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CHAPTER 5

# ENTRENCHMENT, SALIENCE, AND BASIC LEVELS

HANS-JÖRG SCHMID

## 1. Introduction

One of the basic tenets of Cognitive Linguistics is that the human capacity to process language is closely linked with, perhaps even determined by, other fundamental cognitive abilities. This chapter is concerned with possible manifestations of such abilities—most notably among them perception, memory, and attention allocation—in linguistic competence and use. It deals with mechanisms that influence the storage of concepts and constructions in long-term memory and with factors involved in the retrieval and activation of concepts and constructions from memory during ongoing language processing.

This chapter falls into seven sections. Following this introduction, section 2 illustrates the use of the notions of *entrenchment* and *salience* in Cognitive Linguistics and provides initial definitions. Section 3 deals with the role of entrenchment in the emergence, sanctioning, and blocking of linguistic units. More specific linguistic effects of entrenchment and salience in the lexicon are discussed in section 4. Section 5 reviews an attempt to measure the relative entrenchment of categories in lexical taxonomies. Section 6 deals with effects of entrenchment and salience in the area of syntax, and section 7 offers an outlook on future research in this area.

# 2. The Notions of *Entrenchment* and *Salience* in Cognitive Linguistics

## 2.1. Entrenchment

When speakers encode their conceptualizations in words and sentences, they utilize their *competence*, that is, the linguistic knowledge of phonological, semantic, grammatical, and collocational properties of words and syntactic structures. This knowledge is stored in their long-term memory. It is fairly unlikely, however, that speech processing is always carried out in a creative, generative fashion in the sense that language users always have to actively, or even consciously, search their memory for means of encoding what they have in mind or decoding what they hear or read. Presumably, a lot of what speakers say is available in memory in some kind of prepackaged, ready-made format. Convincing evidence for this claim are the words of a language, since these represent nothing else than conceptualizations that have been fossilized by convention in a speech community. We hardly ever stop to think what language would be like without prepackaged concepts readily encodable by words. To refer to a dog that we see running across a meadow, there is no need to consciously construe an appropriate conceptual unit from scratch, because words like *dog* or *poodle* are readily available. The question of how to name this entity will not reach a level of conscious awareness, and the activation of concepts matching our experience of the dog will hardly require cognitive effort. The reason is that familiar concepts like 'dog' or 'poodle' are deeply *entrenched* in our memory so that their activation has become a highly automated routine.

When we are faced with a more exotic animal, say a tapir in a zoo, the situation will be different, because the cognitive processes relating the perceptual input that determines the target conceptualization to the corresponding phonological unit are less well entrenched. We are likely to need more time to identify and categorize the animal by considering some of its most prominent attributes before we can even begin to search our mental lexicon for a word matching this cognitive category. Clearly, then, the conceptual unit 'tapir', which is represented by this cluster of attributes, is less well entrenched than the cognitive unit 'dog'.

Cognitive units come to be entrenched and their activation automated to the extent that they have been used before. According to Langacker (1987: 59), there is a continuous scale of entrenchment in cognitive organization. Every use of a structure has a positive impact on its degree of entrenchment, whereas extended periods of disuse have a negative impact. With repeated use, a novel structure becomes progressively entrenched, to the point of becoming a unit; moreover, units are variably entrenched depending on the frequency of their occurrence.



Langacker conceives of entrenchment as being fostered by repetitions of cognitive events, that is, by "cognitive occurrences of any degree of complexity, be it the firing of a single neuron or a massive happening of intricate structure and large-scale architecture" (1987: 100). As a result, the degree of entrenchment of a cognitive or linguistic unit correlates with its frequency of use. Geeraerts, Grondelaers, and Bakema (1994) argue for a more refined version of this idea (see section 5). On their account, it is not frequency of use as such that determines entrenchment, but frequency of use with regard to a specific meaning or function in comparison with alternative expressions of that meaning or function.

Entrenchment of concepts or constructions not only depends on the frequency of activation by individual speakers (and in that sense is not a completely private matter), but it also applies to languages as such and whole speech communities, because the frequency of occurrence of concepts or constructions in a speech community has an effect on the frequency with which its members are exposed to them. The (tacit rather than explicit) implication is that this results in some kind of collective automatization effect, which makes it possible to talk of the degree of entrenchment of a concept or construction in a given language.

In short, the notion of entrenchment is thus used in Cognitive Linguistics—and especially in Langacker's influential framework of Cognitive Grammar (1987, 1991; this volume, chapter 17)—to refer to the degree to which the formation and activation of a cognitive unit is routinized and automated.

## 2.2. Salience

The notion of *salience* is employed in Cognitive Linguistics in two closely related ways, yet distinct enough to call for differentiation.

The first usage, called "cognitive salience," concerns the activation of concepts in actual speech events. Cognitive units must be activated when they are required for speech processing, and this may result from either one of two mental processes: the activation of a concept may be controlled by a conscious selection mechanism, whereby the concept enters a person's focus of attention and is being processed in current working memory (Anderson 1983: 118–20; Deane 1992: 35); alternatively, a concept may be activated through *spreading activation*, which occurs when the activation of one concept (e.g., 'dog') facilitates the activation of others (e.g., 'bark', 'tail wagging', 'fur', 'poodle', 'alsatian', 'collie', etc.) (see Collins and Quillian 1969; Collins and Loftus 1975; Anderson 1983: 86–125; and Deane 1992: 34). Irrespective of how a cognitive unit has been activated, it is said to be *salient* if it has been loaded, as it were, into current working memory and has thus become part of a person's center of attention. Since the use of concepts that are already activated requires minimal cognitive effort, a high degree of cognitive salience correlates with ease of activation and little or no processing cost. Currently inactive concepts, on the other hand, are nonsalient.

The second usage of the notion of *salience*, "ontological salience," is not related to temporary activation states of concepts but to more or less stable properties of entities in the world. The idea is that by virtue of their very nature, some entities are better qualified to attract our attention than others and are thus more *salient* in this sense. The obvious link between *ontological salience* and *cognitive salience* is that mental concepts of salient entities have a better chance of entering our focus of attention. As a consequence, ontologically salient entities are more likely to evoke corresponding cognitively salient concepts than ontologically nonsalient ones. For example, a dog has a better attention-attracting potential than the field over which it is running. Therefore, it is likely that observers of the scene will be more aware of the dog and its actions than of the field.

The notion of *salience* may thus denote both a temporary activation state of mental concepts (*cognitive salience*) and an inherent and consequently more or less permanent property of entities in the real world (*ontological salience*).

It follows from these definitions that there is a two-way relationship between salience and entrenchment. On the one hand, ontologically salient entities attract our attention more frequently than nonsalient ones. As a result, cognitive events related to the processing of ontologically salient entities will occur more frequently and lead to an earlier entrenchment of corresponding cognitive units, or concepts. This is perhaps most noticeable in the early stages of language acquisition when active, movable, or otherwise interesting—and therefore salient—entities such as people, animals, or colorful and noisy toys, which have a relatively high potential of attracting children's attention, stand a better chance of early entrenchment as cognitive units than less salient entities, such as walls or carpets. It must be emphasized, however, that there is no one-to-one causal link between ontological salience and entrenchment, because from a certain point onwards, children acquire the ability of adults to conceptualize one entity, say a given dog, via a whole range of differently entrenched concepts such as 'dog', 'poodle', 'mongrel', 'animal', or 'creature'. This shows that it is, of course, not real-world entities themselves that get entrenched but possible concepts of entities.

On the other hand, deeply entrenched cognitive units are more likely to become cognitively salient than less well entrenched ones. The reason is that a smaller amount of spreading activation will suffice to activate them. The question of which factors determine the choice from a range of concepts that are entrenched to an intuitively similar degree ('dog', 'poodle', 'animal') will be discussed in more detail in sections 4 and 5. What sections 1 and 2 have shown so far is that there is no general agreement on how to define the concepts underlying the terms *entrenchment* and *salience*. However, unlike in other areas, the terminological unclarity is not the result of a long-standing debate but rather a symptom of the novelty of the concepts involved (see also Geeraerts 2000).



## 3. The Role of Entrenchment in the Emergence, Sanctioning, and Blocking of Linguistic Units

As shown in the previous section, the term *entrenchment* designates the storage of concepts and constructions as (variably) routinized items in long-term memory. By the same token, it accounts for the emergence of linguistic items with a high degree of unit-hood, that is, symbolic associations between semantic and phonological structures (Langacker 1987: 57–59) with little perceived internal complexity. Indeed, although the size of linguistic units can vary from single morphemes to quite elaborate syntactic constructions, it is the hallmark of fully entrenched units that they are conceived of as single gestalts. As Langacker (1987: 59) points out, "When a complex structure coalesces into a unit, its subparts do not thereby cease to exist or be identifiable as substructures.... Its components do become less salient, however, precisely because the speaker no longer has to attend to them individually."

It is by virtue of their Gestalt-like nature that, despite their possible internal complexity, units are relatively easy to process and manipulate and that they require little effort to combine with, or integrate into, other structures. This is the main cognitive advantage of entrenchment. Note, however, that as there are degrees of entrenchment, a linguistic item's unit status may also be variable, that is, there are no discrete boundaries between units and nonunits.

As already hinted at, it is not only lexical concepts that get entrenched with repeated use, but also collocational patterns, or *constructions* in the Construction Grammar sense of the term (see Croft, this volume, chapter 18), and syntactic structures. For example, given their high frequency of usage, lexical bundles like *I don't know*, *I don't think*, *do you want*, or *and I said* (Biber et al. 1999: 994) are likely to be highly entrenched, and so are frequently recurring clause patterns such as 'abstract NP as subject + copula + *that*-clause' (e.g., *the thing/fact/point/problem is that*...) or 'abstract NP as subject + copula + *to*-infinitive' (e.g., *the aim/job/task/idea is to*...; see Schmid 2000).

Firmly entrenched units play a crucial role in the emergence of novel linguistic structures, a process which is known as *sanctioning* in Cognitive Grammar (see Langacker, this volume, chapter 17). If the way to the establishment of novel structures in the repertoire of individual speakers and in the lexicon and grammar of a language is paved by similar structures that are already well entrenched, their entrenchment (i.e., of these novel structures) will be facilitated in turn. On the other hand, well-entrenched structures can inhibit or even block the adoption of novel structures (Langacker 1991: 162). This occurs, for example, in the field of word-formation, where the entrenchment of potential novel structures like English **stealer* or German **Bauer* (as a derivation of the verb *bauen* 'build') is blocked by the established words *thief* and *Bauer* 'farmer' respectively.[1]

# 4. Salience and Entrenchment Effects in the Lexicon: Basic Levels of Categorization

According to the theory of spreading activation, many more words than those that are uttered in a given speech act are activated during the process of lexical retrieval. This claim is supported by association and priming experiments, which suggest that whole networks of concepts that can be related to a target word in various ways (e.g., synonyms, antonyms, superordinates, subordinates, collocates, elements of one frame) achieve some level of activation during lexical retrieval (Aitchison 2003: 84–101). It is from these networks that the most suitable means of encoding the conceptualization to be conveyed, the *active node* (Langacker 1987: 384; 1991: 159–60), is selected during speech production.

This suggests that the stage of conceptual categorization, which is part of lexical retrieval (see Levelt 1989: 222–34), may involve two levels of activation: the activation of a conceptual network and the activation of the active node from the options provided by the network. The two steps result in the allocation of different degrees of salience across possible concepts, and this, in turn, raises the question as to the factors determining this allocation process. Arguably, the degree to which concepts are entrenched in long-term memory will play a crucial role in both stages. All other things being equal—for example, the match between the target conceptualization and the concepts—well-entrenched concepts have a better chance of being selected as active nodes than less well entrenched ones.

What is known about the differences between categories with regard to their degree of entrenchment? While it is of course difficult to make justified assessments about the entrenchment of individual concepts (but see section 5), there is a long-standing tradition in anthropology, cognitive psychology, and linguistics in trying to attribute degrees of entrenchment to certain types of cognitive categories. According to research to be reviewed in the following, it is on the so-called *basic level of categorization* that the most deeply entrenched categories are found.

Before the term *basic level* itself was introduced into cognitive psychology by Rosch et al. (1976), there was evidence that categories were not on a par with regard to their entrenchment levels. In a seminal study, Berlin and Kay (1969) collected data from twenty languages suggesting that there is a set of *basic color terms* whose extension on the color spectrum is similar across languages of different developmental states. They hypothesized the existence of *focal colors*, areas in the spectrum that are particularly likely to be named by basic color terms in different languages. Their research proved to be an important inspiration for cognitive linguists, because it indicated that there was a much closer and more direct tie between perception and naming than had previously been assumed. Later, Kay and McDaniel (1978) supported the universalist notion of basic color terms by showing that there is a correspondence between at least some focal colors and human color receptors, but other attempts to account for the existence of focal colors of variable universality have also been made (see, e.g., Wierzbicka 1990).



Looking at plant taxonomies in Tzeltal, a language spoken in southern Mexico, Berlin and his collaborators (Berlin, Breedlove, and Raven 1973, 1974; Berlin 1978) found that there was one level of abstraction at which the largest number of category names were available. This was the so-called *generic level*, situated in the center of the taxonomies between *unique beginners* (e.g., PLANT) and *life forms* (TREE) at the more general end, and *specific* (WHITE BEAN) and *varietal* (RED COMMON BEAN) categories at the more specific end. The generic level, which included categories like PINE or WILLOW, not only provided speakers of Tzeltal with the widest range of terms (471 terms as opposed to 4 for life forms, 273 for specific categories, and 8 for varietal categories), but it was also the level chosen most frequently for naming plants. In addition, the generic level stood out from the other taxonomic levels on two further scores: (i) the terms used to name these generic categories were short and morphologically simple, and (ii) many generic-level categories, such as CORN and BEAN, were culturally highly significant and biologically important—some were not even seen as subordinate to more general life-form categories. All these findings point in the same direction: category divisions at the generic level seem to carve up reality in such a way that it is convenient to name things at this level. This, in turn, suggests that the generic level of categorization may play a special role in cognitive processing.

The term *basic level of categorization* was first used for the central level in taxonomies by Rosch et al. (1976) to reflect this cognitive importance. Their study also provided the first and most important pieces of systematic psychological evidence concerning this level. Rosch et al. (1976) carried out a set of experiments with the aim of confirming the idea "that there is one level of abstraction at which the most basic category cuts are made" (382). The taxonomies used as experimental stimuli had three levels, superordinate, basic, and subordinate, and comprised such categories as illustrated in (1):

(1)

| | | |
|---|---|---|
| superordinate level | FRUIT, FURNITURE | |
| basic level | APPLE, PEACH, GRAPES, etc. | TABLE, LAMP, CHAIR, etc. |
| subordinate level | DELICIOUS APPLE, MACINTOSH APPLE, etc. | |
| | KITCHEN TABLE, DINING ROOM TABLE, etc. | |

The experiments yielded the following results (see, e.g., the surveys in Rosch 1977; Lakoff 1987: 46–54; Taylor 1995: 46–51; Ungerer and Schmid 1996: 69–71):

a. Basic-level categories strike an ideal balance between specificity of conceptual information and variety and range of members. In contrast, categories at the superordinate level give little specific information but collect a wide range of different members. And subordinate categories give highly specific information but pick out only small sets of members.
b. Similarly, basic-level categories carve up reality at a level of abstraction keeping an ideal balance between intracategorial similarity and

intercategorial difference. On the superordinate level, the difference between category members (e.g., chairs, tables, sofas, and cupboards as members of the category FURNITURE) is so great that only very few category-wide attributes, which may be useful for measuring intracategorical similarity, can be found. Then, again, at the subordinate level, the similarities between neighboring categories outweigh the differences between them. For example, the attributes 'has a seat', 'is used to sit on', and 'has a back' are shared by both 'kitchen chair' and 'living room chair'.

c. In experiments, subjects could name the largest number of motor movements typically carried out in interaction with objects, when they were confronted with basic-level terms. While FURNITURE did not elicit more than 'scan with the eyes', basic-level categories such as CHAIR evoked specific descriptions of movements like 'sitting down', which involve subactions like 'turning one's head', 'bending one's knees and waist', and 'moving one's body backwards'.
d. Basic-level categories are the most inclusive categories that allow for the construal of a visual Gestalt image of a category schema which is compatible with most category members. For example, the outer shapes of most members of the category DOG are so similar that it is possible to imagine a picture of a dog "as such." This is clearly impossible for superordinate categories, because their members' outer shapes are too divergent.

What these and other findings indicate is that the basic level of categorization is basic in a number of respects:

a. it is perceptually basic because it allows for Gestalt perception;
b. it is mnemonically basic because it organizes knowledge about things in an ideal balance between specificity of information and cognitive effort;
c. it is functionally basic because it captures shared kinds of interactions with objects; and
d. it is linguistically basic because basic-level terms tend to be morphologically simpler, to be acquired earlier by children (Brown 1958, 1965), to be used as the unmarked choice for introducing referents into discourse (Cruse 1977), and to provide the raw material for extensions of the lexicon by means of metaphor, metonymy, and word formation (Schmid 1996a).

In sum, it seems to be cognitively advantageous to divide reality into categories at the basic level, and this is why basic-level categories of persons, animals, living organisms, and concrete objects are considered the most deeply entrenched categories at our disposal. Not only are they more deeply entrenched than either superordinate or subordinate concrete categories, but they are also more deeply entrenched than categories subsuming actions, events, properties, and abstract ideas, for they seem to provide the earliest and most fundamental way of comprehending the world around us. Arguably, basic-level categories are acquired as early as in



Piaget's sensorimotor stage, when children begin to interact with the objects around them and find out about their similarities and differences by touching and bodily interacting with them (Deane 1992: 195).[2] There have been attempts to ascribe a similar kind of basicness to certain event categories (Rifkin 1985), speech act categories (Verschueren 1985), locomotive categories (Ungerer and Schmid 1996: 103), and property categories on a central level of abstraction (Ungerer and Schmid 1996: 106), but the extent to which these categories really derive their basicness from an ontologically early and deep cognitive entrenchment is debatable.

## 5. Measuring the Relative Entrenchment and Salience of Categories in Lexical Taxonomies

In the previous section, the entrenchment of basic-level categories was mainly accounted for in terms of cognitive factors like perception, conceptual structure, and early acquisition. It will be recalled, however, that the degree of entrenchment of concepts is also thought to correlate with the frequency with which they are activated: the more frequently a concept is activated, the more entrenched it will become, and, vice versa, the more entrenched a concept is, the easier and therefore more frequently it will be activated. While the correlation between entrenchment and frequency of usage had essentially already been noted by Brown (1965: 321) and Rosch et al. (1976: 435), it was first investigated with a closed controlled corpus of running texts in a study of oral narratives by Downing (1977). Confirming Brown's and Rosch's expectations, Downing found that "it is basic level names which are most frequently used to refer to concrete objects in actual discourse" (476).

Much later, Geeraerts, Grondelaers, and Bakema (1994) took up the variable of frequency in order to measure the degree of entrenchment of the concepts underlying the Dutch lexical field of clothing terms. Their method was not based on the analysis of running text but on a comparison between pictures of clothing items in magazines and the lexical items used to describe these items in the captions or texts accompanying the pictures. A large parallel database was set up, consisting of, on the one hand, referential information about such parameters as type of garment, material, cut, length, and so on, and, on the other hand, of lexical information about the word naming the particular item of clothing. Among other things, this parallel setup allowed the researchers to measure the degree of entrenchment, or *onomasiological salience* in their terminology, by counting how often a certain type of garment, for example tight cotton pants reaching down to the calves, was conceptualized as a particular concept and named by corresponding words, for example *kledingstuk* 'garment', *broek* 'pants', or *legging* 'leggings'. Loosely speaking,

entrenchment was thus measured in terms of relative frequency of naming.[3] This is a very early example of how entrenchment and salience can be operationalized, making use of a corpus of authentic language use, and can then be employed to explain the actual choices of lexical construal that language users make. Geeraerts, Grondelaers, and Bakema's hypothesis was that if "a referent (or set of referents) is expressed more readily . . . by an item with a higher entrenchment value" (1994: 11) and if basic-level concepts were indeed more fully entrenched than concepts at other levels of specificity, then words encoding basic-level concepts should occur more frequently as names for a particular type of garment than words encoding other types of concepts.

This hypothesis was not fully confirmed by their findings. While on the whole basic-level categories did turn out to have a higher entrenchment value than superordinate and subordinate categories, Geeraerts, Grondelaers, and Bakema (1994: 144–46) drew particular attention to one area that casts doubt on the basic-level hypothesis, namely the field of terms denoting different kinds of pants. Here, it turned out that the subordinate terms *short/shorts* 'shorts', *bermuda* 'bermuda shorts', and *legging/leggings* 'leggings' scored roughly the same entrenchment values as the basic-level term *broek* 'pants'. More strikingly, the category JEANS, encodable in Dutch by the terms *jeans*, *jeansbroek*, and *spijkerbroek*, had a considerably higher entrenchment value than *broek*. The subordinate category JEANS thus seems to be more firmly entrenched than the basic-level category BROEK, and this clearly runs counter to the expectation that basic-level categories are more deeply entrenched than other types of categories. Geeraerts, Grondelaers, and Bakema (1994: 146) conclude that the basic-level model may not be universally valid.

There is, however, a second possibility of interpreting their findings (Schmid 1996b: 82–83): if the category JEANS is indeed more firmly entrenched than the category BROEK, then why cannot 'jeans' belong to the basic level as well? For this interpretation to be acceptable, one has to sacrifice the idea that cognitive taxonomies are based on the logical principle of class inclusion, because from that point of view there can be no doubt that JEANS is subordinate to BROEK; after all, all jeans are pants, but not all pants are jeans. But it must not be taken for granted that natural everyday taxonomies, as opposed to artificial and logical scientific ones, are indeed based on class inclusion. There is in fact some evidence that natural conceptual hierarchies are fairly messy and not organized in a particularly consistent manner. As was briefly indicated above, the Tzeltal plant taxonomy, for example, contains a number of particularly important generic terms which are not affiliated to superordinate terms, a phenomenon that is known in lexical field theory as a *generalization gap* (Lipka 1980: 108). Furthermore, conceptual hierarchies do not even seem to be stable: there is evidence from attribute-listing experiments that categories may move from the subordinate to the basic level when they gain in cultural importance (see Ungerer and Schmid 1998: 84–91; also Ungerer and Schmid 1996: 92–95). Words like *(motor)car* or *(air)plane*, for instance, which started out as subordinates in the field of vehicles, have since clearly acquired basic-level status. A similar process is plausibly at work with the category JEANS in Dutch (and possibly other languages), because of the enormous cultural importance of these types of pants.



If the logical principle of class inclusion is declared invalid—at least for natural conceptual hierarchies—as a determinant of category status at the vertical level, this has consequences on the horizontal level as well: categories at the same level of categorization need not always be mutually exclusive. Even if PANTS and JEANS can operate at the same cognitive level in the conceptual hierarchy (though not the same taxonomic level from a logical point of view), this does not preclude conceptualizing a pair of pants as a member of either of these categories. In view of the cross-classifications, gaps, inconsistencies, and other signs of cognitive flexibility, which are eschewed in scientific taxonomies but part and parcel of many everyday conceptual hierarchies (see Geeraerts, Grondelaers, and Bakema 1994: 137; Ungerer and Schmid 1996: 80–83), this claim does not seem implausible.

As already mentioned, Geeraerts, Grondelaers, and Bakema's study ushered in what can be called a quantitative turn in the investigation of entrenchment and salience effects. More recently, the quantitative approach has been extended to other grammatical fields, for example, to phonology (and to some extent morphology) by Bybee (2001) and to syntax by Grondelaers (2000) and Grondelaers et al. (2002). Further illustrations of this trend include my work (Schmid 2000) on abstract nouns based on the COBUILD corpus, Gries's (2003) corpus study on particle placement, and the theme session on the use of corpora in Cognitive Linguistics at the Eighth International Cognitive Linguistic Conference in La Rioja, Spain, convened by Stefan Gries and Anatol Stefanowitsch. What is particularly exciting about the quantitative studies is that they contribute to making the cognitive linguistic approach a testable theory of language.

## 6. Entrenchment and Salience Effects in Syntax

### 6.1. Figure/Ground Alignment

The examples of quantitative studies referred to in the previous section illustrate that different degrees of salience of concepts are not only seen to be reflected in the lexical choices provided by languages, but also in their grammars. It is one of the most fundamental ideas in Cognitive Linguistics that grammatical structures encode and control the distribution of attention across the entities involved in a given scene (see Talmy, this volume, chapter 11; De Mulder, this volume, chapter 12). Quite plausibly, for example, in (2) the book is highlighted for attention, while the table serves as a point of reference for the location of the book.

(2) Look at that book on the table.

Such patterns of attention distribution have been explained by cognitive linguists in terms of different degrees of salience or prominence. The most common terms for the two entities involved in such relations, which are borrowed from the terminology of Gestalt psychology, are *Figure* and *Ground* (see, e.g., Ungerer and Schmid 1996: 156–60; Talmy 2000: 311–44). The Figure is regarded as the most salient entity in a given configuration, while the Ground has secondary prominence. If a grammatical structure includes more than two elements, it is either decomposed into several layers of Figure/Ground pairings or both Figure (with primary prominence) and Ground (secondary prominence) are seen as standing out from the background, which is the least prominent part of the scene.

Figure/Ground organization provides a cognitive basis for a range of linguistic structures, most notably among them relational predications expressed by prepositions (as in (2)) and basic clause patterns consisting of subjects and complements. What all these structures share is the idea that language allows speakers to highlight certain aspects of conceptualized scenes while backgrounding others.

## 6.2. Relational Configurations Encoded by Prepositions

In Cognitive Grammar (see Langacker, this volume, chapter 17) and in Lindner's (1981), Lakoff's (1987: 416–61), and Brugman's (1981) work, the terms *trajector* and *landmark* are used as specific manifestations of the Figure/Ground principle in relations encoded by prepositions (see Zlatev, this volume, chapter 13; Svorou, this volume, chapter 28). Thus, the first nominals in sentences (3) to (5) are trajectors in the relational configuration and the second landmarks.

(3) The car crashed into the wall.
(4) Milton Keynes is close to London.
(5) The sugar is in the red jar.

Here we will follow the practice of linguists such as Talmy (2000: 311–44) and continue using the terms *Figure* and *Ground* to emphasize the similarity between the processes in relations encoded by prepositions and those expressed by other syntactic relations.

Especially in examples (4) and (5), which, unlike (3), do not describe dynamic motion events but stative relations, the question may arise why it is that Figure has more salience than Ground. The answer lies in the arrangement of the two entities involved in the relation. As a general rule, at least in English and related languages, it is the entity that is mentioned first by the speaker that will be accorded the higher degree of salience. This can easily be shown by reverting example (5), as shown in (6):

(6) The red jar contains sugar.



In (6), the hearer's attention is first drawn to the red jar and then to its content; in (5), which describes the same container-content relation, the sugar is more salient. In short, the salience of nominals is determined by their positions in clause structures, and these, in turn, are allocated by speakers according to their perspective on a scene. It depends on the speaker's subjective perception of a real-world scene, or the conception of the scene before the speaker's mental eye, how Figure and Ground will be distributed.

While speakers have thus, in principle, a good deal of freedom in organizing Figure/Ground alignment, it turns out that their choice is in fact severely restricted by the linguistic means available to them. As such, Figure/Ground reversals of the type illustrated for (5) are more difficult, in fact even problematic, for (3) and (4). Attempts to swap the positions of Figure and Ground in (3) and (4) are given in (7) and (8):

(7) ?London is close to Milton Keynes.
(8) a. The wall was hit by the car.
b. ?The wall absorbed the motion energy of the car.
c. *The wall received the car.

The questionable status of (7) derives from fact that London is both larger and more familiar than Milton Keynes, and therefore more suitable as a reference point.[4] Examples (3) and (8) show that it is impossible to preserve propositional content while reversing Figure and Ground: (8a) omits the description of the actual process of the car hitting the wall and the vehemence of the process encoded in the verb *crash*; both (8b) and (8c) are odd, to say the least, and focus on the state resulting from the crash rather than on the process itself. With regard to (5) and (6), then, (5) is felt to be much more "natural" in depicting the scene than (6), which is stylistically formal. So even here there seem to be tendencies for marked and unmarked ways of describing scenes.

These examples indicate that the range of options provided by English for Figure/Ground alignment is fairly limited. The basis for this limitation is arguably cognitive and resides in the way people perceive and conceive events. Apparently, most real-world situations are inherently predisposed toward one specific kind of perception and, as a consequence, are strongly suggestive of one kind of Figure/Ground alignment. This is partly due to the fact that some entities, namely, ontologically salient ones (see section 2 above), qualify as better Figure entities than others. It must be added, however, that the properties of prototypical Figure entities in relational configurations are not necessarily the same as those that qualify for early entrenchment as concepts. The cognitive basis for lexical entrenchment is not identical with the one for salience in grammatical structures. The concept 'London', for example, is clearly more deeply entrenched in most people's minds than the concept 'Milton Keynes', and yet it is the latter that is the more natural Figure at least when the two are connected by the preposition *near* as in example (4).

Table 5.1. Typical characteristics of Figure and Ground (based on Talmy 2000: 315)

| *Figure* | *Ground* |
|---|---|
| Properties inherent in the entities | |
| (a) more movable | more permanently located |
| (b) smaller | larger |
| (c) geometrically simpler | geometrically more complex |
| Properties related to the perception to the entities vis-à-vis each other | |
| (d) less immediately perceivable | more immediately perceivable |
| (e) more salient, once perceived | more backgrounded, once Figure is perceived |
| (f) more dependent | more independent |
| Properties related to the activation status of the concepts | |
| (g) more recently on the scene/in current awareness | more familiar |
| (h) of greater concern/relevance | of lesser concern/relevance |

What, then, are the typical characteristics of prototypical Figure and Ground entities? A list of such characteristics has been put forward by Talmy (2000: 315–16; see also Talmy 1978). Table 5.1 is based on his list.

These properties explain the questionable status of the Figure/Ground reversals in (7) and (8). The fact that properties (b), (c), (d), and (g) are flouted accounts for the oddness of example (7), while property (a) accounts for the difficulties in reversing Figure and Ground in (3). Table 5.1 shows, furthermore, that the characteristics of Figure and Ground are not absolute but relative in nature, and that not all of them pertain to the entities themselves or to how people tend to perceive them.

Another caveat is in order here: the principles of Figure/Ground alignment apply to cases of *unmarked coding* (Langacker 1991: 298). The ontological properties (a)–(c) and the perceptual properties (d)–(f) can easily be overruled by other cognitive factors related to information processing and previous discourse or world knowledge. For instance, the question whether example (6) is indeed the marked construction and (5) the unmarked one largely hinges upon the previous context. If it is the red jar that is already in the focus of attention, then (6) is clearly the unmarked choice. A further illustration is given in (9):

(9) A: Where is the station?
B: The station is near my car.

While B's answer clearly clashes with properties (a)–(f), it could still be used appropriately in a situation where A and B were together when they parked the car and, possibly after some time spent wandering through the city, speaker A has to catch a train and needs to know where the station is. In this case, it would not be entirely unnatural of B to choose the car as a reference point, which means that property (g) can thus take precedence over properties (a)–(f).



## 6.3. Figure/Ground Alignment in Simple Clause Patterns

In the examples discussed in the previous section, it was always the case that the Figure in the relational configuration coincided with the subject constituent in the clause. As Figure entities function as anchor points of relations and subjects are known to function as starting points for clauses, this syntactic arrangement seems natural enough. It is thus hardly surprising that the idea of Figure/Ground alignment and the underlying principle of the deployment of salience are also applied to simple clause patterns.

In cases of unmarked coding, subjects are regarded as Figure entities in the relational configurations encoded by simple clauses. To refer to the subject function in clauses, various terms have been used, such as *primary figure* (Langacker 1991: 323), *relational trajector* or *figure* (Langacker 1990), and *syntactic figure* (Ungerer and Schmid 1996: 173). An additional complement to the basic clause pattern, such as direct object or subject complement, makes up the ground in the relation expressed by the verb and is referred to by terms such as *secondary figure* (Langacker 1991: 323) or *syntactic ground* (Ungerer and Schmid 1996: 173). Subject and objects are seen as *focal participants* (Langacker 1991: 301), which are accorded the highest level of prominence in the clause. When there are two obligatory complements in addition to the subject, two analyses are possible, that is, to postulate several layers of Figure/Ground pairings or a tripartite Figure-Ground-background arrangement (see section 6.1).

Since salience is at issue in this chapter, the main question in this context concerns once more the principles that guide speakers in mapping the participants of an event onto clause constituents representing different degrees of salience. "To characterize subjects in terms of cognitive salience is largely vacuous unless we can say more precisely what *kind* of salience is supposedly involved" (Langacker 1991: 306). Taking recourse to work by Givón (1984), Langacker claims that this mapping is determined by a factor called *topicality* (1991: 306). This concept can be broken down into several parameters, one of which is of course Figure/Ground alignment. This means that the mapping of participants is partly determined by the properties listed in table 5.1. Participants with good Figure-properties are more likely to occupy the subject position, while participants with good Ground-properties more likely to be allocated the object function. Quite obviously, it is the very fact that Figure/Ground alignment codetermines subject and object mapping that motivates terms such as *primary* or *syntactic figure* for the traditional notion of subject.

A second topicality factor is an entity's semantic role in a given event. This idea can be traced back to Fillmore's (1968) Case Grammar and his suggestion that there is a case hierarchy determining the mapping of deep cases to surface constituents. According to Fillmore, the case hierarchy is *Agent* > *Instrument* > *Patient*. This means that if the setup of an event includes an Agent as a participant, it will be the unmarked choice for the subject constituent. If an Instrument (rather than an

Agent) is included, this will turn out to be the subject, and so on. The relation between case hierarchy and salience is quite apparent. In fact, in later work, Fillmore accounts for the case hierarchy by introducing what he calls a "saliency hierarchy" (1977: 78): Agents, who are the willful instigators of changes in the environment and constitute the starting points of energy with regard to the action chains encoded by clauses (see Langacker 1991: 301), clearly play the most salient parts in dynamic events. That they are encoded as the most prominent clause constituent in unmarked cases is a natural consequence from a cognitive point of view. Patients, on the other hand, tend to be less salient and be mapped onto less prominent clause constituents as a consequence.[5]

Semantic roles play an important part in cognitive linguistic approaches to syntax, because they seem to capture highly fundamental aspects of how humans perceive and understand the external world. Indeed, Fillmore had already ventured the claim that deep cases could be sets "of universal, presumably innate, concepts, which identify certain types of judgements human beings are capable of making about the events that are going on around them" (1968: 24). Langacker introduces the term *role archetypes* for notions like Agent, Patient, Instrument, Experiencer, and Mover "in order to call attention to their primal status and nonlinguistic origin" (1991: 285). He considers these roles "so basic and experientially ubiquitous that their manifestation in language is for all intents and purposes inevitable." The fundamental nature of role archetypes also lends itself to an explanation in terms of entrenchment: obviously, they are firmly entrenched in individual and collective memory. However, role archetypes are not individual concepts comparable to those encodable by means of single words, but are deeply entrenched conceptual distinctions that assist us in making sense of our environment and encoding our experience (see Deane 1992: 194–95).

This brings us to the third topicality factor affecting the mapping of entities on clause constituents, namely, the position of the entities on the scale of ontological salience or *empathy* (Langacker 1991: 306). While role archetypes are roles of entities vis-à-vis other entities in events, ontological salience captures properties that are inherent in the entities themselves (though they must, of course, be perceived or construed by the speaker). Scales of ontological salience or empathy have their ultimate source in feature hierarchies suggested by Silverstein (1976, 1981) to explain some universal aspects of case-marking and ergativity. The common idea is that entities can be ranked according to their potential for attracting a person's interest and empathy. The hierarchy suggested by Langacker (1991: 307) is given in (10):

(10) *speaker > hearer > human > animal > physical object > abstract entity*

Since speakers are of most immediate concern to themselves, they make up the starting point of this hierarchy, followed by hearers, persons outside the immediate speech event, and so on. Many grammatical phenomena seem to point to a ranking of entities of this type that is deeply entrenched in our cognitive system; this has led authors such as Deane (1992: 194–205) to use the term *entrenchment hierarchies* for rankings derived from Silverstein's hierarchy.



Finally, the salience of participants is presumably influenced by the *definiteness* of the experience to be encoded and the corresponding linguistic expressions (Langacker 1991: 307–8). A likely hierarchy based on the brief suggestions by Langacker is given in (11), but systematic research into the contribution of definiteness to salience is yet to be carried out. In particular, the role of such contrasts as concrete vs. abstract, singular vs. plural, individual vs. collective, count vs. mass, bounded vs. unbounded, and a few others has to be clarified.[6]

(11) *definite (proper name) > definite (definite description) > specific indefinite > non-specific indefinite*

The parameterization of the relative salience of clause constituents in terms of Figure/Ground alignment, semantic role, entrenchment/empathy hierarchy, and definiteness allows for a description of prototypical manifestations of the focal clause constituents. Thus, prototypical subjects are Figure entities in the profiled relation, Agents, human, and definite; prototypical direct objects are Grounds in the profiled relation, Patients, physical objects, and specific indefinite (Langacker 1991: 308, 323). It must be added, however, that the status of these factors may differ considerably. While the correspondences Figure-subject and Ground-object are highly stable across clause and discourse types, it remains open which conception of prototypicality is involved in the three other factors. For example, it does not seem reasonable to regard Agents as prototypical subjects in expository texts on abstract topics, where persons do not tend to feature prominently at all. It appears, then, that the prototypes outlined above can only be applied to an idealized type of discourse that is of maximum conceptual simplicity. They are part of some kind of basic, uncorrupted child-like language that is limited to the description of concrete events and is tacitly seen as providing the cognitive foundation for more elaborate discourse genres and text types.

## 6.4. Salience in Reference-Point Constructions

One further area of syntax where salience effects have been described can only be mentioned in passing: the encoding of possessive relations. Here, salience is seen as affecting the choice of *reference points* (in the Cognitive Grammar sense of the term; see note 4). According to Langacker, the basic cognitive principles at work here include that "a whole is more salient than its parts; a physical object is more salient than an abstract entity; and a person has maximal cognitive salience" (1991: 171). Other principles derived from the entrenchment and empathy hierarchy described in the previous section can easily be added; for example, a person is more salient than an animal or an object, an animal is more salient than an object, and so on. Principles of this kind account for the unacceptability or markedness of the (b)-versions in examples (12)–(15):

(12) a. the girl's neck
b. *the neck's girl

(13) a. the cat's mat
b. *the mat's cat
(14) a. the boy's bicycle
b. *the bicycle's boy
(15) a. the man's problem
b. *the problem's man

A more comprehensive view of reference-point constructions is given in Langacker (1993) and in Taylor (2000).

## 7. Conclusion

This chapter has introduced the cognitive phenomena *entrenchment* and *salience* and illustrated a number of their linguistic manifestations. While it may be unlikely that entrenchment and salience are the only cognitive processes governing the linguistic observations discussed here, they would still appear to provide a starting point for a plausible and psychologically realistic explanation of many of these observations. In the future, it will be important to pursue the investigation of entrenchment and salience phenomena from both the linguistic and the psychological end. Starting out from language, further linguistic rules and regularities should be made amenable to explanations in terms of entrenchment and salience; in particular, effects of the exigencies of discourse processing on syntactic and lexical choices should be investigated. A step forward in this direction has been made by Deane (1992), but more research is clearly needed. In particular, the relation between cognitive linguistic accounts of salience phenomena and theories of information processing, such as Accessibility Theory (Ariel 1990, 2001) or the Givenness Hierarchy (Gundel, Hedberg, and Zacharski 1993), needs further clarification. Some pioneering work in this area has been done by van Hoek (1997). And starting out from the mind, more research should go into what determines the wiring-in of conceptual and linguistic information into the cognitive system and the activation of concepts from it.

## NOTES

1. Two complementary types of blocking are involved here, synonymic and homonymic blocking: *stealer* is blocked by an entrenched linguistic form encoding the concept 'person who steals', while *Bauer* is blocked because this form is already entrenched as a means of encoding a different concept (see Schmid 2005: 116–17). It should also be mentioned that both forms can, of course, occur as ad-hoc formations, which, by definition, are nonentrenched uses of words.



2. The notion of *generative entrenchment* should be mentioned in this context, which has been used in evolutionary biology and ethnology as a refinement of the controversial notion of innateness (Wimsatt 1986), which allows for the possibility of treating environmental information as part of innate concepts. Interestingly, like *entrenchment* in Cognitive Linguistics, *generative entrenchment* is considered to be a matter of degree (189). A further parallel is that *generatively entrenched* conceptual features are considered to be basic for the acquisition of later features (198). See Pienemann (1998) and Schwartz (1998) for later work on *generative entrenchment* from the field of language acquisition.

3. For a more detailed description of the problems involved in using frequency as a criterion, see Geeraerts, Grondelaers, and Bakema (1994: 138–43).

4. The term *reference point* is used here in its everyday meaning; it must be noted that the term is part of the special terminological system introduced by Langacker in his Cognitive Grammar framework. It will be used in the latter sense in section 6.4. below (see also, e.g., Langacker 1991: 170–72; 1993; this volume, chapter 17).

5. Fillmore (1977: 76–79) introduces four saliency conditions defining the saliency hierarchy, which have an obvious affinity to the topicality factors proposed by Givón and Langacker: humanness, change of location, definiteness, and totality.

6. It should be added that there is, of course, a difference between the notions of *subject* and *topic*, which is not discussed here for reasons of space. What should be mentioned, however, is Deane's assumption that the prominence of subjects is due to spreading activation rather than selective attention-focusing (see section 2 above). This claim is interesting and useful because it resolves an irritating discrepancy between Langacker's syntax-oriented view, which contributes maximum salience to the subject, and discourse-oriented views of attention-distribution in sentences, which have traditionally seen the focus of attention in the rhematic, that is, the later, parts of sentences (see, e.g., Halliday 1994: 37–38). The two views can be reconciled by claiming that subjects/topics/themes are salient in that they tend to be already activated, while complements/comments/rhemes are salient because they introduce new information that requires a selective focus of attention.

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CHAPTER 6

# POLYSEMY, PROTOTYPES, AND RADIAL CATEGORIES

BARBARA LEWANDOWSKA-TOMASZCZYK

## 1. Introduction

One of the most fundamental phenomena observed in language is the existence of a diversity of related meanings expressed by the same word form. Relatedness of meanings is not a new discovery in linguistics. That some words have more than one meaning and that these meanings are related was first observed in ancient Greece (see Nerlich and Clarke 1997). The term "polysemy" was first introduced in nineteenth-century semantics by Bréal (1897) as part of his study on meaning change—a field of study which provided a major impetus for the study of semantics (see Nerlich and Clarke, this volume, chapter 22). In the twentieth century, the interest in polysemy was uneven. In the first half of the century, structuralism introduced a shift from diachronic semantics to a synchronic semantic framework with psychological and sociological groundings but did not study polysemy intensively. In the second half of the century, Transformational Generative Grammar practically denied the existence of polysemy on theoretical grounds (Postal 1969),[1] providing instead lists of identical (homonymic) word forms with their partly overlapping feature matrices. By contrast, one of the major distinguishing features of Cognitive Linguistics as it emerged in the 1980s is precisely the renewed interest