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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 Rosch [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 abandoned 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 constitute 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 categories 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 Fillmore [1982] and Lakoff [1987], or scripts, plans, and schemas - as with Schank and Abelson [1977].

In Lewandowska-Tomaszczyk [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. Minsky 1975]. Since the terminology connected with the patterns proliferate in the Artificial Intelligence studies [cf. Schank and Abelson 1977] and linguistics [e.g. Fillmore 1977, Langacker 1983], de Beaugrande and Dressler [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 Ornithological, Pet, Hunting, etc. background framing. Background framing can have a more static form as in e.g. ORNITHOLOGICAL 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 feature 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 prototypical structure or, undergoing a 'prototype effect' represent extensions 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* instance 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 [Lewandowska 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):

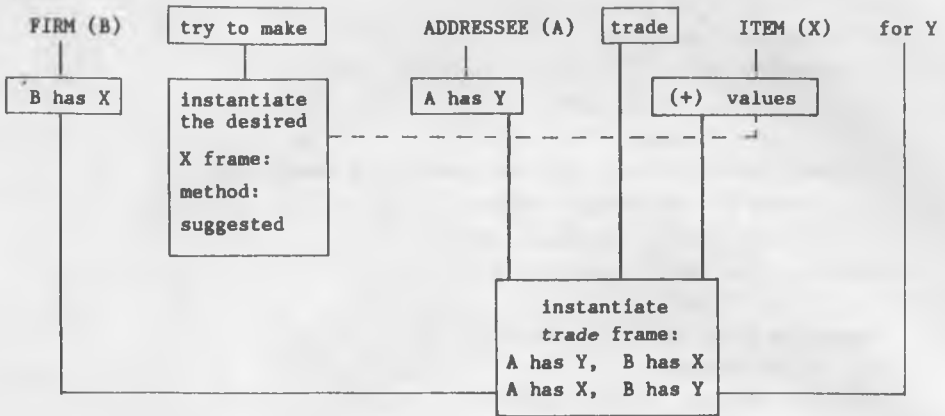


Fig. 2. Superframe of advertisement

The 'labyrinthian' 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 involves 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.

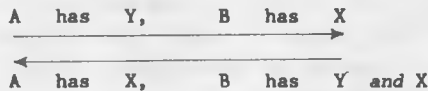


Fig. 3

There are certain problems with frame representations connected with the criteria for the groupings of semantic information as found in frames. As Metzling [1981: 340] notices the information 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:

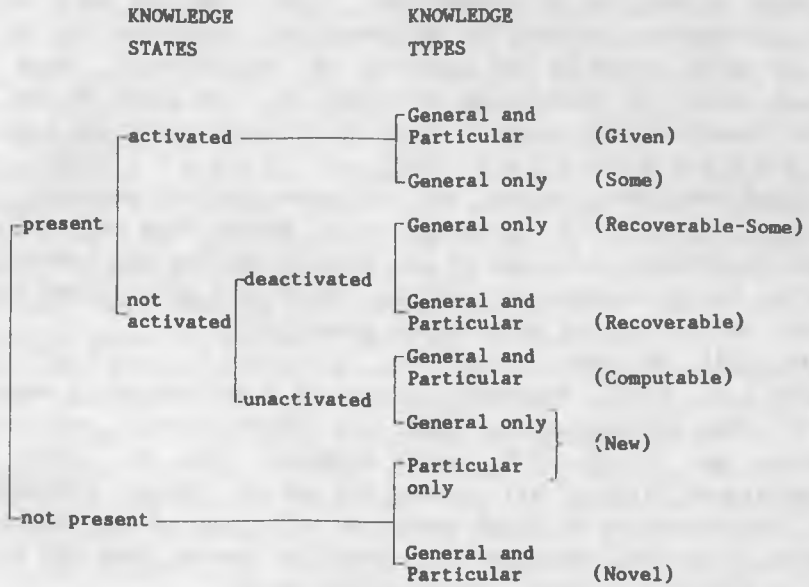


Fig. 4

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 deactivated, or it may be as yet unactivated. Both the syntactic and prosodic 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 Lakoff [1987: 116] in his recent book acknowledges 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 partially 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 Putnam and those taken by the majority of cognitivists. This comparison should be especially revealing in the light of what seem to be diametrically opposite views on Putnam's position expounded by Johnson-Laird [1983] and Lakoff [1987]. Johnson-Laird considers Putnam the strongest realist possible, while Lakoff [1987: 229] proposes that Putnam "has provided a devastating 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. Lewandowska-Tomaszczyk 1987], Putnam's critique of model-theoretic semantics [1981] does not necessarily imply his unambiguously anti-realist position, as Lakoff 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 presuppose or entail a univocal conceptualist stand.

Since the time of Frege's distinction [1892] between 'Sinn' and 'Bedeutung' the most frequently raised issue in philosophy 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 natural language and that some kind of cognitive entities, be they intensions or not, appear as a result of experiencing reality by

the human being. The entities Hilary Putnam [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 communication, as people in fact rely on judgements and opinions of better informed members of a community, according to what Putnam 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 (different for aluminium and for molybdenum) in the case of a metal. Such information, frequently referred to as 'encyclopedic information' 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 members 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 approach to meaning closely resembles classical versions of (Platonist) realism [cf. Katz 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 Oscar₁, and a Twin Earthian Oscar₂. 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 H₂O on Earth and XYZ on Twin Earth. In, say, 1750, however, this fact was not known to anybody (including Oscar₁ and Oscar₂) 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:

Oscar₁ and Oscar₂ 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 is 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 acquire 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 be 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 he would like to retain the criterial model in his ontological part concerning 'true' intensions of terms is a different matter. Putnam accepts 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 "widely 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 Quine [1951] would call more central or unrevisable 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	natural kind	colorless	H ₂ O
concrete	liquid	transparent	(give or
		tasteless	take im-
		thirst-quenching	purities)
		etc.	

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 counterfactualty, 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 not 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 Rey'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, Putnam [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". Wierzbicka, 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* Wierzbicka 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)" [Wierzbicka 1985: 218].

4. TYPES

Evens et al. [1980] report the psychological research of Rumlhart, Lindsay, and Norman [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. Peirce, 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 expressing 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 synonymy is certainly not intended by the speaker of (2) and, as Lyons 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 express 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. Lyons 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 necessarily 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/semantic entities. Individual differences within the depth and range of the lexical senses are reflected in the strength of the stereotype 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 reference of terms is fixed by the (individualistic or collective) mental state of the language user, while realists like Putnam [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 reference 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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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, różnią 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 kognitywnym, pojęcie stereotypu w teorii Putnama odzwierciedla jego pozycję realizmu wewnętrznego, zaś termin typ związany jest ze strukturalno-taksonomicznym ujęciem języka oraz z formalnym opisem jego semantyki.