Results and Prospects in the Study of Semantic Change: A Review of *From Polysemy to Semantic Change* (2008)

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Abstract

The topic of this review article is a volume addressing the relationship between polysemy and semantic change, a relationship which has been important in discussions of semantic theory and method particularly in recent years, and which has the potential to unite synchronic and diachronic approaches. The first part of this article consists of thorough reviews of the fourteen chapters in the volume, entitled *From Polysemy to Semantic Change*, edited by Martine Vanhove (2008). We review each of them in turn, providing a brief summary of the content of each chapter, as well as comments on the impact of the contribution to the study of polysemy and semantic change, and/or on its limits. The second part of the article presents a general evaluation of the volume, and reflects upon the achievements, limits and perspectives of the study of polysemy and semantic change. Some of the chapters demonstrate that a degree of generalization can be reached on these questions, and provide new and potentially productive ways forward in theory and method; others either do not have such aims, or struggle to provide a useful general framework. We consider why this may be the case, and suggest hypothetical solutions. In particular, we examine the difficulty met with drawing conclusions across semantic domains, and the lack of a framework taking language contact and diffusion into account in the study of semantic change.

1. Introduction

This volume is the outcome of a joint project coordinated by LLACAN (Langues, langages et cultures d'Afrique noire, CNRS, Villejuif), under the

scheme 'Fédération typologique des universaux'. A group of linguists special-ised in various languages and linguistic fields met regularly for several years starting in 2002, reflecting on semantic associations from a typologi-cal point of view. Resulting from the collaboration of linguists with diverse backgrounds, the volume groups together a variety of theoretical and method-ological approaches. In spite of this diversity, a number of cohesive topics recur (perception and intellection, 'eat' verbs).

Maria Koptjevskaja-Tamm's chapter, the only chapter in the volume's Part I, is an introduction to the volume. The second part presents diverse theoreti-cal and methodological works. This part is probably less coherent, with some contributions less integrated than others—Pottier's article for instance does not provide many points of connection to the rest of the volume. Demonstrations of specific methods (Koch, Family, Zalizniak) are grouped together with theoretical considerations (Robert) or with more general meth-odological suggestions (François). Part three, on the other hand, consists of a series of cases studies which echo each other as they tend to consider related topics and/or use comparable methods. We comment on each article below, following the order in which they appear in the volume.

2. Chapters' reviews

Maria Koptjevskaja-Tamm's 'Approaching lexical typology' provides an overview of the state of research in lexical typology, defined as the subfield of linguistics exploring possible associations between meanings and words: What is a pos-sible word? What meanings can and cannot be expressed by a single word? etc.

Her chapter offers a concise account of the major classical concepts in lexical semantics, including insights into well-known but yet unresolved difficulties. Koptjevskaja-Tamm's introduction also contains a review of stud-ies in linguistic categorization—i.e. studies of the classic domains where deno-tation offers a safe ground for comparison: colors, kinship, body parts, motion verbs, perception verbs, cut and break verbs. Although it is not always clear how selective the inventories are, they remain useful.

In addition, Koptjevskaja-Tamm highlights some of the difficulties in this field. For instance, a lot of studies strive to generalize and identify regularities beyond the limits of the denotational domains mentioned above. Koptjevskaja-Tamm's introduction closes somewhat aporetically, as the author states that semantics does not lend itself well to standardization, so that the data from various studies and domains often lack commensurability. She suggests—rightly, we believe—that collaboration between researchers may help overcome

this caveat. She emphasizes the need for a metalanguage and describes the difficulties met in identifying semantic universals. In this respect, François's suggestions that the atomic units of semantic analysis may be defined on the basis of cross-linguistic comparison seems to offer if not an ideal solution, at least a step forward. In addition, it may be worth considering Riemer (2006)'s suggestion that the main requirement for a metalanguage is that it is shared. Based on this view, defining a metalanguage may be a matter of agreement within a community of researchers.

Stéphane Robert's 'Words and their meaning: Principles of variation and stabilization' is the first chapter of Part II, but could actually represent an alternative introduction to Koptjevskaja-Tamm's, albeit one adopting a cognitivist perspective. The author adopts a somewhat 'counter-current' view on polysemy. She starts from the observation that polysemy is inherent to linguistic communication. The essence of words (of linguistic communication) is their plasticity: their capacity to group together various aspects of the world under a single label, and to vary the groupings across contexts and occurrences. Therefore, ambiguity in meaning—the condition of polysemy—is also the essence of linguistic communication. At the same time, ambiguity opens up a permanent risk of miscommunication. Hence the problem is to understand how meanings stabilize in communication.

Polysemy is explained by traditional mechanisms of semantic extensions (metaphor, metonymy, etc.). These 'paths' of semantic extension, or 'referential paths' in Robert's terms, tie words to their cultural environment, producing networks of conceptual associations which the author calls the 'depth dimension' of language. On the other hand, ambiguities in communication (resulting from omnipresent polysemy) are reduced thanks to context, either linguistic or extra-linguistic.

Robert's account of the cognitivists' framework enriches the volume, but most of her co-authors make little use of this framework. This may be unfortunate, as it seems that some of the contributions (François, Masson, the chapters on eat and drink verbs) may have benefited from a cognitivist's insight.

Bernard Pottier's 'The typology of semantic affinities' also seems to adopt a cognitivist perspective, but his chapter remains somewhat at odds with the rest. He discusses two ways in which semantic proximity (or 'proxemy') can occur in diachronic processes: by meaning divergence in a polysemous item; and by meaning convergence of different items ('parasemy'). Pottier identifies the 'mental schemas' or 'cognitive processes' underlying these mechanisms, represented by diagrams. The author points to his own earlier work which is said to provide a 'catalogue of mental processes'. While such a 'catalogue' may be useful as a preliminary step prior to a more general analysis, the interpretation

of the diagrams remains unclear in many cases. The theoretical framework is not very explicitly laid out for those unfamiliar with this approach, so that we found the arguments somewhat difficult to follow.

Peter Koch's 'Cognitive onomasiology and lexical change. Around the eye' is the first of a series of three chapters presenting a particular method for semantic typology. Koch's describes a methodology for the study of lexical change, along with an application of this proposed method, i.e. a case study around four body-part concepts: EYELASH, EYEBROW, EYELID and EYEBALL.

Koch's method consists in classifying semantic changes based on a typology taking two dimensions into account. The first dimension considers changes with respect to the concept expressed by a given form. When the Old French *maschoire* 'jaw' was derived from the Old French verb *maschier* 'chew', there was a change in concept from 'chew' to 'jaw'. Changes in concept can be classified according to the cognitive 'bridge' linking the two concepts at stake: metaphorical similarity (e.g. from the concept BALL to the concept EYEBALL), cotaxonomic similarity (e.g. from the concept THUMB to the concept RING FINGER), etc. The second dimension of Koch's typology considers changes in form, described in terms of morphological processes (suffixation, reduplication, tone change etc.) Lexical changes can be classified along this bidimensional scale. A typology of lexical changes based on this classification will give an idea of which combinations (i.e. which type of conceptual extension are realized by which formal change) are possible or frequent, when, where, etc.

The case study applies these methodological principles to the concepts EYELID, EYELASH and EYEBROW and EYEBALL. According to Koch, the study reveals cross-linguistic cognitive tendencies. For instance, EYELID, EYELASH and EYEBROW are more often referred to using morphemes denoting the concept EYE, the whole in which the other parts are included). In contrast, words for EYEBALL more often result from metaphors, typically a roundness metaphor. Koch concludes that this reflects a 'cognitive salience' of the roundness of eyeballs.

Koch's typological principles are relevant and well-articulated, and the case study seems relatively enlightening. However, it is not entirely obvious how the method would apply to other domains than body parts—in particular non-denotational domains—or what kind of results it would bring.

Like Koch's contribution, *Neiloufar Family's 'Mapping semantic spaces: a constructionist account of the 'light verb'* xordæn *'eat' in Persian'* presents a particular method applied to a particular semantic problem, and a case study. However, Family's case is not typological but language internal. The author applies the notion of 'semantic space' to Persian verbal constructions, arguing that this notion and its visual representations help us understand the polysemy

underlying these constructions. 'Mapping of semantic spaces' is a concept which is mentioned in several of the papers in this book (e.g. François) and most often refers to a group of theoretical approaches which has been elaborated in recent years by authors such as Haspelmath (2003). This chapter takes a different tack by applying ideas from Construction Grammar to these issues.

Most of the Persian verbal concepts are expressed by a combination of a preverb and one of small number of 'light verbs' including 'eat' *xordæn*, the focus of the paper. The meaning of the most complex verbs is 'quasi-compositional' rather than wholly idiomatic. But compositionality has its limits, often without a clear algorithm to derive the meaning of the whole verb from that of its parts. Family claims that cognitive linguistics, and more specifically Construction Grammar, is able to handle this kind of situation better than more formal theories, which are biased towards compositionality.

The author identifies 'islands' or clusters of light verb constructions which express similar verbal notions based on the same light verb and a specific type of preverb. Fifteen such islands relating to *xordæn* are described; network diagrams are used to plot the semantic space. While there is a large number of islands, the whole network is divided into four major branches 'affected'; 'suffering'; 'usurping' and 'motion'. One might comment that the method for arriving at this division is not clear: the category 'affected' is very broad and there is potential overlap, for instance, 'be wounded' is classed in 'affected' rather than 'suffer'. Among the conclusions is that there are apparently 'no overarching traits unique to the LV *xordæn* 'eat''. Therefore a 'bottom-up' approach is advocated to plot the networks of meanings which emerge in the context of constructions.

The method presented in this study is enlightening and could be exported to other cases. A notable absence is reference to work on complex verbs and their semantics in Australia e.g. McGregor (2002), and especially Schultze-Berndt (2000), where Construction Grammar is applied to the problem on non-compositionality of light verb constructions.

Alexandre François's 'Semantic maps and the typology of colexification: Intertwining polysemous networks across languages' also discusses points of methods, but unlike Koch's or Family's contributions, the methods he proposes are not attached to a particular problem or domain. Rather, this chapter is a welcome (if tentative) reflection on the issues raised by Koptjevskaja-Tamm in the introduction to this volume: the commensurability of semantic studies, and related issues.

François's article is divided into three parts. The first part is theoretical: the author defines a number of conceptual tools and discusses the methods and prospects of lexical typology. The second part introduces the principles of

semantic maps (inspired by Haspelmath 2003), as a visualisation tool allowing for an insightful presentation of studies in lexical typology. Finally, the last section illustrates the method with a well-chosen example, namely a typological study of words meaning 'breathe' in 13 languages. The most important contribution of this chapter is, in our view, that it enunciates a method for lexical typology, with two important theoretical points.

Firstly, François delineates the simple concept of 'colexification': a lexeme colexifies senses s1 and s2 when this lexeme can mean both s1 and s2. For instance, in English, *straight* colexifies <rectilinear>, <undiluted>, <classical>, <heterosexual> (etc.). This concept makes no claim about polysemy vs mono-semy, and no historical claim. This theoretical 'purity' suits typological purposes but leaves other questions aside. While the notion of colexification seems self-evident, debates occur where linguists strive unsuccessfully to communicate, because they lack a term for this simple concept.

Another important suggestion contributed by François is a method to identify the atomic units of semantic description based on cross-linguistic observations, via the analysis of the emic categories of each individual language. For instance, we saw that English *straight* colexifies <rectilinear>, <undiluted>, <classical>, <heterosexual> (etc.). But in a study of lexemes meaning <rectilinear>, we may find languages that establish a lexical distinction between <vertically rectilinear> and <horizontally rectilinear>. In this case, these units should be added to the list of atomic senses, so that English *straight* should be described as colexifying <vertically rectilinear>, <horizontally rectilinear>, <undiluted>, <classical>, <heterosexual>, etc. (See Evans (2010) comparable suggestions and the notion of etic grid.)

This method may be somewhat difficult to apply, especially with non-denotational concepts. In some cases it may be impossible to decide on empirical grounds whether two meanings found in two different languages are one or two senses (typically where the referents are culturally-specific, e.g. with gods, spirits etc.).

In the second part of the chapter, the author introduces semantic maps, adapted from Haspelmath (2003). The maps visualize the connections between the senses colefixied by a given word. The idea is to choose a pivot notion—<breathe> in François's case study—, to assess which senses are colexified by the words meaning 'breathe' in 13 languages (which range from 'take a holiday' to 'spirit' or 'supernatural being', and produce visual representations of the resulting networks.

The visual representation consists of cells representing the atoms of sense, connected in a network. A line is drawn between two cells when the two corresponding senses are colexified in at least one language. The maps do render cross-linguistic patterns very apparent, facilitating typological observations.

However, it is not entirely clear what the spatial arrangement of the cells on the map represents or demonstrates. Following Haspelmath (2003)'s principles, the cells are first arranged in space by the linguist based on their intuition of conceptual proximity. In a second stage, this intuitive arrangement is then compared to empirical data: each connecting line between two senses must be 'validated' empirically by the existence of the colexification of these two senses in at least one language. But no empirical method provides for searching for connections that would not have, first, been perceived by the linguist. In other words, these semantic maps can confirm our intuitions, but they cannot help us discover what our intuition has overlooked.

François anchors his method in synchrony: overall, he refrains from considering historical data or hypotheses. A further development of the method consists in accommodating historical evidence, which informs us on the direction of semantic changes and therefore, on the ordering of senses on the map. Likewise, questioning the semantic relationship between two senses (e.g. metaphors, inference) can provide information on the directionality of changes. Cognitive linguists such as Jurafsky (1996) or Niepokuj (1994) argue that some semantic changes are unidirectional, thus allowing to assess the direction of a given semantic change.

François's theoretical contribution to lexical typology is an important one. The concept of colexification is as crucial as it is simple. The proposed method for assessing atoms of sense on the basis of cross-linguistic observation, and thus provide empirically-grounded semantic etic grids, is also a simple but important idea.

Anna Zalizniak's *'A catalogue of semantic shifts: towards a typology of semantic derivation'* also deals with issues of methods, discussing Zalizniak's Catalogue of semantic shifts (2010) and its relevance as a tool in semantic typology. The chapter gives detail of how the lexicographic entries in the Catalogue of semantic shifts (2010) were organized. The catalogue itself is a listing of meaning changes and extensions in lexical items, mainly from Indo-European languages. The author suggests that such a catalogue is valuable (1) to establish a semantic plausibility criterion for lexical reconstruction; (2) as a basis for semantic typology; and (3) as linguistic evidence for cognitive processes.

There is value in a collection of semantic shifts, especially 'semantic parallels' as Zalizniak terms them. One of the major problems in reconstruction is to justify semantic shifts, and the presence of multiple instances of a change provides supporting evidence. Such support would be even stronger if the shift could be formulated in more general terms within a theoretical framework such as Francois' colexification and were not just a matter of isolated examples in a list.

Bruno Gaume, Karine Duvigneau and Martine Vanhove's 'Semantic associations and confluences in paradigmatic networks' is the only contribution dealing with computational methods. The authors describe a method based on graph representations and on an algorithm, called 'Prox'. They devise a quantitative treatment of semantic proximity, fed by existing digitalized lexicographic data, to be used as a tool in semantic typology.

The method is based on a representation of semantic relationships by means of 'field graphs', a well-developed branch of mathematics used extensively in Social Network Analysis for instance. Field graphs represent networks, calculating the proximity between individual points of a network. The authors suggest building field graphs representing networks of words, based on computational treatment of existing dictionaries. The occurrence of a given word in the definition of another word represents semantic proximity between these two words, and the graphs account for such occurrences. Based on such representations and on the 'Prox' algorithm, semantic proximity between two words can be assigned a numerical value. Provided the distribution of semantic proximities is not random (the authors emphasize that this is yet to be confirmed), the properties of resulting field graphs should mirror the semantic proximities of the network in question.

Due to the relative complexity of the technique and of the explanations, we found it difficult to understand exactly which properties of a semantic system the graphs and the algorithm could unveil. The authors illustrate the proposed methodology with the perception-knowledge semantic extension, tackled by Vanhove in the same volume. The results confirm Vanhove's findings, yet it is not clear what is gained by using the computational method. Boyeldieu's chapter also presents results from this method: they are more enlightening in the context of a case study, yet it is not absolutely clear what conclusions they allow us to draw.

Considering the vast amount of data involved in the study of polysemy and semantic change, it seems natural that numerical and computational approaches should have something to offer. The method presented here is relevant to the issue, yet it seems that technical improvements and theoretical clarifications are needed before the results can contribute more significantly to semantic typology.

Following these five chapters where methods and methodology are in focus is a series of articles contributing case studies focusing on the patterns of polysemy in given semantic domains, particularly around the semantics of 'eating' and related concepts. This is a universal activity among humans and other animals and it is thus a suitable concept for comparison. The three studies grouped in part 3, together, with Family's contribution which also deals with

'eat' verbs, constitute a significant exploration of this semantic domain. Vanhove's work on perception and intellection echo François's case study on 'breathe' words, which connects to the domain of spirit, soul etc.; Sakhno and Tersis's exploration of the semantic associations of 'friend' and 'enemy' also echoes Vanhove and François's articles. Boyeldieu and Masson both discuss semantic associations related to animals.

Emilio Bonvini's 'About 'eating' in a few Niger-Congo languages' based on lexical entries from a sample of dictionaries. The introductory statement is somewhat obscure. The exact nature of the 'semasiological' approach claimed by Bonvini remains undefined. In addition, the author puts to the fore the unusual term 'orthonym'—referring apparently to non-metaphorical use. Further explication of the approach is provided in the chapter, but without complete clarity.

The first section deals with orthonyms, i.e. with non-metaphorical senses of 'eat' verbs. While acknowledging the universality of eating as an activity, the author emphasizes the need for language internal definitions of the verbs. Some languages, like Cewa, have a large number of 'eat' verbs with specific senses such as 'eat something soft', 'eat in the morning', 'eat in common'… Various languages present diverse sets of lexical contrasts, and Bonvini provides a list of these.

In the last section, Bonvini considers two sets of senses of 'eat' in non-orthonymic context. This kind of wide extension is very striking in these languages and has parallels in many of the world's languages. Among the first set, 'active use', Bonvini distinguishes several general meanings: 'take advantage of'; 'win'; 'reign', 'exploit' etc. These have commonalities for instance to the expressions discussed by Family, as well as common metaphorical extensions in other parts of Africa (like Hausa for instance), and elsewhere (e.g. Australian languages). Just as interesting is the second set of 'undergone' meanings of 'eat' including 'spend/waste'; 'suffer'. Interestingly, in Hausa, this set of meanings seems to take the verb 'drink' rather than 'eat' (Gouffé 1966).

These sets are illustrated from the sample of languages, and the point is made that while some 'isotopies' (use of 'eat' for a set of functions) are shared across a number of languages, some are isolated. In several places, it would have been interesting to further question areal distributions, as well as possible borrowings.

Christine Hénault's 'Eating beyond certainties' is another 'eat' case study, looking at a number of verbs meaning 'eat' in Indo-European languages, and a few other language families around the world. Hénault classifies semantic associations of 'eat' verbs and groups them into three types: concrete actions (e.g.

semantic associations with 'bite', 'swallow' as well as 'itch', 'irritate'); perceptual (semantic associations with 'try' 'choose', 'know'…) and cognitive (association with pleasant emotions, undergone emotions and sensations, control activities). The non-Indo-European languages in the sample provide a cross-linguistic comparison, suggesting some universal semantic association between eating and suffering and torment—these associations are also mentioned by Bonvini for Niger-Congo languages. These results could be usefully compared with other areal studies of 'eat' in this volume and elsewhere.

As compared to Bonvini's case study for instance, Hénault's chapter focuses on the data rather than on structured analysis. But this may in fact be quite appropriate for such case studies. In addition, the simple process of classification of semantic association is informative.

Pascal Boyeldieu's 'From semantic change to polysemy: the cases of 'meat/animal' and 'drink'' also contributes to the exploration of 'eat' words, but unlike the previous case studies, it considers two semantic domains, using data from more than 30 languages (and nearly as many families). The first part of the article deals with semantic association related to 'meat/animal'; the second part with semantic associations related to 'drink'. The author emphasizes a contrast between these two cases: the former is better explained by diachronic facts; whereas semantic associations for 'drink' are better explained in synchrony.

In the first section, the author presents data from a number of languages where 'meat' and 'animal' are colexified, as well as data for a number of languages displaying different patterns. In various places, Boyeldieu suggests cultural explanations for these respective patterns (for instance whether speakers are hunter-gatherers). He concludes that such semantic affinities are better explained 'historically' (by considering etymologies?) or by looking at cognates in neighboring languages. However, it remains somewhat unclear what constrains this approach.

The second section presents data about semantic association of 'drink' verbs in a number of languages. As Boyeldieu points out, this data is particularly interesting in comparison with Bonvini and Hénault's studies on 'eat' verbs. Indeed, an important extension of 'drink' may be glossed as 'passively endured experience', a sense pertaining to some of the Niger-Congo 'eat' verbs described by Bonvini (a contrast which would deserve further explanation). In this section on 'drink', it seems clearer what the author means by a 'synchronic' approach, as opposed to 'diachronic' considerations. Boyeldieu's comments aim at shedding light upon conceptual (rather than historical) associations between various senses of 'drink' and related expressions. While his suggestions are often enlightening, they would benefit from a more structured

conceptual framework. A cognitivist's framework would probably help shape a sound analysis, and guard against the risk of over-general monosemist interpretations.

Sergueï Sakhno and Nicole Tersis's 'Is a friend an enemy?' moves away from the 'eat' domain, to explore semantic associations of words meaning 'friend' in various language stocks—mainly Indo-European and Eskimo languages, with some insight from a couple of African and Oceanic languages, and occasionally Nahuatl. The starting point, 'friend', is particularly well-chosen because of its intrinsic interest and because it unfolds a fascinating conceptual network.

The data is organized into three conceptually-defined categories of semantic associations: semantic associations of 'friend' with duality and proximity; with duality construed as similarity and complementarity; with duality construed as opposition. These categories may seem somewhat arbitrary and/or cumbersome, probably because the authors chose to base their categories upon logical rather than observable distinctions. On the other hand, such a classification is a necessary first step towards a typology of semantic association in semantic domains.

Like several other case studies in this volume, this work is more concerned with data than with analysis. The introduction opens up a methodological discussion, with the idea of three levels at which semantic associations 'should be placed'. The first and second level, synchrony and diachrony, raise no difficulty. The third level, on the other hand, 'that of very abstract theorized semantic relations', is, according to the authors, 'more debatable'. The nature of this third level remains obscure. It may allude to the 'logical distinctions' guiding the classification of semantic associations, but we couldn't identify a discussion of what this level consists of, or why it is debatable.

As a conclusion, while these authors do not really attempt to generalize upon their findings, this chapter is a useful contribution to the study of this particular semantic field may be useful to researchers with various purposes. It seems that the authors strive to elaborate upon their methodology.

Martine Vanhove's 'Semantic associations between sensory modalities, prehension and mental perceptions. A cross-linguistic perspective' focuses on sensory perceptions and their connections to intellectual perception. Vanhove's contribution differs from the other case studies in that it builds upon hypotheses articulated by several researchers (Evans and Wilkins 2000; Sweetser 1990; Viberg 1984), and as a result is able to articulate generalizations about semantic associations in this domain.

Based on her research on Indo-European languages, Sweetser (1990) suggested that the association between vision and intellection 'is fairly common

cross-culturally, if not universal'. Evans and Wilkins (2000) contested Sweetser's claim, observing that in Australian languages, the vision>intellection association is only marginal, the hearing>intellection association being the most common. Evans and Wilkins hypothesized that literacy may favor the vision/intellection association. Vanhove assesses these claims based on a larger sample of languages (24 languages across 7 families, plus a creole language). Firstly, she argues, contra Sweetser, that vision>intellection associations are in fact less frequent cross-linguistically than hearing>intellection associations. Secondly, Vanhove's findings invalidate Evans and Wilkins's hypothesis that hearing>intellection associations correlate with lack of exposure to literacy.

In addition, Vanhove articulates a hypothetical implicational universal, which states that 'if a language has a prehension word which maps onto the domain of mental perceptions, it also has another lexical item with a similar semantic association for vision and the auditory sense, but the reverse is not true'. That Vanhove can articulate such a relatively precise hypothesis suggests that cross-linguistic regularities of semantic change can be identified even in 'less-denotational' domains. The key to this finding seems to be cumulative research on a given domain.

Unfortunately, the robustness of Vanhove's tentative implicational universal may be questioned: she indicates that her relatively small language sample contains one counter example. Much more research is still needed in order to make such universal claims strong enough.

The volume closes with *Michel Masson's 'Cats and bugs'*. Masson's approach differs from other cases studies. Rather than focusing on a domain, he selects a couple of what he regards as non-transparent semantic associations, found in various European languages (regardless of genetic groupings apparently). He seeks to shed light upon them, calling, in particular, on cultural facts.

The semantic associations in question are between cats, monkeys, insects, nasty creatures; as well as drunkenness, black mood, grinning. Masson attempts to explain these associations by shared beliefs (e.g. belief in the association of cats to a devilish force) as well as cultural practices (the carnival and its masks explaining associations with grinning). Masson's explanations are interesting and sometimes relevant, but they remain vague. There are references but no dates, no quotation of actual historical text, and no suggestions of bridging contexts. The author sometimes focuses on disconcerting hypotheses—for instance, considering whether monkeys could become alcoholic, in order to assess the semantic association between 'monkey' and 'drunkenness' (p. 374).

The opacity of the particular series of associations considered here—cats, monkeys, insects, and various demoniac behaviors—may be downplayed if we take a look at semantic parallels. A similar semantic association between remarkable animal/insects/malevolent creatures, is found in some Australian languages. In Dalabon (Gunwinyguan, Australia), the noun *manjh* [maɲʔ] colexifies the senses 'animal', 'insects', 'birds' (i.e. small creatures), as well as 'snake' (a prototypically dangerous animal). The main malevolent character in the mythology is represented as a snake. It is interesting to note that *manjh* also means 'meat' (relating to Boyeldieu's contribution).

In the view of this partial semantic parallel, the semantic associations discussed by Masson do not look so opaque. This does not make them less interesting, but suggests that it may be worth inverting the order of explanations. Calling upon typology and the cross-linguistic semantic parallels reveals associations as more natural and transparent than looking at them in isolation. From there, cultural explanations can be sought to shed light upon specific points.

3. General comment and evaluation

Altogether, the volume makes significant—if diverse—contributions to the study of the typology and regularities in polysemy and semantic associations in general. While identifying regularities in semantic change and polysemy has proved feasible (Sweetser 1990, Vanhove this volume), progress on these issues is relatively slow. Sweetser (1990) compares the study of semantic change to the study of sound change, suggesting that regularities should be as identifiable in the former as they are in the latter. However, these two phenomena are different in nature. Sound change tends to operate automatically, while the sense of words is more accessible to speakers' awareness. As a result, semantic change is open to speakers' creativity, and influenced by a much broader array of factors. Therefore, it is not surprising that regularity in semantic change is more difficult to pin down than regularity in sound change. As pointed by Koptjevskaja-Tamm, progress tends to be made within lexical domains, and generalization across domains remains scarce.

3.1. Cross-domain research

The domains of body parts (treated by Koch in this volume) is a good example of a denotational domain which has been relatively well-explored and where some conclusions have been reached (Wilkins 1996, Koch this volume).

Intellection and perception is also a well-explored domain (treated by Vanhove in this volume). Another domain where regularities in polysemy and semantic change have been established is kinship—not mentioned in the volume. Like with intellection and perception, cumulative research has yielded results—in the case of kinship, researchers from several disciplines (anthropology, linguistics), have been working on these problems for many decades, often with an awareness that they are engaging in the development of semantic theory as well kinship theory.

How can conclusions from one domain be exported to other domains? At first sight, it looks as if each domain has its own ontological particularities: since the human body on the one hand and kinship rules on the other hand are two inherently different phenomena, why should body part terms and kin terms follow the same paths of semantic change? Or, why would polysemies in any other semantic domain (say, semantic associations with 'friend') resemble polysemies in body parts?

It may be possible to approach the problem from a different angle. Rather than trying to apply conclusions drawn about one domain to another domain, it may be possible to compare the conclusions drawn from different domains, to try and see whether they have anything in common. For instance, Wilkins (1996) hypothesizes that in the domain of the human body, 'it is a natural tendency for a visible part to come to refer to the visible whole of which it is […] a part'. Koch (this volume) suggests that cognitively salient body parts are more likely to be referred to by means of metaphorical expressions. As discussed earlier, in the domain of perception and intellection, Vanhove articulates the following implicational universal: 'if a language has a prehension word which maps onto the domain of mental perceptions, it also has another lexical item with a similar semantic association for vision and the auditory sense, but the reverse is not true'. With kinship, research has shown that in the systems where 'mother's brother's daughter' (or niece) can be referred to as 'mother' (a merging called the Omaha skewing), the extension is always from mother to niece, not the other way round (Trautmann and Whiteley in press). This way of dealing with extension has led to construction of apparatus such as 'reduction rules' applied to relative product strings pioneered by Lounsbury (1964), and more recently, suggestions that Optimality Theory (another import from phonology, based on universal constraints) can be productively applied to kinship (Jones 2010).

Can the rules applying to kinship be exported to other domains, and under which conditions? Do the hypotheses listed above have anything in common? Presented in such a short list, they seem very diverse. But if we listed all the hypotheses put to the fore by researchers on various domains, might some regularity emerge?

3.2. Typology and other frameworks

Another observation with respect of this volume is that the combination of typological interests with other types of frameworks, allowing diachronic insight, seem to produce better results (Koch combines typology with historical data; so does Vanhove, following Sweetser who combined a cognitive approach to a historical insight). Because the question of semantic associations is a difficult one, it seems necessary to take all possible perspectives into consideration.

A possible weakness of some of the articles is that they hold firmly to a typological approach, and/or leave aside some theoretical tools or some issues. For instance, Boyeldieu's contribution (as well as the other case studies probably) would benefit from a cognitivist's insight; François's would be improved by integrating further historical considerations. In general, diachrony and synchrony should be better delineated along the volume. For instance, Zalizniak uses the term 'semantic shift' to refer to both synchronic and diachronic extensions, which is unusual. Bonvini and Boyeldieu's could investigate diffusion further, since they notice areal patterns and nuances which seem to raise the question of borrowing.

3.3. The mechanisms of semantic shifts in diffusion

In general, diffusion and borrowing are given little consideration in the volume. However, in some areas, lexical diffusion is probably a prominent path of semantic shift, perhaps of different kinds from what is found in inheritance, and may have a strong explanatory power. The data contributed by Bonvini and Boyeldieu on extensions of 'eat' in Niger-Congo languages suggests that it may be useful to hypothesize diffusion here as well.

It would be good to develop more sophisticated theoretical models to deal with these issues, because there is indicative evidence that diffusion is associated with distinct mechanisms of semantic shift. As an example, the phenomenon of semantic narrowing is often found in diffusional interfaces between languages, for instance the term *pirti* 'hole (in general)' in Western Desert Language and Kikatha comes to mean 'stone quarry' in Arabana-Wangkangurru. This is because the word is mainly heard in intercultural contexts between different Aboriginal groups, when the owners of the quarries hear those strangers seeking for stone there talking about 'holes' and associate that with the narrower meaning 'stone quarry' (Hercus 2005: 195). The familiar examples, in English, of the borrowing of animal words from French as words for meat in the culinary context often attributed to the 'prestige' of French in medieval Britain (Campbell 2004: 64), fits the same model. Also in

Australia the term *ngone* a generic word for 'spear' in Wardaman, is borrowed into neighboring languages such as Gurindji in the narrowed meaning 'short jabbing spear' since this is the type of spear which was borrowed from the Wardaman direction (McConvell 2009: 801).

This interpretation is related of course to the notion that semantic change begins in pragmatics, with a bridging context (see for instance the 'invited inferencing theory of semantic change' Traugott and Dasher (2002)). The pragmatic context of this kind of narrowing in intercultural situations, although different from those usually considered in monolingual contexts, is regular enough in its own right to yield a predictive principle. This phenomenon has been noted in relation to loanwords frequently, including in work on recent loanwords. For instance, English *tuna* is borrowed into Japanese as *tsuna* only in the meaning 'canned tuna', while varieties of tuna fish retain Japanese names (Kay 1995: 171). The phenomenon was described by Fisiak (1970: 41) in this way: 'lexical items are … borrowed… only in concrete situations in one of their senses'.

But so far this effect of language contact pragmatics on semantic shift has not been adequately theorised. This kind of change is not of the classic kind of polysemy in a 'bridging context' since the speakers who give rise to it belong to two separate but interacting language groups and none of them necessarily use the item in question polysemously. It would be good to develop descriptions of these recurrent mechanisms, as well as others, so that the theories available to explain semantic shift are not limited to the search for a bridging context involving polysemy in the narrow sense. In a sense, the title of the volume indicates an intention to focus on these contexts where semantic shift is associated to polysemy. But the book does consider 'semantic associations' more generally, which probably include a broader array of phenomena.

3.4. Summary comment

The volume offers significant contributions to the study of polysemy and lexical typology. A couple of chapters (Koch, Family, Vanhove) present interesting methods and conclusions on a specific domain or issue. Vanhove's chapter in particular is interesting, because her article reaches a significant level of generalization, based on cumulative research. François's work is also important, as it offers theoretical and methodological tools: the concept of colexification on the one hand, and a method to define semantic 'primes' by means of cross-linguistic observation on the other hand. Finally, case studies (Family, Bonvini, Hénault and Boyeldieu on 'eat' verbs, Sakhno and Tersis on 'friend', Boyeldieu and Masson around 'animal') help to identify some regularities within particular domains.

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