MARTIN HUMMEL
Universidad de Graz

The semiotic basis of conceptual and procedural meaning. Towards a cognitive model of the linguistic sign

Abstract

The distinction of conceptual and procedural meaning is subject to a lively debate. As a consequence of the specialization of linguistic disciplines during the 20th century, this discussion is limited to the theoretical framework(s) of pragmatics. The paper argues that a look at fundamental semiotic principles and at the interfaces of linguistic disciplines counterbalances the shortcomings of such specialized approaches. For this purpose, the paper revisits the semiotic triangle of Ogden & Richards, replacing it by a semiotic pyramid that integrates conceptual and grammatical meaning. The semiotic pyramid sheds new light on the traditional separation of content words from function words and provides an operational basis for the analysis of the conceptual-procedural distinction. It suggests an *Interface Model of the Linguistic Sign* that takes into account the basic assumptions of Cognitive Linguistics.

1. Introduction

The distinction of conceptual and procedural meaning has first been suggested by Blakemore in order to describe linguistic functions in discourse from a pragmatic point of view:

> On the one hand, there is the essentially *conceptual* theory that deals with the way in which elements of linguistic structure map onto concepts – that is, onto constituents of propositional representations that undergo computations. On the other, there is the essentially *procedural* theory that deals with the way in which elements of linguistic structure map directly onto computations themselves – that is, onto mental processes. (Blakemore 1987: 144)

Consequently, concepts exclusively belong to the propositional content of an utterance. Blakemore further assumes that unities that can roughly be subsumed under the labels of discourse markers and connectives convey procedural instructions rather than adding information to the propositional content:

> [W]e have also seen that there are expressions whose meanings cannot be analyzed in representational [conceptual] terms at all. *But*, *after all*, *moreover*, and inferential *so* do not contribute to a propositional representation, but simply encode instructions for processing propositional representation. […] [Linguistic meaning] may be either representational or procedural [but not both]. (Blakemore 1992: 150)

This restrictive interpretation is in line with current analyses of discourse markers: "The essential property of DMs […] is therefore that they have primarily *procedural* meanings […] (Fanego 2010: 200)". The term *discourse marker* (DM) stems from Schiffrin's ground-

breaking study on oral discourse, where she defends the idea that they are semantically empty: "Like *oh*, use of *well* is not based on semantic meaning or grammatical status", and "has no inherent semantic meaning (1987: 102, 127)". The same holds for the less frequently cited, but prior studies on French discourse markers (Weydt 1969, Gülich 1970), and it continues to be a topic in recent analyses that follow this tradition (see the synopsis in Drescher & Frank-Job 2006). The hypothesis of semantically empty words in conversation can already be found in early semantics (Paulhan 1928: 317).

This recent discussion parallels (or integrates) an older tradition that distinguishes *content words* like nouns and verbs from semantically empty *function words* like conjunctions and prepositions, or lexical and grammatical word-classes. This distinction is basic in manuals on linguistics, e.g. Crystal (1991: *s.v. meaning*): "The main levels involved are *lexical meaning*, the meaning of lexical items; and *grammatical meaning* (or *structural meaning*), the meaning of grammatical structures". *Lexical words* are supposed to "have semantic content", in contrast to *grammatical* words "whose sole function is to signal grammatical relationship" (*ibid.*: *s.v. lexis*) - in clear analogy with Blakemore: "simply encode instructions for processing propositional representation". Consequently, the term *meaning* is often reserved for lexical semantics, whereas *function* is used for grammatical morphemes or structures (cf. Lyons 1995). In Blank's thorough study on diachronic lexical semantics of Romance, only 'full words' (he also calls them 'autosemantic words') are supposed to have lexical meaning (1997: 52). But how should we treat adverbs like *then*? Are they full words (content words), function words or both? Crystal and Blank avoid a clear statement. Lehmann (2002: 8) suggests a differentiated analysis, subcategorizing each word-class into lexical and grammatical subclasses which are not separated by a clear-cut boundary, e.g. noun-pronoun, adjective-pro-adjective, conjunction-subordinator, etc.

In the same tradition, grammaticalization theory assumes that 'content words' diachronically develop to 'grammatical words' (Hopper & Traugott ^{2}2003: XV). If there is a gradual development, there cannot be a clear-cut separation between them. However, their analysis presupposes the distinction of both types of words:

> For example, it is usually accepted that some kind of distinction can be made in all languages between "content" words (also called "lexical items", or "contentives"), and "function" words (also called "grammatical" words). The words *example*, *accept* and *green* (i.e., nouns, verbs and adjectives) are examples of lexical items. Such words are used to report or describe things, actions, and qualities. The words *of*, *and*, *or*, *it*, *this*, that is, prepositions, connectives, pronouns and demonstratives, are function words. (Hopper & Traugott ^{2}2003: 4)

In addition, grammaticalization is often described as 'desemanticization' (e.g. Greenberg 1991; cf. Traugott & König 1991 for a critical overview), eventually reflected by

morphology[1]. Now, we might ingenuously argue that the development of Engl. *then* or *since* from adverbs of time to connectors that convey a logical relation was i) a gradual process, and ii) did not produce semantically empty words, but rather conceptually motivated new functions (cf. Sweetser 1988, 1990). As a matter of fact, we would not know the type of logical connection in a sentence where these words are used, without knowing the meaning of them. Are they, then, semantically empty or 'desemanticized', or are they rather semantically reloaded for new functions?

For good reasons, semanticists generally avoid referring to empty words. By contrast, as we have seen above, this topic is a crucial point in manuals on linguistics, work on discourse markers, and in the discussion on the conceptual-procedural distinction, at least in the sense that procedural devices are supposed not to have conceptual meaning. A brief look at downloads of courses in linguistics shows that many linguists are trained with this knowledge:

> Due tipi di significato denotativo che individuano classi diverse di parole:
> - *significato lessicale = parole piene*: parti del discorso lessicali che esprimono entità o concetti (nomi, aggettivi, verbi e avverbi)
> - *significato grammaticale = parole vuote*: parti del discorso funzionali che segnalano relazioni grammaticali, cioè *rapporti interni al sistema linguistico* (pronomi, preposizioni, articoli e congiunzioni) (Ferranti 2011; my italics)
>
> Two types of denotative meaning which distinguish different classes of words:
> - *lexical meaning = full words*: lexical word-classes that express entities or concepts (nouns, adjectives, verbs, and adverbs)
> - *grammatical meaning = empty words*: functional word-classes that signal grammatical relations, that is, *internal relations of the language system* (pronouns, prepositions, articles, and conjunctions)

This basic knowledge tends to tacitly affect linguistic analyses, since the commonplace term *empty meanings* often appears in linguistic studies without any theoretical foundation.

Within all this, there can be no doubt that we talk about *linguistic signs*. Conceptual and procedural meanings convey information, and the so-called empty function words would not be used if they had nothing to communicate. Hence, the discussion clearly lacks an adequate grounding in semiotic theory. This paper therefore examines the semiotic basis of the traditional distinction of content words and function words, which presents a crucial analogy with the newer distinction of conceptual and procedural meaning, in order to provide an operational semiotic theory for the description of linguistic meanings and functions. Section 1 is dedicated to the semiotic foundation of the properties that a linguistic sign has to ensure in order to fulfill conceptual-representational and functional-procedural tasks. Section

[1] Cf. the clines "discourse > syntax > morphology > morphophonemics > zero (Givón 1979: 209)" or "content item > grammatical word > clitic > inflectional affix (> Ø) (Hopper & Traugott 2003: 7)".

2 discusses related problems suggesting adequate solutions. Section 3 analyzes the conceptual and procedural meaning in light of the insights provided by the previous sections.

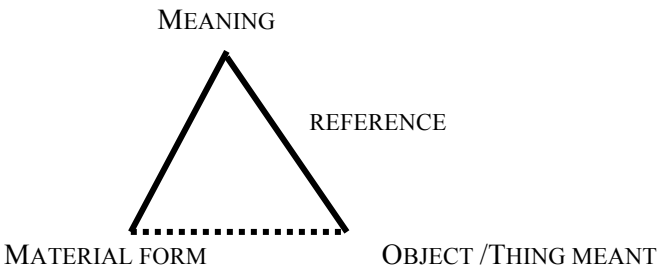
It should be added that the purpose of the paper is not so much primarily to make a contribution to semantics. Semantics shares the destiny of specialized disciplines. From a specialized point of view the models of the linguistic sign discussed here are simplistic. The cognitive linguistic processes involved in meaning are indeed too complex to be reduced to dichotomous terms such as *meaning* and *reference*. However, neighboring linguistic disciplines need a simple but more differentiated semiotic model in order improve their analyses.

2. The semiotic basis

2.1. Back to the roots: The semiotic triangle

Bréal (1982 [= 1913]), who created the French term *sémantique* (first introduced in Bréal 1883), simply defined *semantics* as the science of significations (meaning), without further specification. Similarly, the two-sided semiotic model in Saussure's *Cours de linguistique générale*, first published in 1915, only contains a *signifiant* referring to the mental representation of the sign's material form ("image acoustique"), and a *signifié* which designates the whole content (1983: 99). However, the *signifié* of Lat. *arbor* 'tree' is illustrated with the picture of a tree. Hence, Saussure's idea of meaning is conceptual-representational, grammatical meaning being not overtly included. In the following decades until today, the *semiotic triangle* (Ogden & Richards [10]1952: 1-23; first published 1923) has become the most common landmark for the semiotic description of linguistic signs. Adapting their terminology to currently used terms, we get something like:

Figure 1: The semiotic triangle



This scheme stands in the Aristotelian (see Lieb 1981) and scholastic tradition that has been paraphrased with "Voces significant res mediantibus conceptis"[2]. This formula conveys the central idea that *reference* to an *object* is indirectly conveyed by *meaning*, that is, not by a direct stand-for-relation ("aliquid stat pro aliquo"). In other words, the material form called "symbol" in Ogden & Richard's terminology stands for the meaning, not for the object, except when used in a given situation. The *material form* consists of a sequence of specially formed sounds, letters or otherwise coined (= formed) materials, according to the code (spoken, written, etc.). The combination of material form and meaning is the mentally stored instrument (sign) that enables reference, for both the speaker and the hearer. The denoted *object* has to be understood in a broad sense that includes ideas, state of affairs, events, etc.

I have included in Fig. 1 the almost forgotten term *thing* (*object*) *meant*[3], because the prevailing representational view of reference, where a 'sign stands for an object', clearly falls short of a satisfactory description inasmuch as signs often create and convey a subjective or selective idea of the object. To give an example, the same person ("object") may be referred to by *man*, *father*, *teacher*, *driver*, *criminal*, *idiot*, *beloved husband*, etc., not to speak of diverging opinions, for instance, when one teacher qualifies a student ("object") as *intelligent*, whereas his colleague finds him / her *stupid*. Hence signs enable us to subjectively create a vision of the object, either by focusing a part of it (e.g. *father* designates a selection of features that belong to the person) or by subjective evaluation (e.g. *idiot*).

Given this, the term *representation* is fundamentally ambiguous. As pointed out by Ogden & Richards, it may refer to the relation of a material form with the meaning it stands for at the level of lexicon or to reference in utterance where the sign stands for a specified object. Moreover, *representation* can refer to a descriptive, that is, a rather objective representation of an extra-linguistic object as a whole (e.g. *tree*, *sun*), but it can also denote the selective (*father*) and / or subjective mental representation of an object (*idiot*). The most common interpretation of the term *representation* is the descriptive one, where the sign indirectly 'stands for' an extra-linguistic object, as is assumed in most semiotic models[4]. Again, manuals are revelatory: "In linguistic discussion, the most widespread sense is when linguistic expressions (words, sentences, etc.) are said to be *signs* of the entities, states of affairs, etc., which they stand for […] (Crystal 1991: *s.v. sign*)". As we have seen in the

[2] Geckeler 1982: 59. Cf. "voces significant intellectus conceptiones immediate, et eis mediantibus res (Thomas Aquinas, *In libros Peri Hermeneias exposita* I,4)".
[3] E.g. Morris 1937; see also his distinction of *designatum* vs. *denotatum* (1971: 20). Compare also Baldinger (1984: 21-33) and Jackendoff (1992), who insists on I-concepts as opposed to E-concepts.
[4] Cf. Taylor's (1990) reflections on representation by *schema* and *prototype*; see also Lakoff's (1987: 157-218) critique of objectivism.

Introduction, Blakemore uses *representation* in the first sense as well, extending the representation of an object by a sign to that of a proposition by discourse.

Heger (1969) pushes the indirect stand-for-relation to an abstract level where the sign represents via meaning a whole *class of objects* in the system of language. This corresponds to the view that prevails in Labov's (1973) work on linguistic categorization, where fuzziness of meaning is equated to the fuzziness of the corresponding class of objects. However, where is the real or mental reality of a "class of idiots"? Even in cases where such a class might virtually exist, e.g. for cups or mountains, no common speaker has ever tried to delimit them extensionally. As shown by Labov, it would even be pointless to try it since there is no clear-cut boundary between mountain and hill, day and night, idiots and non-idiots, etc. This means that the existence of the objects as a virtual extensional class depends on the intension of the linguistic sign, that is, meaning. Meaning can indeed be used as a starting point for the definition of extensional categories, as biological, social or linguistic nomenclatures (e.g. word-classes), but common speakers use meaning for occasional designation in discourse. This of course does not exclude the development of an experience based awareness of a class of objects designated with the same word. But this is a derived, not a primary phenomenon. For the speaker, the primary phenomenon is designation in single speech acts. Objects such as "stars" suggest a common designation, but meaning or scientific definition intervenes when we separate stars from planets[5]. Hence, the descriptive representational 'stand-for' view of language plays a role, but the impact of human mind blends it with intensional perception, producing word specific syntheses of both.

Consequently, a general account of all these phenomena has to be based on intensional perception / cognition *and* extensional representation. The result of both may be more intensional (subjective) or more representational (descriptive, objective), according to the sign we consider. In fact, this is how the indirect relation in the semiotic triangle should be read. In general terms, meaning is not a simple stand-for-relation at whatsoever level but a complex bundle of *dynamic relations* (cf. Morris 1937: 66; see also Barsalou's (1992) definition of *frame*). Language is not an exercise of scientific classification (cf. Gauger 1969: 14), but a human activity that humans only occasionally dedicate to the definition and delimitation of classes of object. To say it in other words, classification is one possibility that the bundle of semiotic relations allows for, but we cannot reduce the semiotics and semantics of linguistic sign to this specific task. The term *representation* refers to a mental phenomenon that has to

[5] The Spanish king Alfonso X the Wise (1221-1284) considered the moon and the sun to be planets (*Setenario*: 40). His sensorial perception of these objects was the same than ours', but knowledge has changed.

be situated between two poles, according to the specific nature of each sign. On the one extreme, we have an almost *descriptive* representation of an extra-linguistic object, on the other a rather mentally created, *subjective* idea of the object. For reasons of terminological symmetry with the adjective *subjective*, we could replace *descriptive* by *objective*, but our perception of the world is necessarily human, not objective. We may try to be objective, but the effort will be simply descriptive. We therefore have to oppose *descriptive* representation to *subjective* or, possibly better, *evaluative* or *selective* representation. The adjective *subjective* should indeed be reserved for individual points of view developed by discourse, where the individual choice of linguistic signs plays a major role, whereas the semantic description of words should refer to their evaluative, selective or descriptive nature. At the level of speech, a rather descriptive word like *tree* may be felt as being subjectively used when it refers to an object that the interlocutors feel to be rather a bush than a tree. Thus, the dialectic idealistic-representational interpretation of the semiotic triangle offers an operational interface for the current discussion on subjectivation in discourse (cf. Langacker 1990, 2006, Company Company 2004, Davidse *et al*. 2010, López-Couso 2010), whereas the unilateral "sign stands for object" reading provides a hermetically sealed model that excludes conceptual evaluation and selection. Meaning is instead a synthesis of intensionally *presenting* and descriptively *representing* semantic features, which is in line with basic assumptions of modern Cognitive Linguistics (Langacker 2008: 5, 43).

The fact that meaning includes a complex reciprocal relation of the human mind with perceived objects and features evidentiates the shortcomings of the efforts made by structural linguistics to exclude the extra-linguistic reality. Geckeler (1982: 215-217; cf. Casas Gómez 2002: 136), for example, criticizes Pottier's (1963) componential analysis of the lexical field covered by Fr. *siège* 'object for sitting on' for using extra-linguistic features. In fact, Geckeler is right and wrong at the same time. Meaning contains worded extra-linguistic features, that is, these features belong to the worded mental representation of the world (cf. Taylor 1999: 29). In this sense, the feature 'has four legs' may belong to the meaning of *chair*. It is not on behalf of its own nature that the semantic feature 'has four legs' is immanent to language, but as a consequence of wording. In this case, language is an instrument of communication that integrates this feature at the level of lexicon. The very feature is extra-linguistic in nature, but its inclusion in meaning is a mental and linguistic process.

2.2. The semiotic pyramid

In 2.1 I have suggested an adequate reading of the semiotic triangle. A more radical revision is needed if we want to suggest a specific semiotic model for *linguistic signs*. Signs in general may be limited to the conceptual representation of an object, as in Fig. 1, but in natural languages linguistic signs always contain *grammatical meaning* and realize *syntactic functions*. Bloomfield (1963: 265) notes: "the lexical form in any utterance, as a concrete linguistic form, is always accompanied by some grammatical form: it appears in some function, and these privileges of occurrence make up, collectively, the grammatical *function* of the lexical form". *Tree* is not only a concept but also a noun that may be used with the syntactic function of subject (cf. Putnam 1975: 269 and Pottier 1977: 25). Hence, the semantics of words has to deal with both conceptual and grammatical information. Linguistic signs therefore require a more complex semiotic model than signs in general.

Bloomfield extended his point of view to the study of language as a whole: "When the phonology of a language has been established, there remains the task of telling what meanings are attached to several phonetic forms. This phase of the description is *semantics*. It is ordinarily divided into two parts, *grammar* and *lexicon* (1963: 138)". Similarly, Morris' "semiotic" subdivided meaning into three "dimensions" (1937: 65): "the relation of sign to objects" ("existential meaning"), "the syntactical relations to other symbols within the language" ("formal meaning"), and "the psychological, biological and sociological aspects of the significatory process" or "the relation of signs to the interpreters" ("pragmatic meaning"). He later referred to these as the *semantical*, *pragmatical*, and *syntactical dimensions of semiosis* (1971: 22-23). Morris himself insisted on the relational nature of meaning, that is, a complex semiotic model composed by mutually related dimensions of meaning (1971: 63-64). Hence, general linguistic and philosophical reflections on the nature of meaning include grammatical meaning.

This is generally not the case in specialized semantic or grammatical studies that do not look beyond their discipline. As shown by Matthews 1995 and Lyons 1995, the followers of Bloomfield are normally inclined to identify semantics with the lexicon (using the terms *semantics* and *meaning*), in opposition to grammar or syntax (using terms like *form* and *function*). Pragmatic studies are generally dedicated to identifying pragmatic meaning, attempting to exclude semantic and syntactic meaning. Interestingly, the idea of "procedural meaning" came up in the context of studies dedicated to the pragmatic or semantic meaning of discourse markers, thus confirming Morris' assumption of related dimensions of meaning. Even in the framework of pragmatic theories, procedural meaning should be related to Morris'

notion of syntactic meaning, especially if one assumes that syntax includes the study of syntax in oral discourse, as it obviously should be the case.

Semantics has not been established as a discipline with the sub-disciplines of grammar and lexicon, as Bloomfield claimed, but as an essentially lexicological discipline opposed to grammar, and especially to syntax. Palmer (1981: 5), for example, introduces *semantics* as opposed to *grammar* and *phonetics*. Katz & Postal (1964: 6-29) contrast the "syntactic component" as a function of the category "sentence" with the "semantic component" as a function of the category "word". However, for Katz & Postal the latter includes "syntactic markers", e.g. word-class, but this property of words is not systematically developed by them. Similarly, semantically based grammars do not integrate a semiotic model for something like 'grammatical signs' or the 'grammatical meaning' of signs' (e.g. Fillmore 1968, Dixon 2005). It seems that semiotic models are believed not to belong to grammar.

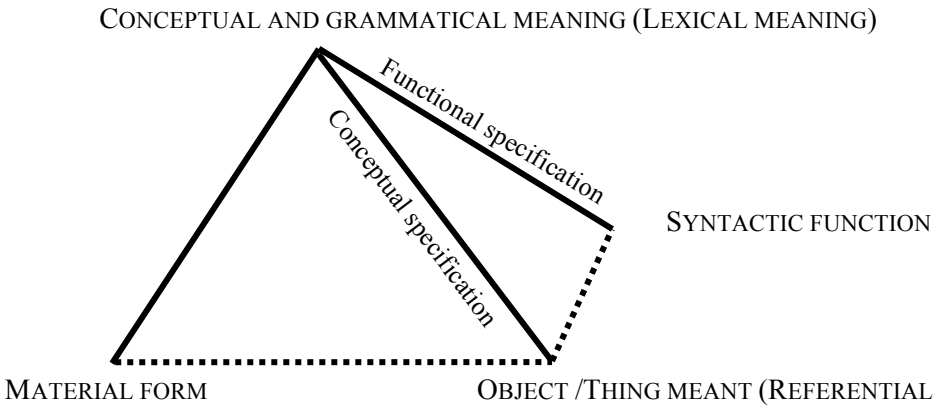
In view of this, recognizing that all morphemes are meaningful certainly is a step ahead (Dixon 2005: 6), especially in cognitive linguistics: "One of the more significant hypotheses of cognitive linguistics is that most if not all grammatical elements in fact do have meaning" (Croft 1999: 77; cf. Taylor 1999: 19; Langacker 2011; Taylor 2012,). In line with this, Wierzbicka (1996) starts with the vigorous claim: "Language is an instrument for conveying meaning". Commonplaces such as those of semantically empty moods (e.g. Harris 1974) or semantically (= conceptually) void copula verbs (e.g. Gutiérrez Ordóñez 1986: 17-23) are indeed untenable. In Spanish, the change from indicative to subjunctive in *Dice que viene / venga* changes the message from 'He says that she is coming' to 'He tells her to come'. There is also a conceptual difference between *I am tired* and *I get tired*. Plural-morphemes are grammatical morphemes that carry the concept of plurality and add this information to a word in utterance. In these cases, we have grammatical signs that add conceptual information. Consequently, there must be an interface between the semiotics of linguistic signs and grammar. Even if semiotic models are supposed to be developed by semiotics and lexicology, they must display interfaces that allow for their implementation into theories of grammar.

This interface is not taken into account by studies in the tradition of the semiotic triangle. To my knowledge, the semiotic models that have been developed on the basis of the semiotic triangle suggest more differentiated analyses of the conceptual-representational dimension of linguistic signs, but they do not consider grammatical meaning (cf. Ullmann 1975: 22, Hilty 1971, Heger ^{2}1976: 51, Baldinger 1984: 3-6; 209-220, Raible 1983, Blank 1997: 102, Taylor 1999, Casas Gómez 2002, Hummel 2009). The same holds for Bühler's (1982=1934: 24-33) proto-pragmatic semiotic model where the sign represents an object or

state of affairs ("Symbolfunktion" or "Darstellungsfunktion"). According to 2.1, Ullmann's critique of Bloomfield's "antimentalistic" attitude towards meaning is fundamentally correct, but we must reproach Ullmann in turn for not even mentioning grammatical meaning in the relevant chapter (Ullmann 1983: 54-79). Modern reflections on meaning follow this tradition. In the first systematic account of semantic change in Romance since Ullmann, Blank (1997: 23) argues that his option for studying the meaning of words is an option for 'lexical semantics' that excludes grammar. He justifies his decision claiming that only lexicon, not grammar, has a direct relation to the world and our perception of it. In the same tradition, lexical Prototype theory focuses on conceptual features of mental prototypes or extra-linguistic members of categories, and extends this focus to the natural context where the usage of linguistic signs is involved (scenes, scripts and frames; see Fillmore 1975, 1982). In cognitive semantics, frames, networks and processes of profiling concern only the conceptual domain (see Section 2.3.2). As far as I can determine, no semiotic model of the linguistic sign itself has been suggested in cognitive semantics. Langacker is right to stress the importance of meaning for grammar, thus criticizing the separation of semantics from grammar (1987: 12), and also to invoke the importance of morpho-semantic motivation in order to counterbalance Saussure's principle of arbitrary signs (*ibid*.), but he does not develop a semiotic model that would take these insights into account. Now, if we want the semiotic model to be apt to discuss Blakemore's hypothesis of conceptual and procedural meaning or the relation of semantics and grammar, conceptual models are too restrictive. The approaches in 2.1 only work because the one-sided focus of the authors on conceptual meaning never obliged them to question their rough descriptions of grammatical meanings and functions. The main effort was dedicated to exclude this aspect from semantics, not to integrate it, thereby contributing to the problematic specialization of linguistic disciplines in the 20th century that now obliges us to insist on their interfaces. In his early account of the word *semantics*, Read (1948: 92) concludes: "The specialized linguist should broaden his conception of meaning".

The semiotic triangle in Fig. 1 can be adapted to this insight if we divide the term *meaning* into the related dimensions of *conceptual meaning* and *grammatical meaning*. Then, however, a differentiated model that transforms the bi-dimensional semiotic triangle into a three-dimensional semiotic pyramid must be proposed:

Figure 2: The semiotic pyramid



This decision has important consequences. Semioticians and semanticists do not provide a differentiated analysis of the *material form* of a linguistic sign, since they all focus on meaning and reference (e.g. Lyons 1977: 96-99). By contrast, the semiotic pyramid obliges us to modify the traditional assumption that the material form of the linguistic sign is a simple 'sequence of sounds' (Saussure; also Langacker 1987: 11) or an unstructured "stimulus" or "symbol" (Ogden & Richards). To give an example, the English word *house* has a material form composed by the series A HOUSE, THE HOUSE, THE HOUSES, HOUSES (I use capital letters for the material form). These material forms correspond to different *grammatical meanings*. Even the morphologically unmarked form HOUSE, which would be used in traditional semiotic models, contains the grammatical meaning 'singular'. One might argue against this that the example clearly shows that this type of grammatical information belongs to syntax, because the grammatical morphemes are occasionally added for reasons that are located in the context. This is perfectly correct, but this point of view does not exclude the complementary one that considers a word to be not only composed by the less marked form, which is an arbitrary choice, but rather by the complete series of variants it offers for its combinations in syntax. Moreover, a verb would not allow the same morphological marks as a noun. The noun *house* as used in discourse will adopt one of the above mentioned forms. Hence, linguistic signs that we directly accede with data always contain a combination of conceptual and grammatical meaning. And when we learn *house*, we necessarily learn a singular form, that is, a form with grammatical meaning, not to mention the fact that we learn this concept as a member of the word-class of nouns. The word-class may even be morphologically marked at the level of lexicon, as in the case of the Spanish verb *cantar* 'to sing'. Here, the overt morpheme *–ar* specifies the grammatical meaning (or function) of the word.

Consequently, the material form of a linguistic sign is not a simple sequence of sounds or just 'one stimulus' but the material part of word structure[6]. Therefore the semiotic pyramid takes into account the basic assumption of morphology that in natural languages linguistic signs are morphematically structured, including the functional relevance of absent morphemes that have been called zero morphemes. Interestingly, the inclusion of the morphological variants of a material form parallels the traditional inclusion of polysemous meanings in the conceptual dimension. Reducing the material form of a linguistic sign to an unmarked representative (e.g. *house*) would be the same as reducing the polysemy of a sign to one basic or principal meaning, without speaking of the rest. In both cases, the main representative may play a major role, but it is arbitrary to reduce the material form of the meaning to a single component. A word like *house* has a limited range of functions which cannot be excluded from the semiotic representation of this word. This is why *conceptual polysemy* parallels *grammatical polyfunctionality* in the semiotic triangle (cf. 2.3). Hence, Langacker's claim for the upgrading of morphosemantic motivation in linguistic theory (see above) should not be limited to the conceptual domain but should also include motivated polyfunctionality, as in his own example of Engl. *staple* and *stapler*, especially if we also consider *a staple* and *to staple* (1987: 12). Obviously, the notion of morpho-semantic motivation, which is generally restricted to conceptual motivation, includes concept *and* (grammatical) function, and it would not be adequate to analyze the material form of these signs only in terms of "phonological representation (*ibid*.: 11)"; we instead have to assume a *morphematic representation*, that is a morphematically structured phonological representation, including morphemes that mark grammatical function, for example *–er* in *stapler* as a mark for *nomina agentis*.

In a given utterance, the syntactic context of the sign selects the form that corresponds to the activated linguistic function (e.g. *a loud* (adjective) *song* vs. *to sing loud* (adverb of manner)). The process that specifies the grammatical meaning for a concrete syntactic function is analogous to the one that specifies the conceptual meaning for reference. Fig. 2 therefore includes the dynamic processes of *conceptual* and *functional specification*. Grammatical meaning does not fully determine grammatical function in a given utterance, and in synthetic languages signs may contain more grammatical information, whereas in languages like English the grammatical meaning may leave a bigger part of functional determination to syntax and context in general, as shown by the role of direct conversion. The

[6] Blank (2001) recognizes that words contain 'morphological information', but the semiotic model he suggests is again reduced to the conceptual dimension.

terminological distinction in Fig. 2 between *grammatical meaning*, that denotes a property or series of properties of a word, and *function*, that refers to a morphologically and contextually specified grammatical task in discourse, solves also a terminological confusion: *Function* matches to what is analyzed by syntactic approaches: it is the specific syntactic function in utterance grammatical meaning is adapted to. The fact that in *Paul hits John* the former noun is the subject and that the latter is the complement depends on syntax. On the other hand, a finite verb could not replace these nouns. Consequently, nouns have grammatical properties that have to be taken into account when they are syntactically integrated. In view of this, the semiotic pyramid displays an operational interface with syntax. *Grammatical meaning* and *syntactic function* are clearly defined, in contrast to their widespread intuitive usage. *Grammatical meaning* refers to abstract ranges of contextual functions that can be attributed to a linguistic sign, whereas *syntactic function* refers to its specification in a given context. Obviously, we could also use *grammatical function* instead of *grammatical meaning*, as Bloomfield suggests (see citation above), opposing it to syntactic function in utterance.

As we are looking for the interfaces, we may also ask for the semantic-pragmatic interface of the semiotic pyramid. The answer is simple: *reference* and *function*, located at the bottom of the pyramid, offer this interface. In utterance, they are not only specified with regard to syntax and conceptual reference, but also for the pragmatic conditions including discourse function. On the conceptual side, the notion of "thing meant (Gardiner 1952: § 10)" is particularly adequate for this purpose, since it is open to inferential effects. A single sign cannot account for the 'thing meant' since contextual and situational information is required. It must consequently be related to notions such as *sense*, that is the specific contribution to a message or text (Coseriu 1994: 64-67; cf. Casas Gómez 2002: *passim*; Llopis Cardona 2014: 59-64; Penas Ibáñez 2014), or terms such as *relevance*, used in pragmatics (Sperber & Wilson 1995)

If there is a lack of discussion on the semantic-pragmatic interface, this is less a problem of the semiotic model but rather that of the separation of linguistic disciplines. Structural semantics explicitly excluded reference and concentrated on the mutual relation between conceptual meanings in the system of language (lexicon). Pragmatics dedicated its efforts to the conditions of usage, interpreting Wittgenstein in the sense of contextual determinism (see Givón 1986), excluding the fact that the linguistic sign adds meaning to the utterance. Consequently, reference tends to be neglected by both semantics and pragmatics. In most cases, reference is understood as self-explanatory and taken for granted. To give an example, studies on evaluative suffixes in Romance tend to fall short since semantic analyses

concentrate on conceptual meaning and pragmatic analyses on the situational conditions of usage, that is, pragmatic meaning (see Hummel 2015; cf. Brisard 2006). Reference tends to be excluded by both approaches, either because of the lexicon-oriented view of semantics that focuses on meaning, not reference, or because the contextualist approach in pragmatics studies looks at the extra-linguistic conditions of usage. However, reference is crucial for linguistic signs, since it is the main reason why we have and use signs. Moreover, reference is the function where the lexical concept meets the contextual and situational conditions of usage. In sum, the semantic-pragmatic interface exists, in both the semiotic triangle and the semiotic pyramid, but most linguists do not use it, since they try to separate semantics (*semantic meaning*) from pragmatics (*pragmatic meaning*). Roughly speaking, the victim of both approaches is reference. The same holds for the specification of function in utterance. Discourse markers are traditionally described in terms of discourse functions, that is, devices that fulfill functions determined by discourse (e.g. reformulation, correction). Research only recently insists more on the motivated relation between underlying grammatical meanings and derived functions in discourse (Hummel 2012).

In sum, instead of being conceived as a semiotic model for (conceptual) semantics, as in the case of the semiotic triangle, the semiotic pyramid is a semiotic model for linguistic analysis in general. Instead of being hermetically closed, it tries to offer operational interfaces for morphology, syntax and pragmatics. It may thus be termed the *Interface model of the linguistic sign*. Moreover, it takes into account the critique formulated by Langacker (2008) to traditional semiotic models and the relation of grammar and semantics. It may thus be used as a semiotic model which I claim to be a necessary complement for the study of lexical networks in cognitive linguistics.

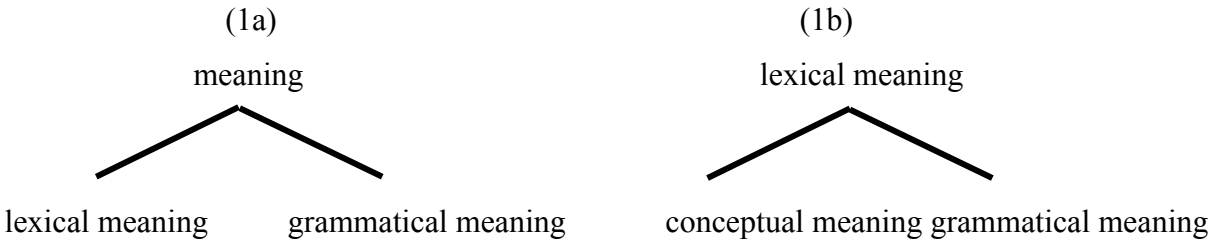
2.3. Related problems and solutions

2.3.1. Lexical meaning

Most linguists would not hesitate to say that lexical meaning corresponds to the conceptual meaning in Fig. 2 (e.g. Coseriu 1973: 371, Wierzbicka 1996: 244). In fact, work on lexical semantics generally deals with conceptual meaning of words using the term *lexical meaning* as an equivalent, often without definition. In the same vein, the didactic chart cited in the Introduction defines lexical meaning as conceptual meaning. However, as we have seen in the previous section, this analysis falls short since linguistic signs always appear in the lexicon as a unit containing conceptual *and* grammatical meaning(s). In English, where changes of

word-class systematically occur without morphological marking of the word (direct conversion), dictionaries subcategorize words like *stone* as noun, verb, etc. (e.g. Collins Cobuild 1987: *s.v.*). In the microstructure of the entries, definitions of meaning are usually subordinated to this classification. Hence, concepts are not independent from grammatical meaning.

This is reflected by the material form of the word. The notion of *stem* is the morphological counterpart of the conceptual meaning. Interestingly, the stem presupposes an artificial morphological isolation from the word: the stem *cant-* of Sp. *cantar* 'to sing' does not occur as such in language, nor is this the case for the concept that virtually corresponds to the stem. This is why studies on word formation cannot provide complete evidence for the derivational process: Is Sp. *cantar* a combination of stem and ending (*cant-* + *-ar*), is it derived from the noun *el canto* (*el canto* → *cantar*) or does derivation work the other way around (*cantar* → *el canto*)? The only evidence data provide is that we have either the verb *cantar* or the noun *el canto*, in both lexicon and speech. Thus if terms like *lexical semantics* or *lexical meaning* refer to words as a part of the lexicon or an utterance then the term *lexical meaning* should include both the conceptual and grammatical meaning, as it is indeed assumed in the semiotic pyramid. As a matter of fact, the process of *lexicalization* needs both types of meaning to be successful. Concepts (or "percepts") are lexicalized as nouns, verbs or adjectives, etc. (cf. Givón 1979: 321-333). The term *lexical meaning* should therefore be reserved for a lexicalized combination of a conceptual and a grammatical meaning. Then the term *lexical* is coherently motivated in line with related terms such as *lexicon* and the process of *lexicalization*. Its traditional usage should therefore be replaced by *conceptual meaning*. Hence, the conventional model (1a) has to be substituted by (1b)

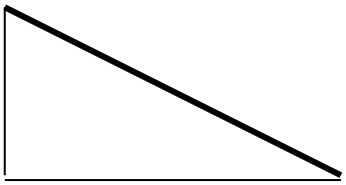


In an utterance, the lexical meaning (1b) is contextually specified with regard to conceptual reference and syntactic function.

2.3.2. Meaning and function

In 2.2 I have defined *syntactic function* as the part of grammatical meaning which is activated in and determined by a given context. Similarly, *reference* is the part of conceptual meaning that is activated and determined in a given context. Hence, the *function* of conceptual meaning is reference. If this is so, then the semiotic pyramid can be simplified by using the term *function* for both the conceptual and the grammatical specification in context. This is why *referential function* has been added in Fig. 2. The *referential function* operates a synthesis of the lexical concept with contextual co-determination (selection and modification of conceptual features).

The function of *referential specification* may appear to be rather restrictive from a cognitive point of view that stresses the capacity of linguistic signs to activate complex semantic networks (Langacker 2008: 39). But if the function of conceptual meaning is that of providing a tool for reference, then we can consider reference as an activator of mental semantic and pragmatic networks. Hence, this point of view offers an operational interface for functional and cognitive semantics. According to Langacker, *profiling* activates a specific element in a more complex contiguous structure. The capacity of profiling presupposes a linguistic sign that selects the thing meant. Thus the word *hypotenuse* selects one single element (highlighted in bold) of a contiguous structure called *triangle* (Langacker 1999: 28):



This is only possible because words have a specifying (selecting) referential function, since the contiguous extra-linguistic structure is not self-selecting. This point of view apparently conflicts with approaches that insist on the fuzziness of meaning (see Hummel 2009, 2011). However, the process of profiling provides evidence for the fact that cognitive semantics needs a semiotic model for single linguistic signs with profiling force, even if the focus is laid on semantic networks.

2.3.3. The interrelation of conceptual and grammatical meaning

Conceptual meaning and grammatical meaning do not simply coexist in lexicon and utterance. Grammatical meaning clearly affects conceptual meaning. Conversion from a noun to a verb, for instance, goes hand in hand with a dynamic reinterpretation of the nominal category as an event. If we transpose the noun *email* to the verb *to email*, this process affects the concept by

adapting it to its dynamic conceptualization as an event. The same holds for the specification of the adjectival and adverbial concept of Engl. *terribly* (← *terrible*) in *terribly good*, where the concept 'terrible' has to be adapted to emphatic metaphorical intensification. Word families provide abundant evidence for the processes of transposition, conceptual adaptation and lexicalization. To put it in other words, polyfunctionality is an important motor for conceptual development, including polysemy (see Hummel 2013). Polyfunctionality (or *multifuncionality*) is an important term in work on discourse markers. The semiotic pyramid offers an interface to discuss this aspect, which can further related to the discussion on conceptual and procedural meaning.

Given this, Langacker is right to integrate conceptual and grammatical meaning, arguing that nouns profile extra-linguistic substance as being a member of a (linguistic) category (1987: 183-213). In 2.1, I have argued that humans ordinarily do not use language to extensionally define classes of objects. It is possible, however, to say that nouns have a word-class specific categorizing effect (cf. Wierzbicka 1986, 1988: 468), even in the case of *idiot*. When we call someone an *idiot*, this person suffers a local intensional categorization. It should be noted, however, that categorization does not allude here to the delimitation of an extra-linguistic category but to the mentally operated categorization of a single object by a *linguistic* category in a given utterance. Hence, the virtual problem of the extensional definition of a class of idiots has no relevance for communication. The linguistic category is given and expressed by a word that belongs to a given word-class. As Wierzbicka puts it, word-class intervenes in this process. Coseriu (1973: 371) suggests the term *categorial meaning* for the way conceptual meanings are captured by word-classes.

This analysis brings to light another shortcoming of the semiotic triangle. The standard interpretation of the semiotic triangle is based on nouns. Linguists have already extended the notion of "object" in the semiotic triangle (Fig. 1) to "states of affairs" in order to avoid a narrow object type perception of reference (e.g. Bühler (1982=1934: 24-33)), but without leaving the domain of reference by nouns. It is clear, however, that nouns present ('categorize') extra-linguistic substance as objects (e.g. *the love*), whereas verbs present the same substance as an event (*to love*) and adjectives as a quality (*lovely*). Consequently, it is semiotically impossible to describe and explain such concepts at the level of lexicon without the categorizing effect of word-classes. The "concept-forming power of the word" (Leech 1974: 37) is not based on conceptual processes only, but also on the concept coining force of grammatical meaning, e.g. word-class.

At the level of utterance, the same type of 'categorization' links reference to syntactic function. Productive adaptations of reference to syntactic functions may diachronically be lexicalized and enter grammatical and conceptual meaning. Thus we can assume that the conceptual meaning 'very much' that appears in the polysemy of Engl. *terribly* has developed from a local context where the concept of *terribly* was productively adapted to the syntactic-pragmatic function of modification-intensification (*terribly good*). The local syntactic context is the modification of an adjective, whereas the local pragmatic function is emphatic intensification based on metaphor. For this reason, grammaticalization theory emphasizes the impact of 'local context' for diachronic development. The semiotic pyramid provides an operational interface for the analysis of productive innovation and diachronic change of meaning. The lines that converge in the summit of the pyramid symbolize the integrating force of linguistic signs. Instead of simply separating conceptual and grammatical meaning, or semantic and pragmatic meaning, that, consequently, are separately studied in specialized disciplines of linguistics, the semiotic pyramid insists on the cognitive and functional relation between these dimensions of meaning. Obviously, concept and function also converge in syntax, for instance when a noun is used as a verb. Hence, synthesis can be observed at both the level of lexicon and the level of utterance. In the same vein, it is not only reference that activates mental and lexical networks, as I have written above, but rather the lexical network that a word is linked with intervenes in the process of referential specification. Consequently, lexical networks and local contexts are related by a reciprocal and dynamic interpretative relation during the activity of speaking.

The so-called desemanticization process which allegedly characterizes grammaticalization (see Introduction) can now be more precisely described. The term *desemanticization* is generally used for the loss of conceptual features, that is, *deconceptualization*. This term is adequate but not much better since it also suggests a resultative process whereby a concept becomes fully lost, which is generally not the case. The correct term would be *reconceptualization*. This process includes a loss of conceptual features with regard to the basic concept, that is, a more abstract and flexible concept which fits with new functions. New conceptual features may be added as well. The reconceptualisation process is driven by a new syntactic or pragmatic function. Consequently, grammatical function changes as well. The intimate relationship between concept and grammatical function is correctly indicated by the semiotic pyramid (Fig. 2). In the case of oral discourse markers such as *well*, their specified functions in discourse are not fully independent from their basic adjectival meaning, but the process of reconceptualization is multifold and strongly

determined by cotext and situation, to the extent that apparently contradictory features such as 'ok' and 'however' may be integrated for rhetorical reasons, that is, pragmatic function (see 3.3).

Changes in meaning are not only generated by productive adaptations in utterance. Cognitively, speakers are perfectly able to conceive the result of changes of word-class at the level of lexicon, e.g. to imagine the effects produced by the derivation Sp. *cantar* → *el canto*. One might even argue that productive changes of word-class presuppose this type of cognitive insight. We do not need to give an answer to this here. The important point is to draw attention to the fact that change and adaptation processes may be situated at both levels: utterance and lexicon. Importantly, the same holds for conceptual meaning, since metaphorical and metonymical relations may be conceived at the level of lexicon, even if they are stimulated and activated by context. Hence, we could replace the simple lines that link conceptual meaning and referential function, on the one hand, and grammatical meaning and syntactic function, on the other, by arrows that point in the bottom up and the top down direction in order to symbolize the reciprocal relation that explains the sign specific synthesis of intensionally projected and descriptively reflected features in meaning. It comes out clearly that terms like *categorial meaning*, which implicitly assume that all words are lexicalized with a given word-class, have to be counterbalanced by *syntactic function*, since the long series of syntactic functions cannot be described as simple manifestations of word-classes, not even the syntactic polyfunctionality of one single sign (see 2.4).

The possibility to give a dynamic-productive interpretation of the semiotic pyramid offers a better basis for the traditionally conflictive discussions of lexicalist and syntacticist positions, because 'lexical meaning' now includes both conceptual and grammatical meaning. In fact, the model gives a coherent account for both the force of syntax (selection, adaptation, productivity) and the existence of tendencies to lexicalize local syntactic solutions. A verb like Pt. *falar* 'to talk' is strongly confined to intransitive use in European Portuguese, whereas in Brazil transitive usage is widespread as well. This means that the same word may lexicalize different grammatical features in the variationist architecture of the same language. This presupposes a productive basis of syntactic functional specification with possible lexicalization.

2.4. Functional paradigmaticization

At odds with the semiotic triangle in Fig. 1, which does not take into account morpheme structure, grammatical meaning and syntactic function, the semiotic pyramid allows us to

analyze the development and lexicalization of functional properties. From a genetic point of view, syntactic function is prior to grammatical meaning, whereas synchronic studies may consider most usages of a word as activation and specification of lexicalized conceptual and grammatical meanings in utterance. Moreover, it is important to note that linguistic signs do not stand alone. In the history of semantics, the belonging of conceptual meanings to *conceptual paradigms* (e.g. *small – big*, *left – middle – right*, etc.) has been widely discussed, for example by field theory in the tradition of Trier (1931). The formation of paradigms shared by series of signs is still more striking for grammatical meaning since words may belong to functional groups. Such *functional paradigms* usually show a higher degree of coherence than conceptual paradigms. To give an example, it is well known that intensifiers are a very productive zone in the lexicon because speakers are often looking for more expressive and impressive metaphorical solutions like *terribly good*. The recurrent metaphorical usage of deadjectival adverbs for emphatic quantification and intensification has a paradigmaticizing effect. Consequently, linguists may discuss functional paradigms like those of quantifiers, intensifiers, focus, etc. Bloomfield (1963: 266-268) suggested the almost forgotten term of *class-meaning* for the common features of paradigms. Such a process may imply morphologicization, that is, the usage of grammatical morphemes for functional paradigms, for example suffixes. Word-classes are a specific variant of functional paradigmaticization.

Paradigmaticization naturally develops on the basis of all the local combinations of conceptual and grammatical meanings in the communicative experience of a speaker. The basic constraint is that linguistic signs necessarily receive a function and a reference in discourse. As a consequence of this process, functional paradigms and even word-classes may be associated, at least to a certain degree, with conceptual features like ‘name for things’. In cases like *a stone* and *to stone*, it may be felt that a given concept is (re-)conceptualized for a word-class. This is why semantic terms like *substantive* or *conjunction* have been suggested for word-classes. The fact that abstract functions of paradigms go hand in hand with conceptualizations may cognitively link conceptual features with functional features, at least in terms of prototypicality or general tendencies. This shows that it is pointless to give an exclusively functional or conceptual definition of word-classes since both converge in each verb, noun, adjective, etc.

This point is crucial for the analysis of function words and related problems such as procedural meaning. So-called ‘content words’ like *stone* do have grammatical meaning, inasmuch as *stone* is a noun, but their conceptual meaning is not used in order to support the

noun-function. By contrast, in the case of function words, for example conjunctions, concept and function form an intimate relation insofar as the concept itself supports the connection of arguments. This is exactly why so-called 'function words' differ from 'content words'. From the point of view of diachronic grammaticalization leading to function words, rather than operating a change from "lexical" to "grammatical" meaning, as Sweetser argues (see Introduction), conceptual meaning is adapted via abstraction in order to support a given function. If there is change to "grammatical meaning", this type of meaning is necessarily a combination of an abstract concept with a grammatical function (including functions in discourse).

The theoretical solutions offered by the semiotic pyramid for the interplay of lexicalized grammatical meaning and local syntactic function move between two extremes. On the one hand, we can imagine single linguistic signs that are not at all specified for syntactic function(s) at the level of lexicon; on the other, there may be linguistic signs whose syntactic function is strongly predetermined at the level of lexicon. From a typological point of view, synthetic and analytic languages behave in different ways with regard to tendencies of lexicalization or free choice of syntactic function, at least for some domains (e.g. some word-classes). Extreme positions which assume that every word in a given utterance belongs to a word-class, as it is generally trained in exercises at school, or opposed positions which claim that function is fully determined by syntax cannot give a coherent account of the functional specifications in syntax. The reality is that there is a dynamic relation between productive functional specification in syntax and its eventual functional lexicalization as part of a word-class or another type of functional paradigm. In cases of lexicalized grammatical meaning, syntax selects functional features that are available in the grammatical meaning and provides further specification. However, cases like *real good*, *the above figure*, *probably* (in the function of an answer) call into question simplistic views of their membership in word-classes. *Real*, *above* and *probably* have a polyfunctional behavior that defies word-class membership. Traditionally, syntacticians prefer the term *syntactic homonymy* (cf. Jespersen (1909-1949), vol. 6: 84) instead of *polyfunctionality*, probably because the assumption of unrelated syntactic functions facilitates an exclusively syntactic analysis (which reflects an effort to separate a specialized discipline of syntax from other linguistic disciplines), but there can be little doubt that the usages of *real*, *above* and *probably* are mutually motivated by properties of the linguistic sign. The basic relation is that of polyfunctionality, with homofunctionality as a special variant caused by lost motivation or other processes.

Polyfunctionality includes productive usage and clearly exceeds the boundaries of word-classes.

The relation of lexicalized functional features and the range of syntactically specified functions are specific for each linguistic sign and they have to be investigated with empirical data. A good example is direct conversion. Traditionally, direct conversion presupposes a change of word-class, as in *the love* and *to love*. Again, the grammatical change includes an object-type conceptual adaptation in the first case, and an event-type adaptation in the second. However, in the following series, the same concept is used for several syntactic functions without conceptual change:

(2) Sp. *bastante grande*, *bastante bien*, *hablar bastante*, *bastantes casas*
'quite big', 'quite well', 'to speak quite a lot', 'quite a lot of houses'

In (2) the Spanish word *bastante* 'quite (a lot)' is used as a modifier of an adjective, an adverb, a verb and a noun, respectively. Traditionally, it would be called an adverb in the first three cases and an adjective in the last case. But is there really a change of word-class or does the obsession to classify all words into classes hide the simple fact that the same word is used for different functions in syntax? Moreover, the classification as an adverb in the first three cases artificially obscures the fact that this word-class covers several functions. The well-known heterogeneity of the word-class of adverbs invalidates the usage of this category for functional analyses; these have to start instead from functional paradigms (artificially, arbitrarily) located within the same word-class. Consequently, some authors define the term *conversion* as a change of syntactic functions (e.g. Plag forthc.). Syntactic function is indeed a universal property of the usage of signs in utterance, whereas the lexicalization of grammatical meaning and its further paradigmaticization are an option. Nevertheless, the traditional definition of conversion is not inadequate in the case of *to love*, *the love*, and *lovely*, where there is more than productive polyfunctionality of the same concept, but lexicalization of the concept as a member of word-classes. The semiotic pyramid allows for a dynamic analysis not only of productive polyfunctionality (syntactic conversion / transposition), but also of additional effects in those cases where the previous lexicalization of a word as a member of a word-class or a functional paradigm intervenes, as shown by cases like Engl. *the above figure*, It. *il allora ministro*, Port. *o então ministro*, Ger. *der obige Fall* etc. (cf. Hansen & Strudsholm 2008). Hence, we do not need either a lexicological or a syntactic definition of *conversion* but a dynamic definition that relates both aspects.

2.5. Lexical morphemes and grammatical morphemes

Bloomfield's (1963: 264) influential distinction of lexical morphemes and grammatical morphemes is useful for lexicographic and grammaticographic classification. However, it is problematic from the functional point of view, insofar as it suggests a material separation of two types of morphemes that matches the linguistic domains of lexicology and grammar (cf. Martinet 1980: 118-119). According to this type of analysis, lexical morphemes are supposed to convey information on the extra-linguistic world whereas grammatical morphemes are used to insure intra-linguistic relational functions. Introductory lectures in linguistics reinforce this vision, as shown by the didactic chart (see Introduction). In the same vein, Delbecque's (2002: 76-78) manual of Cognitive Linguistics retakes Bloomfield's distinction, specifying that independent grammatical morphemes may be called *function words*.

The vision of two different domains is often artificially strengthened by the choice of linguistic examples. According to Portolés (2008: 183-184), for example, the meaning of the Spanish conjunction *y* 'and' is 'not directly related to the knowledge of the world', as is the case with Sp. *sidra* 'cider'. Examples like *cider* or *tree* exemplify lexical morphemes in a prototypical way and suggest reference to concrete extra-linguistic objects, which is not the case for grammatical morphemes like conjunctions, inflectional morphemes or discourse markers. However, as we have seen above, even words like *tree* are lexicalized as a word-class. They therefore contain grammatical information. The term *lexical morpheme* is misleading since grammatical information belongs to the word. The artificial reduction of the function realized by lexical morphemes to noun-bound concepts tends to hide the real role of conceptual meaning.

A conjunction is not less than a *lexical morpheme*; it is simply a lexical morpheme used for connection in discourse (cf. Montolío 2001: 29-34, Garcés Gómez 2008: 207). Conjunctions like *and* and *or* are considered grammatical words, function words or grammatical morphemes. Some even say that they do not have 'lexical meaning' or 'conceptual meaning'[7]. Now, what is the difference between *and* and *or*? They do not differ in grammatical meaning since they both are conjunctions. In contrast, they clearly differ regarding to the logical connection they express. As they share grammatical meaning, this can only be accomplished through conceptual meaning. In fact, *and* combines a connective grammatical function with an inclusive conceptual meaning, whereas *or* combines the same

[7] To give an example: "las conjunciones *pero* o *aunque* […] carecen de una función propiamente designativa o referencial y no tienen, por tanto, ningún significado conceptual. […] Tampoco se puede decir que otros elementos gramaticales, como la conjunction *y* […] significan algo conceptualmente traducible […] (Elvira 2009: 164)". ('the conjunctions *pero* 'but' or *aunque* 'although' […] lack a denotative or referential function and consequently do not have any conceptual meaning. […] Nor can we say that other grammatical elements, such as the conjunction *y* 'and' […] mean something we could translate conceptually').

connective function with an exclusive concept. Hence, both grammatical morphemes do have conceptual meaning. This conceptual meaning lends support to the logical connection they convey.

The only way to assume that function words do not have 'lexical meaning' is to reduce this type of meaning to extra-linguistic reference directed to an object. This approach is misleading, since it is based on a special type of concept, instead of being defined for all referential domains that may be covered by concepts. It is indeed inadequate to assume that conjunctions do not have extra-linguistic reference. It is the heritage of structuralism with its immanent vision of linguistic function that induces us to assume that grammatical words are used to relate linguistic units, and thus have an intra-linguistic function without reference to the extra-linguistic world, whereas lexical words have extra-linguistic function / reference.

Is it really true that conjunctions only have intra-linguistic functions? Certainly not, since they not only connect phrases, sentences, etc. but ideas, that is, units of thinking. To put it another way, by connecting phrases and sentences they connect the content of arguments in discourse. Hence, if they are considered to have only intra-linguistic tasks, we would have to assume that thinking is intra-linguistic as well. This would shed a doubt on the instrumental role of language for thinking and impose the deterministic view of Whorf's (1956) linguistic relativism in its most extreme reading. In fact, thinking is not simply intra-linguistic but mental. Thinking is not determined by but related to language structure. Logical connections of thoughts indeed belong to our knowledge of the world and may be expressed by conjunctions such as *and* and *or*. To put it in other words: they refer to types of logical connections. This analysis does not change if we look at so-called lexical words: When a word like *lake* refers to an object that only exists in our mind, since there is no lake around, this thing meant also belongs to our thoughts.

What really happens is that words like *and*, *or*, *but*, etc. have a concept that is directly used to connect sentences and thoughts. This is why we indeed may consider them as grammatical words or function words. But it would not be correct to say that they do not have 'lexical meaning' in the sense of 'conceptual meaning'. They combine conceptual with grammatical meaning, or more than one in cases of polysemy and polyfunctionality. In light of the conceptual-procedural distinction, it is important to stress that the specificity of such function words is to use a concept for functional purposes. This is less evident for nouns, where the concept is not selected as a support for the syntactic functions of a noun. Hence, function words are specific words, but the specificity does not consist in their being conceptually void words that combine linguistic units. They do have concepts which support

their grammatical (syntactic) function. In sum, our knowledge of the world includes knowledge on how to combine things and ideas in our thoughts. And our language contains words which *refer to* the ways thoughts are connected. They are as referential as the word *tree*. In sum, our lexicon has items whose lexical meanings cover the whole domain of knowledge.

3. Conceptual and procedural meaning

3.1. The conceptual-procedural distinction in light of the semiotic pyramid

We have seen that conjunctions like *but*, *and*, *or*, etc. not only link phrases and sentences on a strictly intra-linguistic functional level but also link thoughts. The conjunctions *and* and *or* differ conceptually, not functionally. They are function words because their concepts stand for logical relations reflected by syntax. We can even say that they *represent* logical concepts. This is indeed incompatible with Blakemore's formulation "[Linguistic meaning] may be either representational or procedural [but not both]" (see Introduction), at least if we equate *representational* and *conceptual*. The extra-linguistic world consists not only of things but also of thoughts, ideas of things, logical relations between thoughts, etc., and language has signs to represent all this. This analysis is compatible, however, with formulations such as "elements of linguistic structure map directly onto computations themselves" and elements that "encode instructions for processing propositional representation", that appear in the same citation (see Introduction). The fact is, however, that Blakemore does not share this point of view, since she argues against Ifantidou (1993) that sentential adverbs like *frankly* "encode a procedure rather than a concept (2007: 59)". For those who feel that *frankly* encodes a procedure on a conceptual basis, this answer is not convincing. As pointed out by Blakemore (1996: 345-346) herself, apposition markers like *in short* "encode conceptual rather than procedural meaning". However, would it not be more convincing to say that they encode both of them, and that conceptual meaning supports (and has been chosen for) procedural meaning, up to the point that the *function* of *in short* in discourse can be considered as a fusion or synthesis of conceptual and procedural meaning? The examples show that Blakemore feels obliged to opt either for conceptual meaning (apposition markers) or for procedural meaning (sentential adverbs). Blending is excluded.

The crucial problem is that Blakemore does not provide empirical evidence for her assumption that "encoded instructions" are not conceptual. In fact, Blakemore's solution to this problem is not empirical but theoretical, insofar as conceptual meaning and procedural meaning appear to be projections of the technique of separating the propositional content from

the rest of the utterance (details in Blakemore 2002: 89-148). This linguistic technique has proved to be a helpful heuristic instrument, but it operates an artificial logic-based intervention on utterances. Hence, the radical opposition of concept and procedure can be considered as an artifact, and Blakemore's argumentation is not completely free from circular reasoning. This is why independent research on the conceptual nature of sentential adverbs and other devices does not corroborate Blakemore's hypothesis. For Blakemore, conceptual meaning depends on proposition, which is perceived as the only representational device in utterance. Hence not propositional devices cannot be conceptual.

Empirical data do not confirm this assumption. Recent empirical studies on the conceptual-procedural distinction are almost unanimous that there are at least some linguistic signs that contain both conceptual and procedural meaning. Ifantidou (1993) calls the attention to sentential adverbs like Engl. *frankly*, Murillo Ornat (2000) adduces reformulation markers like *in other words* (cf. Pons Bordería 2008, Murillo Ornat 2010, Llopis Cardona, in print), and Fanego (2010: 200), in a synchronic and diachronic study on Sp. *de hecho* 'in fact', adds to the citation quoted in the Introduction: "Unlike DMs, sentence adverbials have *conceptual* meaning […]". In line with these findings, Fraser (2006: 32) argues on a more fundamental level:

> I have challenged the claim that a linguistic form must be analyzed as encoding either conceptual or procedural information, but not both, by showing that forms that have been claimed to have only procedural meaning do indeed encode conceptual information, and vice versa. Thus, the thesis that relevance theory proffers, namely, that semantic meaning is of two mutually exclusive types, is untenable. Indeed, I suggest that every linguistic form potentially contains three types of semantic information: procedural, which specifies the role it plays in the interpretative structure of the sentence; conceptual, which specifies its representational content; and combinatorial, which specifies with what constituents and in what way it may combine to produce more complex semantic structures.

3.2. Function words, procedural meaning, and implicature

Looking at the semiotic pyramid in Fig. 2, one could argue that the term *procedural meaning* runs together with *syntactic function* and its supporting grammatical meaning. However, the term *procedural meaning* does not refer to a single dimension of meaning but to the whole meaning of a sign. According to the definition, all signs that do not represent the propositional content convey only procedural meaning. Consequently, the term runs parallel to terms like *function word* in traditional grammar, that is, words whose meaning is characterized by an abstract meaning that merges concept and syntactic function. If this is correct, then discourse markers are procedural devices because they are specific type of function words (cf. Llopis Cardona 2014: 64-67). This is the reason why the discussion on procedural meaning covers a wide range of units that include conjunctions, sentential adverbs, and different types of discourse markers. Even interactive pragmatic markers are, fundamentally, function words.

It might be objected that this is only a terminological solution which does not directly provide insights into the nature of discourse markers. This is correct insofar as the definitive task of the linguist is to describe and explain the specific nature of each type of function word. Put in another way, we have to point out the differences between discourse markers and sentential adverbs. Nevertheless, it is not a good solution to use terms like *guide*, *procedural meaning*, *operator*, *instruction*, *computational encoding*, etc. for the description of discourse markers, since they mask their grounding on fundamental semiotic principles. Terminological hermeticism of specialized linguistic disciplines is an important problem we have to tackle when we seriously want to look at the interfaces. Under conditions of linguistic hermeticism, it is heuristically important to start an analysis from the most basic level. I have said that conjunctions like *and*, *but* and *or* merge concept and syntactic function, converting them into the two sides of the same coin that we may label *function word*. But what about the discourse marker functions of *and*, *but* and *or* (see e.g. Schiffrin 1987: 128-190)? It is probably correct to argue, from a semiotic point of view, that both conjunction and discourse marker are function words. Nevertheless, they do not realize their functions in exactly the same way. The solution cannot be to say that conjunctions and discourse markers are all the same. But what exactly is the difference?

As in the case of the conjunctions *and* and *or*, discourse markers lexicalize concepts that refer to the connection of arguments in discourse, e.g. *well*, or operational concepts, e.g. interactive *you know*. However, discourse markers tend to be used with wide ranges of inferential interpretation, which is economic for informal oral communication where the interlocutors know each other, share the same situation and probably have much of their background knowledge in common. Hence, the usage of discourse markers is defined by the supplementary effects of implicature or "inferencing", as Traugott & König (1991) put it from the point of view of grammaticalization. These effects are stimulated by 'local' syntax and prosody, as grammaticalization theory would say, and some even suggest specific terms like *discoursization* or *pragmaticization* (e.g. in Jucker & Taavitsainen 2010). These processes reflect a basic property of discourse markers: they emerge from underlying word-classes or phrases. Consequently, their meanings emerge from underlying concepts and grammatical meanings via inferential interpretation in 'local contexts'. Terms like *guide*, *operator*, *connectives*, etc. probably have been suggested because they allude to the important doses of inferentiality the signs contain, in contrast to conjunctions in written syntax. Instead of confounding inferentiality with the lack of conceptual meaning, eventually identifying it with procedural meaning, we should concentrate on the analysis of the interaction of a preexisting

concept with local inferential conditions. Hence, the question is how inferential processes act on given conceptual and grammatical meanings.

It follows from this that, while it is true that pragmatic factors have a deep impact on discourse markers, it would not be adequate to rule out semantics, that is, the role of underlying conceptual and grammatical meaning (Llopis, in print). This, however, was the starting point of the discussion on procedural meaning (Escandell *et al*. 2011: XVII):

> In the 1970s a debate was open among the philosophers of language with respect to the limits of a theory of meaning and the borderline between semantics and pragmatics. One of the most pervasive challenges that a truth-conditional semantic theory had to face was the existence of linguistic items that did not seem to play any role in the determination of propositional content: discourse connectives presented a major case in point. There was indeed a general agreement about the fact that linguistic items such as *therefore*, *so* and *after all* do not belong to semantics, since they do not contribute to the truth-conditions of the proposition expressed by the utterances in which the occur; their contribution was rather treated as a matter of pragmatics […]

Thus, the main problem was the attempt to separate semantics from pragmatics instead of considering their interfaces.

As in all considerations of linguistic development, analysis has to consider both productive usage and its possible result, e.g. lexicalization or grammaticalization. The counter-argumentative usage of Engl. *well* and Sp. *bueno* 'well' is based on the lexicalization of its productive rhetorical usage which combines the overt, but only alleged acceptance of a previous argument with the introduction of a deviant argument. Once lexicalized, (parenthetical) discourse markers may indeed be seen as devices that point "to the kinds of implicatures and the kinds of explicatures respectively the hearer is expected to arrive at (Rouchota 1998: 122)", rather perceived as guides being than as fully explicit connectors and operators. In most cases, the underlying concept is still transparent. This does not mean, however, that the morpho-semantic motivation is always directly relevant, but a more subtle type of relevance is generally felt, even in extreme cases like that of contra-argumentative *well* that rhetorically turns the original motivation of acceptance to the contrary.

3.3. Function words in written texts and oral discourse

Discourse markers of the type studied by the pioneering work of Gülich, Schiffrin and Weydt are typical for spontaneous, informal oral communication, whereas they tend to be excluded from written texts. Hence, discourse markers in written texts are not the same as in oral discourse. This is of course roughly speaking, since discourse markers such as Sp. *incluso* 'even' or Engl. *in fact* are acceptable in both, but the impression of two worlds of function words is so strong that modern grammars generally include sentential adverbs in the chapter on adverbs and introduce an independent chapter for discourse markers. In written discourse,

function words tend to appear syntactically integrated, with limited tolerance for parenthetical information based on inference (e.g. apposition markers), which are only accepted as satellites of integrated immediate constituents. It would not be false to say that conjunctions are discourse markers that connect units under the conditions of written syntax and full explicitness, while connectives in oral communication are conjunctions that are created under the conditions of asyndetic syntax and inferentiality.

Consequently, it is not that written texts do not have discourse markers, but they are less based on inference and receive other names. Written discourse also has longer series of discourse markers (function words) for a given function, since the imperative of explicitness stimulates the development of conceptually subcategorized functional paradigms such as reformulation (*that is*, *to put it in other words*, etc.; see Cuenca 2003). Explicitness is also the reason why their conceptual motivation is often transparent, morphologically and semantically. In the tradition of writing, the lexicalization of discourse functions tends less to go hand in hand with semantic bleaching or morphological change. Writers often avoid *actually* 'in fact' or *now* 'however' because they feel that their connective meaning should be morphologically transparent. For the same reason, the metaphorical usage of French sentential adverbs such as *naturellement* 'naturally', *curieusement* 'curiously', etc. was criticized by the rationalistic tradition of grammar, arguing that they should conserve the original motivations 'in a natural way' and 'in a curious manner'. Hence, inferential reinterpretations are felt to disturb the maxims of explicitness and transparency in written communication. Discourse markers like Engl. *in fact* and Sp. *de hecho*, that are fit for both oral and written discourse, normally conserve morpho-semantic transparency (cf. Fanego 2010). Instead of concluding that they are not grammaticalized since they do not fulfill the criterion of morphological, syntactic and semantic change, as Fanego claims, it is important to note that writing differs from speaking in this aspect. They are grammaticalized under the natural conditions of the written code and the cultural normative imperatives of writing. This also seems to be one reason for the fact that studies on sentential adverbs used for writing are more inclined to assume conceptual meanings for procedural devices.

Procedural linguistic sign is the term that pragmatics and discourse analysis have chosen for linguistic signs which are (mainly) used for the construction of discourse in its internal and interactive dimensions. It comes as no surprise that, from this point of view, the center of this type of function words is formed by oral discourse markers and extends at its margins to traditional sentential adverbs and conjunctions, as in the whole discussion on the conceptual-procedural distinction. In the complementary perspective, traditional grammar

considers discourse markers as marginal devices, especially because their status appears to be parenthetical if we concentrate on the immediate constituents of (written) syntax. In oral syntax, parenthetical status is not marginal but standard; it is rather the complex integrated hypotactic structures that are marginal in informal oral communication. Hence, the focus that linguistic disciplines lay on the continuum of function words creates prototypical visions of what a function word is in traditional grammar based on writing and a procedural 'item' in pragmatics based on speaking.

3.4. Do syntactic functions constrain referential concepts?

Even if the number of linguistic functions considerably exceeds the functions that are usually described in traditional grammars, it seems to be clear that their number is rather limited in comparison with the countless concepts that are lexicalized by the words of our lexicon. We may therefore hypothesize that function exerts a restrictive and adapting force on conceptual meaning, or, as Langacker (2011: 31) puts it from a broader perspective: "language is shaped and constrained by the functions it serves". This happens indeed with words like *terribly* and *incredibly* when they are used for emphatic intensification, for example in *terribly* (*incredibly*) *big*. In these cases, the conceptual meaning of the adverbs is metaphorically adapted to emphatic intensification, that is, to syntactic and pragmatic function. From the genetic point of view, this productive effect first happens at the level of utterance. It may then be lexicalized if its usage becomes generalized, according to the principles of the semiotic pyramid. Similar cases are sentential adverbs like *curiously*, *naturally*, etc. which have diachronically adapted their manner meaning to the function of epistemic presentation ('I find it curious / natural that …'). Many recent studies have been dedicated to this type of diachronic evolution. The process provides evidence for the hypothesis that the adaptation of concepts to functions drives the development of polysemy, or, to say it in other words, polyfunctionality drives polysemy (Hummel 2013). Importantly, the underlying concepts of *curiously* and *naturally* subcategorize their epistemic presentational function, that is, both adverbs develop the same function (paradigmatization), but the underlying concepts color this function in a different manner. Hence, their presentational function is genetically motivated by the underlying concepts. This would be the answer the semiotic pyramid provides to Schwenter & Traugott's (2000: 22) question about the origin of such "very fine scalar distinctions" between members of the same functional paradigm.

According to Leonetti & Escandell (2004) and Escandell & Leonetti (2011), conceptual contents and procedural contents differ in that the former are flexible and the latter

rigid. At first glance this matches with the assumption of a restrictive force exerted on concepts by linguistic function. On the other hand, we cannot negate the fact that in series like (2) modifiers are functionally flexible without necessarily adapting their conceptual meaning, since the same word may be used as a modifier of verbs, adverbs, adjectives, nouns and, eventually, phrases or sentences. Hence, the reality is that both the conceptual meaning and the grammatical meaning of a linguistic sign prove to be adaptable to specific reference and syntactic function in discourse, as shown by Fig. 2. In fact, it is not only concepts that adapt to syntactic functions, but also syntactic functions that are selected by concepts. This is the case for function words. A conjunction like *but* is based on a concept that refers to a logical relation in human thought. This relation strongly determines its combinatory features. In other words, its syntactic functions and distribution, which could be used for the definition of its word-class, depend on its conceptual meaning or are interdependently related to it: they are two sides of the same coin, and this is how speakers use the conjunction.

From the abstract standpoint of lexicalized signs, both components of meaning that are located at the top of the semiotic pyramid are flexible. Conversion would not be possible without flexible grammatical meaning. Instead of attributing rigidity to the procedural meaning of a sign, we have to attribute it to the specifying force of its usage in a given context. In other words, the so-called 'local' context is responsible for this phenomenon, affecting both conceptual meaning and grammatical meaning. This is so because language in discourse is an instrument that ensures communication. This function implies the specification of both conceptual reference and syntactic function. Flexibility is a general characteristic of linguistic signs in the lexicon, and specification is a general characteristic of 'local' usage. Hence, it is the local context that exerts grammaticalizing constraints on a linguistic sign, not only regarding to its grammatical meaning but also regarding to its conceptual basis. To come back to Leonetti & Escandell, the effect of the numeric imbalance of syntactic functions and concepts in language is not explainable in terms of conceptual flexibility and functional rigidity: the real effect is that function drives *paradigmaticization*, that is, series of conceptually different items that are used for the same function (cf. 3.4; see also Lehmann 1985, Elvira 2009). Concepts are responsible for the internal differentiation of such functional paradigms.

4. Conclusion

In a certain sense, one of the conclusions is what some always knew: words combine conceptual and grammatical meaning. Nevertheless, specialized linguistic research tends to

ignore this fundamental principle. The semiotic triangle of Ogden & Richards is hermetically sealed for morphology and syntax. It therefore was replaced by a semiotic pyramid in the present paper. This pyramid does not conceive the material form of a linguistic sign as a simple sequence of sounds but as a morphematic and, eventually, syntactic structure, in the case of complex signs, e.g. constructions. At the level of meaning, grammatical meaning has been integrated. In some cases grammatical meaning corresponds to morphemes in the morpheme structure. In utterances, linguistic signs are specialized for reference and function. It has been argued that functional specification interacts with conceptual specification, e.g. when *terribly* is used for intensification in *terribly big*. As a consequence, the semiotic pyramid is a model that offers operational interfaces for morphology, syntax and pragmatics. It has therefore been named the *Interface model of the linguistic sign*.

The interdependency of conceptual and grammatical meaning in the semiotic pyramid applies also to the conceptual-procedural distinction in pragmatics. Hence, Blakemore's material dichotomy of signs that are either procedural or conceptual violates basic semiotic principles. The so-called procedural 'items' or 'markers', that often avoid receiving the designation of signs or words, are function words that use a conceptual meaning for the construction of discourse. This holds for conjunctions in traditional syntax as well as for discourse markers in pragmatics. These differ, however, insofar as discourse markers are traditionally used in informal oral conversation, where asyndetic ("parenthetical") syntax and implicature play a major role. Consequently, oral discourse markers are characterized by a complex interplay of conceptual and grammatical meaning with implicature. The prominent role of implicature debilitates the direct impact of the conceptual basis of a discourse marker, up to the point that Engl. *well*, in spite of overtly (conceptually) accepting something, is often used with contra-argumentative intentions. By contrast, discourse markers in written communication are closer to fully explicit conjunctions and sentential adverbs. As a consequence, discourse analysis and grammaticalization theory have to replace their monolithic perceptions of language by that of a differentiated architecture that offers specific conditions for the creation and usage of "procedural" items.

Despite claiming that linguistic research should upgrade the relevance of interfaces and develop a more synthetic view of language, I do not deny the interest of specialization in linguistics. However, after a century of specialization and analytical separation in the field, scientific progress seems to benefit from approaches that focus on the interfaces of disciplines and general principles of linguistics.

Bibliography

Alfonso el Sabio. 1945. *Setenario*, ed. by Kenneth H. Vanderford, Buenos Aires: UBA.

Athanasiadou, Angeliki, Canakis, Costas & Cornillie, Bernd. 2006. (eds.), *Subjectification*: *Various paths to subjectivity*, Berlin: Mouton de Gruyter.

Baldinger, Kurt. 1984. *Vers une sémantique moderne*, Paris: Klincksieck.

Barsalou, Lawrence W. 1992. "Frames, concepts, and conceptual fields", Lehrer *et al*., 21-74.

Blakemore, Diane. 1987. *Semantic constraints on relevance*, Oxford: Blackwell.

Blakemore, Diane. 1992. *Understanding utterances*, Oxford: Blackwell.

Blakemore, Diane. 1996. "Are apposition markers discourse markers?", *Journal of Linguistics* 32, 325-347.

Blakemore, Diane. 2002. *Relevance and linguistic meaning*. *The semantics and pragmatics of discourse markers*, Cambridge: University Press.

Blakemore, Diane. 2007. "Constraints, concepts and procedural meaning", Burton-Roberts, Noel (ed.), *Pragmatics*, Basingstoke: Palgrave Macmillan, 45-66.

Blank, Andreas. 2001. *Einführung in die lexikalische Semantik*, Tübingen: Niemeyer.

Blank, Andreas. 1997. *Prinzipien des lexikalischen Bedeutungswandels am Beispiel der romanischen Sprachen*, Tübingen: Niemeyer.

Bloomfield, Leonard. 1963 = 1933. *Language*, New York, etc.: Holt, Rinehart & Winston.

Bréal, Michel. 1883. "Les lois intellectuelles du langage. Fragment de sémantique", *Annuaire de l'Association pour l'encouragement des études grecques en France* 17, 132-142.

Bréal, Michel. 1982 = 1913. *Essai de sémantique* (*science des significations*), Brionne: Montfort.

Brisard, Frank. 2006. "Logic, subjectivity, and the semantics/pragmatics distinction", Athanasiadou *et al*., 41-74.

Bühler, Karl. 1982 = 1934. *Sprachtheorie*. *Die Darstellungsfunktion der Sprache*, Stuttgart / New York: Fischer.

Casas Gómez, Miguel. 2002. *Los niveles del significar*, Cádiz: Universidad de Cádiz.

Collins Cobuild. *English language dictionary*. 1987. John Sinclair (ed.), London / Glasgow: Collins.

Company Company, Concepción. 2004. "¿Gramaticalización o desgramaticalización? Reanálisis y subjetivización de verbos como marcadores discursivos en la historia del español", *Revista de Filología Española* 84,1, 29-66.

Coseriu, Eugenio. 1973. *Die Lage in der Linguistik*, *Innsbrucker Beiträge zur Sprachwissenschaft* 9.

Coseriu, Eugenio. ^{3}1994. *Textlinguistik*, Tübingen / Basel: Francke.

Croft, William. 1999. "Some contributions of typology to cognitive linguistics, and vice versa", Janssen & Redeker (eds.), 61-93.

Crystal, David. 1991. *A dictionary of linguistics and phonetics*, 3rd edition, London: Blackwell.

Cuenca, Maria Josep. 2003. *Two ways to reformulate*: *a contrastive analysis of reformulation markers*, *Journal of Pragmatics* 35, 1069-1093.

Davidse, Kristin, Vandelanotte, Lieven & Cuyckens, Hubert. 2010) (eds.), *Subjectification*, *intersubjectification and grammaticalization*, Berlin / New York: de Gruyter.

Delbecque, Nicole. 2002. (ed.), *Linguistique cognitive*, Bruxelles: De Boeck / Duculot.

Dixon, R.M.W. 2005. *A semantic approach to English grammar*, Oxford: University Press.

Drescher, Martina & Frank-Job, Barbara. 2006. (eds.), *Les marqueurs discursifs dans les langues romanes*, Frankfurt, etc.: Lang.

Elvira, Javier. 2009. *Evolución lingüística y cambio sintáctico*, Bern, etc.: Lang.

Escandell Vidal, Victoria & Leonetti, Manuel. 2011. "On the rigidity of procedural meaning", Escandell *et al*. (eds.), 81-102.

Escandell Vidal, Victoria, Leonetti, Manuel & Ahern, Aoife. 2011. (eds.), *Procedural meaning*: *problems and perspectives*, United Kingdom, etc.: Esmerald.
Fanego, Teresa. 2010. "Paths in the development of elaborative discourse markers: Evidence from Spanish", Davidse *et al*. (eds.), 198-237.
Ferranti, Clara. 2011. *Fondamenti di linguistica*, *docenti.unimc.it/docenti/clara-ferranti* (7.7.2012).
Fillmore, Charles. 1968. "The case for case", Bach, Emmon & Harms, Robert (eds.), *Universals in linguistic theory*, New York: Holt, Reinhart & Winston, 1–88.
Fillmore, Charles J. 1975. "An alternative to checklist theories of meaning", *Proceedings of the First Annual Meeting of the Berkeley Linguistics Society*, Berkeley: Berkeley Linguistic Society, 123-131.
Fillmore, Charles J. 1982. "Frame semantics", *Linguistics in the morning calm*, Seoul: Linguistic Society of Korea, 111-137.
Fraser, Bruce. 2006. "On the conceptual-procedural distinction", *Style* 40,1-2, 24-32.
Garcés Gómez, María Pilar. 2008. "La representación de los marcadores discursivos en un diccionario histórico. Propuestas metodológicas", Garcés Gómez (ed.), 203-234.
Garcés Gómez, María Pilar. 2008. (ed.), *Diccionario histórico*: *nuevas perspectivas lingüísticas*, Madrid / Frankfurt: Iberoamericana / Vervuert.
Gardiner, Alan H. [2]1951. *The theory of speech and language*, Oxford: Clarendon.
Gauger, Hans-Martin. 1969. "Die Semantik in der Sprachtheorie der transformationellen Grammatik", *Linguistische Berichte* 1, 1-18.
Geckeler, Horst. 1982. *Strukturelle Semantik und Wortfeldtheorie*, München: Fink.
Givón, Talmy. 1979. *On understanding grammar*, New York: Academic Press.
Givón, Talmy. 1986. "Prototypes: between Plato and Wittgenstein", Craig, Colette (ed.), *Noun classes and categorization*, Amsterdam / Philadelphia: Benjamins, 77-102.
Greenberg, Joseph H. 1991. "The last stages of grammatical elements; contractive and expansive desemanticization", Traugott, Elizabeth Closs & Heine, Bernd (eds.), *Approaches to grammaticalization*, vol. 1: *Focus on theoretical and methodological issues*, Amsterdam / Philadelphia: Benjamins, 301-314,
Gülich, Elisabeth. 1970. *Makrosyntax der Gliederungssignale im gesprochenen Französisch*, München: Fink.
Gutiérrez Ordóñez, Salvador. 1986. *Variaciones sobre la atribución*, León: Universidad de León.
Hansen, Maj-Britt Mosegaard & Strudsholm, Erling. 2008. "The semantics of particles: advantages of a contrastive and panchronic approach: a study of the polysemy of French *déjà* and Italian *già"*, *Linguistics* 46,3, 471-505.
Harris, Martin. 1974. "The subjunctive mood as a changing category in Romance", Anderson, J.M. & Jones, C. (eds.), *Historical linguistics II. Theory and description in phonology*, Amsterdam, etc.: North-Holland / American Elsevier, 169-188.
Heger, Klaus. 1969. "L'analyse sémantique du signe linguistique", *Langue française* 4: 44-66.
Heger, Klaus. [2]1976. *Monem*, *Wort*, *Satz und Text*, Tübingen: Niemeyer.
Hilty, Gerold. 1971. "Bedeutung als Semstruktur", *Vox Romanica* 30,2, 242-263.
Hopper, Paul J. & Closs Traugott, Elizabeth. [2]2003. *Grammaticalization*, Cambridge: University Press.
Hummel, Martin. 2009. "Die funktionelle und die kognitive Betrachtung der lexikalischen Bedeutung", Baumann, Klaus-Dieter (eds.), *Translatologie aus integrativer Sicht*. *Übersetzungswissenschaftliche Analysen zwischen System und Globalität*, Hamburg: Dr. Kovač, 81-119.
Hummel, Martin. 2011. "Prototype effects without prototypes", Enghels, Renata, Meulleman, Machteld & Vanderschueren, Clara (eds.), *Peregrinatio in Romania*. Artículos en

homenaje a Eugeen Roegiest con motivo de su 65 cumpleaños, Gent: Academia Press, 487-511.
Hummel, Martin. 2012. *Polifuncionalidad*, *polisemia y estrategias retóricas en los signos discursivos con base atributiva – entre oralidad y escritura*. *Acerca del uso de* bueno, claro, total, realmente, etc., Berlin: de Gruyter.
Hummel, Martin. 2013. "Polyfunctionality, polysemy, and rhetorical strategy. The functional, semantic and pragmatic motivation of discourse functions", *Grazer Linguistische Studien* 79, 63-91.
Hummel, Martin. 2015. "The semantics and pragmatics of Romance evaluative suffixes", Müller, Peter O., Ohnheiser, Ingeborg, Olsen, Susan & Rainer, Franz (eds.), *Word-Formation. An international handbook of the languages of Europe,* Series *Handbücher zur Sprach- und Kommunikationswissenschaft (HSK),* 40,2, Berlin / Boston: de Gruyter Mouton, 1528-1545.
Ifantidou, Elly. 1993. "Sentential adverbs and relevance", *Lingua* 90, 69-90.
Jackendoff, Ray. 1992. "What is a concept?", Lehrer *et al*., 191-208.
Janssen, Theo & Redeker, Gisela. 1999. (eds.), *Cognitive Linguistics*: *Foundations*, *scope*, *and methodology*, Berlin / New York: Mouton de Gruyter.
Jespersen, Otto. 1909-1949. *A modern English grammar on historical principles*, 7 vols., London: Allen & Unwin.
Jucker, Andreas & Taavitsainen, Irma. 2010. (eds.), *Historical pragmatics*, Berlin / New York: de Gruyter.
Katz, Jerold J. & Postal, Paul M. 1964. *An integrated theory of linguistic descriptions*, Cambridge, Mass.: MIT Press.
Labov, William. 1973. "The boundaries of words and their meanings", Bailey, Charles-James N. & Shuy, Roger W. (eds.), *New ways of analyzing variation in English*, Washington D.C.: Georgetown University Press, 340-373.
Lakoff, George. 1987. *Women*, *fire*, *and dangerous things*, Chicago / London: University of Chicago Press.
Langacker, Ronald W. 1987. *Foundations of Cognitive Grammar*, vol. 1, Stanford: University Press.
Langacker, Ronald W. 1990. "Subjectification", *Cognitive Linguistics* 1,1, 5-38.
Langacker, Ronald W. 1999. "Assessing the cognitive linguistic enterprise", Janssen & Redeker (eds.), 13-59.
Langacker, Ronald. W. 2006. "Subjectification, grammaticization, and conceptual archetypes", Athanasiadou *et al*., 17-40.
Langacker, Ronald W. 2008. *Cognitive Grammar*, Oxford (University Press).
Langacker, Ronald W. 2011. "Semantic motivation of the English auxiliary", Panther, Klaus-Uwe & Radden, Günter (2011) (eds.), *Motivation in grammar and the lexicon*, Amsterdam / Philadelphia: Benjamins, 29-47.
Leech, Geoffrey. 1974. *Semantics*, Harmondsworth: Penguin.
Lehmann, Christian. 1985. "Grammaticalization: synchronic variation and diachronic change", *Lengua e Stile* 20,3, 303-318.
Lehmann, Christian. 2002. "New reflections on grammaticalization and lexicalization", Wischer, Ilse & Diewald, Gabriele (eds.), *New reflections on grammaticalization*, Amsterdam / Philadelphia: Benjamins, 1-18.
Lehrer, Adrienne & Kittay, Eva F. 1992. (eds.), *Frames*, *fields*, *and contrasts*, Hillsdale, etc.: Erlbaum.
Leonetti, Manuel & Escandell Vidal, María Victoria. 2004. "Semántica conceptual / semántica procedimental", Villayandre Llamazares, Milka (ed.), *Actas del V Congreso de Lingüística General*, vol. 2, Madrid: Arco Libros, 1727-1738.

Lieb, Hans-Heinrich. 1981. “Das ‘semiotische Dreieck’ bei Ogden und Richards: eine Neuformulierung des Zeichenmodells von Aristoteles”, Geckeler, Horst *et al*. (eds.), *Logos semantikos*, vol. 1, Berlin, etc.: Walter de Gruyter / Gredos, 137-155.
Llopis Cardona, Ana. 2014. *Aproximación funcional a los marcadores discursivos*, Frankfurt etc.: Lang.
Llopis Cardona, Ana. In press. “Significado y funciones en los marcadores discursivos”, *Verba* 43.
López-Couso, María José. 2010. *Subjectification and intersubjectification*, Jucker & Taavitsainen (eds.), 127-163.
Lyons, John. 1977. *Semantics*, 2 vols., Cambridge, etc.: University Press.
Lyons, John. 1995. “Grammar and meaning”, Palmer, Frank (ed.), *Grammar and meaning*, Cambridge: University Press, 221-249.
Martinet, André. 1980. *Éléments de linguistique générale*, Paris: Colin.
Matthews, Peter. 1995. “Syntax, semantics, pragmatics”, Palmer, Frank (ed.), *Grammar and meaning*, Cambridge: University Press, 48-60.
Montolío, Estrella. 2001. *Conectores de la lengua escrita*, Barcelona: Ariel.
Morris, Charles. 1937. *Logical positivism*, *pragmatism and scientific empiricism*, Paris: Hermann.
Morris, Charles. 1971. *Writings on the general theory of signs*, The Hague / Paris: Mouton.
Müller, Peter O., Ohnheiser, Ingeborg, Olsen, Susan, Rainer, Franz (eds.), *Word-Formation*. *An international handbook of the languages of Europe*, Series *Handbücher zur Sprach- und Kommunikationswissenschaft* (*HSK*), Berlin / New York: de Gruyter Mouton.
Murillo Ornat, Silvia. 2000. “English explicatory reformulative discourse markers: conceptual or procedural?”, Navarro Errasti, María Pilar *et al*. (eds.), *Transcultural communication*: *pragmalinguistic aspects*, Zaragoza: Anubar, 131-138.
Murillo Ornat, Silvia. 2010. “Los marcadores del discurso y su semántica”, Loureda Lamas, Óscar & Acín Villa, Esperanza (eds.), *Los estudios sobre marcadores del discurso en español*, *hoy*, Madrid: Arco Libros, 241-280.
Ogden, C.K. & Richards, I.A. ^{10}1952 = ^{4}1936. *The meaning of meaning*, London: Routledge & Kegan.
Palmer, Frank. 1981. *Semantics*, Cambridge: University Press.
Paulhan, Frédéric. 1928. “Qu’est-ce que le sens des mots?”, *Journal de Psychologie* 4-5, 289-329.
Penas Ibáñez, Azucena. 2014. “Dialogicidad en contextos cruzados. Conciencia metapragmática y significado procedimental en el humor gráfico de Quino”, *Oralia* 17: 317-346.
Plag, Ingo. 2015. “135. English”, Müller, Peter O., Ohnheiser, Ingeborg, Olsen, Susan & Rainer, Franz (eds.), *Word-Formation. An international handbook of the languages of Europe,* Series *Handbücher zur Sprach- und Kommunikationswissenschaft (HSK),* 40,2, Berlin / Boston (de Gruyter Mouton).
Pons Bordería, Salvador. 2008. “Do discourse markers exist? On the treatment of discourse markers in Relevance Theory”, *Journal of Pragmatics* 40, 1411-1434.
Portolés, José. 2008. “Las definiciones de las partículas discursivas en el diccionario”, Garcés Gómez (ed.), 179-202.
Pottier, Bernard. 1963. “Recherches sur l’analyse sémantique en linguistique et en traduction automatique”, Nancy: Faculté des Lettres et Sciences Humaines de l'Université.
Pottier, Bernard. 1977. *Lingüística general*, Madrid: Gredos.
Putnam, Hilary. 1975. *Mind*, *language and reality*, vol. 2, Cambridge, etc.: University Press.
Raible, Wolfgang. 1983. “Zur Einleitung”, Stimm, Helmut & Raible, Wolfgang (eds). *Zur Semantik des Französischen*, Wiesbaden: Steiner, 1-24.
Read, Allen Walker. 1948. “An account of the word *semantics*”, *Word* 4, 78-97.

Rouchota, Villy. 1998. “Procedural meaning and parenthetical discourse markers”, Jucker, Andreas & Ziv, Yael (eds.), *Discourse markers*. *Descriptions and theory*, Amsterdam / Philadelphia: Benjamins, 97-126.
Saussure, Ferdinand de. 1983. *Cours de linguistique générale*, critical edition by Tullio de Mauro, based on the 4th edition 1931, Paris: Payot.
Schiffrin, Deborah. 1987. *Discourse markers*, Cambridge: University Press.
Schwenter, Scott A. & Traugott, Elizabeth Closs. 2000. “Invoking scalarity. The development of *in fact*, *Journal of Historical Pragmatics* 1,1, 7-25.
Sperber, Dan & Wilson, Deirdre. [2]1995. *Relevance*, Oxford: Blackwell.
Sweetser, Eve. 1988. “Grammaticalization and semantic bleaching”, *Berkeley Linguistics Society*, *Proceedings of the 14th Annual Meeting*, 389-405.
Sweetser, Eve. 1990. *From etymology to pragmatics*: *metaphorical and cultural aspects of semantic structure*, Cambridge: University Press.
Taylor, John R. 1990. “Schemas, prototypes, and models: in search of the unity of the sign”, Tsohatzidis, S.L. (ed.), *Meanings and prototypes*, London / New York: Routledge, 521-534.
Taylor, John R. 1999. “Cognitive semantics and structural semantics”, Blank, Andreas & Koch, Peter (eds.), *Historical semantics and cognition*, Berlin / New York: de Gruyter, 17-48.
Taylor, John R. 2012. *The mental corpus. How language is represented in the mind*, Oxford (University Press).
Traugott, Elizabeth Closs & König, Ekkehard. 1991. “The semantics-pragmatics of grammaticalization revisited”, *idem* (eds.), *Approaches to grammaticalization*, vol. 1: *Focus on theoretical and methodological issues*, Amsterdam / Philadelphia: Benjamins, 189-218.
Trier, Jost. 1931. *Der deutsche Wortschatz im Sinnbezirk des Verstandes*. *Die Geschichte eines sprachlichen Feldes*, Heidelberg: Winter.
Ullmann, Stephen. 1983 = 1962. *Semantics*. *An introduction to the science of meaning*, Oxford: Blackwell.
Ullmann, Stephen. [5]1975. *Précis de sémantique française*, Bern: Francke.
Weydt, Harald. 1969. *Abtönungspartikel*. *Die deutschen Modalwörter und ihre französischen Entsprechungen*, Bad Homburg, etc.: Gehlen.
Whorf, Benjamin Lee. 1956. *Language*, *thought*, *and reality*, Cambridge, Mass.: MIT Press.
Wierzbicka, Anna. 1986. “What’s a noun? (Or: How do nouns differ in meaning from adjectives)”, *Studies in Language* 10,2, 353-389.
Wierzbicka, Anna. 1988. *The semantics of grammar*, Amsterdam / Philadelphia: Benjamins.
Wierzbicka, Anna. 1996. *Semantics*. *Primes and universals*, Oxford etc.: University Press.