

PROTOTYPES AND EQUIVALENCE

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Rosch's prototype theory (1973, 1977, 1978) as applied to linguistics by Lakoff (1977, 1982) as well as recent developments in cognitive linguistics (Lindner 1981, Brugman 1981, and Langacker 1983) create the necessity of reevaluating the situation of cross-linguistic studies. The harbinger attempts in that direction have been made by Kalisz (1981) and Lewandowska (to appear). Whereas Lewandowska is preoccupied with the pragmatic perspective necessary in conducting cross-cultural comparisons of social interaction, Kalisz focuses on pragmatic semantic and syntactic implications in the contrastive framework as they spring from the new theory. In a brief section Kalisz restates the concepts of *congruence* and *equivalence* in terms of "partial pattern matching" as discussed in Fillmore (1975) and Lakoff (1977). This latter concept is based on the assumption that linguistic constructions can be characterized by clusters of pragmatic, semantic and syntactic properties (parameters). Various constructions, it appears, exhibit various degrees of correspondence of such parameters. This kind of correspondence can be referred to as *matching* and it extends over a continuum from full matching, through partial matching, to no matching at all. Kalisz proceeds to employ the concept of partial matching in explicating the familiar relations of congruence and equivalence, crucial in all contrastive studies based on structural and transformational models. He maintains that "Equivalence between two given structures is a matter of degree of the matching of the properties. Thus, it reflects a degree of partial pattern matching of properties. One can talk about a degree of syntactic equivalence even if lexical properties do not match, a pragmatic equivalence when the two structures produce the same perlocutionary effect in spite of their syntactic and lexical properties etc. The higher degree of matching of syntactic, semantic and pragmatic properties reflects the higher degree of overall equivalence between two or more constructions." (Kalisz 1981: 45-46).

As originally conceived in structural and transformational terms *congruence* and *equivalence* referred to formal and semantic identity of the compared constructions (Marton 1968, Krzeszowski 1967, 1971). The separation of semantic and syntactic representations, as formalized in some versions of TG, led to the "common underlying structure hypothesis", which claimed that equivalent constructions and sentences have identical semantic representations, even if on the surface they are markedly different (Krzeszowski 1971, 1974, 1981). Formal diversifications occurred at various levels of derivations in the subsequent derivational histories of equivalent constructions. More similar constructions shared more rules and were diversified later, i.e. at some level closer to the level of surface representations. The distance from the surface at which the first diversification occurred provided grounds for measuring the *degree* of similarity and difference of the compared constructions (Di Pietro 1971, Krzeszowski 1974). The formal device which was to accomplish this task was called Contrastive Generative Grammar (CGG).

CGG rendered the concept of congruence somewhat redundant, since *all* equivalent constructions were congruent by definition at some level of representation (if only at the semantic level at which congruence was guaranteed as a matter of initial postulate). Therefore, the concept of *degree* of syntactic similarity is not new with Kalisz's suggestion.

The universality of the semantic base in CGG concerned only that aspect of the meaning which is sometimes connected with "sentence semantics" with the added requirement that equivalent sentences be referentially identical (i.e. have identical extensions). All other aspects of the meaning were relegated to the lexicon and were considered to be language specific. These assumptions led to the hope that CGGs as devices enumerating equivalent sentences across languages were possible to construct, not as theories of translation performance, but as theories of ideal equivalence, presumably characterizing bilingual competence.

It is doubtful, however, whether semantic structure is indeed universal, even if the claim is restricted to "sentence semantics". The present author has had problems in deciding what aspects of meaning belong to "sentence semantics" and what aspects of meaning belong to "word semantics". This led to some motivated and some arbitrary decisions. For instance, aspect in Slavonic languages was considered within the domain of "word semantics" on the grounds that it is connected with intraword markers of irregular nature and that it does not bring about any changes in sentence structure (Krzeszowski 1981). This decision seemed to be well motivated. However, various phenomena connected with modality, definiteness, and even tenses, have been arbitrarily assigned to either "sentence semantics" or "word semantics" or were completely ignored as being within the domain of performance. The situation which thus began to emerge resembled the situation of the current

"core" grammars. Whatever facts do not fit the current syntactic theory are *by definition* outside the scope of the theory. And so, too, in CGG, whatever facts contradicted the initial hypothesis that sentence semantics is universal were disposed of in the ever growing lexical component or in the poorly defined and understood area of "pragmatics", in some indefinite ways connected with performance. Thus shrink all kinds of "core" phenomena and "universal" structures, while the list of unsolved problems becomes intolerably longer and longer.

Kalisz's proposal requires at least two amendments. Firstly, the requirement that pragmatically equivalent structures must produce the *same* perlocutionary effect should be relaxed through substituting "maximally similar cognitive effects" for "the same perlocutionary effects". Marginally, I would like to insist that Oleksy's requirement to the effect that pragmatically equivalent structures should perform a *corresponding* speech act cannot be defended either (Oleksy forthcoming). I would contend that while Kalisz's requirement is too specific Oleksy's requirement is too general. Not all speech acts have perlocutionary effects so that under Kalisz's proposal a number of speech acts such as statements, rhetorical questions etc. would be unaccounted for. Oleksy's proposal is too broad in that it allows for too much freedom in deciding what is pragmatically equivalent outside a specific communicative situation. It seems that one cannot sensibly investigate the issue of pragmatic value of an utterance in abstraction from specific psychosociolinguistic contexts. Such an endeavour involves *contradictio in adjecto*: pragmatics outside the context of language users!

Kalisz's proposal is too restrictive also because it involves an untenable and, I am sure, unintended, implication that only those utterances which happen to be produced simultaneously, in the same setting and with the *same* perlocutionary effect, are equivalent. Even if restricted to perlocutionary effects, the requirement concerning their "sameness" rules out any prospects of generalization and renders the proposal uninteresting. Surely, a given perlocutionary effect can only occur once. Instead, therefore, it is probably reasonable to consider *identity* of effects as a special case of similarity, where identity is to be viewed as the highest theoretically conceivable degree of similarity.

Secondly, the concept of partial pattern matching as envisaged by Kalisz in the context of CA seems to require some constraining. According to Kalisz "Equivalence between two structures is a matter of degree of the matching properties. Thus, it reflects a degree of partial pattern matching of properties" (1981: 45). This claim must be interpreted as suggesting that given a set *S* of pairs of equivalent constructions, *C*'s and *K*'s, one can arrange these pairs on the scale provided by the varying number of certain matching properties. Let us assume that *S* contains the following pairs of equivalent constructions

characterized by some properties which match and some which do not match. Let P's stand for those properties which match and let p's stand for those properties which do not match:

$$S = \begin{matrix} C_1(\text{PPPP}) & C_2(\text{pPPP}) & C_3(\text{pppP}) & C_4(\text{pppp}) \\ K_1(\text{PPPP}) & K_2(\text{pPPP}) & K_3(\text{pppP}) & K_4(\text{pppp}) \end{matrix} /$$

The pairs of constructions in S display various degrees of similarity, with C_1 and K_1 being identical in all relevant respects and with C_4 and K_4 being different in all relevant respects. Concerning this latter case the question immediately arises on what grounds C_4 and K_4 are compared?

Notice, too, that we have artificially limited the number of properties (parameters) to four, providing the upper bound on the scale of similarity with the value of 4, the lower bound having the value of 1. No such limitations can be arbitrarily imposed on actual constructions. However, even if we do impose some more or less arbitrary limits on the number of properties considered, we shall still face the following problem: If two linguistic forms match with regard to *one* property, can they be said to exhibit partial pattern matching? From the set theoretical point of view the answer seems to be "yes". After all one property out of four is a part of the total four and if it matches, which can be expressed in terms of set intersection, then it is involved in partial pattern matching.

However, consider the following examples from English and Polish:

(1) All visitors are kindly requested to leave the boat immediately.

(2) Proszę siadać. 'Please sit down'.

(1) and (2) evidently share at least one property — request. But can they be said to be equivalent, pragmatically or otherwise, just because they exhibit this extremely low degree of pattern matching? Consider, moreover:

(3) Spieprzajcie stąd. 'Get the hell out of here'.

(4) Statek zaraz odpływa. 'The boat departs in a moment'.

In certain circumstances (1) and (3) may have identical perlocutionary effects (visitors leaving the boat); it is doubtful, however, whether anybody would like to consider them as pragmatically equivalent. On the other hand (4) may in some situations be a better equivalent of (1) than (3), even if it exhibits even less pattern matching than do either (2) or (3).

The discussion so far leads us to the following somewhat paradoxical conclusions:

(a) The mere number of shared properties is not relevant in establishing the pragmatically significant concept of equivalence which does not seem to be correlated with the degree of similarity as grasped by partial pattern matching.

(b) The identity of perlocutionary effects does not guarantee that the corresponding utterances are pragmatically equivalent. Instead pragmatic equi-

valence appears to be dependent on elements of extralinguistic context attending the production of equivalent utterances (see also Janicki 1983). Less trivially, pragmatic equivalence seems to depend on the *status* attributed to various properties characterizing the compared constructions.

In what follows I would like to justify the claim that if equivalent linguistic forms belong to *one category within* the domain of CA, the properties crucial in determining the category membership are of unequal status as category determinants. In other words, some properties are more important than others in assigning two linguistic forms in two different languages to one category within the domain of CA. Moreover, the properties which are critically important in determining pragmatic equivalence constitute a *gestalt* in the sense of Lakoff (1977). In the case of (1) the most important parameters constituting the relevant gestalt are the following:

/polite request to leave the boat/

It must be noted that all three elements of the gestalt are equally important in providing the pragmatic content of (1). Other parameters, such as syntactic congruity or lexical congruity seem to play a less important role. The three relevant parameters are: type of speech act (request), modality (politeness) and *anticipated* perlocutionary effects (visitors leaving the boat). Focusing on any *one* of these three elements of the gestalt in the rendering of (1) into Polish results in a distortion of the original pragmatic content. Thus in (2) the anticipated perlocutionary effect is different, while in (3) the modality is different (rudeness rather than politeness), which in turn may influence the perlocutionary effect. This explains why (4) ranks higher on the scale of pragmatic similarity than either (2) or (3), since (4) is neutral with respect to politeness and at the same time it does not rule out the possibility of being interpreted as a request with the perlocutionary effect such as intended (anticipated) in (1). Naturally, (5) would rank even higher than (4) on the same scale:

(5) Uprasza się gości o natychmiastowe opuszczenie statku. 'Visitors are requested to leave the boat immediately'.

(5) is the most accurate equivalent of (1) in all respects: syntactic, semantic and pragmatic. At this stage I would like to suggest that (5) is the most *prototypical* equivalent of (1), while (3) is less prototypical. At the same time (4) is a poor representative of the category of equivalents of (1), situated near the fuzzy edge of the category, while (2) is probably outside the category.

The tentative conclusion which can be drawn from these observations is that linguistic forms have more or less prototypical equivalents in other languages.

Let us consider one more example in order to explore some further consequences of the prototype theory of equivalence.

In her study of English prepositions and particles Brugman (1981) distinguishes twenty senses of preposition-particle-prefix (ppp) *over* as exemplified by the following sentences.

1. The plane flew over the town.



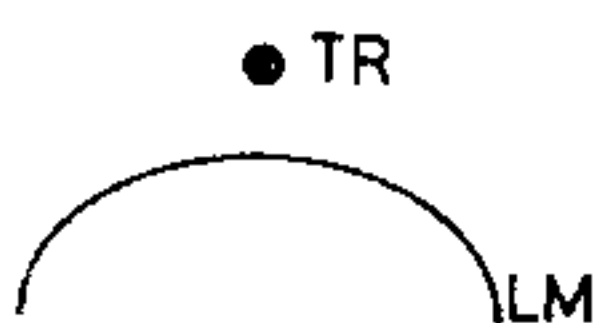
2. The plane flew over the hill.



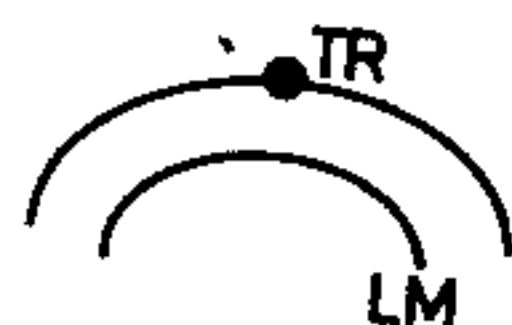
3. The helicopter is hovering over the town.



4. The helicopter is hovering over the hill.



5. He is walking over the hill.



6. Sam lives over the hill.



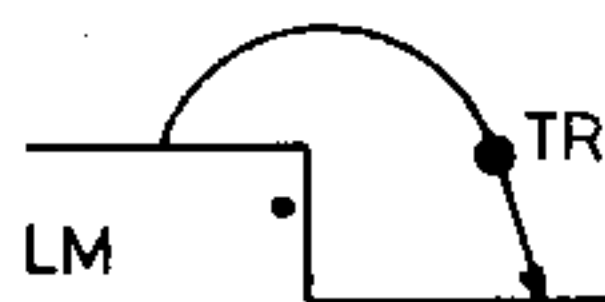
7. The glider flew over the wall.



8. Harry jumped over the wall.



9. Harry jumped over the cliff.



10. The wall fell over.



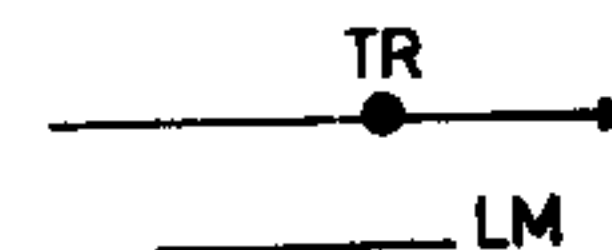
11. Sam turned the page over.



12. Sam rolled the log over.



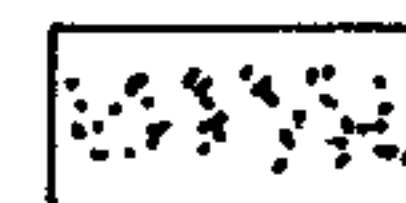
13. The power line stretches over my yard.



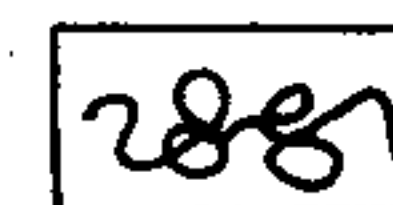
14. She spread the tablecloth over the table.



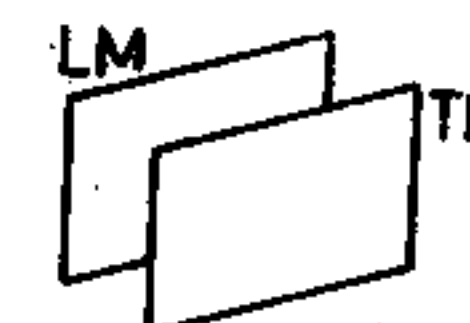
15. The guards were posted all over the hill.



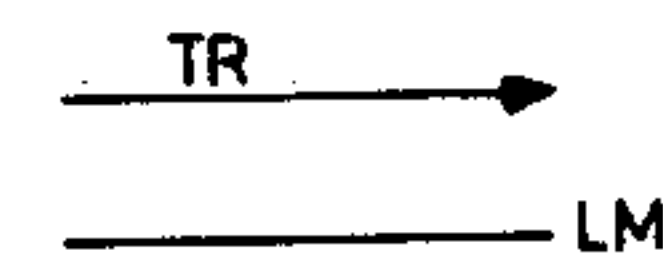
16. He walked all over the hill.



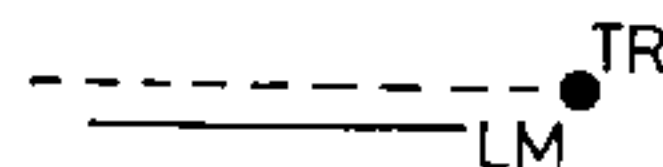
17. She held the veil over her face.



18. He drove over the bridge.



19. He's over.

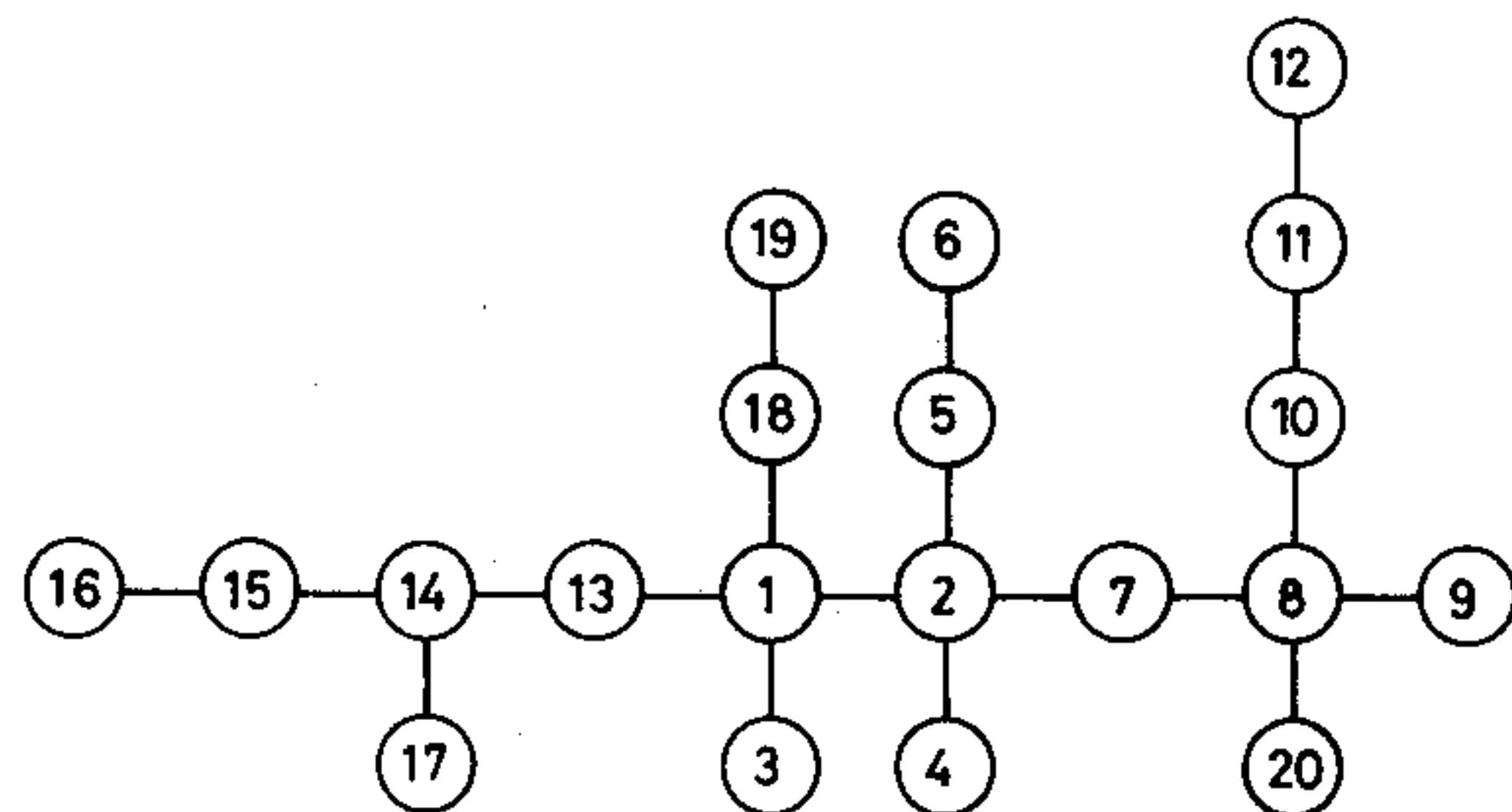


20. The water overflowed.



Each of these senses is associated with a specific image scheme where TR stands for the trajector or the object situated somewhere or moving, LM stands for the landmark or the place at which the trajector is situated or with respect to which it moves and P stands for the path wherever a path is involved. These examples do not include metaphorical extensions of the ppp *over* in such sentences as "He has the authority *over* a staff of hundreds" as an extension of 3 or "He turned the question *over* in his mind" as an extension of 12. All these senses are related by virtue of family *resemblance* (in the sense of Wittgenstein 1953) and can be chained in such a way that the most prototypical ones, i.e. 1 and 2 are situated in the centre, while the progressively less prototypical ones grow in various directions. Towards the edges of the chaining one finds those senses which bear the least resemblance to the prototypical ones, but which are locally correspondingly more similar. The relevant part of the chain is presented in (6):

(6)



In addition senses 2, 3, 5, 6, 8, 9, 10, 12, 14, 16, 18, 19, and 20 have metaphorical extensions, which are not indicated on the chain.

In attempting to compare this material with the relevant material in another language, say Polish, the investigator faces the usual question: what is the equivalent of *over* in Polish? Naturally, given at least twenty senses of *over* in English one cannot expect a single word equivalent in Polish. In search

of the equivalents Brugman's examples were submitted to a group of Polish students of English with the request to translate them into Polish. There were 25 respondents, all well advanced in English. The purpose of the exercise was to find out how the ppp *over* would be rendered in Polish. The following results were obtained:

English senses	Polish equivalents
1	"nad/ponad" — 25 answers
2	"nad/ponad" — 24
3	"nad/ponad" — 25
4	"nad/ponad" — 25
5	"nad/ponad" — 1 "po" — 10 "przez" — 9, "instr." — 2 "wokół" — 1 "na" — 2
6	"na" — 3 "obok" — 1 "za" — 18 "przy" — 1 "po drugiej stronie" — 1 "niedaleko" — 1
7	"nad/ponad" — 24 "przez" — 1
8*	"przez" — 16 accusative — 11
9**	"po" — 1 "przez" — 10 accusative — 6 "poprzez" — 1 "z" — 6
10*	other means — 24
11	accusative — 23 "na drugą stronę" — 2
12	accusative — 22 "na drugą stronę" — 3
13***	"nad/ponad" — 19 "przez" — 4
14	"na" — 25
15	"po" — 13 "wokół" — 1 "na" — 10 "na obszarze" — 1
16	"po" — 15 "przez" — 4 "wokół" — 1 accusative — 4 "wzdłuż i wszerek" — 1
17****	"nad" — 1 "na" — 15 accusative — 8
18**	"po" — 1 "prez" — 21 accusative — 2
19**	other means — 24
20	"prze-" — 17 "wy-" — 18

10 and 19 were nearly always rendered as pseudotransitive verbs "przewrócić się" and "skończyć się", respectively.

These results are interesting for several reasons. Firstly, if we coalesce

* In two cases two answers were provided: accusative and "przez".

** One respondent provided no answer.

*** Two respondents provided no answer.

**** In one case a completely irrelevant answer was given.

“nad” and “ponad” as free variants, at least in the contexts in question, we notice that the most prototypical senses of *over* (*over 1, 2, 3, and 4*) are without any variation rendered as “nad/ponad”, which therefore must be recognized as the most prototypical equivalent of *over*. *Over 7* comes second by a very narrow margin of one rendering “przez”. “nad/ponad” as the most prototypical equivalent of *over* deserves the first mention in an English-Polish dictionary, although Stanisławski has “na”, which is, it will be noticed, the only equivalent of the less prototypical *over 14*.

Secondly, in less prototypical senses the Polish equivalents of *over* vary over a considerable range of prepositions, prefixes and certain other means, such as inflections and special forms of verbs.

Thirdly, the Polish equivalents of non-prototypical senses of *over* evoke varying degrees of agreement among the respondents. On the one hand in the case of 8, 9 or 15 there occur considerable divergencies, on the other hand we deal with complete unanimity in the case of 14. Although the reasons of these differences remain to be investigated, one can surmise that they are partly due to the gaps in the linguistic competence of the respondents, but also, at least to some extent to their different *cognitive* processing of the situations as depicted by the examples (especially in the case of 15 and 17).

Fourthly, less prototypical senses of *over* may have very *prototypical equivalents* in Polish alongside less prototypical ones. For instance, “po całym wzgórzu” appears to be the most prototypical equivalent of *all over the hill* in 16, while “przez wzgórze” or “wzdłuż i wszerek wzgórze” are less prototypical equivalents of *over 16*.

Fifthly, “nad”, the Polish equivalent of the five most prototypical senses of *over*, i.e. 1, 2, 3, 4, and 7, itself has a number of senses, many of which have metaphorical extensions and which do not correspond to *over*. I have been able to distinguish eight senses of “nad” as a preposition and at least fourteen less basic senses of “nad” both as a preposition and as a prefix. The eight basic senses of “nad” are exemplified as follows:

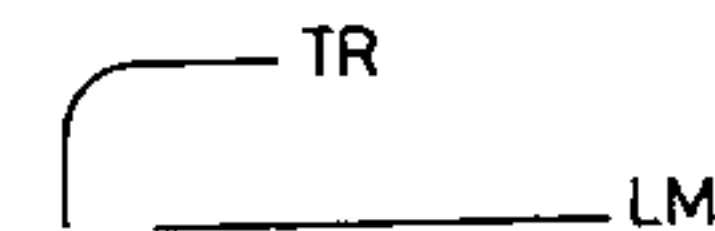
1. Balon unosi się nad miastem.
‘The balloon is hovering over the town’



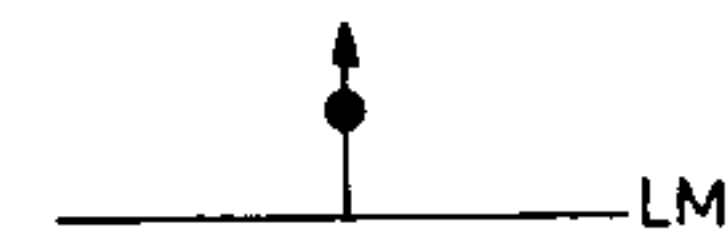
2. Samolot przeleciał nad miastem.
‘The plane flew over the town’.



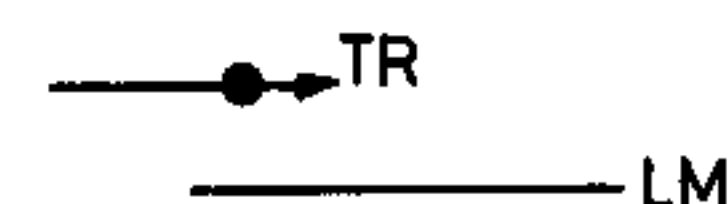
3. Wierzba pochyla się nad wodą.
‘The willow leans over the water’



4. Balon uniół się nad wyspę.
‘The balloon rose over the island’.



5. Balon przyleciał nad wyspę.



6. Usiedli nad wodą.
‘They sat near the water (front)’



7. On mieszka nad morzem.
‘He lives near the sea’.



8. Wyjechali nad morze.
‘They went to the seaside’.



Senses 1 and 2 are the most prototypical and constitute the core of the following chaining:

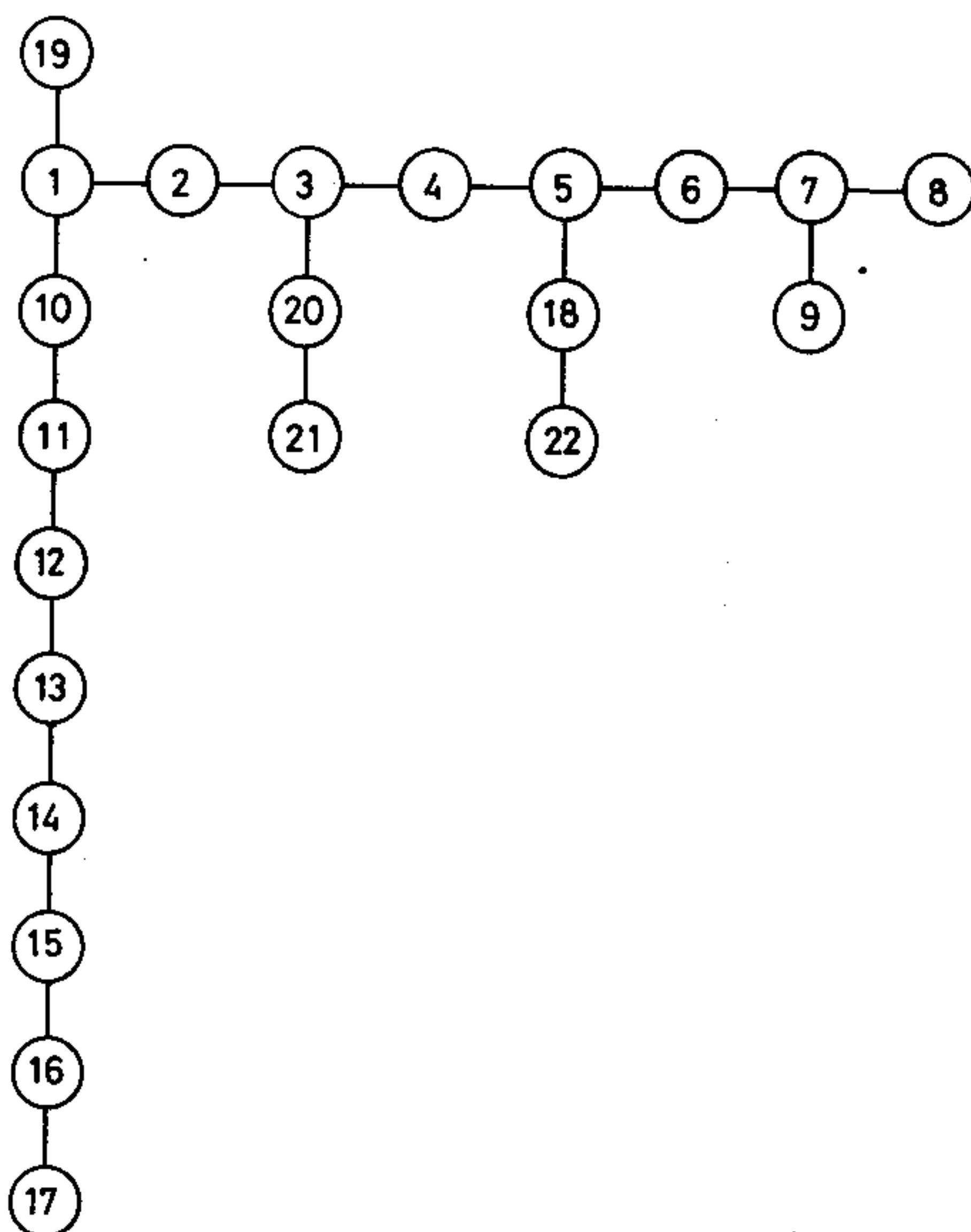


In addition there are the following senses:

9. On *nadbiegł*. ‘He came running’.
10. *Nadbudowali* strychn. ‘They built the attic above’.
11. *nadwozie*. ‘Car body’.
12. *nadkomisarz*. ‘police superintendent’.
12. *nad* śnieg bielszy. ‘whiter than snow’.
14. *nadczłowiek*. ‘superman’.

15. *nadciśnienie*. 'hypertension'.
16. *nadspodziewany*. 'unexpected'.
17. *nadlać*. 'pour out a little'.
18. *nad ranem*. 'before dawn'.
19. *sądownictwo nad chłopami*. 'peasant jurisdiction'.
20. *prace nad słownikiem*. 'work on a dictionary'.
21. *zachwyt nad urodą*. 'delight at someone's beauty'.
22. *nadbutwieć*. 'start being affected by rot'.

Allowing for possible modifications and further extensions, the basic chaining can be augmented thus:



In addition to the extensions mentioned here, many of which become metaphorical towards the end of the chain (e.g. 13 onwards), some of the spatial senses have "direct" metaphorical extensions, for example, 2 — *prześlizgnął się nad tym problemem* "he slid over the subject", 3 — *wyrastał nad przeciętność* "he grew above the mediocrity", 4 — *pochylał się nad każdym bliźnim* (= *interesował go każdy bliźni*. "he was interested in his every neighbour").

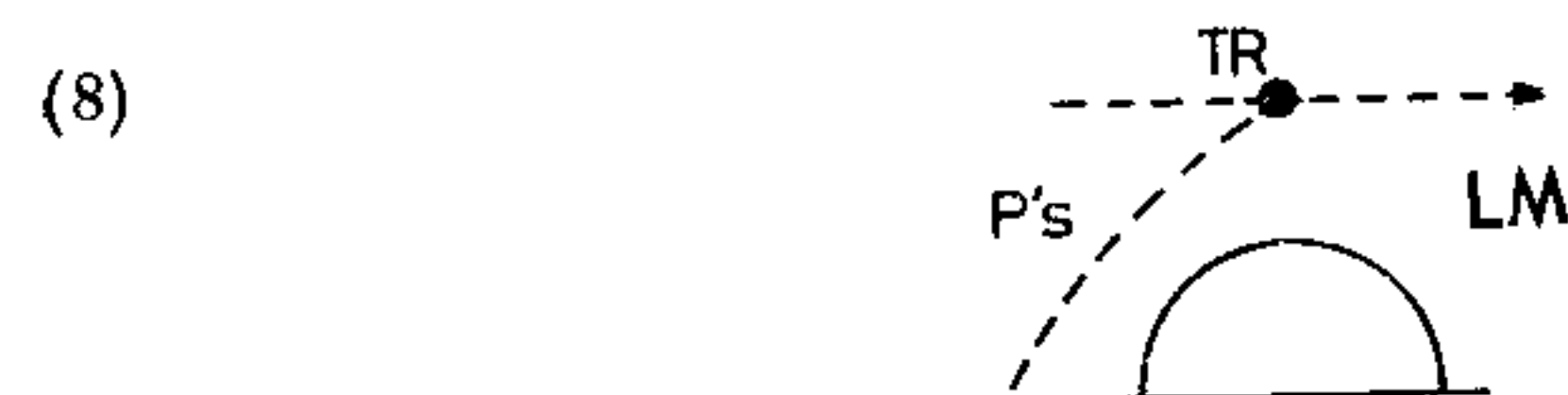
The chaining of the senses of *nad* is quite complex, but they all exhibit family resemblance. Through relating all these divergent senses by means of family resemblance we obtain a fairly coherent view of otherwise disparate phenomena.

It will be noted that each of these senses of *nad* will have its more or less prototypical equivalents in English. 1, 2 and 3 will prototypically correspond to the English *over*, while 4 to *above*, etc.

Incidentally, Brugman does not distinguish that sense of *over* which corresponds to the Polish *nad* 3 as in *The willow is leaning over the pond*, which would have to receive the image scheme: TR ——— LM.

If this omission is considered in our account, it will be possible to conclude that *over* and *nad* are prototypical equivalents in the two languages and that the relevant spatial senses, i.e. 1, 2, 3, and 4 in English and 1, 2 and 3 in Polish exhibit complete pattern matching with respect to the image schemes associated with these senses.

To provide a complete CA of the area of senses covered by *over* and by *nad* a similar procedure will have to be adopted for each sense individually. Consequently, each sense will have to be explored with the prospect of finding its prototypical and less prototypical equivalents in the other language, until the entire area is thus explored. The resulting chainings will then be mutually interconnected by a complex network of links, representing the equivalence of specific senses. Such findings can be additionally supported by the studies of image schemes associated with particular linguistic forms. For example, the research could either confirm or refute the prediction, which seems to ensue from the foregoing discussion, that the image schemes evoked by *over* in its four most prototypical senses and by *nad* in its three most prototypical senses are centered around the following image scheme:



where TR is either stationary or moving but at a certain time either its fragment or its complete body finds itself in the position indicated with relation to LM. Dotted and dashed lines represent these potential paths. The image scheme is a gestalt against which the most prototypical senses of *over* and *nad* are centred. Apart from this gestalt there are other gestalts which serve as centres for other senses of *over* and of *nad*. These other centres attract other equivalents, etc. The cross-linguistic landscape of senses can, therefore, be seen as a multifocal space with various linguistic forms in both languages interconnected by identical gestalts. Every instance of the use of *over* involves *focusing* on the relevant sense associated with the relevant gestalt.

In the case described above we have been dealing with linguistic phenomena which exhibit a great deal of resemblance. The very fact that the most prototypical equivalents of the most prototypical senses of the English preposition *over* correspond to a preposition in Polish suggests a high degree of pattern matching (syntactic, semantic and pragmatic). Yet, when less prototypical and hence more conventionalized senses are considered, or when typologically more distant languages are involved, one would expect a smaller degree of similarity (less pattern matching). Consider *over 9* which is connected with the image scheme (9):



A small majority of ten respondents rendered *over 9* as "przez", misconstruing the image scheme and visualizing it as



Another group (6 respondents) apparently had a different image, namely something like (11), when they rendered *over 9* as accusative case "przeskoczył skałę":



Finally, another group (6 respondents), by rendering *over 9* as "zeskoczył z cliffu" imagined something in the nature of (12) and thus obtained the highest degree of pattern matching:



Disregarding other, less numerous possibilities, we face at least three distinct gestalt interpretations of the situation in *over 9* and three grammatical, though hardly accurate translations of *over 9* into Polish. These divergent interpretations are due to the fact that Polish has no way of expressing the situation depicted in (9) by grammatical means similar to those which were needed to translate the preceding eight senses of *over*. Therefore, any attempt to use an equivalent preposition or at least an inflectional ending yields results which only partially match the original with respect to the relevant image scheme. The relatively conventionalized English expression "to jump over the

cliff" associated with (9) can be more fully matched with the Polish periphrastic (hence highly motivated!) expression "skoczyć w dół przez krawędź urwiska". Full matching of the image schemes is in this case bought at a price: the degree of *syntactic* pattern matching is now lower.

To conclude: in cross-linguistic studies equivalent forms exhibit varying degrees of pattern matching. Thus similarity (and difference) can be evaluated by means of a gradient scale. The upper bound of the scale is delimited *inherently* by complete pattern matching of semantic and/or syntactic parameters. This situation is most likely to occur when prototypical equivalents are involved, although by no means this need be the case. The lower bound of the scale is not delimited by the matching patterns themselves, since there is no *a priori* way of deciding on the necessary minimum of similarity required for the recognition of two linguistic forms as matching. Therefore, the lower bound of the scale is delimited *cognitively* through the bilingual informant's recognition of two linguistic forms in two languages as belonging to a common cross-linguistic category. Notwithstanding the fact that category boundaries are probably fuzzy, their area is delimited by the extent to which stretch their various non-prototypical senses. Such delimitations must also be based on cognitive grounds.

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