

## THE CONCEPTUAL STRUCTURE OF RIGHTS AND OBLIGATIONS

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**Abstract:** Rights and obligations form a class of human concepts found universally across cultures. The present paper explores their logic within the framework of Conceptual Semantics developed in my previous work.

**Keywords:** rights, obligations, conceptual structure, natural logic, cultural universals

### 1. CONCEPTUAL STRUCTURE

Over the past twenty years I have been pursuing a theory of linguistic meaning -- of the contextually integrated interpretations of utterances -- that forms part of a larger psychological theory of how humans understand the world. The theory postulates a level of *conceptual structure*, a mental representation over which principles of inference (included invited inference and heuristics) can be defined and in terms of which planning of actions takes place. Conceptual structure is mapped into the strictly linguistic levels of syntactic and phonological structure by sets of *correspondence rules*. Among the correspondence rules are the lexical items of the language, which provide small scale mappings between phonology, syntax, and meaning (Jackendoff 1983, 1987, 1990, 1997).

This approach to meaning contrasts with many standard philosophical approaches in that conceptual structure is not taken to map directly into the real world; rather it maps into the world *as human beings understand it*, quite a different notion. However, conceptual structure is still connected and constrained by the external world, but indirectly, via the complex mappings between sensation and cognition established by the perceptual systems of the brain.

Like any theory of meaning, the theory of conceptual structure should be supported by linguistic (including crosslinguistic) evidence and by its ability to formally support reasoning. However, because it is conceived of as embedded in a larger psychological theory, it should also interact with evidence from perception, child development, and potentially neuroscience. Moreover, since conceptual structure is meant to be to a degree independent of the language capacity per se, it should in principle be testable against evidence from the cognition of animals, especially primates, both in the laboratory and in natural settings.

The domain of concepts investigated most intensively by myself and many others (e.g. Talmy 1983, Herskovits 1986, Vandeloise 1986, Levin and Rappaport Hovav 1995, and the papers in Bloom et al. 1996) is *spatial cognition*, the position and movement of physical objects and substances in space, the forces they exert on each other, and the temporal structure of the states and events that result. This domain is especially fruitful because there is a vast range of lexical items expressing spatial concepts and because these correspond to a rich and precise set of perceptually-based intuitions. This line of research is now well established within linguistic semantics. In addition, it has long been recognized that language expressing spatial concepts is mirrored to a considerable extent by language expressing concepts in other domains (Gruber 1965, Jackendoff 1976, Lakoff and Johnson 1980, among many others). Thus understanding the organization of spatial concepts helps set a foundation for investigating other domains.

The domain in which the present study is situated is that of *social cognition*. Evidence from animal societies, especially that of primates (e.g. Cheney and Seyfarth 1990) suggests that human conceptualization of the world contains a substantial component, biologically as well as culturally supported, that is devoted to the understanding of the social context in which individuals find themselves (Jackendoff 1992, chapter 4). The fundamental unit of this domain is not the physical object but the *person*, a seat of intention and volition. People (and to some degree animals) have representations both in this domain and the physical; trees, rocks, streets, and buses are represented only physically. It should go without saying that the notion of person plays a substantial role in grammatical structure, if nothing else in the widespread existence of grammatical distinctions based on animacy.

## 2. INTRODUCTION TO RIGHTS AND OBLIGATIONS

In this paper I wish to investigate specifically the notions of rights and obligations, which are fundamental to the fabric of human social organization. For example, ownership of an object confers on the owner rights regarding use of the object and rights to prevent others' use of it (Miller and Johnson-Laird 1976, following Snare 1972). Giving someone a *promise* places one under obligation to fulfill the promise. Conferring a social status (for example an official title, a professional degree, or membership in an organization) grants the conferee certain rights and places him or her under certain obligations. Any sort of contract -- including not only financial/legal contracts but also marriage in many societies -- places the participants under obligation to perform certain acts. Inasmuch as the main issues addressed by a society's *legal system* (written or unwritten) include the privileges of ownership and the making and enforcing of contracts, it is clear that rights and obligations play a central role in understanding law.

The notions of rights and obligations appear to be universal in human societies. Societies differ in what rights and obligations pertain to their members, how such rights and obligations are obtained and lost, and how they are taken to be grounded in religion or government. Yet,



as I will show, these notions are remarkably complex and subtle. Thus these concepts raise interesting questions about learning and the evolution of cognition, issues to which I will turn at the end.

### 3. THE ARGUMENT STRUCTURE OF RIGHTS AND OBLIGATIONS

Right and obligation form a closely related pair, as can be seen from the language in terms of which they are expressed. For instance, one way to express a right in English is with the modal verb *may*; an obligation can be expressed with the modal verb *must*.

- (1) a. One may use one's possessions as one likes. (Right)
- b. One must pay sales tax in Pennsylvania. (Obligation)

One immediate impulse for formalizing these meanings might be to take the modal to express an operator over a proposition. Such a treatment, however, would miss the basic point that a right or an obligation is a relation between a person and his or her action. The readings of *may* and *must* that express the propositional operators possibility and necessity lend themselves to paraphrases like (2a). Such paraphrases are impossible with rights and obligations (2b).

- (2) a. It is possible/necessary that Sue will leave.
- b. \*It is a right/obligation that Sue (will) leave.

Rather, the proper treatment recognizes two separate arguments of these operators, which I will call RT and OB: the holder of the right/obligation and the situation with respect to which this person is entitled or obligated.

- (3) a. Sue has a right to leave when she wants to. =  
RT (Sue, Sue leaves when she wants to)
- b. Sue has an obligation to leave before 6:00. =  
OB (Sue, Sue leaves before 6:00)

The first argument of RT/OB must be a person. Rocks and clouds don't have rights and obligations. Animals are sometimes asserted to have rights, by construing them as semi-persons; they never have obligations. In modern capitalist legal thought, corporations are construed as susceptible to rights and obligations, and therefore can enter into contracts; the language used to effect this construal is that corporations are "legal persons."

In English, the second argument of RT/OB must syntactically be a VP, controlled by the holder of the obligation or right.

- (4) \*Sue has  $\left\{ \begin{array}{l} \text{a right} \\ \text{an obligation} \end{array} \right\}$  for  $\left\{ \begin{array}{l} \text{the sky to be blue} \\ \text{Bill to leave} \end{array} \right\}$

This VP is subject to semantic constraints. Both right and obligation require the situation to be non-past with respect to the time of the obligation: the VP may be present, future, or generic time:

- (5) Sue has  $\left\{ \begin{array}{l} \text{a right} \\ \text{an obligation} \end{array} \right\}$  to leave  $\left\{ \begin{array}{l} \text{right now} \\ \text{tomorrow} \\ \text{whenever she gets annoyed} \\ \text{*yesterday} \end{array} \right\}$

The VP of an obligation must express an action that the holder of the obligation can carry out volitionally (6).

- (6) Sue has an obligation to  $\left\{ \begin{array}{l} \text{leave} \\ \text{scratch her nose} \\ \text{*be tall} \\ \text{*be descended from royalty} \\ \text{*be paid for her work} \end{array} \right\}$

The VP of a right can express either an action carried out by its controller (7a,b) or a situation in which its controller receives a benefit (7e).

- (7) Sue has a right to  $\left\{ \begin{array}{l} \text{a. leave} \\ \text{b. scratch her nose} \\ \text{c. *be descended from royalty} \\ \text{d. *be tall} \\ \text{e. be paid for her work} \end{array} \right\}$

(8) illustrates the difference between *right* and *obligation* in this respect. The verb *receive* does not denote a voluntary action on the part of the recipient, but the verb *accept* does. Only the latter is possible as an argument of *obligation*.

- (8) a. Sue has a right to accept/receive pay for her work  
b. Sue has an obligation to accept/\*receive pay for her work

I will call the kind of right illustrated in (7e) a "passive" right, that in (7a,b) an "active" right; obligations can only be active.

For convenience, I will call the person having the right or obligation the Actor, and the situation to which the right or obligation pertains the Action, with the understanding that this includes as a special case passive rights, which do not involve an Action in the standard sense. We therefore refine (3) as (9); the use of HAVE will be justified shortly.

- (9) a. HAVE ( $X^\alpha$ , RT (ACT ( $\alpha$ ))) = 'X has a right to do Action'  
b. HAVE ( $X^\alpha$ , OB (ACT ( $\alpha$ ))) = 'X has an obligation to do Action'

In these formulas, the Action is notated as a function of one variable, its Actor (it may have further variables, irrelevant in the present context). This Actor position is bound to the holder of the right or obligation by the bound variable  $\alpha$ , where the superscript  $\alpha$  on X indicates that X binds the variable in the argument position of ACT.

The fact that rights and obligations have an Action rather than a proposition as their argument places them in the general domain of *deontic logic*, which deals with such notions as permissions and prohibitions, the logic of *may*, *must*, *should*, and *ought*, and which contains

moral reasoning as a particular subcase. However, passive rights do not fall altogether comfortably into the standard deontic domain, since their arguments are not volitional actions. (*Deserve to VP* has constraints on its argument similar to those of *right*.)

A further constraint on the Action is deeply rooted in the notions of right and obligation. Essentially, a right concerns something one *wants* to do, while an obligation concerns something one *doesn't* want to do.

- (10) a. Sue has a right/?an obligation to eat her ice cream sundae.  
b. Sue has ?a right/an obligation to scrub the toilets.

The interpretations marked ?? are sensible just in case we assume Sue doesn't like the ice cream sundaes and does like scrubbing toilets.

I will state this intuition in terms of the *value* of the Action to Actor -- positive for a right, negative for an obligation -- notating it as a function *VALUE* that maps two arguments, a Stimulus and an Experiencer, into a Value:

- (11)  $VALUE(Y, X) = +/-$  'the value of Y (Stimulus) to X (Experiencer) is positive/negative'

The opposition between positive and negative value here is a primitive affective distinction that may also be paraphrased by 'in vs. not in X's interest.' (This bears a relation to Freud's notion of Pleasure vs. Unpleasure (Lust vs. Unlust).) Using this notion we can state the constraint on rights and obligations as (12).

- (12) a.  $HAVE(X^a, RT(ACT(\alpha)))$  (defeasibly) presupposes  $VALUE(ACT(X), X) = +$   
b.  $HAVE(X^a, OB(ACT(\alpha)))$  (defeasibly) presupposes  $VALUE(ACT(X), X) = -$

In addition, rights and obligations have their own values: a right is generally a good thing to have, an obligation a bad thing to have. We can state this as (13).

- (13) a.  $VALUE([HAVE(X^a, RT(ACT(\alpha)))], X) = +$   
b.  $VALUE([HAVE(X^a, OB(ACT(\alpha)))], X) = -$

Notice that there are cases, such as the right/obligation to vote, which one may construe as either a right or an obligation to perform the same action. In *the right to vote*, we take voting as a desirable action; in *the obligation to vote* as somewhat burdensome. This confirms the intuitions expressed by (12). Similar effects can be discerned with the choice between *right* and *obligation* in (5).

#### 4. WHAT ONE CAN DO WITH RIGHTS AND OBLIGATIONS

Next let us explore the range of things one can do with rights and obligations beyond having them.

First, one can perform the action to which the right or obligation pertains. We speak of so doing as exercising the right or fulfilling the obligation. Notice that the collocations for right and obligation involve different verbs for what (at this level of description at least) appear to

be parallel actions. We will see that such differences pervade the whole range of verbs used with rights and obligations.

Second, a right or obligation can be created. Sometimes the creator of an obligation is the Actor him/herself. For example, *promising* is (in part) creating and declaring an obligation upon oneself to perform the promised action. We speak in this case of *undertaking* the obligation. By contrast, though one can *declare* or *claim* one's own rights, one cannot thereby create them without the assent of other relevant parties. A person's rights and obligations can also be created by an outside party, whom I will call the Authority. We speak of the Authority *giving*, *granting*, or *conferring* rights on the Actor, and of *imposing* obligations.

For a slightly more complex case, consider X's *making an offer* to Y to do such-and-such. This can be construed as X conferring the right on Y to demand (i.e. impose an obligation on) X to do such-and-such -- an embedding of an obligation within a right.

Third, a right or obligation can go out of existence. In certain cases, performing the Action has this effect. For instance, handing the usher one's ticket confers on one the right to attend a performance, after which point the right ceases to exist. Similarly, when a debt is paid, the obligation to pay it ceases to exist.

An Actor can also cause a right to go out of existence by *renouncing* it. The counterpart for an obligation would be for the Actor to *reject* or possibly *renounce* it. However, renunciation of an obligation does not automatically make it go out of existence, even if the obligation is self-imposed: what do we say about someone who revokes promises? The asymmetry here goes in the opposite direction from that for self-creation of rights and obligations.

Under certain conditions, an Authority who has imposed an obligation on an Actor can *release* the Actor from the obligation, or *remove* the obligation from the Actor, in which case the Actor is *free* of it. In the case of rights granted by an Authority, we speak of the Authority *revoking* or *taking away* these rights -- in which case the Actor *loses* them.

Fourth, in a situation of conflict between the Actor and the Authority, the Actor may *insist on* a right, which the Authority is supposed to *acknowledge* or *recognize*. Alternatively, the Actor may try to *get out of* an obligation, and the Authority may try to *hold* him/her *to* it.

These situations are summarized in (14).

(14)		Right	Obligation
Performing Action		exercise	fulfill
Creating	by Actor	#declare, claim	undertake
	by Authority	give, grant	impose
Voiding	by Actor	renounce	#reject
	by Authority	revoke, take away	release, remove
	(effect on Actor)	lose	be free of
Conflict:	Actor	insist on	get out of
	Authority	acknowledge	hold to

(# indicates not necessarily felicitous)

The use of *give* and *take away* alongside *have* suggests that a right might be conceptualized along the lines of a possession, that is, as an independent entity that one may have, give, or take away. On this analysis, the verb *have* in *have a right*, notated as HAVE in (9), is essentially the ordinary *have* of alienable possession. This leads to analyses as in (15). (INCH is inchoative, or 'coming to pass.')

- (15)
- a. [RT (ACT ( $\alpha$ )) = 'the right to do Action']
  - b. CAUSE (Y, [INCH HAVE ( $X^\alpha$ , (RT (ACT ( $\alpha$ ))))])  
= 'Y gives X the right to do Action'
  - c. CAUSE (Y, [INCH NOT HAVE ( $X^\alpha$ , (RT (ACT ( $\alpha$ ))))])  
= 'Y takes away the right to do Act from X'

The language associated with obligations in (14) has more inconsistent and opaque associations. *Undertake*, *impose*, and *remove* seem to image the obligation as a burden to be borne, as does the phrase *under (the weight of) obligation(s)*. On the other hand, *release*, *get out of*, and possibly *hold to* suggest the obligation is imaged as a constraining force. In particular, the notion of an obligation as a constraint relates it to force-dynamic expressions (Talmy 1988): it is a social force that affects one's course of action. The expression *fulfilling an obligation*, through its association with *fill*, might suggest an image of the obligation as a container. The almost synonymous phrase *meeting an obligation* carries overtones of yet another image, whose character is however difficult to pinpoint. In the face of all these

distinct associations, none of them coincident with those for rights, I will adopt a formalization for obligation exactly like (15), only substituting OB for RT.

## 5. THE ONTOLOGICAL STATUS OF RIGHTS AND OBLIGATIONS

Consider more closely the "images" associated with rights and obligations. A theorist in the vein of Lakoff and Johnson 1980 would claim that rights and obligations are understood "metaphorically," and that they derive their conceptual properties from their source domains. Following Lakoff and Johnson's methodology, the evidence for choice of source domain comes precisely from the collocations in which the words in question appear. In this particular case, we would be inclined to claim that rights and obligations are understood metaphorically in terms of *different* source domains -- rights as possessions, obligations as burdens or constraints. Yet, as we have already seen to some extent, and as we will continue to document, rights and obligations are near-twin concepts, with altogether parallel logic.

An alternative view is that rights and obligations have their own logic. This logic is shared only superficially with possessions and burdens, but enough to draw an associative connection. In choosing verbs to express what one can do with rights, the language is swayed toward verbs of possession because possessions, like rights, generally are of positive value; verbs relating to obligations are swayed toward verbs of physical burden and constraint because burdens and constraints, like obligations, generally are of negative value. On this view, one does not understand rights and obligations metaphorically in terms of possessions and burdens/constraints. Rather, because of what one understands about rights and obligations, one chooses verbal collocations in a motivated fashion. While acknowledging the insights that Lakoff and Johnson seek to express, such a view turns the notion of metaphorical understanding on its head: it is because rights and obligations are understood as they are that the metaphorical connection is possible -- not the other way about. (See Murphy 1996, Jackendoff 1992, chapter 3, and Jackendoff and Aaron 1991 for more detailed discussion of the Lakoff/Johnson approach.)

What sort of conceptual entities might rights and obligations be? In the formalization in (15), the right is an independent entity, which someone may have, may be given, or may have taken away, and toward which someone may express attitudes such as insistence or acknowledgment. A more or less standard philosophical approach to rights and obligations, observing that they take sentential complements, might suggest that they are propositional attitudes, like beliefs and desires. However, we have seen that their arguments are not propositions, but rather Actions (except for passive rights). More important in the present context is that rights and obligations are emphatically not attitudes. Beliefs and desires are conceptualized as being "in an individual's mind"; having a belief or desire is being in a subjective mental state. By contrast, rights and obligations are abstract entities, and having a right or obligation is being in a certain objective social situation. To make this clearer, notice *that Bill's belief/desire is in his mind* is a sort of tautology, but *Bill's right/obligation is in his mind* attributes to Bill some kind of delusion about his social relations. In fact, understanding someone's rights and obligations requires no understanding of their mind. Here rights and obligations differ sharply from another species of deontic concept, moral/ethical understanding, which depends heavily on empathy, that is, one's understanding of others' minds (Goldman 1993, Hoffman 1987).

Beyond this observation I have little to offer about what sort of abstract objects these are. They are perhaps a bit like facts -- objectively determinable persistent entities -- a bit like

responsibilities and opportunities, a little less like credit and blame (both mass terms). But since the ontology of such abstract objects in all their variety has not been explored (to my knowledge), for the moment the matter has to be left hanging here.

## 6. "EXISTENTIALLY" VERSUS "UNIVERSALLY QUANTIFIED" RIGHTS AND OBLIGATIONS

Section 4 spoke of rights and obligations that go out of existence by virtue of exercising or fulfilling them. On the other hand, not all rights and obligations are like this. Showing the usher one's yearlong pass to the theater gives one the right to enter the theater, but one retains the right for future occasions. Similarly, one's obligation to obey a police officer does not go out of existence once one obeys an officer once: this obligation persists.

We must distinguish, then, between rights and obligations that pertain to exactly one action and those that pertain to all actions of a given type. The former are exercised or fulfilled by an appropriate action taking place, at which point they go out of existence. We could think of these as "existential," in the sense that if there exists (or comes to exist) a situation that satisfies the argument of the right or obligation, the right or obligation ceases to exist. The latter, by contrast, are "universal": they pertain to every action of the appropriate type.

This distinction could be encoded by a subscript on the operators RT and OB, for example  $RT_{Ex}$  and  $OB_{Ex}$  versus  $RT_{Un}$  and  $OB_{Un}$ . Inference rule (16) then pertains only to the "existential" variety.

- (16) HAVE ( $X^\alpha$ ,  $RT_{Ex}/OB_{Ex}$  (ACT ( $\alpha$ ))) at time  $t_1$ , and  
       ACT ( $X$ ) at time  $t_2$ , where  $t_2 > t_1$ ,  
       entails  
       NOT HAVE ( $X^\alpha$ ,  $RT_{Ex}/OB_{Ex}$  (ACT ( $\alpha$ ))) at time  $t_3$  where  $t_3 > t_2$

Similar inference rules apply to various other situations. For instance, an intention to perform an action is fulfilled -- and thereby goes out of existence -- when the action is performed. Parallel effects obtain with bodily sensations such as hunger, thirst, and some itches. So this odd metaphysical property of rights and obligations is actually more broadly attested among our concepts.

The situation is actually a bit more complex. One has the right to vote in every election: that is, exercising the right does not eliminate it. On the other hand, one has the right to vote only once in each election; having voted eliminates the right till the next election. So this right has a mixed flavor, partly "universal" and partly "existential." This suggests that the simple subscripts Ex and Un are not subtle enough to capture the range of possibilities; there is more internal structure to be teased out.

## 7. CONSEQUENCES OF NONCOMPLIANCE

What happens if one fails to fulfill an obligation? Very simply, one runs the risk of getting in trouble. Suppose I have undertaken an obligation, say by promising to wash the dishes. Making a promise involves another individual to whom you have made the promise, who

typically will benefit from having the dishes washed. Let us call this individual the Beneficiary of the obligation.

Now suppose I do not wash the dishes within a reasonable amount of time. (What counts as a reasonable amount of time is a delicate matter.) Then the Beneficiary has the (Existential) right to impose some sort of punishment on me. The Beneficiary does not necessarily exercise this right, but we clearly understand that this right exists.

What does it mean to impose punishment? Roughly, if Z punishes X, Z performs some action with negative value to X, *in return for* some previous action on the part of X with negative value to Z. (*Reward* is the same, except with positive values.) In order to state a preliminary version of the inference rule for nonfulfillment of obligations, we must add to the predicate OB an argument position for the Beneficiary, as in (17).

(17)  $OB (ACT (\alpha), TO Z) = \text{'the obligation to Z to do Action'}$

We may further add that the Beneficiary normally benefits from the Action:

(18)  $OB (ACT (\alpha), TO Z) \text{ (defeasibly) entails } VALUE (ACT (\alpha), Z) = +$

The inference rule for noncompliance now comes out as (19).

(19)  $HAVE (X^\alpha, OB (ACT_1 (\alpha), TO Z)) \text{ at } t_1 \text{ and}$   
 $NOT ACT_1 (X) \text{ in period from } t_1 \text{ to } t_2$   
*entails*  
 $HAVE (Z^\beta, RT_{EX} ( \left[ \begin{array}{l} ACT_2 (\beta) \\ \lambda a (VALUE (a, X) = - ) \\ EXCH (NOT ACT_1 (X)) \end{array} \right] \text{ at } t_2$

In the third line of (19),  $ACT_2$  is the action that Z has the right to carry out; the lambda expression says that this action has a negative value for X; the EXCH operator says that this action is in exchange for X's nonperformance.

Rule (19) says nothing about the appropriate time interval to wait for compliance. More important, (19) says nothing about what kind of retaliatory act is appropriate, only that it should be something that the Actor won't like. Many such actions, especially for culturally loaded obligations, are prescribed in a culture's stock of customs and oral or written law.

Turning to rights, we find a related situation. Suppose I have borrowed a lawnmower from my friend Steve. This gives me a temporary right to use the lawnmower, along with an obligation to return it to him intact. Now suppose I am using it to mow my lawn, and someone comes along and tries to wrest it from me, saying, "You can't use that! It's mine!" (or "It's Steve's!") I am thereby entitled to show this person disapproval or worse: my right has been violated.

This scenario leads us to the counterpart of (19) for rights. If I have a right, I may choose or not choose to exercise it. But if I attempt to exercise it, and some other party tries to prevent me, I then have the right to exact punishment on that person. (20) formalizes this intuition.



- (20) HAVE ( $X^a$ , RT (ACT<sub>1</sub> ( $\alpha$ ))) at  $t_1$  and  
 CAUSE (Z, NOT ACT<sub>1</sub> (X)) at  $t_1$   
*entails*  
 HAVE ( $X_\beta$ , RT<sub>Ex</sub> ( $\left[ \begin{array}{l} \text{ACT}_2 (\beta) \\ \lambda a(\text{VALUE} (a, Z) = - \\ \text{EXCH} (\text{CAUSE} (Z, \text{NOT ACT}_1 (X)) \text{ at } t_1) \end{array} \right]$ )) at  $t_2 > t_1$

Again, there are many cultural customs and norms concerning what kind of Act<sub>2</sub> is appropriate to what kind of Act<sub>1</sub>, and under what sort of relationship between X (the Actor) and Z (the Right-Violator).

Rules (19) and (20), though nearly symmetrical, have one important difference. In the case of obligations, there is a specific Beneficiary of the obligation. As seen in (19), this is the individual who acquires the right of retaliation if the obligation is not met. In the case of rights, there seems to be no such specifically identified individual. *Anybody* who tries to prevent one from exercising a right is a potential target for justified retaliation.

This difference, however, conceals a deeper similarity: the individual entitled to retaliation is always the one for whom the potential Action is of positive value. In the case of a right, the Actor is the potential Beneficiary, and therefore receives the right of retaliation for interference with his receiving the benefit. In the case of an obligation, the Action is of negative value to the Actor; the reason the Action is to be performed is to benefit someone else. It is that someone else, then, who receives the right of retaliation.

My sense is that inference rules (19) and (20) are the central principles that make rights and obligations what they are. By contrast, a moral/ethical principle takes the form "One should/should not do such-and-such," that is, it is a similar relation of an individual to an action. But it does not carry inferences concerning rights of retaliation. In turn, it is the need to regulate modes of retaliation, so that it is clear what is justified in response to noncompliance to particular sorts of rights and obligations, that leads to the development of legal and judicial systems in a society. So these inference rules lie at the foundation of social/cultural cognition.

## 8. EQUALITY OF VALUE IMPLIED BY EXCH

Let us consider more closely the notion of exchange, symbolized by EXCH in (19) and (20). This notion appears not only in the entailments of rights and obligations; it is also expressed explicitly by means of a certain use of the preposition *for* in English.

- (21) a. Susan praised her son Sam for behaving nicely.  
 b. Fred cooked Lois dinner for fixing his computer.
- (22) a. Susan insulted Sam for behaving badly.  
 b. Lois slashed Fred's tires for insulting her sister.

These sentences describe situations in which someone does something "in return" for someone else's action. Those in (21) describe actions with positive values; those in (22) describe actions with negative values.

Exchanges can felicitously take place only with another person (or animal or corporation regarded as a person), an entity that can be regarded as having values and responsibility. One cannot sanely punish one's car for getting a flat tire.

If we switch around the actions in (21) and (22) we get sentences that sound odd or perhaps ironic.

- (23) a. Susan insulted Sam for behaving nicely.  
b. Lois slashed Fred's tires for fixing her computer.

This shows that we expect a positively valued action in return for a positively valued action, and a negatively valued action in return for a negatively valued one.

So far we have spoken of values as only positive or negative. But these exchange situations show that values are conceived of as roughly quantitative. We find it odd if the two actions related by *for* do not match in quantity. The sentences in (24) convey some of this oddness:

- (24) a. Fred cooked Lois dinner for saying hello to him.  
b. Fred cooked Lois dinner for rescuing all his relatives from certain death.  
c. Fred slashed Lois's tires for eating too little at dinner.  
d. Fred slashed Lois's tires for murdering his entire family.

In (24a) and (24c), we sense Fred as overreacting, as doing something unwarranted in return for Lois's action; in (24b) and (24d), we sense him as underreacting, as doing something that is not nearly enough to recognize the importance of Lois's action.

The intuition, then, is that an exchange situation presupposes rough equivalence of value between the two actions. For a first approximation, then, we could state a principle for the value of exchanges along the lines of (25).

$$(25) \left[ \begin{array}{l} \text{ACT}_2 (Z) \\ \text{EXCH} [\text{ACT}_1 (X)] \end{array} \right] \\ \text{defeasibly presupposes} \\ \text{VALUE} (\text{ACT}_2 (Z), X) = \text{VALUE} (\text{ACT}_1 (X), Z)$$

In practical situations, the equation is not this simple: each participant's judgment of the value of his own and the other's actions, both to himself and to the other, may differ. Thus it often requires negotiation to achieve a "fair" exchange, where both participants judge the exchanged acts to be of equivalent value to themselves and to the other. Here is an important point where "folk theory of mind" and Cosmides' (1989) "cheater detection" enter: one is more inclined to compromise if one believes the other's assertions of value are made in good faith.

The logic of exchange laid out here is a cognitive elaboration of a behavioral strategy well-documented in the ethological literature, *reciprocal altruism*: "You scratch my back and I'll scratch yours." How much of its detail can be attributed to nonhuman primates (not to mention elephants and bats) I leave open. What strikes me as particularly human is the broad generality of the actions available to be entered into exchange equations. It may be possible to see this generality as the endpoint of a sort of Piagetian progression, but carried out over the evolutionary time scale rather than that of the individual.

Turning back to rights and obligations more specifically, we see in (25) a more or less formal statement of "the punishment fits the crime": this helps guide what actions are appropriate in retaliation for breaking obligations and violating rights in (19) and (20).

## 9. AUTHORITY

Consider who can impose an obligation on you. As was pointed out in section 4, the simplest case is a self-imposed obligation such as a promise. Other things being equal, you are free to make whatever promises you wish. But no one else can impose an obligation on you unless particular conditions obtain. For example, if a random person says to you, "I hereby oblige you to wash my feet," you are justifiably offended and baffled. The felicity conditions for such a speech act are not met, just as if a random person were to declare to you, "I hereby name you Fuzzy-Wuzzy."

An obligation imposed by someone else can be felicitous if you have granted the other person the right to impose it, either by making an offer, or else by making an agreement or contract by virtue of which you receive some reciprocal right. You are perfectly free to grant such a right. On the other hand, you are not free to grant someone a right to take something from someone else -- the counterpart of the infelicitous imposing of an obligation. The generalization is that you are free to take on costs for yourself, but not to impose costs on others.

There is however another situation in which someone can impose obligations on you: when that person has authority over you through position in the social hierarchy. A society presents many authority relationships, for instance parent to child, boss to worker, sergeant to private. The authority relationship entails the authority's right to impose obligations on the subordinate. If, for a first approximation, we encode the authority relationship as (26), then (27) expresses the authority's right to create obligations for subordinates.

(26) HAVE (Z, AUTHORITY (X)) = 'Z has authority over X'

(27) HAVE (Z, AUTHORITY (X)) entails  
HAVE (Z<sup>α</sup>, RT (CAUSE (α, INCH HAVE (X<sup>β</sup>, (OB (ACT (β), α))))))

The language used to express what one can do with authority is virtually identical to that for rights as listed in (14). We speak of the *exercise* of rights and of authority; a higher authority can *give* or *grant* rights or authority -- or *revoke* them or *take* them *away*. One can *renounce* rights or authority that one currently *holds*; or one can through malfeasance *lose* rights or authority. One can *insist* on one's own rights or authority; one can *acknowledge* someone else's. On the other hand, there is more complexity in authority, since one can *resist* another's authority, but the phrase "resisting another's right" makes little sense.

Like all obligations, those imposed by an authority must have a beneficiary. (27) encodes the typical case in which the beneficiary is the authority him/herself (note the α in the second argument position of OB, bound to Z). Thus in case of noncompliance, the authority also has the right of punishment. Other beneficiaries are possible, for instance when a judge obliges a divorced parent to pay child support to the ex-spouse. In such a case, the ex-spouse's right of retaliation in case of noncompliance is typically determined by the judge as well. That is, if an authority imposes an obligation on an actor, with another individual as beneficiary, the authority retains the right to punish the actor for noncompliance, with or without appeal from

the beneficiary. So the logic becomes still more complex; I will not attempt to formalize it here. Even with these caveats, the account in (27) is still crude, in that it is necessary to recognize limitations of authority. At least in our society, we believe that your boss does not have the right to oblige you to take your clothes off. A more adequate formalization relativizes authority to a particular class of actions, as in (28).

- (28) HAVE (Z, AUTHORITY ( $X^\beta$ , ACT<sub>a</sub> ( $\beta$ )))  
       = 'Z has authority over X with respect to actions of type  $\underline{a}$ '

The appropriately revised form of (27) is (29):

- (29) HAVE (Z, AUTHORITY ( $X^\beta$ , ACT<sub>a</sub> ( $\beta$ ))) entails  
       HAVE (Z <sup>$\alpha$</sup> , RT (CAUSE ( $\alpha$ , INCH HAVE ( $X^\beta$ , (RT/OB (ACT<sub>a</sub> ( $\beta$ ),  $\alpha$ ))))

(29) leaves about the right loopholes for social negotiation (and conflict): over exactly what actions can a given authority impose obligations? And how are those decided? These are issues with which every society must grapple.

One way to obtain authority is to be granted it by a higher authority, who is then said to be *delegating* authority. But this leaves open who grants authority at the top of the pyramid. This problem of what Stone (1964), following Hans Kelsen, calls the "apex norm" lies at the root of a society's conception of itself. Three possible solutions: despotism, where the ultimate authority simply asserts authority without recourse, and maintains it through the exercise of power; supernatural authority such as the "divine right of kings," in which the top-ranked person is said to be granted authority by a deity whose rights in turn require no justification; and representative government, in which authority is taken to arise from the "consent of the governed." In addition, all societies recognize the seemingly "natural" authority of parents over children, which seems to need no justification. Perhaps there are other possibilities.

## 10. WHERE DOES IT ALL COME FROM?

We have surely left many subtleties still untouched -- and some major points as well, such as how to reason about conflicting rights and obligations, and how to characterize rights as legitimate or illegitimate. Nevertheless, let us now step back a bit.

We have found that the notions of right and obligation are richly interconnected by inferences to each other and to the notion of the value of an action to an individual. The central inference rules (19) and (20) depend on the notion of linking two actions as exchanges of value, and through that to notions of fairness or justice. The notion of authority depends heavily on the notion of rights. In short, many of the conceptual foundations of social organization either depend on an understanding of rights and obligations, or else are developed in justification of the assertion of particular rights and obligations.

The concepts of right and obligation are, it seems, quite abstract, not linked to perception of the physical world except very indirectly. In fact, the analysis here suggests that their content may lie entirely in the inferences that can be drawn from them. They are, as it were, part of an elaborate social accounting system for keeping track of the implications of an individual's actions with respect to others, a system rooted ultimately in the notion of value.

In order for an individual to function in a society, then, it is essential for him or her to intuitively grasp the concepts of right and obligation. Indeed, most of the discussion here has consisted of pointing out intuitions that all of us share. So the question arises of how people acquire these concepts. As Macnamara 1990 puts it, how does one gain entry to a system of interrelated terms and ideas, if they cannot be defined in terms of some other system?

There is no question that people must learn the particular network of rights and obligations inculcated (or presupposed) by their society: who has an obligation to whom, who has a right to impose obligations and grant rights over what actions, what retaliation is appropriate for failure to meet what obligation, and so forth. This must by all means be a major part of cultural learning. But, returning to a point made at the outset, it is less clear that people must learn that there *are such things* as rights and obligations. As far as I know, every culture shares these concepts. They seem to be building blocks as fundamental to understanding of the social world as force is to understanding the physical world.

Moreover, the inferential patterns of rights and obligations have no analogue in the physical (or sensorimotor) domain, such that there could be a progression in learning along the lines of Piaget, or a learning through metaphor along the lines of Lakoff and his colleagues. The latter possibility was rejected in section 5, even before approaching the complexities of retaliation and exchange, for which a physicalistic metaphor is still more farfetched. (In fact, if anything, the tendency often goes the other way, attempting to understand the physical world by anthropomorphizing it into a metaphorically social world full of wills and desires.)

It seems to me, therefore, that an important question for research into social cognition is how the child learns the concepts of right and obligation -- or if they are learned at all. The latter possibility, not to be discounted, is that these concepts are largely if not entirely innate, a specialized "way of thinking" wired into the brain by the human genome. Such an account would certainly account for the cultural universality of these concepts: they would form a pre-established species-wide skeleton of social understanding over which each particular culture builds its own flesh. Under this hypothesis, the child learning a culture would then come to the task predisposed already to interpret the social world in terms of rights and obligations, among other things. If there is an identifiable developmental stage where such concepts become available, relatively uniform across cultures, this might well be interpreted as evidence of biological maturation of the brain. Thus the argument would be parallel to the arguments for the biologically based language capacity that makes language acquisition possible (Chomsky 1965, Lenneberg 1967, Pinker 1994).

I am not aware of any research that bears directly on the acquisition of these precise concepts. However, suggestive evidence appears in the experimental work of Piaget 1932, who discusses the development from ages 6 to 11 of the child's understanding of related deontic concepts such as the rules of games and of moral concepts such as prohibition and fairness, as well as their relation to authority. In particular, rules of games have some of the same "objective" ontological status as obligations, so should provide suggestive evidence.

Looking earlier in child development, work by Cummins (1996, in press) and Harris and Núñez (to appear) investigates children's understanding of the deontic concepts of prohibition, permission, and reciprocal exchange at the ages of 3 and 4. They find a degree of understanding of these concepts more sophisticated than one might have expected from Piaget's research, an understanding more reliable than with equally complex propositional statements. For instance, Cummins compares three- and four-year-olds' understanding of a

prohibition such as "All squeaky mice have to stay in the house" with that of a declarative statement such as "All the squeaky mice are in the house." She tests the children's understanding by asking them which (toy) mice they have to check in order to determine whether the order has been carried out or the statement is true. The question is phrased in such a way that the very same mice must be checked under both conditions. Cummins finds that the children are much more reliable with the prohibition than with the statement. (Notice also that this is not exclusively ego-centered deontic understanding, as might be acquired through a child's experience with parent's orders: the task involves checking whether other individuals have obeyed someone else's order.) Cummins concludes that this aspect of deontic understanding is in place early on in development. This is not a test of the entire logic of rights and obligations, but at least an important part.

If the logic of rights and obligations were part of the human endowment, it would have likely emerged from some evolutionary antecedent. So some precursors might be expected in the social behavior of primates. Section 8 has already alluded to reciprocal altruism and aggression as a precursor of exchange. More pointedly, Hauser et al. (1995) describe a behavior in rhesus macaques that appears to present a precursor of obligation. It seems that when an individual finds a food source on his own, there is a special call he utters to signal to the troop that food has been found. If the individual does not utter the call, of course, he will benefit from a greater quantity of food for himself, so there is a payoff in not uttering the call. However, if other members of the troop discover the individual eating *and the call has not been uttered*, then they beat him up, even if he is the most dominant individual in the troop. It is striking, however, that nonmembers of the troop will not be beaten up, given the same conditions. One is highly tempted to interpret this scenario, then, as an understanding on the part of the monkeys that one is "obligated" to the members of one's own troop to signal the finding of food. In particular, what makes this suite of behaviors look like obligation is that the right of punishment, expressed here as inference rule (19), seems to be an essential component. While it is important not to overinterpret ethological observations, the detail of current work like Hauser's bids us not to underinterpret either. I would not go so far as to call this behavior illustrative of an understanding of obligation in the full human sense, but it certainly appears to be on the way. If so, it again provides indirect evidence that the notion of obligation has a biological basis.

Two directions suggest themselves for investigating the issue further. First, I have barely scratched the surface of the formal detail of rights and obligations, their dynamic functioning in social reasoning, and their relationships with other social concepts (including dominance hierarchies and moral and ethical thought). To figure out exactly what the child has to learn -- and what the child can learn -- it is crucial to pull these concepts apart further into their components, and to see what external evidence could lead to the acquisition of such components. A second direction is to use formal analysis of this sort to help guide further research in anthropology, primatology, and especially child development on this topic which is so vital to our social existence. It is my hope that researchers better versed than I in these disciplines will take the present paper as a stimulus to undertake such a challenge.

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## LA STRUCTURE CONCEPTUELLE DES DROITS ET DES OBLIGATIONS

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Cet article se situe dans le cadre de l'étude de la structure conceptuelle, c'est-à-dire le niveau de représentation mentale qui encode les interprétations contextuellement intégrées des énoncés, le niveau sur lequel on peut définir d'une façon formelle les règles d'inférence. Dans le cadre de cette théorie un grand nombre de travaux ont été consacrés à la compréhension humaine des objets matériels dans l'espace (Talmy 1983, Herskovits 1986, Vandeloise 1986, Bloom et al. 1996). Cependant, l'intérêt de cet article est sur le domaine moins étudié de la cognition sociale, la compréhension biologiquement et culturellement supportée du contexte social dans lequel on est situé.

Les notions des droits et des obligations semblent être universelles parmi les sociétés humaines. Les sociétés diffèrent quant à la nature des droits et des obligations qui se rattachent à leurs membres, ainsi que la façon dans laquelle elles les font valoir, mais l'idée qu'il existe des entités telles que les droits et les obligations qu'un enfant doit apprendre ne semble pas être en question.

Les droits et les obligations sont en effet des relations entre une personne (l'Acteur) et une Action. Par exemple, dans la phrase *John has the right/obligation to leave* "Jean a le droit/l'obligation de partir", Jean est l'Acteur et son départ est l'Action. Un droit (ainsi que l'Action à laquelle se rattache ce droit) est interprété comme ayant une valeur positive face à l'Acteur (il lui est avantageux); par contre, une obligation (ainsi que l'Action à laquelle se rattache l'obligation) est interprétée comme ayant une valeur négative face à l'Acteur (elle lui nuit). Sous des conditions variantes, les droits et les obligations peuvent être créés ou peuvent ne plus exister à partir d'une action soit de la part de l'Acteur, soit de la part d'un autre individu, une Autorité, celle-ci ayant le droit de créer ou de révoquer les droits et les obligations de l'Acteur.

Les verbes utilisés pour exprimer la création et la révocation des droits en anglais ne sont pas du tout ceux qui sont utilisés pour les obligations. Par exemple, on dirait *One gives someone a right* versus *One imposes an obligation*. Une théorie de la signification qui est basée sur la métaphore (ex. Lakoff et Johnson 1980) sera donc forcée à dire que ces concepts n'ont aucun

rapport l'un à l'autre, malgré le parallélisme évident. Une conclusion alternative propose que les droits et les obligations suivent leur propre logique; ils héritent des choix de verbes différents à cause de leur différences en valeur. Les droits étant avantageux, utilisent des verbes qui sont associés avec les possessions, normalement considérées avantageuses; par contre, les obligations étant nuisibles, utilisent des verbes qui sont associés avec les fardeaux, normalement considérés nuisibles.

Bien qu'ils soient proches mentalement liés sémantiquement aux formulations de jugement moral, les droits et les obligations sont vus comme étant plus objectifs en caractère. Les droits et les obligations d'un individu ne sont pas des questions d'opinion ou de jugement; ils sont des faits sociaux interpersonnels.

Les règles principales d'inférence qui s'attachent aux droits et aux obligations concernent les conséquences de la nonconformité. Si un Acteur n'arrive pas à respecter une obligation, le bénéficiaire de l'obligation - la personne qui sera avantagée par la réalisation de l'obligation -- acquiert le droit de se venger de l'Acteur, c'est-à-dire d'exécuter une Action qui est nuisible à l'Acteur. Si quelqu'un empêche un Acteur d'exercer un droit, l'Acteur acquiert le droit de se venger de cette personne. Plusieurs coutumes culturelles, normes, et lois concernent quelle sorte de vengeance est juste et sous quelles circonstances, mais la forme fondamentale de l'inférence demeure la même. Ici encore les droits et les obligations sont différents des principes moraux; ceux-ci n'entraînent pas les droits de vengeance contre les violateurs.

Les principes de vengeance sont eux-mêmes gouvernés par des principes plus généraux d'échange qui concernent une action étant exécutée en récompense d'une autre. Les inférences d'échange précisent que si une action est exécutée en échange d'une autre, les deux actions sont approximativement de valeur équivalente. La peine est proportionnel au délit. Ce principe d'échange honnête est une généralisation des principes d'altruisme réciproque qui se retrouvent partout dans les sociétés animales.

Le pouvoir de créer des droits et des obligations d'un Acteur peut être assigné à une Autorité qui occupe une position quelconque dans l'hierarchie sociale. Le pouvoir de cette Autorité peut être compris d'une part comme suit: l'Autorité a le droit de créer des droits et des obligations par rapport à une classe spécifique d'Actions. Encore une fois, une grande partie de l'organisation d'une société concerne l'établissement de qui a une autorité sur qui par rapport à quelles actions, ainsi que la justification du niveau plus élevé d'autorité dans la société.

En résumé, les notions des droits et des obligations sont *prochement reliés l'une à l'autre*, et à la notion de la valeur. Les règles centrales d'inférence qui gouvernent les droits de vengeance dépendent du lien entre deux actions comme étant un échange de valeur, et à travers ceci aux notions de justice et d'équité. En somme, plusieurs des fondations conceptuelles d'organisation sociale dépendent d'une compréhension des droits et des obligations et de leur connexion.

Pour qu'une personne puisse fonctionner dans une société, elle doit absolument être capable de saisir intuitivement la notion des droits et des obligations, sinon elle n'arrivera pas à naviguer le réseau des droits et des obligations qui caractérise sa propre société. Puisque les modèles inférentiels des droits et des obligations n'ont aucun équivalent sensori-moteur, il est difficile de comprendre comment un enfant acquiert ces concepts; il semble plausible qu'au moins une partie de leurs éléments est innée. Des études de développement de l'enfant ont démontré que

les enfants dès l'âge de trois ans comprennent les concepts reliés tels que l'interdiction et l'échange réciproque. Des études récentes des singes rhésus révèlent au moins un type de comportement qui suggère un précurseur de l'obligation. Cette évidence du développement de l'enfant et celle des primates, en combinaison avec l'universalité culturelle de ces concepts, suggère l'existence d'une base innée et évolutionnaire.