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PROTOTYPES, STEREOTYPES, AND TYPES

1. INTRODUCTION

During the past two decades a considerable amount of theoretical and experimental research in psychology, linguistics, philosophy and Artificial Intelligence has been devoted to the classical questions concerning the relationship between language and human conceptual system.

The present paper aims at giving a perspective on the overlaps on the one hand, and the disparities on the other, between some basic concepts utilized in such studies, namely the concepts of prototype and stereotype in contradistinction to the classical concept of type.

2. THEORY OF PROTOTYPES

A number of researchers in different fields, starting with Wittgenstein and his family resemblance and earlier, have played a significant role in the history of challenging the basis of the classical conception of categorization. It is however Eleanor R o s c h [1973] first of all, who is credited with putting forward what has come to be called the theory of prototypes and basic level categories.

Basing on her experimental study of the colour terms in a New Guinea language, Dani, Rosch found out that in learning, memorizing, and the evaluation of colour terms, speakers use what she called prototypes, i.e. category exemplars which serve as special (cognitive) reference points not only for the speakers of one language but, as was confirmed in further research (1977), more universally.

Distances or asymmetries between these prototypical exemplars and other category members have been called prototype effects.

In his latest book George   L a k o f f [1987] gives a detailed description   of   Rosch's   development   of   the   interpretation   of her experimental results,   and points to the fact that while in her earlier work Rosch tended to   interpret   prototype   effects   as the characterization of the representation   of   the   categories in   the human mind, in the late 70s she clearly abondoned this idea, as is quite evident from the following quotation:

1. To   speak   of   a   prototype   at   all   is simply a convenient grammatical   fiction,   what   is   really   referred   to are judgments of prototypicality [...].
2. Prototypes   do   not   constitute   any   particular   processing model for categories [...].
3. Prototypes   do   not   constitute   a   theory of representation for categories [...].
4. Although   prototypes   must   be   learned,   they   do   not con-stitute any particular theory of category learning [R o s c h   1978: 40-41].

As   can   be   seen,   however,   although   prototypes alone cannot reveal   the   nature   of   the   categorial   boundaries,   judgments of prototypicality   give   us   important   clues   to the   interpretation of the internal category structure.

2.1. BASIC LEVEL CATEGORIES

Categorial hierarchies have   been   shown to be organized not in a regular taxonomic model but   rather   into distributionally uneven levels. It is the middle levels   of   a hierarchy that represent the psychologically most salient basic   levels   e.g.   in   the hierarchy mammal - dog - dachshund it is the category   dog   which is   basic, while in the hierarchy furniture - chair - kitchen   chair,   it will be the category chair. The basic level,   being also the name of the whole category (e.g. dog), which includes   all   lower   taxa, stands closest to the prototypical exemplar of that category both in terms of its gestalt, image-schematic, as well as   typicality   properties [cf. P u l m a n   1983].

2.2. BACKGROUND FRAMING

Prototypes   are   not   'context-free'   entities.   They   do   not act in vacuum. As was first proposed by Marvin   M i n s k y [1975] and Charles   F i l l m o r e [1982],   the   interpretation of cate-gories takes place in terms of larger knowledge patterns. They have been   differently termed: frames with defaults - by   Minsky,   scenes

and frames - by Fillmore, Idealized Cognitive Models (ICMs) - with F i l l m o r e [1982] and L a k o f f [1987], or scripts, plans, and schemas - as with S c h a n k and A b e l s o n [1977].

In L e w a n d o w s k a-T o m a s z c z y k [1987] the notion of Cognitive or Conceptual Domain was introduced, which represents general knowledge of the paradigmatic categorial connections between domains and subdomains. Factual knowledge of a syntagmatic type, i.e. knowledge about states and events, as well as about their order and sequentiality, is assumed to be stored in the human meaning as global patterns or complete stereotypic chunks [cf. M i n s k y 1975]. Since the terminology connected with the patterns proliferate in the Artificial Intelligence studies [cf. S c h a n k and A b e l s o n 1977] and linguistics [e.g. F i l l m o r e 1977, L a n g a c k e r 1983], de B e a u-g r a n d e and D r e s s l e r [1981: 90] proposed the following systematization of the terms:

FRAMES - contain commonsense knowledge about some central concepts (birthday parties, restaurant scenes),

SCHEMAS - global patterns of events and states in ordered sequence linked by time proximity and causality, arranged in progression,

PLANS - global patterns of events and states leading up to an intended GOAL - evaluated in terms of how they advance forward the planner's goal.

SCRIPTS - stabilized PLANS called up frequently to specify the roles of participants and their expected actions, differ from plans by a preestablished routine.

However, as can be seen, the proposed classification is not quite satisfactory. Frames, including, say, restaurant scenes, cannot be in fact distinguished from Schemas or Scripts, both, according to the definitions above, potentially able to cover the same restaurant scenes. The roles of participants and the sequential progressing would have to be specified regardless of the proposed type of patterning.

The expression *background framing* is used in some frameworks in regard to the background knowledge of the world which can affect the interpretation of the linguistic expression, e.g. the meaning of *bird* can be analysed in terms of Ornitological, Pet, Hunting, etc. background framing. Background framing can have a more static form as in e.g. ORNITOLOGICAL FRAME, or a more dynamic one, as in the HUNTING SCRIPT. The notions of PLANS and GOALS are retained

in their original sense as introduced by S c h a n k and
A b e l s o n [1977].

From the point of view of their organization both frames
and scripts are data structures which consist of:

(a) collection of concept-nodes with a characteristic fea-
ture specification for each concept and markers pointing to
other frames/scripts,

(b) characteristic relations for those concepts.

Concepts represent either prototypical structure or extensions
of a prototype. They too can be represented as a structure of
nodes, connected with one another as a network system. Some
nodes both in frame/script and in prototype configurations are
associated with partial but "constant" knowledge while some
others are filled with variable 'default' assignments, true,
unless some disconfirming information is provided. Defaults are
loosely attached to the nodes, so that new information can be added
there, or some changes can be incorporated.

From the point of view of typicality of their structure both
frames, scripts and (object) prototypes may have either prototypi-
cal structure or, undergoing a 'prototype effect' represent exten-
sions of a prototype.

Some modification of the concept such as, say *toy pistol* or *fake
gun* influences the nominal concepts in terms of defeating their
most essential properties to the extent that we can say we no more
have to do with the extension of the prototype *pistol* or *gun* but we
rather deal with an entirely new entity. Thus may be true even with
such cases as *social lie*, which is considered by some language users
as no lie at all.

An example of the FAMILY FRAME after T h o m p s o n [1976:
13] is given below:

Family Abstract

> (*self* a Simple Family with
> > *daddy* = the *male Parent*
> > *mommy* = the *female Parent*
> > *Kids* = the *children*)
>
> (*male Parent* a Person with
> > *sex* = Male)
>
> (*female Parent* a Person with
> > *sex* = Female)
>
> (*parents* the *male Parent*, the *female Parent*; a Couple with
> > *male Half* = the *male Parent*,
> > *female Half* = the *female Parent*)
>
> (*male Children* some 'a Person with
> > *sex* = Male')
>
> (*female Children* some 'a Person with
> > *sex* = Female')
>
> (*children* the *male Children* the *female Children*)
>
> (*generation* a Generation with
> > *pairs* = each in the *children*, a Person)

Fig. 1

The type of knowledge presented above embraces the *prototypical* in-
stance of the FAMILY FRAME, where such terms as *brother* or *son* are
referred to in further specification of family relations.

Stimulated in a perceptual or cognitive act, a matching process
starts after a frame (script, etc.) is activated.

Particular token knowledge is matched then with the general
frame and a concrete family (or a member of the family) can be
defined in terms of the frame content. In this context the default
'children' can be overridden by contingent facts, if there is only
one son or daughter in the family.

There are cases of complex frame/script configurations even if
they underlie the meaning of a single lexeme in a language. One such
case of frame/script stacking can be found in what I called the
Superordinate Frame of ADVERTISING [L e w a n d o w s k a 1984].
This main frame can instantiate subframes of different sort with a
set of 'terminal' nodes, which, in turn, can evoke other frames, or
may serve as connection pointers between ADVERTISING script/frame
and other frames.

As global patterns of knowledge can incorporate PLAN and
GOAL schemes, the Super F of advertisements reflects the persuasive
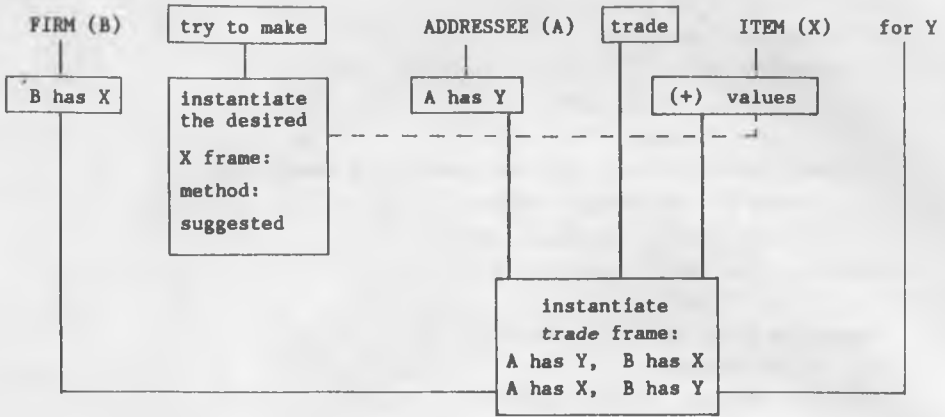character of this concept (Fig. 2):

```
FIRM (B)        try to make        ADDRESSEE (A)   trade      ITEM (X)    for Y

 B has X        instantiate         A has Y                (+)  values
                the desired
                X frame:
                method:
                suggested

                                        instantiate
                                        trade frame:
                                        A has Y,  B has X
                                        A has X,  B has Y
```

Fig. 2. Superframe of advertisement

The 'labirynthian' structure of the conceptual meaning of *advertising*
is presented in the prototypical form in Fig. 2. However, there are
numerous extensions of the prototype, one of them for instance in-
volves TRADE frame. As a less typical variant, the concept of
trading exhibits the following processual script as in the case of
the trading of information, software, services etc., where the
seller does not get rid of the 'object' sold.

```
        A    has   Y,      B    has    X
        ───────────────────────────────►
        ◄───────────────────────────────
        A    has   X,      B    has    Y  and X
```
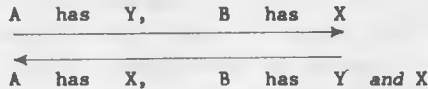
Fig. 3

There are certain problems with frame representations connected
with the criteria for the groupings of semantic information as
found in frames. As   M e t z i n g [1981: 340] notices the informa-
tion may be either independent of the speaker (as in the case of
stereotyped events), or it can be speaker-dependent (as when based
on internal inference processes). If the latter is the case it may

appear that the speaker is able to propose such 'groupings of
semantic information' which defeat conventional patterns found in
the language of his/her audiences.

Knowledge types as described above (general vs particular) has
been taken by   C o p e l a n d [1984: 232] as a distinction over
which knowledge states can be defined in the interactional context.
The figure below (Fig. 3) is modified from Copeland:

```
        KNOWLEDGE              KNOWLEDGE
        STATES                TYPES

                            ┌General and
              ┌activated ────┤Particular      (Given)
              │             └General only     (Some)
    ┌present  │               ┌General only     (Recoverable-Some)
    │         │     ┌deactivated
    │         │not  │         └General and
    │         └activated      Particular     (Recoverable)
    │               │         ┌General and
    │               │         Particular     (Computable)
    │               └unactivated
    │                         └General only ┐
    │                                        │(New)
    │                         ┌Particular   ┘
    │                         only
    └not present ─────────────┤
                              └General and
                              Particular     (Novel)
```
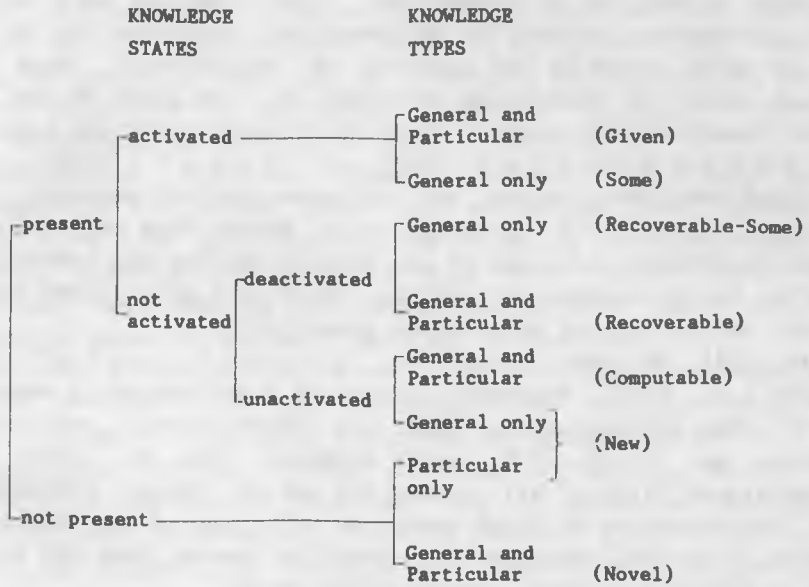
Fig. 4

The speaker's knowledge of the world can be either shared (present)
or not shared (not present) by his/her audience. If it is present,
it can be either activated or not at a given moment. If it is not
activated, it may mean that it was activated previously in the
given discourse context, but it no longer is i.e. it is deactiva-
ted, or it may be as yet unactivated. Both the syntactic and proso-
dic behaviour of the speakers as well as the audience have been
found to provide evidence for these knowledge states.

3. PUTNAM'S REALISM AND STEREOTYPES

George   L a k o f f [1987: 116] in his recent book acknow-
ledges the contributions of Marvin Minsky and Hilary Putnam to the
explanation of prototype effect in terms akin to cognitive models
accounts. The aim of this section is to show that it may be par-
tially misleading to put Putnam in the same compartment as Minsky
or Fillmore, and to elucidate the approach Putnam introduced, which
is based on the idea of stereotype. I will also try to illuminate
basic differences between the philosophical positions held by Put-
nam and those taken by the majority of cognitivists. This com-
parison should be especially revealing in the light of what seem
to be diametrically opposite views on Putnam's position expounded
by   J o h n s o n-L a i r d [1983] and   L a. k o f f [1987]. John-
son-Laird considers Putnam the strongest realist possible, while
L a k o f f [1987: 229] proposes that Putnam "has provided a de-
vastating logical critique of the view of meaning and reference in
what he calls metaphysical realism, which is a generalized version
of what we have called objectivist semantics".

As will be seen below [cf. L e w a n d o w s k a-T o m a-
s z c z y k 1987], Putnam's critique of model-theoretic semantics
[1981] does not necessarily imply his unambiguously anti-realist
position, as   L a k o f f   would probably like it [1987: 229].
Putnam argues first of all against the use of formal systems and
the interpretation of truth connected with them as the models of
meaning in natural language. This position however does not presup-
pose or entail a univocal conceptualist stand.

Since the time of   F r e g e's   distinction [1892] between
'Sinn' and 'Bedeutung' the most frequently raised issue in philo-
sophy of language and linguistics concerns the status of sense and
reference, later intension and extension.

Two major trends, Realism and Mentalism, describe them in
different ways and assign them different origin and existence.
Realism treats intensions as objective 'givens', having independent
reality outside the human language user's mind. All psychologically
based theories on the other hand, situate them in the human mind
and consider meanings as cognitive entities.

But even the most radical realists cannot deny that the
human mind does play a role in capturing the sense of natu-
ral language and that some kind of cognitive entities, be they in-
tensions or not, appear as a result of experiencing reality by

the human being. The entities Hilary   P u t n a m [1975] is trying
to describe, are   distinct from   intensions,   which are supposed to
exist independently of the human mind,   and   are referred to by him
as *stereotypes*. It is stereotypes, as Putnam is trying to argue, and
not intensions, that exist in the human language user's   head and
are the basis of meaningful communication, while   intensions may or
may not be subject to human penetration and cognition.

Stereotypes may be true, i.e. they may correspond to reality,
or they may be false, originating in the human lack of knowledge
or false beliefs. This, however, does not block successful communi-
cation, as people in fact rely on judgements and opinions of better
informed members of a community, according to what P u t n a m
calls 'a division of linguistic labour' [1975: 227].

Stereotypes   represent theories language users have about
referents of the words used. The stereotype then associated
with e.g. the word *lemon* embraces the following features: *lemon* is
a natural kind word and refers to fruit with yellow peel, tart
taste, etc. These are the core properties without which even the
approximate sense of the word could not be conveyed.

The same stereotype can be associated with different terms, e. g.
the same characteristics that are assigned to, say, aluminium, may
fit molybdenum (a light metal which makes durable pots and pans and
does not rust). For that reason, as Putnam is arguing, part of the
meaning of a term must be connected with its extension represented
either as, say, its chemical structure (water - H_2O), or by a
sample (for colours), or weight perhaps, the atomic weight (dif-
ferent for aluminium and for molybdenum) in the case of a metal.
Such information, frequently referred to as 'encyclopedic informa-
tion' cannot, in actuality, be distinguished from purely linguistic
data.

Since in Putnam's approach the extension of a term is not
determined relative to the psychological state of the language
user and is assumed to be superposed by the intension (e.g. all mem-
bers of the class FRUIT must be covered by the intension of the
word *fruit*), then the only course open to Putnam is to propose
that the psychological state of the language user cannot determine
the intension of the terms either, so the intension of the term is
an objectively given really existing abstract entity. Such an ap-
proach to meaning closely resembles classical versions of (Plato-
nist) realism [cf. K a t z   1981]. What is affected on the other
hand by the psychological state of the language user is the stereo-

type of the term which may or may not (this is supposedly not immediately evident to the human being) correspond to the intension of the term.

Putnam gives a fairly controversial example of two hypothetical individuals, an Earthian $Oscar_1$, and a Twin Earthian $Oscar_2$. Suppose the two most frequently used and perceived liquids on both planets have all the perceptual and functional properties of water, the extension of which however is H_2O on Earth and XYZ on Twin Earth. In, say, 1750, however, this fact was not known to anybody (including $Oscar_1$ and $Oscar_2$) either on Earth or on Twin Earth. To prove that the extension is not determined by psychological factors, P u t n a m [1975: 224] argues:

> $Oscar_1$ and $Oscar_2$ *understood* (emphasis mine) the term "water" differently in 1750 although they were in the *same psychological state* (emphasis mine), and although, given the state of science at the time, it would have taken their scientific communities about fifty years to discover that they understood the term "water" differently.

Although one could tentatively agree with the conclusion that the extension of the term *water* is not a function of the psychological state of the speaker, one can raise objections against Putnam's claim that the two individuals understood the terms differently although they were in the same psychological state of mind. It seems hardly controversial nowadays to assume that understanding is, among other things, a function of the psychological state of the mind, even if we accepted that actual extensions of terms might not be. The core part of the problem seems to be the question as to whether intensions and extensions should be best considered ontological or epistemological entities. Understanding, however, i.e. grasping these entities, is an epistemological matter determined by psychological states of the human being.

Developing his argument further, P u t n a m [1975: 226] discusses the meaning of the two words: *elm* and *beech*. He argues that although he cannot tell one tree from the other (i.e. he cannot point to the denotata of the extensions), the extensions in fact are different. "Is it really credible", he asks, "that this difference in extensions is brought about by some difference in our concepts? My concept of an elm tree is exactly the same as my concept of a beech tree (I blush to confess). (This shows that the identifications of meaning 'in the sense of intension' with concept cannot be correct, by the way)".

Putnam seems to completely disregard this very important piece of information that he knows that the trees are different, no matter what the exact differences are, so, although his concepts of a beech tree and an elm tree may be similar, they are not identical. He would never use these labels as synonyms! His concepts of these objects are incomplete, while the verification of their identity if left to experts, according to Putnam's own principle of the division of linguistic labour (p. 228), which is possibly a good candidate for a sociolinguistic universal. Putnam argues in this connection that

> Whenever a term is subject to the division of linguistic labor, the 'average' speaker acquires it does not accuire anything that fixes its extension. In particular, his individual psychological state certainly does not fix its extension, it is only the sociolinguistic state of the collective linguistic body to which the speaker belongs that fixes the extension. (p. 229).

The speaker may by capable of pointing to these instances of the category to the extent to which he has developed a given concept. This, however, means simply that both one speaker's concept (different from Putnam's intension) of the term as well as his ability to identify the category members (corresponding to extensions) will not be identical with those of an expert. However, this should not exclude the meanings used by 'average' speakers from the scope of linguistic interests.

As has been mentioned above, people have stereotypes which serve as a basis of member identification in the given class. Stereotypes are assumed to have criteria - necessary, or probabilistic necessary conditions providing clues for recognizing natural kind members. By postulating stereotype criteria Putnam departs from a necessary and sufficient feature model of meaning in the epistemological part of his theory. Whether be would like to retain the oriterial model in his ontological part concerning 'true' intensions of terms is a different matter. Putnam accepts is as possible that objects may have some 'hidden structure' (possibly a genetic code), which might determine class membership not only in the socially accepted reality but in all 'possible worlds'. Such essentialism would justify some plausible counterfactual suppositions about natural kind terms (e.g. Water could have all been vapour - TRUE) and discard others (Water could have all been XYZ - FALSE). On the other hand, Putnam seems hesitant about the 'essential' structure - in cases where the structure may

not be uniform and it is the superficial properties that play the decisive role in concept formation and recognition.

Stereotype criteria are assumed to be culture and topic dependent, but familiarity with these features is expected, even required in the linguistic community in order for a community member to be considered a successful acquirer of the stereotype (e.g. the feature striped for 'tigers'). It is in this sense that one can say that stereotypes are obligatory for community members, as Putnam puts it "in the same sense of 'obligatory' in which it is obligatory to indicate whether one is speaking of lions in the singular or lions in the plural when one speaks of lions in English" (p. 251).

The consequence of the 'objective truth' position that Putnam assumes is still more evident when he talks about "wrong" or "widly inaccurate" stereotypes (pp. 249-250). As an example Putnam gives the feature yellow for gold, whereas chemically pure gold is known to be white. Quite evident here is the lack of a contextual frame of reference that should be incorporated in the analysis of stereotypes. And even though Putnam provides an explanation of why the feature yellow is present in the "wrong" stereotype ("the gold we see in jewelry is typically yellow due to the presence of copper"), he does not propose any more constrained apparatus to include a possibility of contextual variation in his model of meaning.

Some features of stereotypes seem more important than others, e.g. ANIMAL - for tiger, DAY OF THE WEEK - for Tuesday, PERIOD OF TIME - for hour, etc. They are what Q u i n e [1951] would call more central or unrevisible category-indicators. Due to their significant function Putnam gives them a more significant position in his system assigning them the status of semantic markers.

Summing it up, the meaning of a word for Putnam is "a finite sequence, or 'vector', whose components should certainly include the following (it might be desirable to have other types of components as well):

(1) the syntactic markers that apply to the word, e.g. 'noun',

(2) the semantic markers that apply to the word, e.g. 'animal', 'period of time',

(3) a description of the additional features of the stereotype, if any,

(4) a description of the extension.(p. 269).

A partial description of the meaning of, say 'water' that Putnam gives, is as follows:

SYNTACTIC MARKERS	SEMANTIC MARKERS	STEREOTYPE	EXTENSION
mase noun concrete	natural kind liquid	colorless transparent tasteless thirst-quenching etc.	H_2O (give or take impurities)

What emerges from Hilary Putnam's theory of word meaning, and is further confirmed by Saul K r i p k e [1972] is not in fact an argument against the criterial features model as seems to be suggested by S m i t h and M e d i n [1981], but first of all a necessity of a proper distinction between metaphysical and epistemological possibility and necessity [cf. R e y 1983]. An interesting thing is that a similar conclusion can also be drawn in reference to the description of meaning based on prototypes and exemplars [R o s c h 1975, etc.]. These approaches to meaning seem first of all to exploit epistemological possibilities of concept formation and recognition, leaving aside metaphysical possibility and necessity altogether.

R e y [1983: 241] proposes the following list of the main functions that concepts perform:

I. STABILITY FUNCTIONS:

(a) intrapersonal: the basis for conceptual competence and for comparisons of cognitive states within a given agent,

(b) interpersonal: the basis for comparisons of cognitive states across agents.

II. LINGUISTIC FUNCTION: the meaning of open class linguistic items, whereby they enjoy relations of translation, synonymy, antonymy, and semantic implication.

III. METAPHYSICAL FUNCTIONS:

(a) metaphysically taxonomic: that by virtue of which things are the kinds of things they are (by virtue of which they are correctly classified).

(b) metaphysically modal: the basis for claims of counterfactuality, possibility, and necessity.

IV. EPISTEMOLOGICAL FUNCTIONS:

(a) epistemologically taxonomic: the means by which an agent categorizes things, decides whether or not something is of a certain kind,

(b) epistemologically combinatorial: the means by which an agent categorizes things into complex kinds,

(c) epistemologically modal: the basis for claims to 'a priori knowledge', or knowledge justifiable 'completely independently of any experience'.

The linguistic function is in fact an expression of the stability functions. They provide a basis for constructing a typology of different content of different cognitive states and in this way make it possible to characterize the relations of inference, linguistic equivalence, implication, etc.

The core of the controversy which is replicated in different approaches to meaning in natural language is the issue concerning the distinction between the epistemological and metaphysical functions. In simple terms, the controversy refers to a division between, as Rey puts it (p. 243): "issue surrounding *how the world is* (what exists, what is true) and issues surrounding how we know, believe, infer, *how the world is*". There are cases in which this distinction is not too sharp, nevertheless it is psychologically real. People have no doubt that the questions *whether this metal is gold* and *whether someone believes (knows, infers etc.) that this metal is* gold are basically different. Similarly the questions *whether this metal is gold* and *how I know this metal is gold*, being based on non--identical premises, may yield different answers. There may exist defining conditions for *gold* even though the most competent language user would not know them. It is then *metaphysically possible* that gold could have some defining conditions, not known to us, the conditions which may be different from those we seem to know. But *if it is true* that its atomic number is 79, then it is *necessarily true*. So metaphysical possibility and necessity, as Kripke and Putnam argue, have nothing to do with the human language user. They concern *the world as it really is*.

Epistemological possibility, on the other hand, may be read as: 'to the best of the language user's knowledge', 'compatible with a system of his beliefs' etc. What is important is the fact that this concept does n o t exclude any other possible state of affairs if such a situation occurs, in other words, it is assumed to be contingent. Metaphysical necessity and epistemological possibility can be made compatible. To use R e y's [1983: 254] wording: "Given how little I know about chemistry, I am prepared to discover that gold has atomic number 89, even though, if it in fact has atomic number 79, then necessarily it does".

For that reason linguistic models of meaning should and do in fact concentrate on the analysis of meaning in the epistemological sense. It should be emphasized here that even such semantic theories which are putatively 'free from psychologism' (e.g. truth--conditional semantics) are also based on cognitive principles in this sense.

The significance that both Putnam and Kripke associate with the above distinctions shows quite clearly that they do not argue against the classical view of necessary and sufficient conditions. On the contrary, they try to show that essentialism is what constitutes the world, although the true structure of the matter may be in fact beyond the human cognitive capabilities. For that reason, although their theories can be taken as an attack on definability of concepts, they are not aimed against the defining conditions model. Such a view, as Rey argues (p. 252: ft 15), seems to have been anticipated even by Wittgenstein, e.g. in his discussion of 'symptoms' and 'criteria' of *angina* which vary over time [W i t t g e n s t e i n 1965: 25-26].

Language, as used by competent language speakers, is based, among others, on words and concepts understood in the epistemological sense, relative to the language users' sets of beliefs and convictions. It is most probable that meanings of language units, as used by people, approach metaphysical truths in these regions where such truths do exist and where they can be penetrated. At some other points, however, where the subject of our interest are either terms vague 'in essence' or phenomena familiar to us only through 'outer' features, we are completely at a loss as to what 'real' criterial features of such entities may be. And although I am far from denying the possibility of existence of 'real' metaphysically necessary properties of concepts, I think that it may be the case that competent language users will never have access to the core structure of some concepts. This, however, does not and will not make it impossible for them to enter verbal interactions and to communicate successfully.

The inaccessibility of 'real essence' of concepts may also lead to a total scepticism as to the possibility of defining meaning. Such a position is known primarily from classical structuralism [B l o o m f i e l d 1933], which eliminates semantics from any serious linguistic activity. On the other hand, such attitudes like Wittgenstein's *quietism* expressing scepticism against definitional feature analyses, has led to a more constructive ap-

proach to meaning based on his 'family resemblance' model of categorization, and Rosch's theory of prototypes and basic levels.

3.1. CONCEPT MAXIMUM AND CONCEPT MINIMUM

In his classical paper on meaning, P u t n a m [1975: 14] states that "not all criteria used by the linguistic community as a collective body are included in the stereotype, and in some cases the stereotype may be quite weak". W i e r z b i c k a, in her recent book *Conceptual Analysis and Lexicography* [1985] takes issue with Putnam. She argues instead that [1985: 215] "all the criteria used by the linguistic community as a collective body are included in the stereotype, but not all members of the linguistic community know all the stereotypes. Which stereotypes they know, and whether they know them completely, depends on their individual life experiences".

In this way Wierzbicka eliminates Putnam's concept of weak stereotypes. Instead, Wierzbicka suggests that this dichotomy could be possibly applied to language as a whole to point out differences between the rich stereotypes of say, *dog* and *horse* in English, and the weaker stereotypes of *tiger* or *lion* in this community.

To account for the differences found in individual speakers on the other hand, Wierzbicka posits a distinction between what she calls the *concept maximum* versus the *concept minimum*.

By the *concept maximum* W i e r z b i c k a understands "a maximum of ideas which people in a speech community see as a shared stereotype" [1985: 215]. For English speakers the concepts such as *apple* or *potato* should be instances of the concept maximum. The examples of the concept minimum on the other hand seem more individually determined, but such instances as *papaya* or even *pineapple* may be good candidates in the Polish community for the concept minimum, i.e. "meanings one knows incompletely (but sufficiently to use them)" [W i e r z b i c k a 1985: 218].

4. TYPES

E v e n s et al. [1980] report the psychological research of R u m e l h a r t, L i n d s a y, and N o r m a n [1972], who propose a distinction between primary and secondary concepts. They con-

sider primary concepts to correspond roughly to lexical entries representing types, while secondary concepts - tokens, are to represent individual objects. Secondary concepts are linked with the primary node by the relation called ISA e.g.:

(1) A robin ISA bird i.e. A robin (A) IS-A-MEMBER-OF a class (set) of birds (B).

In this sense then type functions as a superordinate *genus* in the taxonomic definition associated with the item specific *differentiae*.

The distinction between the terms *type* and *token* however is not an innovation of the last few years. It was first introduced in the works of C. S. P e i r c e, and as Lyons notices [1977: 13], it originally referred to the types and their actual instantiations. Only then was its sense extended (especially in psychological research) to cover also hyponymic relations.

The concept of type in lexical semantics strictly relates to the problems of generic reference. Some sentences express-ing generic propositions refer not to particular exemplars of a category but to the whole class embracing its members i.e. to the type, e.g.:

(2) The puma lives in mountain regions of America. Within the framework of predicate calculus representation, the NP (the puma) in (2) would be formalized as involving universal quantification, so it would be interpreted as "for all values of x etc." In this form there would be no distinction between the semantic formula for (2) and that for (3):

(3) All pumas live in mountain regions of America. This synony-mity is certainly not intended by the speaker of (2) and, as L y o n s notices [1977: 195] there is also a difference between the truth-conditions of (2) and (3), if one wants to stick to truth-conditional semantics: living in the mountain regions of America is not a necessary characteristics of all lions. I want to suggest then that what generic propositions of this type really ex-press are actually propositions concerning prototypical exemplars of the category. Under this interpretation, the original sense of the *type/token* distinction, (i.e. the full instantiation of the type by a token), gets weaker. In other words, the interpretation of the meaning of the type concept must be sensitive to contingent facts. At the same time, and from a different point of view, the interpretation gets stronger, as the properties associated with the type [cf. ex. (2.)] are not merely incidental properties, but express their genuine typicality [cf. L y o n s 1977]. The in-

terpretation of the concept of type then merges at this point with
the notion of prototype.

5. CONCLUSIONS

The concept of a prototypical category member partly overlaps
with that of a classical type in that the type is shown to possess
the highest number of properties common with the prototype. On the
other hand however, the type is the notion superordinate for all -
prototypical and peripheral - category members by the hyponymic
relation between them, although, as has been shown above, such a
relation does not necesarily entail the reference to all tokens
(exemplars) of the category.

Each lexical item (not only prototypical members) is assumed to
be associated with a certain stereotype. The notion of stereotype
then, unlike that of a prototype or a frame, does not reflect any
structure or organization of the overall scheme of conceptual/se-
mantic entities. Individual differences within the depth and range
of the lexical senses are reflected in the strength of the stereo-
type with Putnam, and the distinction between the concept maximum
and the concept minimum with Wierzbicka.

As to the philosophical implications entailed by a given
position with respect to the linguistic meaning, there is a
spectrum of different metaphysical perspectives possible, starting
from the strongest externalist realism, through weaker internal
realism, up to different shades of radical conceptualism. Each of
these stances may imply different interpretations of the theory of
truth and rationality and can be associated with varying stands
towards the issue of relativism.

One of the test issues here may be the solutions concerning the
fixing of reference. Conceptualists tend to argue that the referen-
ce of terms is fixed by the (individualistic or collective) men-
tal state of the language user, while realists like P u t n a m
[1981] try to show that it is the extension of a term (i.e. the set
of objects in the socially accepted reality or in another possible
world), in other words 'the substance itself' that fixes the re-
ference of the term.

The linguistic sign, however, that refers to the 'substance'
does not correspond to it independently of who uses it and how.
Linguistic signs are entities internal to the conceptual schemes of
their users. Such a philosophical perspective reconciles the

matter-of-fact realism of our days with the conceptualism relative
to the linguistic community and to the individual.

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      millan.   •

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PROTOTYPY, STEREOTYPY I TYPY

      Artykuł ma na celu przeanalizowanie trzech pojęć używanych   we współczesnym
opisie semantycznym języka naturalnego: prototyp, stereotyp i typ.   Jak wykazano
w pracy, mimo częściowego pokrywania się zakresów pojęciowych tych terminów, róż-
nią się one zarówno w miejscu i funkcji, jaką przypisują im różne kierunki w
opisie semantyki leksykalnej języka, jak i w założeniach filozoficznych, które
się z nimi wiążą. Termin prototyp - to wynik analizy pojęciowej w ujęciu kogni-
tywnym, pojęcie stereotypu w teorii Putnama odzwierciedla jego pozycję realizmu
wewnętrznego, zaś termin typ związany jest ze strukturalno-taksonomicznym uję-
ciem języka oraz z formalnym opisem jego semantyki.