de Montréal)
René Tondji-Simen (Université de Montréal)

Le colloque terminologique des étudiants diplômés a été organisé avec le concours du Conseil des recherches en sciences humaines du Canada (643-92-0193).

TABLES RONDES / PANEL DISCUSSIONS

TITRE : GÉOLINGUISTIQUE ET LA MORTALITÉ DES LANGUES (RENCONTRE ENTRE LINGUISTES ET GÉOGRAPHES)
TITLE : GEOLINGUISTICS AND THE LIFE-EXPECTANCY OF LANGUAGES (A MEETING OF LINGUISTS AND GEOGRAPHERS)

ORGANISATEUR(S) / ORGANIZER(S) :
William MACKEY
(Université Laval/CIRAL - Canada)

GÉOLINGUISTIQUE ET MORTALITÉ DES LANGUES

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Université Laval, Québec, Canada

Cette rencontre entre linguistes et géographes a fourni une occasion à la linguistique de déborder les confins de la dialectologie et de la géographie des formes pour englober la géographie des fonctions langagières.

La nouvelle orientation de la géolinguistique est motivée par le thème même de ce congrès; car les causes et conséquences de la mortalité des langues ne se limitent guère à la modification des morphèmes; il y a aussi des facteurs de comportement langagiers qui déterminent la redondance fonctionnelle des langues en contact ainsi que les dimensions territoriales des variables paralinguistiques.

Cette nouvelle interdiscipline comprend l'étude du rapport entre la géographie de fonctions. Cela comporte des descriptions à la fois synchroniques et diachroniques de la répartition et de la diffusion des variétés linguistiques à l'intérieur d'un même territoire selon les structures sociales (pluriglossiques ou monoglossiques) des populations qui y habitent. Ces descriptions géolinguistiques permettront des mises en rapport de données linguistiques et paralinguistiques ainsi que des synthèses axées sur les régions bien délimitées (villes, vallées, cantons, provinces) en faisant appel à diverses disciplines paralinguistiques telles que la démographie, l'ethnographie, l'histoire urbaine et régionale, la sociographie, les sciences politiques et juridiques ainsi que la cartographie linguistique.

En prenant comme base des données démolinguistiques, on peut observer des tendances en ce qui concerne le nombre de locuteurs, leur répartition selon la langue d'origine, la langue d'usage et le comportement langagier. On pourra ensuite examiner le décalage entre la connaissance d'une langue et son utilisation. Pour établir le rapport entre ces données linguistiques et celles provenant de la géographie des formes, il serait nécessaire de faire abstraction de la distinction entre «langue» et «dialecte» et de retourner aux principes d'Antoine Meillet.

Dans ce contexte, on a fait remarquer que le chinois parlé de Beijing, de Chongqing, de Wuhan, de Guangzhou et de Shanghai comporte des

différences analogues à celles que l'on trouve entre diverses langues romanes telles que l'italien, le castillan, le portugais, le français et le roumain.

Étant donné que ces différences entre parlers et «langues» constituent un déterminant de la cohésion linguistique de l'espace géographique des mesures de la distance interlinguistique entre elles (ainsi que leur dialectométrie) devront faire partie intégrale d'une étude géolinguistique.

La géolinguistique doit d'abord établir le rapport entre l'intégrité géopolitique et la cohésion linguistique d'un territoire. Il s'agit de mesurer le degré de congruité entre les frontières linguistiques et les frontières politiques. Pour ce faire, on met les techniques bien rodées de la dialectologie au service de la géolinguistique.

La géolinguistique, telle que conçue, comprend l'étude de la vie et de la mort des langues étant donné que la survivance d'une langue dépend de plusieurs facteurs qui varient d'une région à l'autre. Une langue ne disparaît pas soudainement sur toute l'étendue de son territoire, mais parler par parler en commençant souvent par ceux de la périphérie. La modification progressive de chaque parler par contamination et désuétude serait l'objet de types de recherches qui feront appel aux méthodes de la linguistique descriptive, historique et comparée en mettant en rapport les changements de formes avec les pertes de fonctions langagières.

Puisqu'il ne peut pas y avoir de vide linguistique dans la société, il faudra démontrer comment une langue moribonde se fait remplacer par une langue vivace dont la diffusion aurait déjà fait l'objet d'étude géolinguistique.

La diffusion d'une langue est fonction de facteurs mesurables y compris le déplacement des peuples et la mobilité des populations, leur interaction linguistique ainsi que les moyens et la structure de leur intercommunication. Une observation, même superficielle, de ces facteurs nous permet de hasarder quelques hypothèses.

Depuis la Révolution industrielle jusqu'à nos jours, on constate une accélération phénoménale dans la mobilité des populations, et cela touche directement la mortalité de certaines langues aux dépens d'autres langues de plus grande diffusion.

L'urbanisation à l'échelle internationale a modifié la composition linguistique des grandes villes. Ces mégapoles modernes, en grandissant avaient besoin de plus en plus de main-d'oeuvre pour répondre à la demande de services. Plus la ville grandit, plus les gens viennent de loin, plus cette population augmente, plus elle est diverse.

Le mouvement des populations entre les régions pauvres et les centres riches se fait aussi en sens inverse. Le citadin fuyant la congestion de la ville se dirige vers des endroits moins peuplés, mais il demande qu'on le serve dans sa langue. Le tourisme diffuse surtout les langues du touriste. Il est vrai que cela est parfois sa langue auxiliaire dans le cas où sa langue nationale n'est pas un idiome de diffusion.

Les langues se répandent par de l'interaction linguistique. Plus il y a d'interaction, moins il y a de langues - grâce à la tendance à trouver un parler commun, ou par le nivellement de dialectes et variétés de langues, ou par l'utilisation de la langue la plus forte. Plus la distance d'interaction augmente, moins il y a de langues d'interaction. Car le nombre de langues que l'on peut utiliser partout est moindre que la totalité des langues se trouvant dans les divers pays. Plus l'interaction est spécialisée, moins il y a de langues de diffusion. La diffusion d'une langue dépendra de son utilisation; et l'utilisation de cette langue est fonction de son utilité. Plus une langue est utilisée, plus elle est utile. Toute accélération de l'utilisation d'une langue pour une fonction donnée engendre une augmentation dans l'importance de cette langue.

Sur la surface de la terre, de plus en plus accessible à tous, une population qui ne cesse de doubler se déplace toujours plus loin et plus souvent, tout en utilisant des moyens de communication à distance qui ne connaissent maintenant plus de limite. Tout cela favorise de plus en plus les langues de grande diffusion qui occupent de multiples fonctions. Chacune de ces fonctions fait diffuser la langue selon sa propre dynamique pour aboutir, à long terme, à une polyglossie de plus en plus généralisée.

Voilà donc quelques hypothèses dont la vérification pourrait bien occuper pendant plusieurs années les practiciens de cette interdiscipline qui est devenue la géolinguistique.

INDEX GÉNÉRAL / GENERAL INDEX[1]

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[1]- Les chiffres romains indiquent le volume et les chiffres arabes indiquent les pages. Roman numerals refer to volume numbers and Arabic numerals to page numbers.

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Les **Actes du XVe Congrès international des linguistes** comprennent quatre volumes totalisant plus de 1900 pages qui rassemblent la plupart des communications entendues lors du **CIL 1992**. Le premier volume est consacré aux allocutions de la séance d'ouverture, aux conférences des séances plénières (11 articles) et aux exposés, rapports et discussions présentés lors des 19 tables rondes (plus de 75 contributions). Les trois autres volumes réunissent les communications libres. Leur contenu est réparti comme suit : le volume 2 : sections 1 à 3 (99 articles), le volume 3 : sections 4 à 7 (132 articles), le volume 4 : sections 8 à 17 (114 articles auxquels s'ajoutent les allocutions de la séance de clôture).

Témoignage ultime et permanent du **CIL 1992**, les **Actes** donnent la parole à des centaines de linguistes et de chercheurs, jeunes et chevronnés, venant des cinq continents. Toutes les composantes et toutes les orientations de la linguistique moderne y sont l'objet d'études et d'analyses les plus diverses, tandis que les grandes questions de l'heure sont discutées et débattues avec franchise et compétence. Les connaissances sur le fonctionnement des langues progressent sans cesse, et c'est tout à l'honneur de la science linguistique. Ces regards multiples sur tous les sujets d'actualité stimuleront certainement les hommes et les femmes engagés dans la recherche linguistique de par le monde.

The **Proceedings of the XVth International Congress of Linguists**, which include four volumes totalling over 1900 pages, are a collection of most of the papers presented at the 1992 congress. The first volume contains the opening remarks, the papers from the plenary sessions (11 articles), and the presentations, discussions and reports from the 19 plenary sessions (over 75 articles). The papers from the thematic sessions make up the other three volumes : sections 1-3 (99 articles) in volume 2 ; sections 4-7 (132 articles) in volume 3 ; and sections 8-17 (114 articles) in volume 4, to which the closing remarks are added.

As the ultimate lasting witness to the 1992 congress, the **Proceedings** provide an occasion for hundreds of linguists and researchers, both young and experienced, from five continents to make their ideas known. All the elements and trends of modern linguistics are studied and analysed from different points of view and the major current topics are discussed openly and competently. Thanks to science, our knowledge of how language functions is continually increasing. The variety of views on contemporary issues published in these **Proceedings** will surely stimulate anyone interested in linguistics research around the world.