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Introduction

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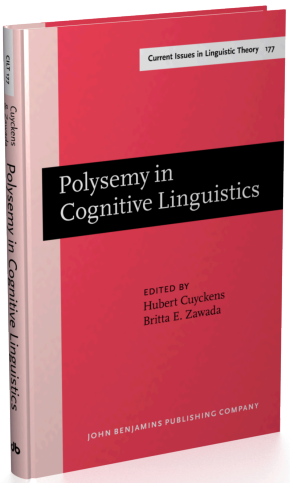

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INTRODUCTION

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Polysemy, "the association of two or more related senses with a single linguistic form" (Taylor 1995:99), is ubiquitous in natural language and therefore deserves linguists' attention. Although the importance of the question of polysemy for the semantic study of language was already recognized in the historical-philological tradition (cf. Bréal 1991[1887]; Stern 1931), and was emphasized again by Ullmann (1951), it is not until recently that polysemy has become a central issue again in linguistic semantics. Polysemy has certainly become a core area of study in Cognitive Linguistics.

The importance of the study of polysemy is, evidently, not confined to the field of (cognitive) linguistic semantics. Indeed, polysemy has also received considerable attention in psycholinguistics (Frazier & Rayner 1990; Frisson & Pickering 1999; Gibbs et al. 1994; Swinney 1979; Williams 1992), in cognitive psychology, and in Artificial Intelligence and computational linguistics (cf. Kilgariff 1992, 1997; Pustejovsky & Boguraev 1993, 1996, and the works cited therein). For computational linguistics in particular, polysemy continues to present a real challenge, in that (automatic) word sense identification/ disambiguation in natural language processing is still not unproblematic.[1] It seems safe to say, then, "that the study of polysemy is of fundamental importance for any semantic study of language" (Nerlich & Clarke 1997:349).

In this introduction, we will highlight some of the specific themes and issues which surround the study of polysemy in twentieth-century linguistic semantics and specifically in Cognitive Linguistics in the late nineties and at the turn of the century. In the course of this discussion, we will also refer to the papers in this volume, and how they contribute to these themes and issues. In the last part of the introduction, we will give a brief summary of each of the papers. Before doing so, however, we would like to spend a few words

explaining the *Cognitive Linguistics* and the *Polysemy* in the title—even though this will undoubtedly be superfluous to some readers.

Cognitive Linguistics emerged in the eighties as an approach to the study of language and mind, with its own association (the *International Cognitive Linguistics Association*) and conferences (of which the proceedings in this volume reflect only one theme at one conference), its own journal (*Cognitive Linguistics*), as well as a series of reference texts (Lakoff & Johnson 1980; Lakoff 1987; Langacker 1987, 1991a, 1991b, 2000; Fauconnier 1994; Talmy 2000) and introductory textbooks (cf. Taylor 1995; Ungerer & Schmid 1996; Dirven & Verspoor 1998). Central to the concerns of Cognitive Linguistics (among a variety of issues) is the notion that lexical items, as well as word classes and grammatical constructions, are conceptual categories that have to be studied and investigated as reflecting general cognitive principles, rather than purely formal linguistic principles. This central concern will be illustrated in this introduction, as well as in the papers in this volume. Other, equally important concerns of Cognitive Linguistics are discussed and elaborated in the sister volumes of these conference proceedings (see Gibbs & Steen 1999; Van Hoek, Kibrik & Noordman 1999; Janssen & Redeker 1999; Foolen & Van der Leek 2000).

The term 'polysemy' is derived form the Greek *poly-* meaning 'many' and *sem* meaning 'sense' or 'meaning'. In its simplest form, then, the term refers to the phenomenon in language where one linguistic form has a number of different, yet related meanings. This single linguistic form was traditionally interpreted as referring to one lexical form, i.e., to a word. A typical example of this would be the word *school* in English, which can be used to refer to an institution (*Brooklyn School is a good school*), the building in which it is housed (*The roof of the school needs to be painted*), as well as the pupils and staff that participate in the institution (*The school is mourning the untimely passing away of the English teacher*). This is in contrast to *monosemy* which refers to the phenomenon in language where one linguistic form has only one meaning.

The roots of the study of the complex relations between words and meanings lie in Greek philosophy. However, "concrete research into the multiplicity of meaning only began in the 18th century" and was continued in the nineteenth century by "linguists interested in meaning from the point of view of etymology, historical lexicography or historical semantics" (Nerlich & Clarke 1997:351). An important linguist in this nineteenth century historical tradition was Bréal, whose research into polysemy marked a new starting point, in that he shifted the study of polysemy away from lexicography and

etymology and investigated "polysemy as the always synchronic pattern of meanings surrounding a word, which is itself the ever changing result of semantic change" (Nerlich & Clarke 1997:378).

In the course of the twentieth century, the focus of linguistic studies, in general, changed from a diachronic perspective to a synchronic perspective. At the same time, the (synchronic) study of polysemy, in particular, shifted to the background. To start with, polysemy only played a minor role in the structuralist tradition;[2] actually, it posed a problem for structuralist semantics as the structuralist pairing of *signifiant* (one form) and *signifié* (one meaning) required, except in obvious cases of homonymy, that two related meanings pair up with two different forms (on that account, *school*$_1$ and 'institution' *school*$_2$ 'building' would have to be considered as two different form–meaning pairs). One way to solve this problem, and at the same time do justice to the 'one form – one meaning' adage, was to search for a single meaning for each distinct phonological form; this entailed bringing polysemous lexical items under one (abstract) definition—consisting of a criterial set of singly necessary and jointly sufficient features[3]—and treating their various senses as contextually determined realizations or instantiations of that general definition (cf. Jakobson's 1936 notions of *Gesamtbedeutung* and *Sondernbedeutung*;[4] Coseriu's 1977 distinction between the level of 'system', where general, i.e., abstract/criterial, meanings belong, and the level of 'norm', where specific readings belong; see also Nida 1951 and Joos 1958).[5] Later on, in the theory of semantics developed by Katz & Fodor (1963) and Katz (1972) within the framework of Chomsky's *Standard Theory*, the issue of polysemy did not receive much attention either. For one thing, Katz did not distinguish polysemy from homonymy (cf. his discussion of the homonymy, or semantic ambiguity, of *school* 'building' and *school* 'teaching institution'; Katz 1971:300); more importantly, he also subscribed to the single meaning approach:

> Meaning must be an abstraction from the variable features of the things referred to by the term: the meaning of a word must represent only the invariant features by virtue of which something is a thing, situation, activity, event or whatever of a given type. Otherwise no word could ever be used again with the same meaning with which it is used at any one time, since there is always some difference in what is referred to from one time to the next. (Katz 1972; quoted in Ravin & Leacock 2000:10)

It is likely that the presence of the single meaning approach in the generative tradition was further strenghtened by the influence of the generative grammarians resisting "the idea that regular expressions should be listed in a

grammar, on the presumption that listing entails a failure to capture significant generalizations" (Langacker 1991a:264). On that view, a semantic description that tries to maximally restrict polysemy and bring as many different senses under one semantic definition was given preference over one that allows a proliferation of senses each of which is listed separately. Most recently, the 'one form – one meaning' adage was put into practice in Ruhl (1989) and in the so-called 'two-level approach', proposed mainly by the German linguists Manfred Bierwisch and Ewald Lang (cf. Bierwisch 1983; Bierwisch & Lang 1987; Bierwisch & Schreuder 1992; Lang 1991—for a critical appraisal, see Taylor 1994, 1995:268–281).

The relative importance of the 'one form – one meaning' postulate in the linguistic semantic theories sketched above meant that polysemy was largely regarded as the unusual case, with monosemy and homonymy being regarded as the norm. Still, some studies did explore polysemy (cf. Apresjan 1974), focusing on 'regular polysemy' and how the various senses of a polysemic word could be derived from a basic sense (cf. also Lyons 1977:550–569). With the advent of Cognitive Linguistics, with its initial focus on lexical semantics and linguistic categorization, as well as with its view that meaning is central to and motivates linguistic structure, the question of polysemy was placed center-stage again. This had as a natural consequence a remarkable increase in the number and variety of studies on polysemy.

Why is it that Cognitive Linguistics is a much more accommodating framework for the study of polysemy than the earlier frameworks? Cognitive Linguistics, which initially focused on word meaning, incorporates (i) ideas from the philosophy of language on family resemblance (cf. Wittgenstein's 1953 discussion of the various uses of the word *game*) and (ii) results from psychological research on categorization. In a number of experiments (summarized in Rosch 1978), Rosch demonstrated that "people do not actually categorize objects on the basis of necessary and sufficient conditions but rather on the basis of resemblance of the objects to a prototypical member of the category …, [which] best exhibits the features of the category and so is close to the ideal category definition of the classical [i.e., structuralist, Katzian] theory" (Ravin & Leacock 2000:13). Based on these insights, cognitive semantics developed a description of word meaning that has commonly become known as the prototype approach to word meaning. On this view, lexical concepts are categories (i) which are not defined by means of a set of criterial features, but by disjunctive sets of semantic/conceptual information that are interrrelated by means of a family resemblance structure; (ii) in which some semantic conceptual/semantic information is more salient or prototypical than other

information; (iii) in which the conceptual/semantic information need not have a definitional status. From the outset of Cognitive Linguistics, this approach to word meaning was applied to polysemous words (cf. Brugman's 1981 study of *over*, Lindner's 1981 study of the particles *up* and *out*). In other words, polysemous words were viewed as categories of senses which are interrelated through family resemblance and which possibly center around a prototype. This means, then, that the semantic value of a word need no longer be a single, unitary structure, but rather, that it is a set of interrelated senses. Once the categorial view of polysemy had been established, it was no longer confined to the domain of lexical semantics, where it had originated, but its operational range was extended to the description of grammatical categories. Before going into this, however, it is necessary and backtrack a bit to the traditional definition (or operational range) of the term 'polysemy'.

For the most part of the twentieth century, the term 'polysemy' was only used to refer to words or lexical items and the following set of criteria was used to identify them as 'polysemes' (Lyons 1977:550):

- The polysemic senses of a word are related to each other such that there is a clear *derived* sense relation between them; the idea of 'derivation' entails that there is a basic sense and that the others are derived or generated from it by means of semantic rules (e.g., metonymical and metaphorical transfer); see, e.g., Apresjan (1974)[6] and Jakobson (1990:318, 417, 468).
- The polysemic senses of a word must be shown to be etymologically related to some original source word.
- The polysemic senses of a word must belong to the same syntactic category.

The first of these criteria is, in essence, the definition of *polysemy*, whereas the last two criteria were necessary in order to distinguish *polysemy* from *homonymy*, which refers to the semantic phenomenon where the same linguistic form refers to two separate and unrelated words, each with their own meaning. A typical example of homonymy in English is the word *bank*, where the meanings of $bank_1$ and $bank_2$ are clearly unrelated (*I deposited the cheque in the* $bank_1$ and *The trees on the river* $bank_2$ *are dying*). The distinction of lexical items as being either a case of polysemy or of homonymy has been especially important in the domain of lexicography, where decisions need to be made regarding the headwords and the number of entries in a dictionary.

Typically the various senses of a polysemic word are listed under one headword, whereas homonyms are listed as two separate entries.[7]

It seems fair to say that this set of criteria was already used in the historical (nineteenth-century) tradition in linguistic semantics, and that, until recently, they were part and parcel of linguists' thinking about polysemy. In Cognitive Linguistics, a word with a number of polysemic senses is regarded as a category in which the senses of the word (i.e., the members of the category) are related to each other by means of general cognitive principles such as metaphor, metonymy, generalization, specialization, and image-schema transformations. One of the senses of a word may be regarded as more salient than the others, but the senses are not seen as being derived from each other in a generative fashion; rather, these categories are viewed as being extended by means of the cognitive principles mentioned above. Categories of related senses are often represented in the form of so-called radial networks (cf. the paper by Selvik for typical examples of such networks), although alternatives to the network representations have been suggested (cf. the paper by Martin in this volume). The study of individual lexical items as categories of related senses which are motivated by cognitive principles is reflected, for example, in the papers by Meex and Huumo in this volume.

It seems clear, then, that the notion of derivation in the first criterion has fallen away, as is the case with the second criterion which requires a historical connection between the various senses of a polysemic word. The last criterion, namely that the senses of a polysemic word have to belong to the same syntactic category was also discarded. This meant that words such as *hammer*$_N$ and *hammer*$_V$ were no longer regarded as homonyms but as related senses within the family or network of related senses that make up the category 'hammer'. This extension of the notion of polysemy to a phenomenon that was previously regarded as a morphological phenomenon (in the form of zero-derivation, or conversion) opened the door for the notion of polysemy to be used more widely in the morphological and syntactic domain. Similarly, the notion that the senses of a polysemic word can be regarded as a category, together with the notion in Cognitive Grammar that constructions can be regarded as categories, led to the widespread use of polysemy in the analysis of both morphological and syntactic constructions. Examples of these types of studies are represented by Selvik, Casad, and Smith in this volume. The extension of the notion of polysemy from lexical semantics to the semantics of grammatical constructions is discussed in the paper by Hendrikse, and used by him to extend the use of the notion of polysemy even further to account, not

only for individual grammatical phenomena, but for a *systemic* phenomenon, such as the noun class *system* in a particular family of languages.

A problem that any account of polysemy (whether in the structuralist/generative or in the cognitive linguistic framework) needs to come to terms with is the distinction between *polysemy* and *vagueness*. While the distinction between polysemy and homonymy is, at first sight, fairly straighforward, the distinction between polysemy and vagueness or indeterminacy is much more difficult to draw. This issue is important for Cognitive Linguistics because it is tied with its being accused of so-called 'rampant' polysemy.

The distinction between polysemy and vagueness (or indeterminacy) is the distinction between those aspects of meaning that give rise to different polysemous senses of a word vs. those that are manifestations of a single sense. Geeraerts (1993) illustrates the distinction with the item *neighbor*. The referent of the item *neighbor* might be either male or female; if this difference in gender is viewed as creating different senses, *neighbor* is polysemous; if not, which is the more intuitively acceptable alternative, *neighbor* is seen as a category that is vague for gender. Similarly, the verb *eat* might refer to eating with a spoon and eating with a knife; while both eating activities are referentially different, native speakers will, on the whole, view them merely as variations of a single 'eating' sense.

As we have seen above, all the linguistic semantic theories heralding the single meaning approach try to maximally restrict polysemy by bringing as many different senses as possible under one definition—often expressed in terms of a set of singly necessary and jointly sufficient features. As such, with the exception of cases of homonymy, any semantic differences between the various uses of a lexical item are viewed as contextual variations. It is, however, not always straightforwardly clear what the criteria are to distinguish between 'properly semantic' (i.e., invariant) information and contextually determined information. Why is it, for instance, that in the *eat*-example above, 'swallowing' is considered part of the meaning of *eat*, while 'eating implement' is not (cf. Ravin & Leacock 2000:10–11; see also Katz 1972)? And even if it was possible to draw a principled distinction between invariant semantic information and contextually determined information, the single meaning approach still faces two important challenges. First, as a unitary description of word meaning, it needs to accommodate polysemous words whose featural description consists of a disjunctive set of related featural configurations. In particular, "for those who wish to restrict polysemy as much as possible, the problem becomes, how to state the meaning of a word with sufficient generality so as to cover the full range of different uses (and at the

same time, with sufficient specificity so as to distinguish that word from its conceptual neighbors)" (Taylor 1995:267). And second, it needs to spell out the derivation rules that produce the full range of contextually determined instan-tiations from a single definition.

Unlike the single meaning approach, Cognitive Linguistics allows the proliferation of the number of senses of a word; in other words, particular referential or conceptual differences in the uses of a word are allowed to make up different polysemous senses (and hence need not be passed off as contextual variations). Still, the question remains which referential/conceptual differences should be diagnosed as instances of polysemy and which as instances of vagueness (consider, for instance, the large number of situations the verb *paint* can refer to; cf. Tuggy 1993). Various tests have been proposed for distinguishing between polysemy and vagueness, but none of them are consistent (cf. Geeraerts 1993 for a detailed analysis). The difference between polysemy and vagueness, then, turns out to be unstable. In a similar vein, Langacker (1991a:267) states that we do not know "how far 'downward' a speaker articulates [a polysemy] network into progressively more specialized notions. Speakers may very well differ in these respects".

The lack of a principled distinction between polysemy and vagueness need not necessarily be seen as a problem in Cognitive Linguistics. First, Tuggy (1993:276–278) has shown that for some purposes, particular groupings of senses might be seen as one (i.e., treated as instances of vagueness), while for other purposes, they might be seen as instances of polysemy (see also Brisard, Van Rillaer & Sandra, this volume). For instance,

> If I have been painting a watercolor landscape … and Jane a portrait in oils …, a sentence like (1) *I have been painting and so has Jane* is perfectly normal, indicating vagueness rather than ambiguity [i.e., polysemy]. If I have been painting stripes in the road …, however, while Jane painted a portrait, (1) feels zeugmatic. (Tuggy 1993:276)[8]

In addition, it is a widely accepted belief among cognitive linguists that it is fallacious to assume that rules and lists are mutually exclusive (the 'rule/list fallacy'; Langacker 1991a:264). In other words, there is nothing wrong with representing word meaning in terms of generalizations (schemas, unitary definitions) that maximally capture the shared semantic information across a word's many uses, *and*, at the same time, in terms of specific semantic information which instantiates (and hence potentially overlaps with) the general schema or which incorporates information from the surrounding context (e.g., spatial prepositions such as *in, on,* and *at* contain semantic

information about the spatial and/or functional characteristics of the landmark noun, while this information is also part of the landmark noun itself). To varying degrees, the papers by Meex and Casad reflect these issues.

While the lack of hard-and-fast criteria to distinguish between polysemy and vagueness can, in principle, be easily accommodated within the cognitive linguistic framework, the extensive role that polysemy plays in Cognitive Linguistics has led to the accusation of so-called 'rampant' polysemy, which refers to the idea that cognitive linguists all too often pass off very fine-grained relationships between the various usages of a word or a construction as instances of polysemy rather than of vagueness (see, e.g., the criticism in Sandra & Rice 1995). This, in turn, has sharpened the debate on the types of evidence for polysemy (see, e.g., the recent papers in *Cognitive Linguistics* by Croft 1998; Sandra 1998b; and Tuggy 1999). Since Cognitive Linguistics is ultimately meant to be a theory on the linguistic knowledge of a speaker, and about how this knowledge is embodied in the mind/brain of a speaker, most studies in Cognitive Linguistics will make reference to the notion of mental representation and processing. However, claims about the mental representation and processing of polysemous structures should, in the final analysis be supported by psycholinguistic evidence. This focus on the psycholinguistic evidence for polysemy is represented in three of the papers in this volume: Gibbs & Matlock; Beitel, Gibbs & Sanders; and Brisard, Van Rillaer & Sandra.

Earlier psycholinguistic experiments exploring whether language users store separate fully-specified semantic representations of the usage potential of lexical items rather than more schematic representations has at best been inconclusive (cf. Cuyckens, Sandra & Rice 1997; Frisson et al. 1996; Rice, Sandra & Vanrespaille 1999; Sandra 1998a; Sandra & Rice 1995). The paper by Brisard, Van Rillaer & Sandra in this volume seems to indicate that, at the representational level, semantic representations of lexical items are underspecified rather than fully specified. Even if, for now, psycholinguistic experimentation cannot readily answer the question whether the semantic representation of lexical items should be stored in the mental lexicon as separate, fine-grained units, Tuggy (1999) argues that it is definitely worthwhile looking for linguistic evidence for polysemy and, in particular, the extent to which lexical semantic structures are stored separately in the mind.[9] In this respect, he holds that there are (linguistic) decision principles (cf. below) that provide cutoff points for what must be part of a polysemous item's semantic representation. Tuggy (1999:363) emphasizes that in the final analysis, it is what is *conventionalized* that dintinguishes between polysemy and vagueness, and while this might not be a hard-and-fast rule and might be

different for different speakers, it is a criterion nonetheless (cf. also Croft 1998:161, 165, 169).

> Any [semantic/conceptual] distinction or connection that is conventionalized, whether strongly or weakly, is in that degree relevant and must be part of mental representations; any that is not conventionalized, even if the linguist can discern it, is not … Once again, conventionalization provides the cutoff principle: only those (and only those) clusterings which are conventionalized are part of the mental structure of the language. (Tuggy 1999:363)

The following types of evidence are regarded in Tuggy (1999) as relevant for the study of polysemy, and are represented by the papers in this volume:

- Intersubjectively valid intuitions by the researcher as a mother-tongue speaker, often assisted and supplemented by typical semantic tests (such as the *do so* test or the presence or absence of zeugma) (cf. Meex and Huumo in this volume);
- Native speaker intuitions in the form of elicited responses by mother-tongue informants, where the researcher is not a mother-tongue speaker (cf. Selvik in this volume);
- Cross-linguistic or typological evidence (cf. Casad and Hendrikse in this volume);
- Idiolectal, dialectal and diachronic variation (cf. Casad in this volume, and Soares Da Silva, forthcoming);
- Psycholinguistic experiments (Gibbs & Matlock; Beitel, Gibbs & Sanders; and Brisard, Van Rillaer & Sandra in this volume);
- Studies of conventions of prior use, presumably based on descriptive studies (cf. Casad, Selvik, and Hendrikse in this volume);
- Spoken and written text corpora (Meex in this volume).

None of the papers in this volume directly address or attempt to solve the issue of which types of evidence may, or may not be used, or should be regarded as more or less valid, in studies in polysemy. However, by reporting on basic research in this domain in which some of these sources of evidence were used to good effect, these papers may contribute to this debate on the meta-level. The notion of *converging evidence* (i.e., where evidence from more than one source or where different types of evidence converge on a particular analysis or proposal) should be kept in mind in this regard (Langacker 1993).

While the papers in this volume do not take up all of the issues discussed above, they do address questions that are still very much in the foreground among cognitive linguists. The papers fall into into three categories. Three papers analyze the polysemy of lexical categories (Meex, Huumo, and Martin). Four papers are concerned with the analysis of the polysemy of grammatical categories (Casad, Smith, Selvik, and Hendrikse. Finally, three papers look for psycholinguistic evidence of polysemy in lexical categories (Gibbs & Matlock; Beitel, Gibbs & Sanders; and Brisard, Van Rillaer & Sandra).

In her paper on the German preposition *über* (the English cognate is *over*), Meex contributes to the already extensive literature on the polysemy of prepostions within the cognitive linguistic framework. Basing her analysis of this preposition on a corpus of contemporary German sources, Meex examines the wide array of usages of *über* in spatial and non-spatial (i.e., temporal and abstract) contexts, and tries to justify why the same form *über* is used to express these seemingly divergent relations. She shows how the spatial usages of *über* motivate its non-spatial usages by exploring the metaphorical mapping of conceptual structures and image schemas in the spatial domain onto the temporal and abstract domains. In general, non-spatial extensions seem to have developed from the PATH, COVERING, and VERTICALITY schemas associated with spatial *über*, together with functional notions such as 'control' and 'obstacle traversal'.

Huumo, in his paper entitled *Scalar Particles and the Sequential Space Construction*, investigates the Finnish scalar particles *jo* "already", *vasta* "only, not until", and *vielä* "still, as late as" as they are used in the *Sequential Space Construction* (a specific construction which results from the combination of a scalar particle with a locative element and the insertion of that combination into a clause as a peripheral modifier; e.g., *Jo junassa Elmeri tunsi itsensä sairaaksi* "Already on the train, Elmer felt sick"). These particles have a wide range of temporal and non-temporal usages. In contrast to traditional accounts, which treat these usage types as distinct, Huumo views them as a set of interrelated usages clustered around a temporal prototype. On this account, then, the non-temporal functions of scalar particles are analyzed as semantic extensions of their basic temporal use. At the same time, the temporal aspect of scalar particles constitutes their underlying semantic regularity; as Huumo concludes, "this is because a scale is always approached in a serial manner, and therefore has a temporal order as its central semantic facet" (54).

While most contributions in this volume (at least implicitly) subscribe to a network-based description of polysemy, Martin examines how the notion of

frame, which played an influential role at the early stages of Cognitive Linguistics (see Fillmore 1977; Lakoff 1987:68), can accommodate polysemous words, and in this way makes an interesting contribution to the discussion on lexical polysemy. In particular, Martin's explores the role that slots and fillers, which are typical of frame representations, play in treatment of polysemy in frames; he shows how frames help in understanding polysemes; and finally, he looks at their power in generating and predicting novel sense extensions.

In his paper on the polysemy of the locative verbal prefix *va'a-* in Cora, a Southern Uto-Aztecan language of Northwest Mexico, Casad shows that the various uses of *va'a-* cluster around two prototypical senses, namely a static locational and a dynamic directional sense. One cluster, which can be glossed as "covering an area of a surface", relates to the occurrence of a state of affairs or a quality within a given surface area of a complex configuration that can be modeled as an oriented cube incorporating the canonical viewer's vantage point. The other cluster of senses, glossed as "coming this way", relates to motion towards a primary reference point. Casad demonstrates that there is no *single* prototype from which all of *va'a-*'s locational and directional uses can be derived; rather, that polysemic *va'a* appears to have arisen from two main verbs that have merged morphologically. To support this claim, Casad discusses morphosyntactic evidence (such as compounding and reduplication), diachronic evidence in the form of the grammaticalization processes involved, as well as cross-linguistic evidence from related Southern Uto-Aztecan languages.

In his paper *Why* Quirky *Case Really Isn't Quirky*, Smith discusses the problem in Icelandic of an apparent subject bearing a non-nominative case—usually dative or accusative—or of an apparent direct object being marked dative. Smith argues that a grammatical category such as case can be motivated and explained (though not necessarily predicted) from the point of view that cases are meaningful and polysemous categories, consisting of prototypical and extended senses. Different cases reflect different construals of a situation: the so-called quirky dative marks a nominal's role as being experiencer-like, whereas quirky accusative marks a nominal's role as being patient-like. Smith offers evidence that when the dative, accusative and nominative case, as well as third-person verb agreement in Icelandic are assumed to be meaningful and polysemous, their occurrence in a wide variety of constructions can be explained and semantically motivated. This is in contrast to autonomous syntactic accounts which simply treat the patterning of these grammatical categories as accidental. The account of case and agreement given by Smith in

terms of the typical framework of Cognitive Grammar, is therefore a more natural and realistic model of native-speaker knowledge than those afforded by autonomist syntactic accounts.

In her paper *When a Dance Resembles a Tree: A Polysemy Analsyis of Three Setswana Noun Classes*, Selvik presents a detailed description of three Setswana noun classes (Classes 3, 5, and 7), which are notorious for exhibiting a high degree of semantic heterogeneity in all of the Southern Bantu languages—of which Setswana is one—and which have traditionally been marked as 'miscellaneous'. In her polysemy analysis, she shows that the nouns in each of these three classes constitute a schematic network of related senses (cf. Langacker 1987), involving chains of meaning associations. The senses are linked together on the basis of parameters such as contrasts in shape, degree of animacy, degree of individuation, as well as participation in action chains. Selvik concludes that the Bantu noun classes seem to be among those grammatical categories that are best accounted for in terms of different but related meanings, and that they therefore represent polsyemous categories.

Whereas Selvik focuses her analysis of the Bantu noun class system on three individual noun classes, treating each of these noun classes as a separate category with an internal polysemic network structure, Hendrikse, in his paper *Systemic Polysemy in the Southern Bantu Noun Class System*, focuses on the Southern Bantu noun class system as a whole. In so doing, he further extends grammatical polysemy to include so-called *systemic* polysemy; that is, he does not confine the discussion of noun class polysemy to *intracategorial* polysemy attested in individual noun classes, but examines *intercategorial* polysemy within the class prefix system as a whole. Systemic polysemy, then, views polysemy as a categorizing phenomenon which enables the description and explanation of the multidimensional character of the class prefix system. In particular, it enables Hendrikse to treat the category 'class prefix' in the Southern Bantu languages as a polysemous category with multidimensional interrelated senses and significances all of which converge on the prototypical domain of entities, viz., three-dimensional space.

In their paper *Psycholinguistic Perspectives on Polysemy*, Gibbs & Matlock present the findings of three research projects that examine how conceptual knowledge and embodied experience motivate speakers' systematic intuitions about the meanings of three polysemous words, viz. *just*, *stand*, and *make*. The first project shows that speakers' intuitions about polysemous words (e.g., *just*) depend on their conceptualizations of real-world events and their different communicative intentions in discourse; the second project demonstrates that speakers have tacit motivations via their embodied

experiences for why polysemous verbs (e.g., *stand*) have the the set of interrelated meanings they do; the third project shows that speakers' tacit knowledge of lexico-grammatical constructions helps predict the appropriate uses of polysemous words (e.g., *make*). Gibbs & Matlock's research differs from that other collaborative work between cognitive linguists and psycholinguistis (i) in that they probe speakers' (non-)linguistic experience, which might motivate polysemous word meaning, *before* asking them to provide their judgments about polysemous word meaning, and (ii) in that they do not make any claims about speakers' underlying mental representations for polysemous words (e.g., network representations). At the same time, they share the concern voiced in other collaborative work such as Sandra & Rice (1995) that specific claims made by cognitive linguists should be empirically verified, and they see their research as a demonstration of that concern.

In their paper *The Embodied Approach to the Polsyemy of the Spatial Preposition* On, Beitel, Gibbs & Sanders replicate the second experiment of the Gibbs & Matlock paper and report in detail on the role of embodied experience in speakers' judgments of conceptual similarity of various spatial and non-spatial uses of the polysemous preposition *on*. In particular, they experimentally investigate the role that recurring bodily force experiences and perceptual interactions, which give rise to such image schemas as SUPPORT, PRESSURE, CONSTRAINT, COVERING, and VISIBILITY, play in motivating various uses of the polysemous spatial preposition *on*. Their findings clearly suggest that the various uses of the word *on* are not arbitrary but are related via these embodied image schemas in various conceptual domains. While psycholinguistic theories of word meaning have yet to acknowledge the role that bodily kinesthetic and sensorimotor experiences play in structuring linguistic meaning, the authors are confident that this work represents a first step in the experimental investigation of relations between bodily experiences and linguistic meaning.

Brisard, Van Rillaer & Sandra's paper, lastly, examines the representational status of polysemy in the mental lexicon. With the two previous papers, it shares a concern for empirical verification of cognitive linguistic findings; unlike these papers, its interest lies clearly in investigating, through a series of online experiments, how polysemy is represented in the mental lexicon. On the basis of these experiments, Brisard, Van Rillaer & Sandra put forward the following hypotheses with regard to the representational status of polysemous adjectives: (i) polysemous adjectives do not resemble their homonymous counterparts; (ii) it cannot be ruled out that the representational format of polysmous adjectives resembles, or is compatible, with that of vague

adjectives, whereby only one representation is assumed. While these experimental findings cannot resolve the indeterminacy issue (between polysemy and vagueness), they do seem to suggest that a wide proliferation of senses is not self-evident.

Notes

[1] For an overview of polysemy in computational linguistics, see Ravin & Leacock (2000:23–27).
[2] For an interesting discussion of the question of polysemy in structuralist semantics, see Taylor 1999.
[3] This lexical semantic description in terms of a set of necessary and sufficient features was later referred to by Fillmore (1975) as the 'checklist theory of meaning'.
[4] Jakobson 1936 introduced this distinction his discussion of the grammatical meaning of case, but it can also be applied to lexical meaning
[5] This two-tiered description of polysemous lexical items in terms of a single (abstract) meaning and contextually determined realizations was obviously fashioned after the distinction in structuralist phonology between phonemes, which are abstract entities, and allophones, their concrete realizations.
[6] Consider, for instance, Apresjan's (1974) study of 'regular polysemy', "which is governed by processes which are productive, rule-governed, and predictable, very much like the processes of word formation" (Ravin & Leacock 2000:10).
[7] While this distinction might, at first sight, be straightforward enough, it is not imaginary that words with different etymologies are synchronically viewed as polysemous (e.g. *ear* (of a human) and *ear* (of corn).
[8] For a similar example, see Croft (1998:161).
[9] As such, Tuggy reacts against Sandra's claim that "no claims on mental representations are implied by any [linguistic] analysis" (Sandra 1998b:376).

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