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## **Basic level categorization and meaning in language**

### **Abstract**

Categorization is the most basic cognitive process. It is the ordering of phenomena according to similarity with the purpose of guiding our interaction with the environment. Categories are formed in accordance with a functional and adaptive structuring of reality. At the culture level categories come to be formed by becoming coded in language. The process of cultural category formation is functional in nature since it is based on a speech community's adaptation to its environment. Semantic change reveals a great deal about this process as it shows how reality can be construed in alternate ways to facilitate this adaptation due to the fact that the semantic structure of a language is the product of conceptualization processes.

Categorization at the basic level involves abstraction relying mainly on perceptual attributes, gestalt structures and common motor movements, thus it is to be expected that such categories exhibit a significant degree of universality. In spite of this, their manifestations in language – basic level terms – are also affected by the fact that language is a culturally influenced cognitive model of reality. It can be observed even at this level that language will be shaped in such a way that it will best facilitate communication and cognition in and of the physical, social, and cultural conditions under which it is used.

*Keywords:* categorization, cognition, basic level categories, basic level terms, semantic change, conceptualization, prototype

### **1 Introduction**

Categorization is a process of ordering various phenomena (objects, events, actions, processes, qualities, relations, etc.) into different groups according to certain kinds of similarity. Although it can be a conscious act of determining what group a given item belongs to, primarily it is the most basic cognitive process with the function of providing cognitive building blocks for guiding our interaction with the environment. Categories are thus formed in accordance with an organism's cognitive structuring of reality. As we perceive the world around us, we recognize various individual phenomena as being equal for purposes of interaction in spite of the fact that no two of them are ever exactly the same. Recognition, and also differentiation, happens on the basis of categories because they function as "pattern recognition devices" (Smith & Medin, 1981: 8) by specifying relevant properties and thus providing schemas for finding similarities. In this way the world is not perceived and experienced as a huge (and chaotic) array of individual phenomena but as a relatively stable and ordered set.

This order perceived in the world is not an objectively given state of affairs but the product of the workings of the mind. Rosch (1978: 27) emphasized that human categorization is not "the arbitrary product of historical accident or of whimsy but rather the result of

psychological principles of categorization”. Category systems are as they are because we tend to make categorizations in one way rather than another due to two basic principles of human categorization. The first one, termed cognitive economy, “asserts that the task of category systems is to provide maximum information with the least cognitive effort” (Rosch 1978: 28). The second one “asserts that the perceived world comes as structured information rather than as arbitrary or unpredictable attributes” (Rosch 1978: 29). These principles are not supposed to explain “the development of categorization in children” nor to explain “how categories are processed (how categorizations are made) in the minds of adult speakers of a language”, but rather “the categories found in a culture and coded by the language of that culture at a particular point in time”, i.e. “their formation in a culture” (Rosch 1978: 28). These functional principles of categorization are responsible for the fact that the specific categories of the human mind that get coded in any particular language should provide the most efficient way to deal with the environment. They will influence what conceptual categories will be socially adaptive and will as a result achieve cultural significance to become coded in a language. Thus, the process of cultural category formation is functional in nature since it is based on a speech community’s social cognitive adaptation to situations its members might encounter in their environment and which they have to handle by thinking, reasoning and communicating about them.

In spite of being “concerned ... with explaining the categories ... coded by the language”, Rosch explained the above principles as applying not only to humans but to organisms in general and operating in species specific ways:

[T]he perceived world ... [is] ... not a metaphysical world without a knower. What kinds of attributes *can* be perceived are ... species-specific. ... What attributes *will* be perceived ... is undoubtedly determined by many factors having to do with the functional needs of the knower interacting with the physical and social environment. (Rosch 1978: 29).

This explanation is absolutely legitimate since categorization is the most basic cognitive process and is, as such, independent of language. Primarily it is based on perception and serves the recognition of and differentiation between stimuli in an organism’s interaction with its environment. Categories provide the basic building blocks for cognition, the biological function of which is to operate an internal model of this environment regulating and guiding the organism’s behaviour in a way that facilitates its optimal adaptation to environmental circumstances. Because of this, categorization necessarily involves an interpretation of reality in terms of the perceiver’s biology, that is, reality is categorized according to the role its parts play in the functional interaction between organism and environment. Rosch’s (1978: 29) principles of categorization explain exactly this function of categorization.

If Rosch’s principles are applied to the coding of human categorization in language, the enormous complexity of the human environment must be taken into account. It must be borne in mind that our environment includes socially and culturally determined components to an exceptionally high degree as compared to that of other organisms and for this reason language represents a very complex model of the world. Among other things this requires various levels of abstraction, and alternately it is also true that through our cognitive capacity for various levels of abstraction our environment has become very complex. In the following I will first look at linguistic categorization in general and then turn to the more specific issue of basic level categories in language.

## 2 The coding of categories in language

The cognitive function of language is to serve as a device for providing a symbolic model of the world which can be operated in various ways for deriving knowledge for an adaptive interaction with our intricately complex physical, social and cultural environment. Thus, language must be shaped in a way that best facilitates cognition of this environment. Hence reality itself is not the exclusive influence on the way language is because for language to function as an efficient cognitive device, it must be adapted to serve our specifically human interaction with the world. Efficiency means that language should provide an interpretation of the world that proves to be adaptive and functional in the given environment. This functional interpretation of the world will be reflected in linguistic categorization, which is manifest in the semantic structure of language. Thus, language will impose a particular categorization on the world, which has emerged as a result of Rosch's principles so as to provide an adaptive model.

Categorization, as a process of sorting various entities into groups, means both the cognitive process of pattern recognition in our everyday interaction with the environment (cf. Smith & Medin 1981: 8) and also that of setting up categories and establishing a category system. Rosch's principles apply to this second one, that is, to the issue of what categories become coded in language and how this process occurs. This latter aspect of categorization is the one I will be concerned with in the following.

One of the most conspicuous functions of language is that it is used for communicating conceptual structures that have been coordinated through speaker-hearer interaction and thus conventionalized in a speech community (Clark 1996: 325, 335). Therefore categories in language exist basically in the form of word meanings. Thus, semantic structure reflects a particular category system and through this a particular way of categorization language imposes on reality. One major way of how new meanings (and the expressions carrying them) arise in a language is through semantic change. It is this historical linguistic process where the kind of category formation that Rosch speaks about, i.e. the formation of categories in a culture, becomes most explicit (cf. Rosch 1978:42). In semantic change it is attested when a category was formed at the cultural level because the only way we know about the existence of a category is its codedness in language, i.e. via the existence of a certain expression. In this way etymology will provide a clue to the cultural formation of categories.

Semantic change does not only show how cognition influences what categories will be created in language. It also shows how the linguistically established categories influence further categorizations. As Rosch (1978: 29) says, "[o]ne influence on how attributes [in category formation] will be defined by humans is clearly the category system already existent in the culture at a given time." While the semantic structure of a language is the product of categorization processes, it is also true that the input for these categorizations is to a large extent the semantic structure of language itself. The existent semantic structure will influence new categorization processes because it is always the meanings of already existing words and expressions that serve as the basis for semantic change and by this the creation of new categories. Since our expectations about the world are biased by our previous knowledge and the concepts we have (Das-Smaal 1990: 349; Heit 1997: 8), semantic change must exploit and utilize the common understanding and interpretation of reality existing on the basis of conventionalized category structures shared by the members of a speech community.

Let us consider an example. The fact that, for instance, the word *hawk* derives from PIE *\*kap-* 'to grasp' (Watkins 1985: 27) suggests that referents of *hawk* were at one time categorized as instances of something 'grasping'. Drawing on the prototype theory of

categorization, it is reasonable to claim that such a specific instance will be more or less central to a particular initial category under which it is first categorized. The larger its difference (both structural and functional) from prototypical instances turns out to be, the more peripheral it will appear to the category, and the categorization of the new phenomenon will be the more likely to break away from that original category with time and create a new category of its own (Györi 2002: 152; cf. also Campbell 1998: 269, Langacker 1990: 266). Since referents of *hawk* are not simply grasping things but have a large degree of functional autonomy (as compared to other grasping things), in time they will be conceptually and semantically relegated to a different category and coded in the language accordingly. This is how and why the word *hawk* will stand in its own right later on without implying anything grasping, and only a historical perspective will reveal the origin of the category. This kind of flexible categorization is made possible, among others, by the fuzzy boundaries of prototypical categories. The above way is basically how semantic change takes effect in a large number of cases (see Györi 1996 for more examples).

As we can see, meaning change at the linguistic level very often appears to be equivalent to category coding or category formation at the conceptual level. When such new categorization takes place, it appears to be based on one or maybe two particular features only, since these become explicit by being expressed in language as attested in the etymologies. Other features of the new category stay linguistically implicit and are present only conceptually. The etymology of Eng. *thumb* (from PIE *\*teu-* ‘to swell’ > *\*tum-*) (Watkins 1985: 71) for example shows that SWOLLEN (as compared to the other digits of the hand) is the particular feature that served as the explicit basis for category coding. But as a thumb is not the only thing in the world that can be characterized as swollen, in order to set its category conceptually apart from other such categories, conceptually there must be also other features participating in the categorization process. The fact that only one feature becomes explicit through language while others remain implicit at the conceptual level will of course obscure the complete categorization process, but this may be a linguistic manifestation of cognitive economy, one of the principles of category formation proposed by Rosch (1978: 28). An answer to the question how marking only one feature can facilitate the hearer’s understanding initially of a still not conventionalized expression may be that in the appropriate context the high correlational structure of attributes will yield such a high level of feature integration in the category that when activating one feature, the totality of the connecting features is also activated (cf. also Langacker 1987: 385).

In the case of the novel usage of an expression both the hearer’s understanding and the speaker’s own representational process must be reinforced. This requires a certain degree of explicitness in the reference. This can be accomplished rather economically by depicting salient features of the phenomenon that needs to be referred to and represented. Thus, it is not by chance that an already existent meaning (a conventionalized expression) is selected to be modified in order to convey a new sense. As already mentioned, this implies that the categorization of some new phenomenon (or the re-categorization of old ones) is guided by the existent culturally shared category system, which is materialized in the lexicon of a language. When the interaction with the environment requires the categorization of such a new phenomenon or some kind of reinterpretation of an already familiar one, it still must be recognized – due to our cognitive mechanisms relying heavily on analogical processes (cf. Holyoak & Thagard 1997) – as belonging to a given category in the established system.

The emergence of new meanings and expressions in the course of semantic change is not simply a process of creating a label for a cultural category but creating the category itself. However, meanings are different from pure categorizations as they are not solely the results of

cognitive principles of functional and adaptive categorization but are to a large extent shaped by the human conceptualizing capacity (Lakoff 1987: 280) and also by cultural beliefs (Clark 1996: 339). Cognitive semantics claims that meaning is based on mental imagery and conceptualizations of reality which do not objectively correspond to it but reflect a characteristic human way of understanding. Thus, one of the basic axioms of cognitive semantics is that linguistic meaning originates in the human interpretation of reality. This involves conceptual mappings from familiar domains of experience to unfamiliar or less well-understood domains in the form of metaphor, image schema projections, idealized cognitive models and blending of mental spaces, among others (Lakoff & Johnson 1980; Johnson 1987; Fauconnier 1994; 1997). Since meaning derives from the way human beings make sense of the world, the conceptualizations which underlie meaning are not governed by autonomous linguistic processes but their operation is based on cognitive mechanisms at any level of cognitive functioning, from perception to complex conceptual structures (Langacker 1987: 98; 1991: 2). Although this involves a great deal of subjectivity due to the fact that cognitive processes occur in individual human minds, meaning is “shared, public, and ‘objective,’ in an appropriate sense of objectivity” due to common human ways of embodied understanding of a shared reality (Johnson 1987: 175), and also a common conceptualizing capacity (Lakoff 1987: 280).

Meanings are conceptual phenomena and their changes are largely dependent on general cognitive mechanisms, like e.g. associations, due to their open-ended and encyclopaedic nature (Langacker 1987, 1990). Cognitive semantics, by incorporating encyclopaedic knowledge and conceptualization into semantic structure (cf. Langacker 1987: 155), has made considerable progress in the theoretical account of such change (e.g. Geeraerts 1997). If encyclopaedic knowledge and conceptualization lie at the bottom of changes in semantic structure, it is no wonder that knowledge of the socio-cultural history of the speakers of a language is very often indispensable for discovering etymologies and the categorizations behind them and thus providing explanations for the individual cases of change of meaning (cf. Anttila 1989: 137; Campbell 1998: 267). It is especially true in the case of semantic change, as Keller (1985: 234) has pointed out, that a proper understanding of language change requires that we recognize language as an “object of sociocultural evolution.”

As already mentioned, the familiar knowledge that can be exploited for new categorizations and creating new meanings resides in conventional expressions and in the connotations (or encyclopaedic information) attached to them by the speech community. However, even though new meanings emerge on the basis of already existing ones, this does not happen in a propositional form most of the time. Since in meaning changes a highlighted salient property will evoke others due to the high correlational structure of phenomena (cf. above), emergent meanings resemble conceptual combination. This may sometimes be compositional, in most of the cases it will yield “emergent properties” in the combined concept which do not derive from either of the combining concepts (Hampton 1997: 147). The reason for this is that the inputs to a *conceptual blend* are rarely mental representations of classical categories, but rather mental spaces *construed* by speakers on the basis of encyclopaedic knowledge that have been evoked through the current linguistic expressions (Coulson & Oakley 2000: 176). Taking all this into consideration, it is also understandable why the same conceptual avenue for categorizing and conceptualizing a phenomenon will often not work in different languages and why the same metaphorical or metonymical transfer may be cognitively plausible in one language but not in another.

Due to complexity of the human environment especially in the intellectual realm, our conceptual structures include categories and types of knowledge of a vast array of abstract and virtual entities. In these cases, because of the “lack” of perceptual attributes, functional,

cultural and encyclopaedic knowledge play a much more relevant role in categorization. At the same time, these being results of the human conceptualizing capacity, we seem to be able to form mental representations about these only with the help of language because they are highly dependent on metaphor, image schema projections, idealized cognitive models and blending of mental spaces, etc. Such entities are for instance abstract notions (e.g. LOVE, DEMOCRACY, HONOUR, etc.), imaginary ideas (SPIRIT, FAIRY, etc.), but also super-ordinate categories (FURNITURE, ANIMAL, etc.). On the other hand, basic level categories appear to rely on perceptual attributes to a much greater extent. However, these categories, emerging in language as basic level terms and constituting linguistic meaning, should also be affected by the human conceptualizing capacity. To what extent this is the case is the issue I will turn to in the next section.

### 3 Basic level categorization

#### 3.1 *The cognitive salience of basic level categories*

An important function of a category system is to provide a taxonomy of the entities categorized, that is, to show their super- and sub-ordering relations. If we take a look at such a taxonomy of things, it will be obvious that certain levels are more fundamentally linked to sensory experience than others. Interestingly, this is not necessarily always the same level. For instance in the biological taxonomy of vertebrate animals (see Fig. 1) fish in general have quite prominent common visual characteristics as opposed to vertebrates, while this state of affairs can be found one level lower in the case of cats as opposed to mammals. In line with this observation Rosch (1978: 30) claimed that there is a level of categorization of reality – the *basic level* – at which we make categorizations on the basis of natural discontinuities found in nature. In other words, we distinguish the entities that show maximal category resemblance with each other and minimal with others based on gestalt perception, as well as motor movements and behavioural functions connected to them. Categorization above this level has no direct empirical ground, and even categorization below the basic level is not necessarily grounded in perceptual qualities but often involves knowledge other than the types basic level categorization is based on, among others also some type of expert or socio-cultural knowledge. Thus, whereas frogs are relatively easily identified on the basis of their average shape, for determining that a living creature is an amphibian or that a particular frog (a sub-ordinate category) belongs to a certain species of frog some knowledge of biology is inevitable. In the case of human artefacts the situation is no different: for instance, tables as such are easily recognizable purely by their shape, but knowledge of the category FURNITURE or distinguishing two relatively similar tables as kitchen or dining tables respectively involves the knowledge of how, where and for what purpose certain items are used or with what function in mind they were manufactured.

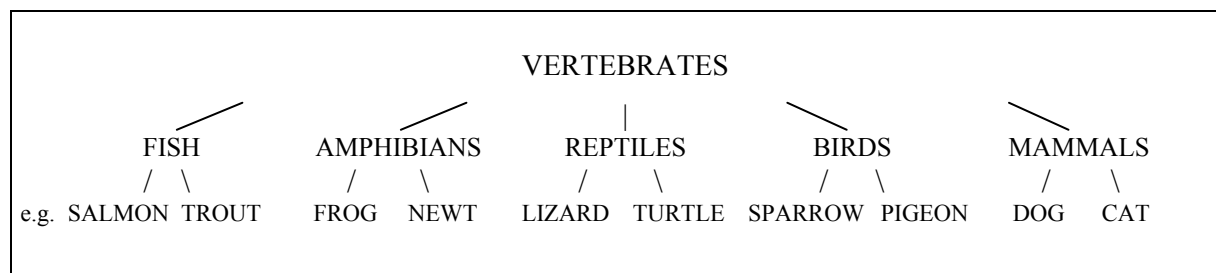


Figure 1: A simplified taxonomy of vertebrates

Rosch (1978: 35) also claims that “objects are first seen or recognized as members of their basic category and only with the aid of additional processing can they be identified as members of their superordinate or subordinate category.” This is obviously due to the fact that it is mostly perceptual features that dominate at this level of categorization, or in other words, categorization at this level is largely based on the way humans perceive the world in terms of sensory input. Categorization at the levels above and below this one requires the processing of functional features, that is, knowledge about the functions of objects. It is partly on the basis of this difference that Wierzbicka (1980: 313) distinguishes between taxonomic and non-taxonomic concepts, where the former “stand for a kind of thing which is ‘imaginable,’ can be represented pictorially (e.g. TRICYCLE, BALL, etc.),” and the latter “stand for anything that has a particular function (e.g. TOY, WEAPON, etc.)” Recognizing objects primarily at the basic level appears to be a fundamental human cognitive predisposition relying on the operation of “learned and innate feature detectors that pick out the invariant features of object and event categories from their sensory projections” and yield categorical representations (Harnad 1990: 335).

On the basis of the above it seems obvious that the psychological relevance and the special status of basic level categories derives from the fact that basic level categorization is a universally fundamental characteristic of human cognitive capacity. Even mentally impaired children have been shown to have a grasp of basic level categories without language, while they cannot handle categories at other levels (Boucher et al. 2008: 273). Since categorization at the basic level relies mainly on perceptual attributes and common motor movements, it is to be expected that this basic level perception of world structure will engender categories that exhibit a significant degree of universality across cultures. Although categorization is a non-linguistic cognitive operation and the existence of basic level categories is in itself not necessarily a linguistic matter but a psychological-cognitive one, when considering the universality of basic level categories, the issue of language cannot be left aside. For an experimental investigation of such categories basic level terms, their linguistic counterparts, must be invoked. For instance, Pansky & Koriat (2004) found in two experiments on memory for story material that participants tended to remember basic level terms for the super- and subordinate ones that they had been presented with, and concluded that basic level categories have conceptual primacy in their effects on memory. Also, the developmental corollary of basic level categorization, according to which “basic objects are the first categorizations of concrete objects made by children” (Rosch 1978: 35) is not necessarily a question of language development. It has been suggested that the acquisition of such categories may precede its linguistic expression in the child (Diesendruck 2003: 771), although the tangible manifestation of the acquisition of a category is the proper usage of its linguistic expression by the child. However, there are other indications for the fact that basic level categorization is not dependent on language, obviously due to its overwhelming reliance on perceptual features. It has been shown that animals, especially birds and mammals, are capable of categorizing objects in their environment (Cheney 1984, Herrnstein 1985, Terrace 1985, Pepperberg 1987). Herrnstein (1984) considers the ability to categorize so fundamental among animals that he attributes adaptive value to it. Furthermore, experiments conducted with apes on the labelling of objects showed that they learn and use labels for basic level objects relatively easily while labelling super-ordinate categories is a very difficult, though not impossible task for them (Premack 1985, Savage-Rumbaugh 1986). Basic level categories seem to be available without any symbolic representation also to apes and it is only the matching of categories and labels that have to be learned. However, in the case of super-

ordinates labelling must most probably go hand in hand with the formation of the conceptual category.

Children's acquisition of the names of basic objects prior to names for categories above and below that level may also be influenced by the fact that basic-level names for different items appear to be the most useful and most used ones as compared to other elements of the lexicon (cf. Rosch 1978: 35). This usefulness and frequency is obviously connected to the already mentioned dominant cognitive status of basic level categories according to which objects are first recognized as members of such categories and also to their psycholinguistic relevance as elementary symbols grounded in categorical representations, i.e. as "the names of object and event categories, assigned on the basis of their categorical representations" (Harnad 1990: 335). This is why children first learn and name basic level categories. It is here, in the process of word acquisition in linguistic ontogeny where the emergence of elementary symbols is the most obvious. The child first learns the symbols for the categories that it gets into physical contact with and can most easily distinguish on perceptual grounds. Thus, the meanings of these words are indeed empirically grounded because they are connected to categorical representations based on perception.

### **3.2 Basic level categories in language**

In language basic level categories are expressed with basic level terms, but words (and their meanings) are not simply labels. They are symbolic representations of conceptual categories containing not only perceptual and structure dependent functional features as categorical representations do, but also encyclopaedic and cultural knowledge about these categories. This is obviously the basic reason why children learn words for super- and subordinate categories only after they have acquired the names for basic ones (Waxman & Lidz 2006: 311), especially because naming is the best indication for the child of the coherent nature of a category (Diesendruck 2003: 777). This is especially important in the case of categorizations that are not in accordance with natural discontinuities. Thus with the help of language we can construct categories other than basic level ones, i.e. different super- and subordinate categories, whose features are non-perceptual. The categorization of FURNITURE draws upon some culture-based knowledge of housing, while the symbolic representation of KITCHEN-CHAIR is anchored in the knowledge that some chairs, not necessarily perceptually different from other chairs, are used in kitchens. Non-perceptual features are those that imply other knowledge than can be gained through sensory (visual, olfactory etc.) information or perception of motion. With the help of words we can represent non-perceptual information about basic level categories as well as construct super- and subordinate categories often dependent on knowledge of cultural tradition, function, origin, etc., and not only on perception.

In connection with the relation between basic level categories and language Rosch (1978: 35) also speculates that "in the evolution of languages names evolve first for basic level objects spreading both upward and downward as taxonomies increase in depth". This appears to be rather logical on the following grounds. Harnad (1990: 335) distinguishes symbolic representations from the already mentioned categorical ones and claims that the former are grounded in non-symbolic representations, i.e. they are derived from sensory representations through symbol composition: "An X is a Y that is Z". This logic seems to be verified by the definitions given by dictionaries for most super- and subordinate terms. Webster's New Collegiate Dictionary defines the lexeme *furniture* in the following way: "movable articles used for readying [...] a room [...] for occupancy or use". Thus, in terms of symbol composition FURNITURE is MOVABLE ARTICLES that are USED FOR READYING A



ROOM FOR OCCUPANCY OR USE. In Harnad's terminology FURNITURE is thus a higher-order symbol and as such is grounded in elementary symbols because symbolic representations "consist of symbol strings describing category membership relations" (Harnad 1990: 335). This is also in line with Wierzbicka's claim according to which non-taxonomic categories are based on the common function of their members. Categorization above the basic level has no direct empirical ground, and even categorization below it is not necessarily grounded in perceptual qualities but often involves knowledge other than the types basic level categorization is based on. It also follows from these considerations that symbolic representations or higher order symbols do not only correlate with super-ordinate categories but also with subordinate ones, as is also shown by the fact that the linguistic expressions of the latter are mostly compounds. Thus, it appears to be the case that basic level categories (basic-level names) are cognitively so fundamental that the development of any hierarchical taxonomy is both psychologically and linguistically contingent upon them.

Diesendruck (2003: 777) claims that at the basic level children's categorizations do not seem to be strongly influenced by names. This should be natural, since basic level categories are mainly dependent on perceptual attributes, and the names (i.e. words) we use for designating these categories should not affect the way we categorize the world. After all, categorizing at this level reflects natural discontinuities and this is why such categories have also been called natural (cf. Rosch et al. 1976). It must be remarked here, as Rosch (1978: 29) also states, that natural discontinuities do not simply depend on some objective structure of the world, but on perceived world structure, that is, on a special human way of perceiving the world. And this is exactly why functional attributes may play an equally important role in basic level categorization. However, there is an essential difference between functional attributes in basic level categories and in categories at other levels. Functional attributes in basic level categories depend on the structure, which is perceptual, and it is actually the structure from which the motor movements derive. The structure serves as the direct basis for how objects can be handled and used, as it determines the way we interact with these items. Thus, it is not by chance that in the case of basic level categories, like CHAIR, perceptual (i.e. structural) attributes go hand in hand with motor movements, as the two most basic characteristics of these categories. As Rosch (1978: 33) herself states, the motor movements we perform with objects is inseparable from their correlational structure: the function of chairs, that is, that they can be sat on and are normally used for sitting on, derives "from the nature of the attributes of chairs – legs, seat, back, etc."

Functional attributes in categories at other levels have a different source. The functions of FURNITURE obviously do not derive directly from the structures of the different members of the category. FURNITURE cannot be characterized with perceptual attributes because it has no common structure, and hence there are no common motor movements for interacting with pieces of furniture. The functions of FURNITURE are based on cultural knowledge of conventions about the fact that certain movable articles are used for readying a room for occupancy or use and what these articles commonly are. Subordinate categories, like KITCHEN CHAIR, also involve cultural knowledge of conventions, for instance that certain chairs are used in kitchens to sit on to perform activities that are normally preformed in kitchens while seated, that is, their basic level function plus some special function not directly deriving from their structure.

There are differences in the conceptual content of basic level categories, both individual and cultural, due to the fact that our knowledge of basic level objects also includes cultural and encyclopaedic components. Croft & Cruse (2004: 96) claim that there are "cases where different speakers apparently assign items to different levels," what is more, such variation

can be found within one and the same speaker on different occasions. They exemplify this with the category THRUSH, which is basic level for some speakers and subordinate for others, or even occurs at both basic and subordinate level in the usage of one and the same speaker. They presume that the difference between the two levels of THRUSH depends on “richness of content, in terms of knowledge, memories, connections and so forth”. Kövecses (2006: 46) claims that there can be cultural differences in basic level categorization and states “that TREE is basic level category only in urban cultures,” whereas for indigenous people rather different kinds of trees, like OAK, MAPLE etc. appear at the basic level, as revealed by their use of these terms. From a logical point of view such examples go against the definition of basic level, and from a cognitive point of view against what we know about categorization processes. TREE is definitely the most inclusive category in its hierarchical taxonomy for which a recognizable image can be formed and in the case of which an averaged shape can represent all members of that category.

As for the case of THRUSH, elevating it to the basic level runs into the following problems. It would mean that THRUSH is not a BIRD since they are at the same level (namely basic), and then it follows that they should be maximally distinct categories. Furthermore, in this case an averaged image of BIRD could not represent THRUSH, which sounds absurd. Claiming, as a solution, that BIRD is super-ordinate simply violates the facts about basic level: the most inclusive level in a hierarchical taxonomy with the most common attributes for which an averaged image can be formed. This was confirmed in an early study by Rosch (1978: 32) and her co-workers in which they expected both TREE and BIRD to appear at the super-ordinate level on the basis of the biological taxonomy, but as the result of their experiment showed, both turned out to be basic level from a cognitive point of view, which is no wonder after all. As Taylor (1995: 62) points out, “cognitive structures need more often to be understood as holistic, gestalt configurations, than attribute bundles,” which is especially true for basic level categories. This is probably why MAMMAL, although theoretically characterizable by a bundle of common attributes, namely ‘four legs,’ ‘fur,’ ‘tail’ etc., functions as a super-ordinate category with its members as basic level ones, in spite of being at the same level as BIRD in the biological taxonomy. The shapes of different mammals just do not converge to a common recognizable image as those of birds do.

Language may also affect basic level categorization due to the prototypical character of meaning. Instances that appear to be peripheral members of a basic level category may be recognized as basic level in their own right, like for instance in the case of TROUSERS and JEANS (Taylor 2008: 49). The reason for this may be that in a network of prototypical meaning structure there is a global prototype for the category as a whole, i.e., some kind of basic meaning, while other nodes represent peripheral exemplars. If the network gets more elaborate, i.e., many different exemplars get included in the same category, local prototypes may also develop. In terms of the underlying cognitive processes this should happen when a given entity, which has been conceptualized formerly as peripheral from a prototypical centre of a category, is recognized as a central member of a new category. Such a linguistic process may be underpinned by cultural expectations and encyclopaedic knowledge, which may influence certain members to become more and more peripheral, i.e., to move away conceptually from the global prototype and acquire a relatively high degree of independence. A member of a basic level category is recognized as another basic level category when one of the nodes (a local prototype) gets detached by being raised to the status of a new global prototype in a network of its own.

## 4 Conclusion

The lexicon of a language defines a shared cultural system of categories stored in the minds of the individuals of a speech community. The formation of these categories is the product of semantic changes, which reflect categorizations of new experience or of some already familiar experience from a new perspective when adaptation to a changed environment requires it. Thus, linguistic meaning can be viewed as the product of historical categorization processes, i.e. these linguistically coded categories are results of previous conceptualizations on the level of a whole culture. The cognitive basis of categorization is the exploitation of familiar knowledge, which resides in conventional expressions and in the connotations attached to them by the speech community and so they also provide a source for the operation of similar cognitive processes in future categorizations. This reflects a form of cultural adaptation facilitated by the nature of linguistic meaning. In linguistic categorization purely cognitive categorization processes are supplemented or even overridden by symbolic representational processes to allow a more flexible way of adaptation to our environment under the conditions of human culture.

Basic level categories have a special status in categorization due to their psychological relevance, which derives from the fact that they rely mainly on perceptual attributes, gestalt perception and common motor movements, and are thus expected to exhibit a significant degree of universality. However, if we take a look at the linguistic aspects of basic level categorization and analyse the relationship between the meanings of their linguistic expressions (basic level terms) and the contents of such categories themselves, it turns out that this expectation cannot be completely verified. This is due to the fact that meanings are not mere categorizations of reality but reflect a form of cultural adaptation through various ways of conceptualization facilitated by the encyclopaedic nature of linguistic meaning. In linguistic categorization purely cognitive categorization processes are supplemented or even overridden by metaphor, image schema projections, idealized cognitive models and blending of mental spaces to allow a more flexible way of adaptation to our environment under the conditions of human culture.

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