

## ON THE CONCEPT OF GRAMMATICAL CATEGORY

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**Abstract:** The INTRODUCTION outlines the general theoretical background of the discussion. PART 1 deals with the scope in which the term 'grammatical category' is used in linguistics and specifies the sense to which the term is restricted in the present paper. PART 2 gives a critical evaluation of functional treatments of the grammatical category (J. Perrot, P. Guiraud). PART 3 defines a grammatical construction and points out that a set of grammatical constructions constitutes the basis of a grammatical category. PART 4 shows the grammatical category as a function in a selectional-generative sense. PART 5 introduces a distinction between actual and potential values of a grammatical category. The main result is recapitulated in the CONCLUSION.

**Key terms:** theory of grammar, grammatical construction, grammatical category, formative, formative, value (actual vs. potential), selectional-generative function, gender.

### 0. INTRODUCTION

0.0. This paper is a further elaborated presentation of the concept of grammatical category developed by the present author in his earlier papers.<sup>1</sup> The theory of language that lies at the background of the concept in question is that proposed by the author in *The Dynamics of Language* (1976).

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<sup>1</sup> The present paper is a revised and extended version of the author's paper "Czym jest kategoria gramatyczna" (= What is a grammatical category) (forthcoming), the latter being a revised and extended version of mainly the first part of the author's paper of 1988. The paper of 1988 had its shorter predecessor in the author's paper of 1984.

0.1. A natural language is understood as a “set of systems of textual rules, i.e. rules that govern the process of verbal communication” (Sroka 1976:76). Textual rules concern the occurrence of features of textual entities (elements of text) as determined by the occurrence of other features of those entities. A description of any natural language (or of its fragment or subsystem) should ultimately consist in the formulation and arrangement of textual rules proper to that language.

One arrives at textual rules by comparing textual entities among themselves with regard to form (structure), location (co-occurrence with other entities, textual or extratextual), and signification. The comparison leads to the establishment of a system of co-occurrence of features, for example a system of co-occurrence between formal and signification features, the former being values of form and the latter values of signification.

0.2. A system of co-occurrence, which is a bidirectional relationship between elements of two sets, yields two directionally opposite systems of unidirectional relationship, i.e., in the present author's terminology, selectional-generative functions. This type of function, when operating on the occurrence of features of textual entities, constitutes a system of textual rules (see Sroka 1976:Chs.1-3).

The concept of selectional-generative function is a top-level tool for language description. It has also helped the present author to develop an important but lower-level concept, namely that of functional contrast, on the basis of the traditionally central concept of functional linguistics: that of opposition (see Sroka 1976: 92ff.).

0.3. For handling semantically complex textual entities (i.e. those which are above the morpheme and thus constitute the area of grammar) the theory additionally provides the concept of grammatical construction; auxiliary concepts are those of base (argument), formative (operator), and functive (i.e. a feature co-occurring with a given subset of formatives, cf. Sroka 1981b: 195ff.). By definition, a grammatical construction consists of at least one base and one formative. The presence of a larger number of bases and formatives in one textual entity entails a certain (fixed) type of hierarchical organization (see Sroka 1976: 106ff., 1981a:34f., 42).

Such a concept of grammatical construction will make it possible to develop the concept of grammatical category.

## 1. THE SCOPE OF THE TERM ‘GRAMMATICAL CATEGORY’

1.1. Originally, the scope of grammatical categories was confined to inflexional (accidental) categories, such as gender, number, case, person, tense (see Lyons 1968:270-273). Currently, the term is employed also for other kinds of entities. According to the terminology used by Lyons (1968:274), there are (a) primary grammatical categories, (b) secondary grammatical categories, and (c) functional categories. The primary grammatical categories correspond to parts of speech, the secondary, which are identical with inflexional (accidental) categories, include such notions as tense, mood, case, etc., and the functional categories, which Lyons (1968:334) also calls grammatical functions, include the traditional syntactic notions of subject, predicate, object, etc.



Grammatical categories are divided into three analogous types by Guiraud (1958:45ff.); he distinguishes (a) *espèces* corresponding to *parties du discours*, i.e. parts of speech, (b) *modalités*, e.g. gender, number, person, and (c) *relations*, e.g. subject and predicate.

1.2. Examining the nature of the three types of categories mentioned above, one finds that there is an essential logical difference between the secondary grammatical categories and the other two types.

The secondary grammatical categories, whose scope corresponds to that of grammatical categories in the original sense, are *variable qualities* whose *values* are assignable to textual entities. Thus, for example, the category of gender, may, in a given language, comprise such values as masculine, feminine, and neuter; the category of case may be characterized by such values as nominative, genitive, dative, etc.; the category of number may include such values as singular and plural.

The characteristic described above is not shared by the primary grammatical categories or functional categories. Neither the representatives of the former, i.e. particular parts of speech, nor those of the latter, i.e. subject, predicate, object, etc., are variable qualities whose values would be assignable to textual entities. Particular parts of speech are classes of textual entities. Those classes may be regarded as subclasses of such a class, or as values of such a category, as *part of speech* (in the singular). Similarly, such entities, or functions, as subject, predicate, object - may be considered to be specimens of such a class, or values of such a category, as *sentence part*, or *function in the sentence* (also in the singular).

1.3. The concept of grammatical category to be presented in this paper is confined to variable qualities. Grammatical categories in this understanding, although deriving their essence from those which in Lyons's account appear as secondary grammatical categories, will be more numerous than the latter might prospectively be since they will not be restricted to inflexional (accidental) categories; they will go beyond the morphological level. Thus, for example, one may treat as a grammatical category the purpose of declaration ("speech act") with such values as assertion, question, and pragma, assignable to sentences (utterances).

## 2. FUNCTIONAL TREATMENTS OF THE GRAMMATICAL CATEGORY

2.0. Having established that being a variable quality is a necessary condition for being a grammatical category (in the sense accepted here), one obtains a firm basis for a further inquiry into the nature of that concept. The basic question promoting such an inquiry is obviously the following: what is the *differentia specifica* which makes a variable quality a grammatical category? If we accept, rudimentarily, that a variable quality, to qualify as a grammatical category, must associate with a certain type of textual entities, then several important subquestions arise, such as

- (a) what textual entities are involved?
- (b) what does the association consist in?
- (c) is the variable quality formal, signification, or both formal and signification?
- (d) how can the variable quality and its values be established?
- (e) what are the ways of, and the criteria for, assigning a given value of the variable quality to a given textual entity?

The present author's proposals for solving the problem outlined above will be preceded by a critical account of what is said on grammatical categories by two representatives of functional linguistics.

2.1. Jean Perrot (1959:50f., 59f.) regards grammatical categories as notions which are expressed by means of morphemes. They vary from language to language. In each language, in a specific manner, functions associate notions with means of expression, i.e. morphological devices. The application of the functional principle allows us to recognize distinct linguistic categories only in connection with series of distinct forms. If there are no series of distinct forms, there is no reason to speak of distinct values. In turn, the expression "distinct series" (i.e., as one can understand, "series of distinct forms") has its sense only in a system of oppositions: the same series may run through several sets of forms without ceasing to be one (unitary) by virtue of its function.

The account given above will be substantiated by quoting Perrot himself.<sup>2</sup>

Ainsi, dans la phrase française: *Les grands arbres du bois ont été abattus par le bûcheron*, on reconnaît cinq éléments lexicaux désignant des notions: *grand*, *arbre*, *bois*, *abattre*, *bûcheron*. Mais les notions qui s'expriment dans cette phrase sont spécifiées sous certains rapports: pluriel (*les grands arbres*) par opposition au singulier (*le grand arbre*); passif (*ont été abattus*) par opposition à l'actif (*ont abattu*), et en même temps fait accompli par opposition au passé répété ou vu dans son déroulement (*étaient abattus*), au présent (*sont abattus*), ou au futur (*seront abattus*); on parle alors de *catégories grammaticales* du nombre, de la voix, du temps; ce sont les notions qui s'expriment au moyen des morphèmes (*les* pour le pluriel par opposition à *le*, et liaison -z- dans *grands arbres*, par opposition à la liaison -t- dans *grand arbre*). [...]. (p.50).

Les catégories grammaticales sont très variables suivant les langues. Nous opposons en français un singulier et un pluriel, dans la catégorie du nombre; mais l'opposition du nombre peut comporter d'autres degrés: [...]. L'indo-européen avait, en face de l'indicatif, à la fois un subjonctif, exprimant la volonté et l'éventualité, un optatif exprimant le souhait et la possibilité, et un désidératif marquant le désir ou l'intention. En latin, il ne subsiste qu'un subjonctif en face de l'indicatif: le glissement des valeurs (des formes de subjonctif ayant fourni un futur à l'indicatif, des formes d'optatif ayant reçu des emplois du subjonctif) s'y traduit par une simplification des oppositions.

On voit ainsi se définir d'une manière spécifique, dans chaque langue, des *fonctions* associant des notions à des moyens d'expression. Les notions sont les catégories grammaticales, les moyens d'expression sont les *procédés morphologiques*. Ceux-ci sont également très variables selon les langues. (p.51).

Sur le plan de la grammaire, l'application du principe fonctionnel oblige à n'admettre de *catégories linguistiques distinctes* qu'en liaison avec des séries de formes distinctes. [...] là où n'apparaissent plus de séries de formes distinctes, il n'y a pas à considérer des valeurs distinctes. [...]. (p.59f.).

<sup>2</sup> The fragments quoted are given in the present author's translation in Annex 1, (A).

Encore faut-il préciser ce qu'implique l'expression "séries distinctes". Elle n'a de sens que dans un système d'oppositions; une même série peut recouvrir plusieurs jeux de formes, sans cesser d'être une par sa fonction. Soit le système des "temps" de l'indicatif en grec ancien: il comporte notamment un imparfait, un aoriste (passé ponctuel), un parfait; mais les jeux de formes sont variables: [...] ces jeux de formes ne sont que des variantes morphologiques possibles pour une série qui est fonctionnellement unique. Il y a de même en français plusieurs types de conjugaisons (*aimer, finir, etc.*) qui diffèrent par les formes, mais dont l'organisation est la même. (p.60).

The content of Perrot's statements can be systematized according to the following problems: (1) grammatical categories across languages, (2) the setting up of grammatical categories, and (3) the level to which grammatical categories basically belong. As regards the first problem, Perrot maintains that grammatical categories are subject to interlanguage variation. As regards the second problem, he postulates recognition of distinct grammatical categories in a given language only if there exist series of distinct forms which make up systems of oppositions and participate in functions associating notions with means of expression. As, finally, regards the third problem, Perrot assumes that grammatical categories are basically notions (i.e., as one can understand, *significata*), and formal entities (morphemes) serve them only as means of manifestation; from this it follows that grammatical categories belong basically to the signification level.

Perrot's treatment of problems (1) and (2) is the strong point of his approach. It should also be considered basic for any discussion of grammatical categories. However, his treatment of problem (3) requires revision in two respects, namely: (a) grammatical categories cannot be located at the signification level although they are, in a certain way, connected with signification, (b) one should make explicit the difference between the variable quality and its values and treat the grammatical category (e.g. gender) as a variable quality in contrast to its values (such as masculine, feminine, neuter); Perrot is not clear at that point when he calls grammatical categories notions.

2.2. The other functionalist, Pierre Guiraud (1958:45-70), differs from Perrot in that he puts more emphasis on form and is inclined to locate grammatical categories at the level of formal (syntactic) relations.

Before passing on to details, it should be recalled that, in Guiraud's use, the term 'grammatical categories' covers what he calls (a) *espèces*, (b) *modalités*, and (c) *relations*, which correspond to Lyons's 'primary grammatical categories', 'secondary grammatical categories', and 'functional categories', respectively (see above, 1.1). For the purpose of the present discussion, one should mainly consider Guiraud's approach to his *modalités*, i.e. such categories as gender, number, case, person, tense.

Using as evidence the characteristics of the category of gender, specifically in French, Guiraud states that it is not forbidden to think that *modalités* as well as *espèces* (parts of speech) have their primary source not so much in logic (meaning) as in the exigencies of syntax, i.e. necessary relationships among forms in the sentence. In Guiraud's own words:<sup>3</sup>

<sup>3</sup> All the fragments quoted below are given in the present author's translation in Annex 1, (B).

La grammaticalisation du genre offre un exemple remarquable des relations tout arbitraires entre la forme et le sens.

En français, il est impossible d'identifier le genre grammatical (masculin, féminin) et le genre logique (mâle, femelle), et la distinction y apparaît comme un pur moyen syntaxique permettant à travers l'accord de marquer la relation du déterminant au déterminé (l'adjectif s'accorde en genre avec le nom). (p.49).

Il n'est donc pas interdit de penser que les *modalités* aussi bien que les *espèces* (parties du discours) ont leur origine première moins dans la logique que dans les nécessités de la syntaxe, c'est-à-dire des relations nécessaires entre les formes dans la phrase. (p.50f.).

Functional analysis makes it possible, according to Guiraud, to base one's definitions not only on meaning, but also on form. Using the other option, one can define a grammatical category as a set of forms constituting elements of the same system of relations. In other words, each grammatical category is constituted by a series of permutable forms.

L'analyse fonctionnelle nous offre un autre critère [in contrast to the logical or semantic one], puisque pour chaque signe elle nous propose une double définition, à partir du sens ou à partir de la forme: ainsi le *sujet* est "celui qui fait l'action" (définition logique et sémantique), c'est aussi une forme définie comme un certain type de liaison (définition formelle).

De ce dernier point de vue on peut définir une *catégorie grammaticale* comme l'ensemble des formes entrant dans un même système de relations. (p.63).

Chaque catégorie grammaticale est constituée par une série (plus ou moins importante) de formes permutable; [...]. (p.65).

The concepts of opposition and function play in Guiraud's approach as important a role as in Perrot's, but in contrast to Perrot, who places grammatical categories basically at the signification level, he maintains that a grammatical category constitutes a system of oppositions, a structure in which the function of each term depends on the possibilities of contrasting it with other terms. This can be seen from his conclusion to the discussion of the "category" of determiners in French.

La catégorie constitue donc un *système d'oppositions*, une structure dans laquelle la fonction de chaque terme dépend des possibilités de l'opposer à d'autres, [...]. (p.65).

Guiraud's approach to the problem of grammatical categories across languages is similar to that of Perrot, but his emphasis upon the differences among languages seems to be stronger.

Le parallélisme logico-grammatical devait céder à l'évidence de la grammaire générale (moderne) en constatant que les différentes langues n'ont ni les mêmes formes ni les mêmes catégories.

C'est qu'une langue donnée ne grammaticalise que certaines catégories logiques et n'emploie qu'un certain nombre de formes, différentes d'une langue à l'autre; par ailleurs, la relation entre forme et sens reste arbitraire. (p.51).

### 3. GRAMMATICAL CONSTRUCTIONS AND A GRAMMATICAL CATEGORY

3.0. The foregoing account of Perrot's and Guiraud's views shows, on the one hand, what is basic and stable, and, on the other, what varies in the functional treatment of grammatical categories. Generalizing what is basic in that treatment, but taking into account also its varying components, the present author will proceed towards his own concept of grammatical category. The author proposes, accordingly, to reconsider the nature of the grammatical category by relating it to the system of co-occurrence of features within a set of grammatical constructions.

3.1. A grammatical construction will be viewed as a semantically complex textual entity in whose structure, on functional grounds, two components can be distinguished: a BASE and a FORMATIVE.

In the expressions *flower-Ø* and *flower-s*, which are instances of grammatical constructions, *flower-* is the base, and *-Ø* and *-s* are formatives. From the logical (semantic) point of view, a grammatical construction proper (in contrast to an apparent grammatical construction, see below, 3.2), i.e. such as is represented by the examples quoted, is an operation in which the base is an argument, and the formative an operator. In the examples in question, *flower-* is the argument, and *-Ø* and *-s* are operators; in this case, the operators act upon the argument (content of the base) as specifiers of number.

A grammatical construction may itself constitute the base of a higher-order grammatical construction and/or contain, as its own base, a lower-order grammatical construction. The organization of a complex grammatical construction is, thus, hierarchical.<sup>4</sup> For example, *flower-s*, which itself is a grammatical construction, occurs as the base of a higher-order grammatical construction, e.g. *the flowers*, *some flowers* (with the formatives *the* and *some*); in turn, *the flowers* and *some flowers* occur as bases of such constructions as *of the flowers*, *to the flowers*, *of some flowers*, *to some flowers* (with the formatives *of* and *to*).

3.2. As regards the 'substance' ('material' essence) of formatives, they may be divided (as shown in Sroka 1981a:35f. and 1988:349f.) into three basic types: (1) textual segments distinct from the base, as in the examples given above, (2) inherent (segmental and supra-segmental) non-defining features of the base, and (3) locational non-defining features of the base, i.e. positions of the base in a higher-order construction.

The formatives of type (1) may appear as adverbs (e.g. *not*), conjunctions, prepositions, affixes, determiners, and auxiliaries.

The formatives of type (2) appear as (see l.cit.):

- a. constitutive (or, componential) features, i.e. in this case the alternating components, of the base, such as the alternating vowels in *run* : *ran* as formatives of tense or in G. *Laden* : *Läden* ('shutter/shop' : 'shutters/shops') as formatives of number;

<sup>4</sup> For an earlier formulation of the concept of grammatical construction and its hierarchical organization outlined here, see Sroka (1976:106f., 1981a:34f.).

- b. tactic features, i.e. the alternating types of the order of elements (components), of the base, e.g. in *He is a painter : Is he a painter?*, where, with the same (falling) intonation, one type of order marks a statement and the other a question;
- c. accentual features of, i.e. the alternating types of stress and intonation imposed upon, the base, e.g. *He is a painter : He is a painter?*, where the intonational pattern in which the element *painter* obtains the falling tone marks a statement, and the one in which *painter* obtains the rising tone marks a question.

The formatives of type (3) include sets of positions capable of bringing about grammatical contrasts, e.g. the preverbal and the postverbal positions in *x visited y*. The two positions are formatives of role constructions. Thus in *John visited Peter*, there are two role constructions: one of them has *John* as base and the preverbal position as formative; the other has *Peter* as base and the postverbal position as formative. These constructions show different values of the grammatical category of role. The former is the subject, the latter is the object (cf. l.cit.). The elements of text which appear in the role of the subject and of the object are, therefore, grammatical constructions not only in inflexional languages, where the variation is enacted by means of endings (as in P. *Jan-Ø odwiedził Piotr-a* 'John visited Peter'), but also in those of positional (configurational) type, where the contrast is obtained through location and where positions are fully legitimate formatives.<sup>5</sup>

3.3. In the approach proposed by the present author, grammatical categories have their basis in sets of grammatical constructions. A grammatical category derives, namely, from the system of co-occurrence, in a structurally homogeneous set of grammatical constructions (e.g. a set of constructions consisting of nominal stems and case endings), between particular formatives and some other properties of the constructions. These other properties will be referred to as **FUNCTIONIVES**.<sup>6</sup> The interplay of formatives and functionives constitutes the basis for establishing a variable quality whose values are assignable to particular textual entities. It will temporarily be assumed that such a variable quality is a grammatical category.

Viewed directionally, and dynamically, the system of co-occurrence underlying a given grammatical category yields Function A, which maps functionives into formatives, and Function B, which maps formatives into functionives (cf. Sroka 1981b:195). In the realization of Function A, a particular functionive (used as an argument, i.e., in this case, a value of the independent variable) selects a particular formative or a set of formatives (which is, thus, a value of the dependent variable and, simultaneously, a value of the function). In turn, in the realization of Function B, a particular formative (used as an argument) selects a particular functionive or a set of functionives. The two functions operate in the process of communication (encoding and decoding).

3.4. Speaking of sets of grammatical constructions relevant for the establishment of a given grammatical category, one should distinguish **GRAMMATICAL CONSTRUCTIONS PROPER**, i.e. such as those defined above (3.1), and **APPARENT GRAMMATICAL CONSTRUCTIONS**; the latter resemble the former from the formal point of view, i.e. each one possesses a base and a forma-

<sup>5</sup> On the comparison, from this point of view, of English and Polish, see Sroka (1981a: e.g. 39f., 49f., 54).

<sup>6</sup> Originally, the present author used the term 'functionive' in the sense of a semanteme associated with a formative (Sroka 1981a:42). For an extended sense going beyond that of the semanteme, the sense which appears also here, see Sroka (1981b:195).

tive, but they are not grammatical constructions semantically, i.e. they do not represent logical operations consisting of argument and operator; they are semantically simple. The same expression may be a grammatical construction proper with regard to one grammatical category, and an apparent grammatical construction with regard to another. For example, *P. szaf-a* 'cupboard' is a grammatical construction proper with regard to the grammatical category of number (where the stem *szaf-* is an argument carrying lexical content, and the ending *-a* is an operator specifying number), and, as will be shown below, it is an apparent grammatical construction with regard to the grammatical category of gender.

In the case of APPARENT GRAMMATICAL CONSTRUCTIONS the functives are (a) isolated formal properties of the base or (b) isolated significational properties of the construction. Both cases will be illustrated by expressions manifesting the grammatical category of gender in Polish. In this connection, it should be mentioned that, in Polish, the ending of the adjective modifying a noun or relating, as a predicator, to a noun functioning as the subject, reflects the value of gender characteristic of the noun. Hence the set of such endings (running through different cases) occurring in connection with a given noun can be used as evidence that the noun in question represents a given value of gender.

As regards case (a), i.e. where the functives are isolated formal properties of the base, the nominal stem *stół-/stół-/stół-* co-occurs with the formatives characteristic of the masculine (nom. sing. *duż-y stół*, m., 'big table'), the nominal stem *szaf-* co-occurs with the formatives characteristic of the feminine (nom. sing. *duż-a szaf-a*, f., 'big cupboard'), and the nominal stem *krzesł-/krześl-* co-occurs with the formatives characteristic of the neuter (nom. sing. *duż-e krzesł-o*, n., 'big chair').

As to case (b), i.e. where the functives are isolated significational properties of the construction, the nominal stem *grot-* co-occurs with formatives belonging to two different sets: one characteristic of the masculine, and the other characteristic of the feminine; it co-occurs with the former if the construction *grot-[]* has the meaning 'arrow, spearhead' (nom. sing. *ostr-y grot-ø*, m., 'sharp arrow/spearhead') and with the latter if the construction in question has the meaning 'cave' (nom. sing. *ślynn-a grot-a*, f., 'well known cave').

In the case of GRAMMATICAL CONSTRUCTIONS PROPER, the functives are regular significational properties of the constructions: they are members of a significational contrast running through many sets of constructions. Such are the features [+ male] and [+ female] in the core system underlying the category of gender in Polish, in the range of nouns denoting male and female representatives of people within various categories (e.g. kinship, profession, nationality). Thus the feature [+ male] co-occurs with the formatives characteristic for the masculine, and the feature [+ female] co-occurs with the formatives characteristic for the feminine. This happens, for example, in the case of the construction *kuzyn-[]*, as seen from nom. sing. *dalek-i kuzyn-ø*, m. 'distant cousin (male)', *dalek-a kuzyn-k-a*, f. 'distant cousin (female)'. In *kuzyn-k-a* (nom. sing.), *-k-* is a word-formational suffix, and *-a* an ending, both manifesting the feminine.

It should be noted, however, that, in Polish, the nouns denoting people of a given profession or function (rank) show a tendency to occur with formatives characteristic for the masculine, also in the case of women, e.g. *ona jest nauczycielem akademickim* 'she is a university teacher' vs. *ona jest nauczycielką w szkole podstawowej* 'she is a primary school teacher', *ona jest dyrektorem departamentu* 'she is a/the director of a/the (ministry) department' vs. *ona jest dyrektorką szkoły* 'she is a/the headmaster'. One should add also that certain nouns belonging



to the group discussed have only the masculine form, e.g. *magister* 'master' or *minister* 'minister', but are used also with reference to women.

3.5. The existence of functives of the regular signification type is necessary in order to speak of a grammatical category. In fact, it is most often with reference to signification that particular grammatical categories and particular values of those categories are named although there exist also pairs of terms, one member of the pair denoting an extratextual (natural) category and the other member denoting a grammatical category, e.g. *sex* and *gender*, *time* and *tense*, in English, *pleć* 'sex' and *rodzaj* 'gender', but only *czas* covering both 'time' and 'tense', in Polish.

The number and the character of the values of a given grammatical category in a given language depends on the number and the character of the members of the regular signification contrast running through the set of grammatical constructions involved. The subsets of formatives associated with particular members of the signification contrast obtain the status of exponents of particular values of the grammatical category. However, they are treated as this type of exponents not only in the case of grammatical constructions proper, but also, by extension, in the case of apparent grammatical constructions, i.e. when they are not connected with the regular signification contrast. Ultimately, therefore, a value of a given grammatical category is a formal, and not a signification, characteristic of a textual entity.

#### 4. GRAMMATICAL CATEGORY AS A SELECTIONAL-GENERATIVE FUNCTION

4.0. Having assumed that, in its *genus proximum*, a grammatical category is a variable quality, one can, by adding a *differentia specifica* resulting from further considerations presented above, define it as follows: A grammatical category is a variable quality manifesting itself in a homogeneous set of grammatical constructions and consisting in a variation through subsets of formatives assigned to particular constructions by virtue of certain features (including members of a regular signification contrast) differentiating the constructions. A value of a grammatical category is then a property of an individual grammatical construction and consists in the choice of a particular subset of formatives, the choice being determined by a certain feature present (specified) in the construction.

4.1. At the background of the definition of the grammatical category given above there is a function, namely Function A (see above, 3.3). The grammatical category corresponds to the dependent variable of that function. If, however, one wants to expose, in the concept of grammatical category, the very system of determination, one must go a step further and treat the grammatical category not merely as the dependent variable of the function, but as the function itself.

Taking the latter course, we define a grammatical category as a function extending over a homogeneous set of grammatical constructions and assigning subsets of formatives to particular grammatical constructions on the basis of features present (specified) in the constructions. Such a function can be represented in Formula F1, which has the following shape (cf. Sroka 1976:44-49):

$$C/x \Rightarrow y.$$



In the formula,  $C$  stands for a set of grammatical constructions,  $x$  stands for the independent variable (determining features, i.e. functives), and  $y$  for the dependent variable (determined subsets of formatives). The symbol  $/$  indicates that  $C$  is the field of the function, i.e. the restricted area for which the selectional system represented by  $x \Rightarrow y$  is valid. The fact that here a selectional system is at play and that, accordingly,  $x$  and  $y$  are variables is symbolized by the two arrows; a single arrow would represent a single selection, as in  $a \rightarrow p$ , where  $a$  and  $p$  are constants.

A short reading of Formula F1 is as follows: for  $C$ , a particular value of  $x$  selects a particular value of  $y$ . An extended, explanatory, reading is the following: for a set of grammatical constructions  $C$ , a particular functive belonging to a set  $X$  selects a particular subset of formatives belonging to a set  $Y$ . The determining features (values of  $x$ ) are thus the arguments, and the determined subsets of formatives (values of  $y$ ) are the values of the function. The values of  $y$ , i.e. values of the function, constitute the essence, and the values of  $x$  constitute the determinants, of the values of a grammatical category.

4.2. From Formula F1 it follows that if a grammatical construction belonging to the set  $C$  is specified by a feature  $f1$  (i.e. by a particular functive), then it is specified also by a feature  $f2$  (i.e. by a certain subset of formatives). This is, in a generalized way, expressed in Formula F2:

$$c @ x \rightarrow c @ y,$$

where  $c$  is a grammatical construction belonging to the set  $C$ ,  $@$  is the symbol of specification and has to be read as 'is specified by',  $x$  is a variable which takes its values from a set of functives  $X$ , and  $y$  is a variable whose values are subsets of formatives belonging to a set of formatives  $Y$ ; one more symbol used here, the arrow, represents logical implication or consequence. A short reading of the formula is then the following: if  $c$  is specified by a particular value of  $x$ , then  $c$  is specified by a particular value of  $y$ . A more extensive reading runs as follows: if a grammatical construction  $c$  is specified by a particular functive belonging to a set of functives  $X$ , then it is specified by a particular subset of formatives belonging to a set of formatives  $Y$ . Examples:

- (1)  $P. \text{ kuzyn-}[] @ \text{ 'male' } \rightarrow \text{ kuzyn-}[] @ \{ \text{sing.: N. } -\emptyset, \text{ G. } -a, \text{ D. } -owi, \text{ A. } -a, \text{ I. } -em, \text{ L. \& V. } -ie, \text{ plur.: N. \& V. } -i, \text{ G. \& A. } -ów, \text{ D. } -om, \text{ I. } -ami, \text{ L. } -ach \}$  (result in N. sing.: *kuzyn*, in G. sing. *kuzyna*; value of the grammatical category of gender: masculine).
- (2)  $P. \text{ kuzyn-}[] @ \text{ 'female' } \rightarrow \text{ kuzyn-}[] @ \{ \text{sing.: N. } -k-a, \text{ G. } -k-i, \text{ D. \& L. } -c-e, \text{ A. } -k-e, \text{ I. } -k-a, \text{ V. } -k-o, \text{ plur.: N. \& V. } -k-i, \text{ G. } -ek-\emptyset, \text{ D. } -k-om, \text{ I. } -k-ami, \text{ L. } -k-ach \}$  (result in N. sing.: *kuzynka*, in G. sing. *kuzynki*; value of gender: feminine).
- (3)  $P. \text{ nom. sing. } \text{ szaf-}[] @ \text{ — } \rightarrow \text{ szaf-}[] @ -a$  (result: *szafa*; value of gender: feminine).
- (4)  $P. \text{ nom. sing. } \text{ grot-}[] @ \text{ 'arrow, spearhead' } \rightarrow \text{ grot-}[] @ -\emptyset$  (result: *grot*; value of gender: masculine).
- (5)  $P. \text{ nom. sing. } \text{ grot-}[] @ \text{ 'cave' } \rightarrow \text{ grot-}[] @ -a$  (result: *grota*; value of gender: feminine).

4.3. From what was said above (4.1 and 4.2) it follows that when we say that a given grammatical construction is characterized by a given value of a grammatical category, we mean that the construction in question, by virtue of its (specified) features, is associated with a certain subset of formatives. In this sense, for example, we have to understand such terms as 'masculine', 'feminine', and 'neuter' in the case of the category of gender. They denote particular values of the category, but the essence of the values lies in the subsets of formatives associated with particular constructions by virtue of the features present (specified) in the constructions.

It is not accidental that we speak of subsets of formatives, rather than of individual formatives, as values of grammatical categories. The reason for doing so is that particular values of a given grammatical category in a language of a given type may be characterized by series of formatives. Such series, on the one hand, need not be totally exclusive, and on the other, a difference in only some of the items may be decisive for a distinction of different values. In the case of the category of gender in Polish, which belongs to the cumulative type, there are series of formatives running through declensions (see examples (1) and (2) in 4.2 above). Some formatives are shared by two or three of the main values, i.e. masculine, feminine, and neuter (see below, 5). In turn, a difference in only some of the items is decisive for the subdivision of one of the main values, namely the masculine, into masculine-personal, masculine-nonpersonal-animate, and masculine-inanimate<sup>7</sup> (e.g. acc sing.: *kuzyn-a* 'cousin', *kot-a* 'cat', *pas-∅* 'belt', acc. plur.: *kuzyn-ów* 'cousins', *kot-y* 'cats', *pas-y* 'belts').

4.4. Formatives belonging to the set of grammatical constructions over which a given grammatical category extends may be called formatives, or exponents, of that category; formatives belonging to the subset associated with a particular value of a grammatical category may be called formatives, or exponents, of that value.

Functionives operating in the set of grammatical constructions over which a given grammatical category extends may be called functionives, or (internal) determinants, of that category; functionives determining the choice of the subset of formatives characteristic for a given value may be called functionives, or determinants, of that value.

## 5. ACTUAL VS. POTENTIAL VALUES OF A GRAMMATICAL CATEGORY

5.0. If one takes an interpretive point of view, one may try to identify the value of a grammatical category on the basis of those formal components of a grammatical construction which are specified. Depending on the range of specification, the identified value is either POTENTIAL or ACTUAL.

5.1. The value is POTENTIAL when the base is, and the formative is not, specified. In this case, the type of value depends on the selective power of the base, i.e. on its capability to choose a given subset of formatives, e.g., in Polish, the nominal stem *szaf-* (see above, 3.4, and ex. (3) in 4.2) selects, as regards gender, the subset of formatives characteristic for the feminine and this value of gender is potential for the (apparent) grammatical construction *szaf-[]*.

<sup>7</sup> Such a set of "genders", i.e. values of gender, for Polish is proposed by Mańczak (1956); in our translation, the term 'masculine-nonpersonal-animate' renders his term 'męsko-zwierzęcy' (literally, 'masculine-animal').

A potential value may be SIMPLE, as is, for gender, the feminine in the case of the construction *szaf*[], or ALTERNATIVE, as is the masculine/feminine in the case of the construction *grot*[], in Polish (see above, 3.4, and ex-s (4) and (5) in 4.2) when the lexical meaning is not specified, or of the construction *kuzyn-k*[] in Polish (cf. ex. (2) in 4.2) when the semantic value concerning sex is without specification (*kuzyn-k*- functions as an expressively neutral stem co-occurring with the set of endings characteristic for the feminine, or as a diminutive co-occurring with the set of endings characteristic for the masculine).

The potential value of the alternative type appears when the features specified in the construction have not a stronger selective power. The subset of formatives corresponding to this value is the sum of the two subsets which constitute the component values. If the subsets in question are  $P$  and  $Q$ , then their sum is  $P \vee Q$ .

5.2. A value of a given grammatical category is ACTUAL when positive specification covers not only the base of the grammatical construction but also its formative, owing to which a given subset of formatives is actually represented. It may also be either SIMPLE or ALTERNATIVE.

The actual value is SIMPLE when the formative represents only one subset of formatives out of those characteristic for particular values of a given grammatical category. Such values, in the case of gender, are, for example, the feminine in P. *szaf-ę* or *kuzyn-k-ę* (both in acc. sing.), and the masculine in P. *kuzyn-owi* (dat. sing.).

The actual value is ALTERNATIVE when the formative represents more than one subset of formatives out of those characteristic for particular values of a given grammatical category. Such formatives are, for example, in the case of gender, *-om* in P. *grot-om* (dat. plur.) and *-a* in P. *kuzyn-k-a* (gen./acc. sing. masc. in the diminutive form or nom. sing. fem. in the neutral form). Each of these formatives belongs to two subsets characteristic for different values of gender, namely masculine and feminine. Thus, for the constructions *grot-om* and *kuzyn-k-a*, the value of gender is masculine/feminine. The value is actual and belongs to the alternative type.

If, in the case of the actual value of the alternative type, one wants to reach a simple value, one needs information which would supply a differentiating characteristic. Such information can be obtained from the context and/or speech situation. Context works through its form, e.g., in the case of gender in Polish, through the form of the adjective modifying the noun, and through its meaning.

## 6. CONCLUSION

In elaborating the concept of grammatical category proposed in the paper, the starting point was the assumption that a grammatical category is a variable quality. Owing, however, to a slight shift in that assumption it has become possible to recognize a grammatical category as a function in the selectional-generative sense.

A grammatical category has namely been defined as a function extended over a homogeneous set of grammatical constructions and assigning subsets of formatives to particular grammatical constructions on the basis of certain features (called functives) present (specified) in the

constructions. Subsets of formatives assigned to particular grammatical constructions are values of the function and thus values of a grammatical category.

Observation makes it possible to state that the realization of particular characteristics (components) of a given grammatical category is language-specific. This creates a field for comparative studies (see Sroka 1988:343-352).

One can also accept that, at least in the case of some grammatical categories, language-specific is also the existence of a given category. For example, the category of gender, which is found in Indo-European languages, essentially does not exist in Hungarian, which represents the Finno-Ugric family.

## ANNEX 1

### (A) *Quotations from Perrot (1959) in the present author's translation*

Thus, in the French sentence: *Les grands arbres du bois ont été abattus par le bûcheron* 'Big trees of the wood were cut down by the woodcutter', one can recognize five lexical elements designating notions: *grand* 'big', *arbre* 'tree', *bois* 'wood', *abattre* 'cut down', *bûcheron* 'woodcutter'. But the notions expressed in the sentence are specified as to certain relations: plural (*les grands arbres*) in contrast to singular (*le grand arbre*); passive (*ont été abattus*) in contrast to active (*ont abattus*), and, at the same time, accomplished action in contrast to the past repeated or in progress (*étaient abattus*), to the present (*sont abattus*) or to the future (*seront abattus*); one speaks, therefore, of *grammatical categories* of number, voice, tense; these are notions which are expressed by means of morphemes (*les* for the plural in contrast to *le*, and the connective *-z-* [the phonemic value of *-s* in *grands*] in *grands arbres* in contrast to the connective *-t-* [the phonemic value of *-d* in *grand*] in *grand arbre*. [...]. (p.50).

Grammatical categories are highly diversified across languages. In French, we contrast singular and plural in the category of number; but the opposition of number may involve other degrees [sc. values]: [...]. Indo-European had, beside the indicative, also a subjunctive expressing will and possibility, an optative expressing wish and probability [or, likelihood], and a desiderative marking desire or intention. In Latin, there is only a subjunctive beside the indicative: the shift of values (subjunctive forms having supplied a future tense in the indicative, optative forms having received the uses of the subjunctive) is interpreted as a simplification of oppositions.

Thus one can see that, in a way specific for itself, every language defines functions which associate notions with means of expression. The notions are grammatical categories, the means of expression are morphological devices. These are also highly diversified across languages. (p.51).

At the level of grammar, the application of the functional principle makes it necessary to admit different linguistic categories only in connection with series of distinct forms. [...] if, in a given case, there are no series of distinct forms, there is no reason to think of different values. [...]. (p.59f.).

One should still make clear what is implied by the expression “distinct series”. It has its sense only in a system of oppositions; the same series may cover various sets of forms without ceasing to be one [or, unitary] through its function. Consider the system of “tenses” of the indicative in ancient Greek: it, among others, includes imperfect, aorist (momentary past), perfect; but the sets of forms [within one tense] vary: [...] these sets of forms are but possible morphological variants within a series which is functionally unique [or, unitary]. In the same way, in French, there are several types of conjugations (*aimer*, *finir*, etc.) which differ as to their forms, but whose organization is the same. (p.60).

(B) *Quotations from Guiraud (1958) in the present author's translation*

The grammaticalization of gender offers an excellent example of completely arbitrary relations between form and meaning.

In French, it is impossible to identify grammatical gender (masculine, feminine) with logical gender (male, female) and the distinction appears to be a pure syntactic means making it possible to mark, through agreement, the relation between the modifying element and the modified one (the adjective agrees, as to gender, with the noun). (p.49).

It is, therefore, not forbidden to think that *modalities*, to the same extent as *species* [or, classes] (parts of speech) have their primary origin less in logic than in the exigencies of syntax, i.e. necessary relations among forms in the sentence. (p.50f.).

Functional analysis offers us another criterion [in contrast to the logical, or semantic, one] since, for every sign, it proposes a double definition, proceeding from meaning or proceeding from form: thus the *subject* is the one who/which does the action (logical, or semantic, definition); it is also a form defined as a certain type of connection (formal definition).

From the latter point of view, one can define a *grammatical category* as a set of forms belonging to the same system of relations. (p.63).

Each grammatical category is constituted by a (more or less important) series of permutable forms; [...]. (p.65).

The category constitutes, therefore, a *system of oppositions*, a structure in which the function of each term depends on the possibilities of opposing it to others, [...]. (p.65).

The logico-grammatical parallelism should give way to the evidence coming from general (modern) grammar ascertaining that different languages have neither the same forms nor the same categories.

In fact, a given language grammaticalizes only certain logical categories and uses only a certain number of forms, which vary from one language to another; after all, the relation between form and meaning is arbitrary. (p.51).

## ANNEX 2

*Summary in French – Résumé français**Sur le concept de catégorie grammaticale*

Le but de cet article est une présentation du concept de catégorie grammaticale que l'auteur a graduellement développé dans ses articles de 1981, 1984 et 1988, et qui est étroitement lié avec son travail théorique de 1976: *The Dynamics of Language*.

Nous avons considéré ces catégories grammaticales, qu'on peut qualifier comme des qualités variables, p.ex. genre, nombre, cas, personne, temps, mais qui doivent inclure quelque chose de plus, p.ex. espèce de phrase ou d'acte de parole.

Après une présentation et évaluation des vues de J. Perrot (1959) et P. Guiraud (1958) sur la nature de la catégorie grammaticale, l'auteur propose une reconsidération de ce concept en le référant au système de cooccurrence de traits dans un ensemble de constructions grammaticales; par définition, une construction grammaticale se compose d'une BASE (un argument) et un FORMATIF (opérateur), p.ex. angl. *flowers*, où *flower-* est la base et *-s* le formatif.

Ce qui est essentiel c'est l'espèce de la corrélation entre les formatifs et d'autres traits (p.ex. significations), ici nommés FONCTIFS, dans un ensemble structuralement homogène de constructions grammaticales (p.ex. un ensemble de constructions qui se composent de thèmes nominaux et désinences de cas).

Dans une perspective directionnelle et dynamique, le système de cooccurrence entre particuliers (sous-ensembles de) formatifs et particuliers (sous-ensembles de) fonctifs produit fonction A, qui projette les fonctifs sur les formatifs, et fonction B, qui projette les formatifs sur les fonctifs.

On peut regarder une catégorie grammaticale comme une qualité variable qui correspond à la variable dépendante en fonction A. Si pourtant on veut exposer, en catégorie grammaticale, le système de détermination (sélection), on peut la traiter comme la fonction même. Une telle fonction peut être représentée dans la formule:

$$C/x \Rightarrow y$$

(pour  $C$ , une valeur particulière de  $x$  choisit une valeur particulière de  $y$ ),

où  $C$  représente un ensemble de constructions grammaticales (pour lequel le système de détermination est valable),  $x$  est la variable indépendante (parcourant les fonctifs) et  $y$  est la variable dépendante (parcourant les sous-ensembles de formatifs).

Une valeur de la variable dépendante (un sous-ensemble de formatifs) est une valeur de la fonction et ainsi une valeur de la catégorie grammaticale. Une valeur de la variable indépendante (un fonctif) est, pour une valeur de la catégorie grammaticale, un déterminant.

Au point de vue interprétatif, on a établi la distinction entre les valeurs actuelles et les potentielles des catégories grammaticales.

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<sup>8</sup> For a fuller bibliography, see Sroka (1988 and forthcoming).