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Chapter 8

# The Geometry of Grammatical Meaning: Semantic Maps and Cross-Linguistic Comparison

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## THE PROBLEM OF MULTIFUNCTIONALITY IN GRAMMAR

A recurrent problem in linguistic analysis is the existence of multiple senses or uses of a linguistic unit. Although this affects all meaningful elements of language alike, content words as well as function words (such as prepositions and auxiliaries) and affixal categories (such as tense and case), it is particularly prominent with the latter two. Function words and affixes, which I group together as "grammatical morphemes" (or "grams" for short), have more abstract and general meanings and are thus more apt to be used in multiple ways than content words. Moreover, many linguists regard the study of grammar as more interesting and prestigious, so the grams have tended to occupy center stage in linguistic theory. A few examples of grammatical morphemes with multiple senses/uses are given in (1) to (3). Each English example is followed by a short label describing the use or sense. The specific item whose uses/senses are exemplified is highlighted by boldface.

(1) English preposition *on*

| | |
|---|---|
| a. *a cup* ***on*** *the table* | (support/vertical) |
| b. *a fly* ***on*** *the wall* | (support/horizontal) |
| c *keys* ***on*** *a hook* | (attachment/non-part) |
| d. *leaves* ***on*** *a tree* | (attachment/part) |

(2) English preposition *to*

a. *Goethe went* **to** *Leipzig as a student.* (direction)
b. *Eve gave the apple* **to** *Adam.* (recipient)
c. *This seems outrageous* **to** *me.* (experiencer)
d. *I left the party early* **to** *get home in time.* (purpose)

(3) English Past Tense[1]

a. *Goethe* **wrote** *a poem every day.* (past habitual)
b. *Goethe* **wrote** *Faust in 1808.* (past perfective)
c. *If she* **wrote** *to me tomorrow, I would reply in time.* (hypothetical)

In this chapter, I use the term *multifunctionality* to describe situations like those in (1) to (3), and I mostly refer to different *functions* of an expression, rather than "senses" (= conventional meanings) or "uses" (= contextual meanings), because often it is not easy to tell whether we are dealing with different senses or just different uses. The term "function" is meant to be neutral between these two interpretations.

The optimal linguistic treatment of multifunctionality has long been a contentious issue. Idealizing considerably, three possible positions can be distinguished. The *monosemist* position claims that a grammatical morpheme has just a vague abstract meaning, and that all the various functions that can be distinguished are not linguistically significant because they arise from the interaction with the context. In other words, they are not different conventional senses, but only different uses. Thus, one might claim that the meaning of *to* in (2a) and (2b) is really the same (e.g., "abstract direction"), and that the idea of a recipient is an automatic consequence of the fact that *Adam* is animate. The intermediate *polysemist* position recognizes that there are different senses or meanings attached to each gram, but these meanings are related to each other in some fashion that needs to be specified, so that it is by no means an accident that the different senses have the same formal expression. At the other extreme, the *homonymist* position advocates totally separate meanings for each of the functions and recognizes different grams or lexemes for each different meaning.[2] These three positions are

[1]Names of morphological categories of particular languages are capitalized, following a convention first proposed by Comrie (1976). This helps avoid confusion between categories and meanings, because the traditional names of categories do not always describe their meaning well. In English, for instance, the Past Tense does not always describe past tense.

[2]From a semantic point of view, polysemy and homonymy are similar in that both involve different senses. The fundamental semantic problem has often been seen as that of distinguishing between *vagueness* (= monosemy) and *ambiguity* (= polysemy or homonymy). Important references are Zwicky and Sadock (1975), Geeraerts (1993), and Tuggy (1993). See also Croft (1998) for a broader perspective.



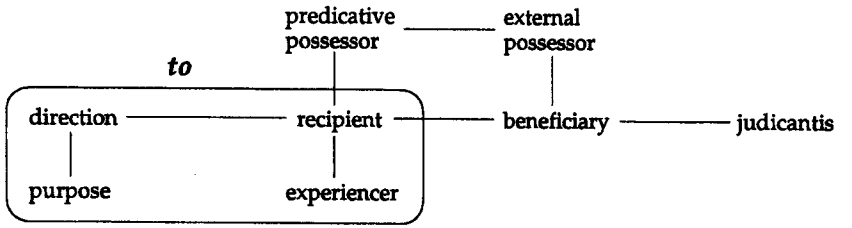


FIG. 8.1. A semantic map of typical dative functions/the boundaries of English *to*.

adopted only for particular analyses, and it is perfectly possible, for example, to propose a monosemic analysis for the functions of *on* in (1), but at the same time a polysemic analysis for the functions of *to* in (2). Or one might regard the verbal *to* in (2d) and the nominal *to* in (2a–c) as homonyms, while analyzing nominal *to* as polysemous or even monosemous. As the analysis of multifunctionality is controversial in many cases, I avoid the terms *sense, use,* and *polysemy,* preferring the more general terms *functions* and *multifunctionality.* Thus, when I talk about different *functions* of *on* and *to* and the Past Tense, I do not commit myself to a particular claim about which functions are part of the conventionalized linguistic knowledge and therefore constitute different senses, and which functions only arise in different utterances depending on the pragmatic context.

In this chapter I discuss *semantic maps,* a method for describing and illuminating the patterns of multifunctionality of grammatical morphemes that does not imply a commitment to a particular choice among monosemic and polysemic analyses. Semantic maps crucially rely on *cross-linguistic comparison,* as I explain in the next section. As a first example, consider Fig. 8.1 (cf. Haspelmath, 1999a), which shows a number of typical functions of dative cases in case-marking languages. A semantic map is a geometrical representation of functions in "conceptual/semantic space" that are linked by connecting lines and thus constitute a network. The configuration of functions shown by the map is claimed to be universal.

In addition to the nodes of the network (i.e., the labels of the various functions) and the connecting lines, Fig. 8.1 also shows a range of functions of English *to*: direction (cf. 2a), recipient (cf. 2b), experiencer (2c), and purpose (cf. 2d). Curved closed lines on the map indicate the boundaries of a language-particular gram in semantic space. Thus, we see in Fig. 8.1 that English *to* lacks some functions that dative cases often have in other languages, such as the predicative-possession function (**This dog is to me.* "This dog is mine"), the beneficiary function (*I'll buy a bike {for/*to} you.*), or the "judicantis" function (*dativus judicantis* "judger's dative"), as in German *Das ist mir*$_{\text{DAT}}$ *zu warm* "That's too warm {for/*to} me." Of

course, English *to* has some other functions not represented in Fig. 8.1, which I ignore here.

The *semantic-map method* for representing grammatical meaning has several advantages over its rivals. In this section I mention only two prominent rivals, the *list method* and the *general-meaning method*, and I only summarize the main advantages here, deferring more detailed discussion to a later section, "The Advantages of Semantic Maps." The list method is the approach that is often used in descriptive grammars and is particularly well known from older school grammars of Latin and Greek, where the different uses or senses of morphological categories are simply listed, illustrated, and provided with labels such as *genitivus subjectivus, genitivus materiae, genitivus possessivus*, and so on. It is perhaps a bit unfair to mention this method as a "rival" here because it has never implied any theoretical claims, but it is clear that the semantic-map approach is superior in that it treats the set of functions of a particular gram not as an arbitrary list, but as a coherent chunk of a universal network.

The general-meaning method is the classical approach of structuralist analyses of grammatical meaning, going back to Jakobson (1936/1971). In this approach, grammatical meanings are typically identified on the basis of their contrasts with other elements in the system with which they are in opposition, and an attempt is made to formulate highly abstract meanings that subsume all the individual functions. Compared to the list method, the general-meaning method is thus in a sense at the other extreme of the scale, and it was originally developed as a reaction to this overly "atomistic" procedure. An example of an abstract formulation in this spirit is Van Hoecke's (1996) characterization of the Latin Dative case: "The dative serves as the limit of the predicate in the sense that it indicates the ultimate term towards which the action or process referred to tends" (p. 31). The problem with such formulations is that they are difficult to interpret and thus to apply in a consistent and objective fashion—What exactly is meant by "limit" and "ultimate term"? It seems quite impossible to derive the various functions of the Latin Dative case from such a description, unless one already knows what they are. Moreover, such general-meaning analyses are not particularly helpful if one wants to know in what way languages differ from each other. For instance, Burridge (1996) characterized the Dative in Middle Dutch as indicating "non-active involvement in an activity," and Barnes (1985) said about French: "The dative clitic always represents an oblique argument of the verb which is a 'theme' of the sentence, that is, the center of attention" (p. 161). It would be hard to infer from these descriptions that the Dative functions of Latin, Middle Dutch, and French overlap to a considerable extent. In the semantic-map method, by contrast, cross-linguistic comparison is straightforward. For instance, the functions of the French preposition *à*, although similar to English *to*, are not quite the same.



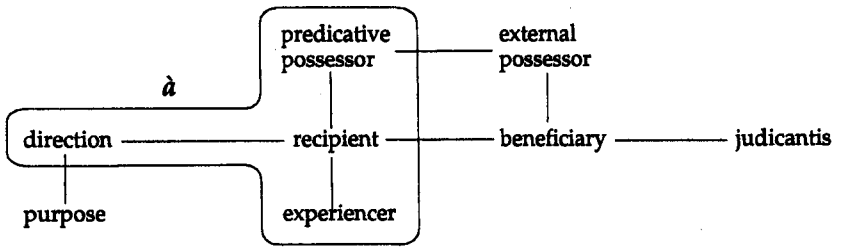


FIG. 8.2. The boundaries of French *à*.

The boundaries of French *à* in semantic space are shown on the same semantic map in Fig. 8.2.

The difference between French and English is that French *à* is not used for purpose (**J'ai quitté la fête tôt à arriver à la maison en bon temps.* "I left the party early to get home in time."), but that it may be used for predicative possession (*Ce chien est à moi.* "This dog is mine.").[3] Now an advocate of the general-meaning method might object that semantic maps do not tell us what the various functions of a gram have in common: The only thing shared by all the functions is that they are located in a similar region in semantic/conceptual space. But this is perhaps just as well: It is quite possible that the senses of a grammatical morpheme are related only by family resemblances and that there is no single schematic sense under which they could be subsumed.

## HOW SEMANTIC MAPS WORK

In this section I explain the notational conventions of semantic maps in greater detail. The leading idea of the semantic-map method is that multifunctionality of a gram occurs only when the various functions of the gram are similar. (This presupposes, of course, that accidental homonymy, where formally identical elements have unrelated meanings, can be distinguished from polysemy in some way.)[4] Similarity is expressed topologically by close-

[3]Another salient difference between French *à* and English *to* is of course that only the former can be used to express static location (*Marie est à Bruxelles* "Marie is in Brussels"). The map in Figs. 8.1 and 8.2 could easily be extended to show the location function as well, but I arbitrarily limit the discussion here to the functions shown in Figs. 8.1 and 8.2.

[4]Here, too, cross-linguistic comparison can help. Consider the case of plural *-s* and genitive *'s* in English, and of directional and purposive *to*. A priori, one could claim for both of these that they are semantically similar and hence we have polysemy rather than accidental homonymy (cf. Leiss, 1997, for an attempt to spell out the semantic relation between the English plural and genitive), or that they are semantically so distinct that we need to posit homonymy. Now the cross-linguistic perspective helps us distinguish these two options, as was

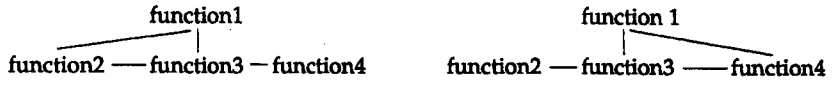


FIG. 8.3. Two different semantic maps.

ness of nodes in representational space, which metaphorically can be thought of as mapping the possibilities of meaning, or "semantic/conceptual space." For the sake of clarity, closeness is formally shown not only by spatial adjacency, but also by a straight connecting line. Thus, Fig. 8.3a is not identical to Fig. 8.3b.

The difference between Fig. 8.3a and Fig. 8.3b could have been expressed by printing function1 and function2 more closely together in Fig. 8.3a, and function1 and function4 more closely in Fig. 8.3b, but in larger maps, connecting lines greatly help legibility. (However, in practice they are often omitted, cf., e.g., Anderson, 1982, 1986.) The simplest semantic map is one-dimensional and has the form "function1 – function2 – function3," but most of the more elaborate maps that have been proposed are two-dimensional. In the notation that I use here, neither the length of the connecting lines nor their spatial orientation (vertical/horizontal) are significant—these are purely a matter of representational convenience. Likewise, left–right or top–bottom orientation plays no role.

Ideally, a complete theory of grammatical meaning would allow us to derive deductively the functions that are needed for the world's languages and their relative position on the map. This is, of course, totally utopian, but we can take recourse to induction. That is, for each language examined, the functions are arranged in such a way that each gram occupies a contiguous area on the semantic map. As long as only one language is considered, this procedure is of course circular, and for the reasons mentioned in the previous section we could not be sure which functions to represent on the map in the first place. It is here that cross-linguistic comparison is of

noted by Haiman (1974) (he used "word" rather than "gram," but the point carries over to grammatical morphemes):

> If a word exhibits polysemy in one language, one may be inclined, or forced, to dismiss its various meanings as coincidental; if a corresponding word in another language exhibits the same, or closely parallel polysemy, it becomes an extremely interesting coincidence; if it displays the same polysemy in four, five, or seven genetically unrelated languages, by statistical law it ceases to be a coincidence at all. (p. 341)

Applying this method to English *to*, we find that in language after language, the same gram is used for direction and purpose (cf. Haspelmath, 1989). But genitive/plural polysemy is extremely rare outside of Indo-European, where *-s* was both a genitive suffix and a plural suffix in the proto-language. Thus, we can probably dismiss the genitive/plural multifunctionality of English *s* as an accidental homonymy.



crucial importance, both for choosing the relevant functions and for arranging the functions on the map.

First, selection of functions: A function is put on the map if there is at least one pair of languages that differ with respect to this function. Consider the distinction between direction and recipient in Fig. 8.1. Neither English nor French have different prepositions for these two functions, so these two languages provide no basis for distinguishing them. If we knew only these two languages, it could be that the direction–recipient distinction is only one that can be made a priori, but not one that is made by language (perhaps analogous to the distinction between "non-part" *on* in [1c] and "part" *on* in [1d], which is perhaps not reflected in any language). In order to justify this distinction on our semantic map, we need at least one language that has different formal expressions for the two functions. Of course, such a language is easy to find: German, for instance, uses *zu* or *nach* for direction, but the Dative case for recipient. This procedure is repeated as more languages are taken into account until no new functions are encountered.

Second, arrangement of functions: Here there is no mechanical procedure. The functions must be arranged in such a way that all multifunctional grams can occupy a contiguous area on the semantic map. When just one language is considered, three functions of a multifunctional gram can be arranged in three different ways. Let us look again at the example of English *to* and the three functions "direction," "recipient," and "purpose." In principle, these could be arranged in any of the three ways in (4).

(4) a. purpose – direction – recipient
b. direction – purpose – recipient
c. direction – recipient – purpose

As soon as data from French are added, the option (4b) can be eliminated, because French *à* expresses recipient (*à Adam*) and direction (*à Leipzig*), but not purpose. And when we also consider the German preposition *zu*, option (4c) can be eliminated, because *zu* expresses both purpose (*Anna ging zum Spielen in den Garten* "Anna went into the garden to play") and direction (*Ich gehe zu Anna* "I'm going to Anna's place."), but not recipient. Thus, only (4a) remains, which is of course a subnetwork of the map in Fig. 8.1.

Experience shows that it is generally sufficient to look at a dozen genealogically diverse languages to arrive at a stable map that does not undergo significant changes as more languages are considered. Of course, any new language can immediately falsify a map and require a revision, but the map method allows us to generate interesting hypotheses fairly soon. The configuration of functions on a semantic map is claimed to be universal, thus a

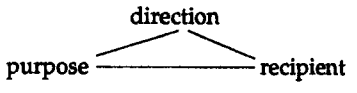


FIG. 8.4. A vacuous semantic map.

map makes predictions about possible languages that are easy to test on new languages.

Let us go back to our example (4a). What happens if we now find a language that expresses both recipient and purpose, but not direction, with the same gram? This would contradict (4a), and in order to resolve the contradiction, we would have to add a connecting line between recipient and purpose. The map would now look as in Fig. 8.4, and it would be compatible with all the data, but at a high price: In Fig. 8.4, all the functions have connecting lines with all other functions, so the map is vacuous. It excludes no possible language and is not particularly interesting (except that it shows that these three functions are closely related).

It may well turn out that in a number of functional domains non-vacuous maps are impossible to construct, but experience shows that there are many areas in which there are very strong universal restrictions, so that interesting maps can be drawn. As soon as more than three functions are considered, a vacuous map would have to involve crossing or curved connecting lines, that is, in fact more than two dimensions.[5] So it is a general rule that the fewer dimensions and the fewer connecting lines a map shows, the more predictions it makes and the more interesting it is.

A final point to make is that it is not uncommon for different grams of the same language to overlap in their distribution. For instance, in addition to the dative-like preposition *à*, French has a dative series of clitics (*me, te, lui, nous, vous, leur*), which has a somewhat different distribution. Dative clitics do not express direction (**Je lui vais* "I go to him") or predicative possession (**Ce livre m'est* "This book is mine"), but they can be used for the benefactive sense (*Je lui ai trouvé un emploi* "I found a job for her") and the external-possessor sense (*On lui a cassé la jambe* "They broke his leg"), where *à* is impossible (cf. Haspelmath, 1999a). Thus, the boundaries of French dative-like grams are as shown in Fig. 8.5. So strictly speaking, one does not even need cross-linguistic comparison to construct a semantic map, because all we need is different grams with an overlapping distribution. But of course such different grams are most easily found by examining different languages.

[5]Of course, there is no a priori reason why a semantic map should not be three-dimensional or indeed n-dimensional. But maps with more than two dimensions are difficult to read, and they are less interesting than one-dimensional or two-dimensional maps, so they are rarely used (cf. Haspelmath, 1997b, p. 106 for a rare example of a three-dimensional map).



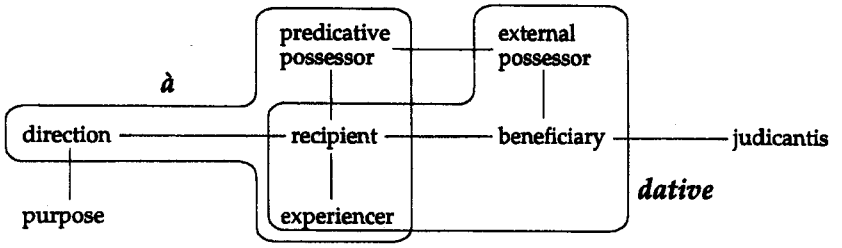


FIG. 8.5. The boundaries of French *à* and dative.

Before moving on to more elaborate concrete examples of semantic maps, let me insert a note on terminology: Because the semantic-map approach is fairly recent,[6] there is no fully established term yet. The term *semantic map* is used in Kemmer (1993, p. 201), Stassen (1997, p. 578), and van der Auwera and Plungian (1998). Croft's (2001) term is *conceptual space*. Others have used the terms *mental map* (Anderson, 1986) or *cognitive map* (e.g., Kortmann, 1997, p. 177, 210), because it is hoped that the universal configuration of functions on the map directly corresponds to the cognitive structuring of meaning.[7] Haspelmath (1997a) used the term *implicational map* to highlight the fact that semantic maps express implicational universals (see later section "The Advantage of Semantic Maps"). Here I use *semantic map* because it is more transparent than *implicational map* and less ambitious than *cognitive map/mental map*. The only problem with this term is that the functions that we want to map are not necessarily differentiated only semantically. For instance, the function "predicative possession" in Figs. 8.1 and 8.2 also contains the syntactic component "predicative." Similarly, the "hypothetical" function of the English Past tense (cf. [3c]: *If she wrote to me tomorrow*) is restricted to the protasis (the *if*-clause) of a conditional construction, although the main-clause verb presumably also has hypothetical meaning. So sometimes the syntactic context must also be taken into account, and the term *semantic map* is thus not completely accurate. But as it is fairly well established, it seems best to continue using it.

[6]An early influential paper was Anderson (1982) (his approach was foreshadowed in Anderson, 1974), which was endorsed (but not applied further) by Bybee (1985, pp. 195–196). Applications in the 1980s include Anderson (1986, 1987), Croft, Shyldkrot, and Kemmer (1987), and Haspelmath (1987).

[7]Semantic maps are also similar to cognitive-grammar "networks" (e.g., Enger & Nesset, 1999; Lakoff, 1987; Langacker, 1988; Rudzka-Ostyn, 1996; Sandra & Rice, 1995), that is, spatial arrangements of the polysemy structure of an item in a particular language. However, these networks do not seem to imply anything about the universality of the spatial arrangement of the senses.

Croft (2001) made a useful terminological distinction between a *conceptual space* (i.e., the universal arrangement of functions) and a *semantic map* (i.e., the boundaries of particular elements in particular languages). But in fact we need terms for three different entities: (a) conceptual/semantic space (the object of study), (b) universal semantic maps or conceptual spaces (a particular linguist's hypothesis about a segment of (a) as represented geometrically), and (c) language-particular and gram-specific subdivisions of (b).

## SOME FURTHER SEMANTIC MAPS

Let us now look at a few concrete cases of semantic maps that have been discussed in the literature.

### Indefinite Pronouns

The first case to be mentioned here is the distribution of different series of indefinite pronouns (cf. Haspelmath, 1997a). English has three such series: the *some*-series (*someone, something, somewhere,* etc.), the *any*-series (*anyone, anything, anywhere,* etc.), and the *no*-series (*no one, nothing, nowhere, never,* etc.). In these series, I consider the first element (*some/any/no*) as the grammatical morpheme whose functions are to be mapped in semantic/conceptual space. But what are the relevant semantic or syntactic distinctions? Quirk, Greenbaum, Leech, and Svartvik (1985, p. 83) described the contrast between *some*-indefinites and *any*-indefinites in terms of the notion of "assertiveness." *Some*-indefinites occur in assertive contexts, that is, in propositions whose truth is asserted (cf. 5a-b), whereas *any*-indefinites occur in non-assertive contexts such as questions (6a), conditional protases (6b), and negative sentences (6c), which do not claim the truth of the corresponding positive statement.

(5) a. *Yesterday Mariamu met* ***someone*** *(/*anyone) from Botswana.*
b. *At the DGfS conference I always meet someone (/*anyone) I know.*

(6) a. *Has* ***anything*** *happened while I was away?*
b. *If I can help you* ***in any way,*** *please tell me.*
c. *I didn't notice* ***anything*** *suspicious.*

But although a highly abstract notion such as "(non-)assertiveness" certainly captures important aspects of the semantics of *some-* and *any*-indefinites, it is not sufficient to predict all their functions. For instance, *any*-indefinites are not normally possible in imperatives (7a), and *some*-indefinites are also possible in questions and conditional protases (cf. 7b–c).



(7) a. *Please buy* ***something*** *(/??anything) for our son when you go to town.*
b. *Has* ***something*** *happened while I was away?*
c. *If I can help you* ***in some way,*** *please tell me.*

Moreover, many languages have a distinction among indefinites that is roughly comparable to that in English, but differs from it in subtle ways. For example, Russian has two indefinite series characterized by the markers *-to* (*kto-to* "someone," *čto-to* "something," *gde-to* "somewhere," etc.) and *-nibud'* (*kto-nibud'* "anyone," *čto-nibud'* "anything," *gde-nibud'* "anywhere," etc.). Like English *any*-indefinites, the Russian *-nibud'*-indefinites do not occur in positive declarative sentences such as (8a), but they do occur in questions and conditionals (e.g., 8b).

(8) a. ***Kto-to*** *(/****kto-nibud'****) postučal v dver'.*
"Someone (/*anyone) knocked at the door."
b. *Esli* ***čto-nibud'*** *slučitsja, ja pridu srazu.*
"If anything happens, I'll come immediately."

However, *-nibud'*-indefinites also occur in "assertive" contexts when *non-specific* reference is intended, that is, the speaker has no particular referent in mind. For instance, whereas the English sentence *He wants to marry someone from Botswana* is ambiguous (he might have a fiancée who happens to be from Botswana, or being from Botswana might be a prerequisite for any future wife), Russian distinguishes these two readings. The *-to*-indefinite is used for specific reference, and the *-nibud'*-indefinite is used for non-specific reference.

(9) a. *On xočet ženit'sja na* ***kom-to*** *iz Botsvany.*
"He wants to marry someone [specific] from Botswana."
b. *On xočet ženit'sja na* ***kom-nibud'*** *iz Botsvany.*
"He wants to marry someone [non-specific] from Botswana."

In imperatives, reference to indefinite phrases is necessarily non-specific, so the *-to*-indefinite is impossible here:

(10) *Kupi* ***čto-nibud'*** *(/****čto-to****) dlja našego syna.*
"Buy something for our son."

The Russian distinction between *-to*-indefinites and *-nibud'*-indefinites is thus often characterized as consisting in the property of *(non-)specificity,* but just as (non)assertiveness cannot account for all functions of English *some/*

*any*, (non)specificity cannot account for all functions of Russian *-to/-nibud'*. For instance, *-nibud'*-indefinites cannot occur in negative contexts such as (6c), and again unlike *any*-indefinites, they cannot occur in the "free-choice" sense as in (11).

(11) ***Anybody** can solve this easy problem.*

Thus, English and Russian have two different grams in indefinite pronouns that overlap in their distribution, but do not coincide. Abstract labels such as specificity and assertiveness do not capture the similarities between the languages, and they are not sufficient to derive the exact range of functions of these types of indefinites. To describe the differences and similarities in the functions of indefinites in 40 languages, I developed a semantic map in Haspelmath (1997a), shown in Fig. 8.6.

Here "irrealis non-specific" refers to non-specific functions such as (9b) and (10), as opposed to other non-specific functions such as negation, free choice, and so on. The distribution of English *some-/any*-indefinites and of Russian *-to/-nibud'*-indefinites on the map is shown in Figs. 8.7 and 8.8. In these figures, the connecting lines between the functions are omitted for ease of legibility.

The functions "specific known," "indirect negation," and "comparative" are all needed because some languages have indefinite pronoun series that differ from each other precisely in this respect. Let me just give an example for the need to distinguish "specific known" and "specific unknown": German *jemand* "someone" and *irgendjemand* "someone" differ in that *irgendjemand* cannot be used when the referent's identity is known to the speaker. Thus, *irgendjemand* is appropriate in (12a), but not in (12b).

(12) a. *Mein Handy ist weg, **(irgend)jemand** muss es gestohlen haben.*
"My cell phone is gone, someone must have stolen it."
b. ***Jemand** /*irgendjemand hat angerufen – rate mal wer.*
"Someone called—guess who."

The semantic map in Fig. 8.6 has been tested for 40 languages in Haspelmath (1997a), and no counterexamples have been found.

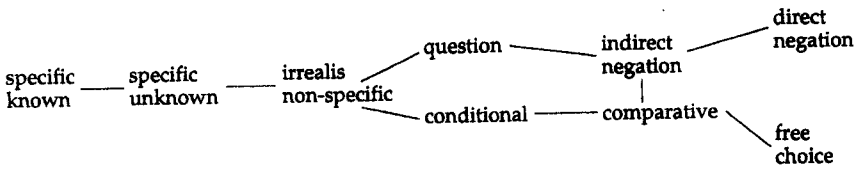


FIG. 8.6. A semantic map for indefinite pronoun functions.



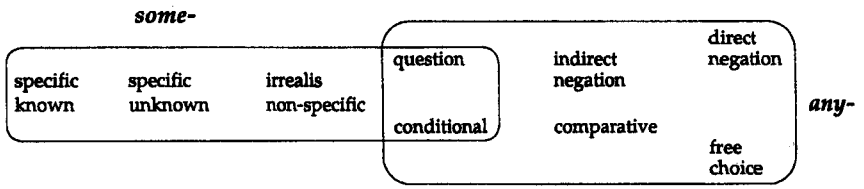


FIG. 8.7. The boundaries of English *some*-indefinites and *any*-indefinites.

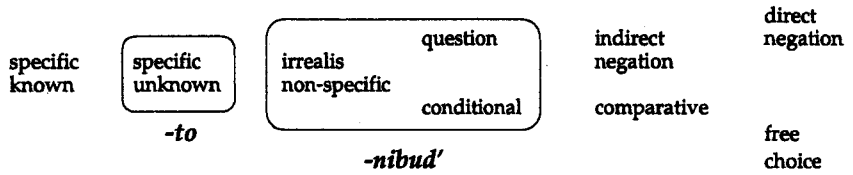


FIG. 8.8. The boundaries of Russian *-to*-indefinites and *-nibud'*-indefinites.

## Reflexives and Related Functions

My next example comes from the area of voice-marking on verbs. Quite a few languages have grammatical morphemes associated with the verb that express reflexive actions as well as a number of related senses that often involve intransitivization. A case in point is French, which uses its reflexive clitic (*se* "him/herself," *me* "myself," *te* "yourself," etc.) not only with fully transitive verbs such as "kill" (cf. 13a), where it corresponds to English *-self*, but also in a number of other cases (cf. 13b–13e).

(13) a. *Judas **s'est** tué.* (full reflexive)
"Judas killed himself."
b. *Bathséba **s'est** lavée.* (grooming)
"Bathseba washed."
c. *Mamoud **s'est** agenouillé.* (body motion)
"Mamoud kneeled down."
d. *Elisabeth et Marie **se** sont rencontrées.* (naturally reciprocal)
"Elizabeth and Mary met."
e. *La porte **s'est** ouverte.* (anticausative)
"The door opened."

In (13b) and with other verbs of grooming (shaving, combing, etc.), one can still construe *se* as "herself," because *Bathseba washed* can be paraphrased by "Bathseba washed herself," and such a construal is not totally impossible either in (13c). However, (13d) and (13e) are clearly no longer truly reflexive. Example (13d) is reciprocal, and (13e) expresses a sponta-

neous non-caused event ("anticausative"). Such non-reflexive functions of reflexive morphemes are often called (somewhat vaguely) "*middle voice*," following the terminology of classical scholars (cf. Kemmer, 1993). Another language that is similar to French in that its reflexive marker has a number of middle functions is Russian (reflexive marker *-sja/s'*):

(14) a. *Batseba umyla-**s'**.* (grooming)
"Bathseba washed."
b. *Učitel' povernul-**sja**.* (body motion)
"The teacher turned around."
c. *Elizaveta i Marija vstretili-**s'**.* (naturally reciprocal)
"Elizabeth and Mary met."
d. *Dver' otkryla-**s'**.* (anticausative)
"The door opened."
e. *Vopros obsuždal-**sja** komissiej.* (passive)
"The question was discussed by the committee."
f. *Sobaka kusaet-**sja**.* (deobjective)
"The dog bites."

In order to describe the range of meanings that reflexive markers may have, some linguists have attempted to formulate abstract general meanings or functions such as "derived intransitivity" (Cranmer, 1976), "non-distinct arguments" (Langacker & Munro, 1975), or "low degree of elaboration of events" (Kemmer, 1993). These abstract notions certainly capture significant aspects of the meaning components that are shared by the various middle functions, but they are not helpful for comparing languages, for example, for describing the difference between French and Russian. In order to do this, we need finer-grained functions. For instance, Russian *-sja* does not have the full reflexive function: The independent reflexive pronoun *sebja* must be used in the translation of French *Judas s'est tué* (13a):

(15) *Iuda ubil **sebja**.* (**Iuda ubil-sja.*)
"Judas killed himself."

On the other hand, French does not have the "deobjective" function exemplified by Russian *Sobaka kusaet-sja* "The dog bites" (= 14f), and the passive function of French *se* is highly restricted.

Again, a more profitable approach is the construction of a universal semantic map on which middle-like grams of individual languages occupy a contiguous area. A good approximation for our purposes is the map in Fig. 8.9 (cf. Haspelmath, 1987, p. 35, and Kemmer, 1993, p. 202; see also Geniušienė, 1987 for detailed discussion and a rich collection of relevant data).



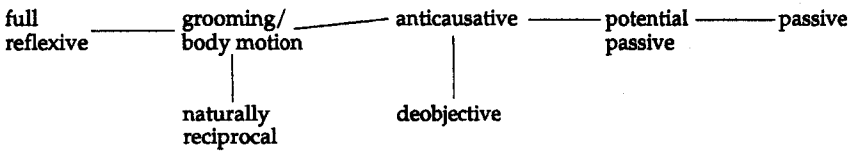


FIG. 8.9. A semantic map for reflexive and middle functions.

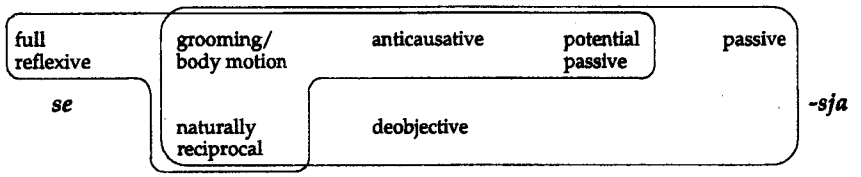


FIG. 8.10. The boundaries of French *se* and Russian *-sja*.

The distribution of the French reflexive gram *se* (i.e. *me/te/se*, etc.) and the Russian verbal reflexive *-sja/-s'* is shown in Fig. 8.10.

"Potential passive" refers to a kind of passive construction with generic meaning and generally an obligatory adverbial phrase such as "easily" or "well." Some languages, for instance German, allow the reflexive gram in potential passives, but not in ordinary passives:

(16) a. *Der neue Roman von Grass verkauft **sich** gut.*
"Grass's new novel sells well."
b. *Humboldt liest **sich** nicht leicht.*
"Humboldt doesn't read easily."
c. **Das Fahrrad hat **sich** gestern repariert.*
"The bike was repaired yesterday."

Naturally reciprocal events are clearly distinct semantically from naturally reflexive events such as grooming and body motion, and there are some languages in which reciprocal events are expressed differently. For instance, Turkish has the suffix *-In* for grooming and body motion (e.g., *giy-in-mek* "dress [oneself]"), but the suffix *-Iş* for naturally reciprocal events (e.g., *bul-uş-* "meet [each other]," *sev-iş-* "make love [to each other]," *döv-üş-* "hit each other"). Turkish also illustrates the case in which grooming and body motion is not expressed in the same way as the anticausative, which is marked by the suffix *-Il* (e.g., *aç-ıl-mak* "open [intr.]," cf. *aç-mak* "open [tr.]"). That the anticausative function must be closer to the passive than to the other functions is also illustrated by Turkish, because the suffix *-Il* also expresses the passive in this language:

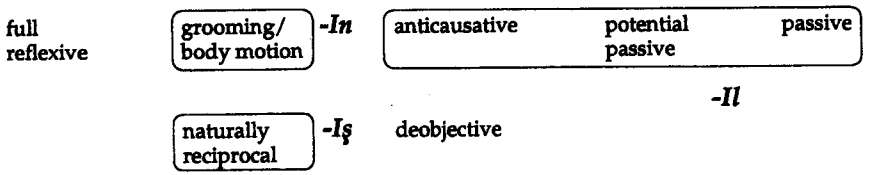


FIG. 8.11. The boundaries of Turkish *-In*, *-Iş*, and *-Il*.

(17) Turkish passive
*Bu iş-ler makine-ler-le yap-ıl-ır.*
these thing-PL machine-PL-INSTR make-PASS-AOR
"These things are made with machines."

The boundaries of the three markers *-In*, *-Iş* and *-Il* are shown in Fig. 8.11. Reflexive-like markers have quite a few further functions in many languages, such as "emotion" (e.g., French *s'étonner* "be astonished"), "emotive speech action" (e.g., French *se lamenter* "lament"), and "cognition" (e.g., French *s'apercevoir* "become aware, notice") (cf. Kemmer, 1993, for detailed discussion). These would eventually have to be integrated into the semantic map, but because their occurrence is strongly lexically determined, cross-linguistic comparison is not easy. Quite generally, comparison by means of the semantic-map approach is straightforward for analytically expressed grams or inflectional grams with high lexical generality, but is difficult for derivational grams that occur only in a small number of lexemes.

**Instrumentals and Related Functions**

My third example again concerns prepositions and case markers, like the first example of typical dative functions in the first section. In this section I look at prepositions and case markers that express the instrumental role and related functions (cf. Michaelis & Rosalie, 2000). In English, the normal instrumental preposition *with* (cf. example 18a) also has the function of accompaniment (or *comitative*), as illustrated in (18b).

(18) a. *Kanzi cracked the nut* ***with*** *a nutcracker.*
b. *Sancho Pansa has arrived* ***with*** *Don Quijote.*

Comitative-instrumental polysemy is frequent in the world's languages (cf. Stolz, 1996; and Lakoff & Johnson, 1980, p. 134 on the kind of metaphorical transfer that is involved here), but it is by no means universal. For example, Russian uses its instrumental case (here the suffix *-om/-em*) to express



instrument (cf. example 19a), but it requires the preposition *s* "with" for the comitative function (cf. example 19b).

(19) a. *Kanzi raskolol orex kamn-em.*
"Kanzi cracked the nut with a stone."
b. *Sančo Pansa prišel* ***s*** *Don Kixotom.*
"Sancho Pansa has arrived with Don Quijote."

Another common type of polysemy involves comitative(-instrumental) and conjunctive, that is, the coordinating notion "and." This particular polysemy is almost non-existent in European languages,[8] but it is widespread in other parts of the world, for instance in Africa. Thus, Nkore-Kiga (a Bantu language of Uganda) has the preposition *na* for instrument (20a), comitative (20b) and conjunction (20c).

(20) Nkore-Kiga (Taylor, 1985)

| | | |
|---|---|---|
| a. (instrument) | ***n'*** *enyondo* | "with a hammer" |
| b. (comitative) | ***na*** *Mugasho* | "(together) with Mugasho" |
| c. (conjunctive) | *emeeza* ***n'*** *entebe* | "a table and a chair" |

Probably as a result of influence from African substratum languages, many creole languages of the Atlantic and Indian Ocean with European lexifier languages also show this kind of polysemy (cf. Michaelis & Rosalie, 2000). For example, in Seychelles Creole, the preposition *ek* (from French *avec* "with") has a wide range of functions, including the three functions just exemplified from Nkore-Kiga (20a–c).

(21) Seychelles Creole (Michaelis & Rosalie, 2000)

| | |
|---|---|
| a. (instrument) | *Nou fer servolan, nou file* ***ek*** *difil.*<br>"We made a kite, we let it fly with a string." |
| b. (comitative) | *Mon 'n travay* ***ek*** *Sye Raim.*<br>"I have worked with Mr. Rahim." |
| c. (conjunctive) | *dan zil Kosmoledo* ***ek*** *Asonpsyon*<br>"on the islands of Cosmoledo and Assomption" |
| d. (passive agent) | *Mon 'n ganny morde* ***ek*** *lisyen.*<br>"I have been bitten by dogs." |

[8]However, Russian has a coordination-like construction in which the preposition *s(o)* "with" is used:

(a) *starik so staruxoj* "the old man and (lit. 'with') the old woman"

e. (source) *Mon ganny pansyon* ***ek*** *gouvernman.*
"I get a pension from the government."

f. (cause) *Pa kapab reste laba* ***ek*** *moustik.*
"It was impossible to stay there because of the mosquitoes."

g. (recipient) *Mon 'n donn larzan* ***ek*** *li.*
"I gave the money to him."

From the point of view of the European languages, this rampant polysemy of a single preposition may look unusual, but it is not difficult to find parallels for most of the functions. Thus, the Russian Instrumental case expresses both the instrumental role and the passive agent (e.g., *Orex byl raskolot Konstantin-**om*** "the nut was cracked by Konstantin"), and the German preposition *von* expresses both passive agent and source:

(22) a. (source) *Ich bekomme eine Pension* ***von*** *der Regierung.*
"I get a pension from the government."

b. (passive agent) *Ich wurde* ***von*** *Hunden gebissen.*
"I have been bitten by dogs."

The French preposition *par* expresses both passive *agent* (*par des chiens* "by some dogs") and cause (*par hazard* "by accident"), and German *aus* expresses both source (*aus Paris* "from Paris") and cause (*aus Hass* "out of hatred"). Only the coincidence between comitative and recipient is somewhat special in that it is not found in European languages.

The various patterns of multifunctionality noted so far do not lend themselves easily to a description in terms of an abstract general meaning of the kind "non-assertiveness" or "non-distinct arguments," and they have not attracted much attention by theoreticians (but cf. Croft, 1991). Still, they are by no means random and can be captured by a universal map just like indefinite pronoun functions and middle functions. The map I propose here (based largely on Michaelis & Rosalie, 2000) is given in Fig. 8.12. The role "co-agent" refers to a comitative-like participant that takes active part in the action, as in *X fought with Y, X kissed with Y.* It is shown in parentheses in Fig. 8.12 because I have no good cross-linguistic evidence for its position as a linking element between comitative and recipient. However, semantically it seems to make sense, and expressions such as English *talk to/with somebody*, where a co-agent can alternatively be expressed like a comitative (*with*) or like a recipient (*to*), seem to confirm this view.

In Figs. 8.13–8.15, some of the prepositions and case-markers that we have seen so far are shown as they appear on the map.

In addition to the functions mentioned so far, the map also contains the function "beneficiary," linked to both "recipient" and "cause." The recipient–beneficiary link (which we already saw on the map in Fig. 8.1) is justified by many languages with a dative case that has both these functions (e.g., German and Latin), whereas the beneficiary–cause link is justified by prepositions like English *for* (beneficiary: *for my mother*; cause: *for this reason*) or Italian *per* (beneficiary: *per mia madre* "for my mother"; cause: *per questa ragione* "for this reason"; passive agent: *Questa noce è stata schiacciata per Kanzi* "This nut has been cracked by Kanzi.").

Through the linking element "beneficiary," this map has a circular shape, thus contrasting with the other maps that have so far been discussed in this chapter. However, there is nothing peculiar about this: Conceptual space is not infinite, and there are many different routes through it, so there is no reason why some paths should not lead back to where they started.



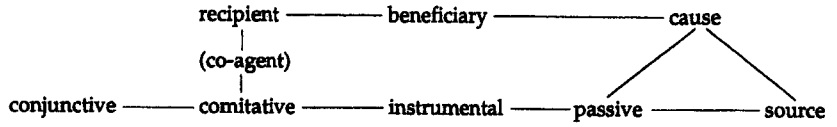


FIG. 8.12. Instrumental and related functions.

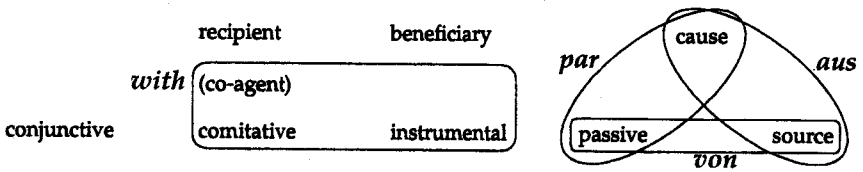


FIG. 8.13. The boundaries of some English, German, and French prepositions.

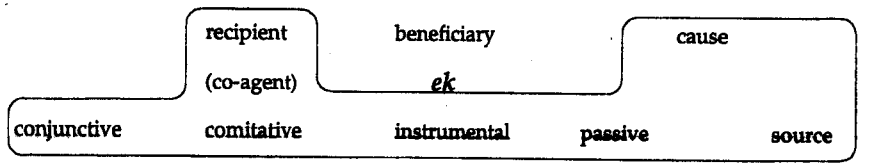


FIG. 8.14. The boundaries of Seychelles Creole *ek*.

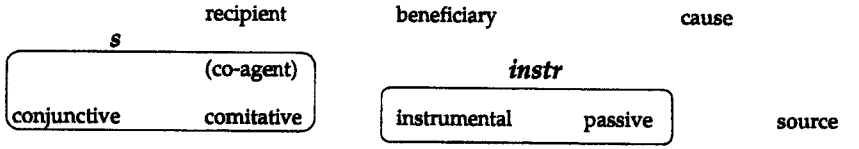


FIG. 8.15. The boundaries of the Russian instrumental and *s* "with."

The overlap between Fig. 8.12 and Fig. 8.1, which share the subnetwork "recipient — beneficiary," raises the question of what the relation between two overlapping maps is. The answer is simple: Both maps represent just an arbitrary subnetwork of the "semantic universe." It would be possible to consolidate the two maps into one big map, just as it is always possible to split up a map into smaller submaps. What is significant is only the links and the (mostly semantic) substance of the functions, but the size and the extension of each map depends solely on the linguist's current purposes.

## THE ADVANTAGES OF SEMANTIC MAPS

The semantic-map approach has a number of important advantages, some of which have already been mentioned and illustrated.[9] Semantic maps ensure cross-linguistic comparability, they allow us to avoid the problem of distinguishing between polysemy and vagueness, they help us detect universal semantic relationships, they generate a number of implicational universals as a side effect, and they lead to expectations about diachronic change. In this and in the next section I spell out these advantages in somewhat more detail.

In contrast to the structuralist general-meaning approach, semantic maps permit cross-linguistic comparisons. Jakobson (1936/1971), one of the founders of structuralism, observed himself that universal meanings cannot be formulated in his framework: "Man kann nicht universal und allezeit gültige und vom gegebenen System (bzw. Systemtypus) der Kasusgegensätze unabhängige Kasusbedeutungen aufstellen." [It is not possible to set up case meanings that are universally and always valid and independent of the given system (or system type) of case oppositions.] (p. 26). On the structuralist view, case meanings (and grammatical meanings more generally) exist only within particular systems and are derived from system-internal contrasts (cf. Bybee, 1988, for some discussion). But if this were the whole story, we would expect languages to differ much more radically from each other than we actually find. Empirical typological work has generally found that similar semantic distinctions are relevant in language after language, independently of genealogical or areal affinities, even though the grams of different languages (and often also different grams within the same language) carve up the space of possibilities in different ways. For instance, although many languages express direction and recipient in the same way (e.g., English and French, cf. Figs. 8.1–8.2), there are also many languages (such as German and Latin)

[9]To my knowledge, the earliest clear discussion of the advantages of the function-based method as opposed to the general-meaning approach is Ferguson (1970). However, Ferguson did not mention semantic maps.



that make a distinction between these two notions, reserving a separate gram for recipient and one for direction (cf. Croft, 1991, p. 157). On the Jakobsonian view, this is surprising—one would expect languages to carve up the direction–recipient space in numerous totally different ways. But the fact that the same distinctions occur again and again allows us to make a reasonably limited list of "atomic" constituents of conceptual space, the *functions*. Of course, no semantic domain has been studied in any detail for hundreds of languages, but the typical experience is that after a dozen languages have been examined, fewer and fewer functions need to be added to the map with each new language. On the structuralist view, we would expect every language to behave in a completely different way, so that each further language that is examined would force us to posit a plethora of new distinctions. But this is not what we observe in practice. The finding that languages are in fact so similar invites systematic cross-linguistic comparison, and semantic maps are an important tool for such studies.

Semantic maps describe the grammatical meaning(s) of a gram in a very concrete way that can easily be discussed, improved on, or proven wrong. In contrast, the general-meaning approach generally arrives at descriptions so abstract and vague that it is practically impossible to work with them. As Lakoff (1987) noted (for word meanings), a general meaning is "so devoid of real meaning that it is not recognizable as what people think of as the meaning of a word" (p. 416).

Semantic maps do not presuppose that we have found THE correct semantic analysis of a grammatical morpheme in a particular language. They simply sidestep the vexing problem of distinguishing between polysemy and vagueness. If there is one language whose grams distinguish between two functions, then these two functions must be added to the map. Thus, the fact that German *jemand* and *irgendjemand* differ with respect to the speaker's knowledge of the referent (cf. section "Indefinite Pronouns") forces us to distinguish a "known" function and an "unknown" function on the map. Now of course this implies nothing about the analysis of other languages. English *some*-indefinites are not sensitive to this distinction, but it does not seem reasonable to say that they therefore have two different senses—*some*-indefinites are simply vague with respect to this distinction. Thus, a gram that covers several functions on a map may have just a single sense and be vague with respect to the relevant distinctions, or it may be polysemous, and of course it may also be vague with respect to some of the distinctions, whereas others are distinct senses. But all this does not matter for the semantic map. This is an important advantage because semantic analysis of grammatical meaning is very difficult. Cross-linguistic comparison of grammatical meaning is easier: It only requires us to be able to identify functions across languages. This is not a trivial prerequisite either, but it is more manageable.

Similarly, the semantic-map perspective can help us avoid making unnecessary homonymy claims. For example, there is a long-standing debate on whether the different usage types of English *any* (cf. section "Indefinite Pronouns") can be subsumed under one general meaning, or whether two different *any*s have to be recognized, a "polarity-sensitive *any*" and a "free-choice *any*." The semantic map in Fig. 8.7 provides a way out of this dilemma: It shows the different functions of *any*, but it also shows that the different functions are close to each other on the map, so the fact that the "two *any*s" are not unrelated is captured as well. Likewise, it has sometimes been claimed that French has two different items *à*, a "preposition" *à* that expresses direction, and a "case marker" *à* that expresses recipient. Again, the semantic map in Fig. 8.2 expresses both the differences and similarities, so that we do not need to assume accidental homonymy here.

Semantic maps also do not require the identification of a central or prototypical function (or use or sense) of a grammatical item. It has often been suggested in recent years that polysemy networks are organized around a prototypical sense that is surrounded by more peripheral senses (Lakoff, 1987; Langacker, 1988). Such analyses are compatible with semantic maps: For instance, one might want to claim that the "direction" sense of English *to* is the central sense, and that the other functions (cf. Fig. 8.1) should be seen synchronically as extensions from this sense. However, in many other cases the identification of a central, prototypical sense is not straightforward (e.g., Seychelles Creole *ek*, Fig. 8.14), and probably it is not a good strategy to look for one single central sense in all cases. The semantic-map method is completely neutral in this respect.

Semantic maps not only provide an easy way of formulating and visualizing differences and similarities between individual languages, but they can also be seen as a powerful tool for discovering universal semantic structures that characterize the human language capacity. Once a semantic map has been tested on a sufficiently large number of languages (i.e., at least a couple of dozen) from different parts of the world, we can be reasonably confident that it will indeed turn out to be universal, and even if a map is based only on a handful of languages, the map can serve as a working hypothesis to be tested by further evidence. Thus, every semantic map can be interpreted as making a universal claim about languages that can be falsified easily. By showing that there exists at least one language with a pattern of multifunctionality that cannot be accommodated by the map, a map is falsified and needs to be abandoned or at least modified. So for every sub-chain of three functions "function1 — function2 — function3" (where function3 is not linked directly to function1), the claim is made that if a language has a multifunctional gram with the functions "function1" and "function3," then that gram also has "function2." That is, each semantic map embodies a series of implicational universals (hence Haspelmath's [1997a] term "implicational map"). These universals emerge as an automatic side effect of the construction of a map that allows the representation of cross-linguistic similarities and differences.



Because multifunctionality of grammatical morphemes presumably occurs only when the different functions are similar, semantic maps provide objective evidence for which meanings or functions are perceived as similar by speakers. In this sense, our semantic maps can indeed be taken as a direct representation of the relationships between meanings in speakers' minds ("mental maps," "cognitive maps"). In Croft's (2001) words, they represent "the geography of the human mind, which can be read in the facts of the world's languages in a way that the most advanced brain scanning techniques cannot ever offer us" (p. 364). However, semantic maps only show the relative closeness or distance of relations, not the exact nature of the relations within semantic space. So semantic maps cannot replace cognitive–semantic analyses, but they can supplement them and constrain them in various ways.

## SEMANTIC MAPS AND DIACHRONIC CHANGE

In addition to summarizing the synchronic relationships between different grammatical meanings, semantic maps can also be an important tool for diachrony, in particular grammaticalization studies. The simplest way in which semantic maps make predictions about diachronic change is by showing that some changes presuppose others. For example, given the mini-map "direction – recipient – predicative possessor" (a sub-map of Figs. 8.1–8.2), it is predicted that if a direction marker (such as Latin *ad* "to," which later gave rise to French *à*) is extended to additional functions and comes to express predicative possession, it must have been extended to "recipient" before. This is really a trivial consequence of the synchronic implicational relations: Just as synchronically each gram covers a contiguous area, so diachronically a gram cannot arbitrarily "jump" to a distant function, but must be extended step by step (or "incrementally," Croft, Shyldkrot, & Kemmer, 1987).

But we can say more than this, because diachronic change is typically directed, and this directionality can be encoded easily on semantic maps by turning the neutral connecting lines into directed arrows. A diachronic version of the map in Figs. 8.1 and 8.2 would look as in Fig. 8.16.

An arrow between two function labels means that a gram can extend its meaning only in the direction shown. For instance, direction markers are typically extended to the purpose function (Haspelmath, 1989) and to the recipient function (the latter has happened both to English *to* and French *à*, from Latin *ad*), but the reverse development, from purpose or recipient

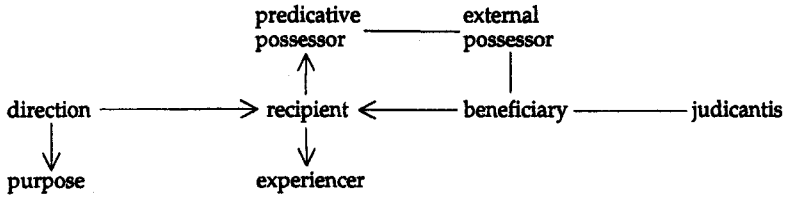


FIG. 8.16. A semantic map of typical dative functions, with directionality.

to direction, is unattested. Evidence for directionality comes from attested diachronic changes, and as the diachronic data are far more difficult to obtain than the corresponding synchronic data, the possible directions of change are not always known. For instance, it is not clear to me whether there are any restrictions for the direction of change for the functions of external possessor and judicantis, simply because of insufficient data. (Thus, Fig. 8.16 shows simple connecting lines rather than arrows for these functions.) We can be really certain that a change is unidirectional only if there are numerous attested cases and no counterexamples.

Often, however, a further strong indication of unidirectionality comes from the substance of the meanings involved: The most common type of grammatical change, grammaticalization, generally entails a unidirectional bleaching and extension of meaning, that is, the loss of specific, concrete meaning elements, increasing abstractness, generalization to new contexts, and loss of pragmatic emphasis.[10] The changes from "direction" to "recipient" and from "direction" to "purpose" illustrate bleaching quite well, because in both cases, the concrete spatial meaning component is lost and the gram is extended to new contexts.

Some semantic maps show a systematic directionality of semantic change across a range of functions and can therefore be likened to sloping territory in semantic space. A good example is the map of reflexives and middles (section "Reflexives and Related Functions," Figs. 8.9–8.11). In Fig. 8.17, a somewhat modified version of this map with arrows is given.

Figure 8.17 is simplified in that "naturally reciprocal" and "deobjective" are omitted, for which diachronic data are insufficient. To the left, the function "emphatic reflexive" is added, that is, the function of English *-self* as in *The mayor herself opened the exhibition.* Such emphatic reflexives are usually the source of (full) reflexive markers (as in *The mayor admires herself*) (cf. König, 2001). Figure 8.17 is a good example of a "slope" because grammatical morphemes can only acquire new meanings from left to right on this figure. In Fig. 8.18, the boundaries of (originally) reflexive grams in several

[10]Cf. Lehmann (1995), Heine et al. (1991), Hopper and Traugott (1993), and Bybee et al. (1994) for the nature of semantic change in grammaticalization, and Haspelmath (1999b) for an explanation of the unidirectionality of grammaticalization.



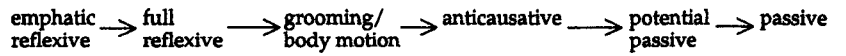


FIG. 8.17. A semantic map for reflexive and middle functions, including directionality.

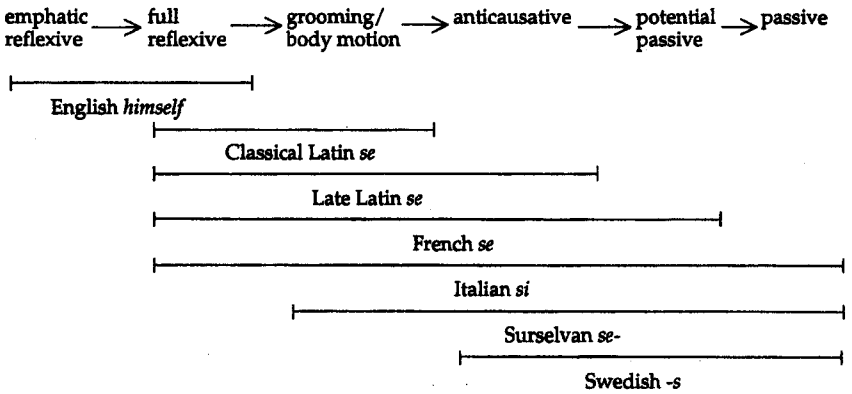


FIG. 8.18. The boundaries of reflexive/middle grams in seven languages.

languages are shown that illustrate the unidirectional diachronic development (cf. Croft et al., 1987; Kemmer, 1993, for more discussion).[11]

Particularly instructive is the comparison of Classical Latin, Late Latin, and French, because these three represent three successive stages of the same language. Whereas Classical Latin *se* was restricted to full reflexives (e.g., *se videt* "sees himself") and grooming/body motion (e.g., *se movet* "moves [himself]"), Late Latin texts already show *se* extended to the anticausative function (e.g., *cludit se* "closes [intr.]"). French allows *se* in the potential passive construction (*Son livre se vend bien* "Her book sells well"), and Italian has extended *si* even further (*Si è evitata una tragedia* "A tragedy was avoided.")

But a gram cannot go on acquiring new functions indefinitely. When a gram has taken on a certain number of abstract functions, chances are that speakers will prefer a novel expression for the more concrete or more emphatic functions that stand at the beginning of the slope. Thus, Latin *se* very early lost the original emphatic reflexive sense (which it must have had at some point), and *ipse* "same, self" was used as a new emphatic reflexive marker. In Surselvan Romansch,[12] the marker *se-* (which has become a pre-

[11]A completely analogous figure for indefinite pronouns is given in Haspelmath (1997a, p. 149).

[12]Surselvan Romansch is one of the "Rhaeto-Romance" varieties of the canton of Graubünden, Switzerland. It is discussed by Kemmer (1993, pp. 166–175), following the original work by Stimm (1973).

fix in this language) has lost the full reflexive function, for which the reinforced reflexive *sesez* is used (*vesa el sesez* "he sees himself"). The corresponding Swedish suffix *-s* does not, of course, descend from Latin *se*, but its history is completely analogous (Kemmer, 1993, pp. 182–193). Going even further than Surselvan, Swedish *-s* has lost also the grooming and body motion functions, for which the full reflexive pronoun *sig* is used (e.g., *vaska sig* "wash [oneself]"), and it is restricted to the anticausative and passive functions (e.g., *förändra-s* "change [intr.]," *hata-s* "be hated"). For such slope-like semantic maps, we can thus summarize the diachronic development by the following metaphor: A grammatical morpheme is like a window that opens the view onto part of semantic space. The window gradually moves in one direction over the map, and as new functions come into view on one side, some old functions disappear on the other side.

Figures such as Fig. 8.17 are well-known from grammaticalization studies. They are variously called "grammaticalization channels" (Lehmann, 1995), "grammaticalization paths" (Bybee, Perkins, & Pagliuca, 1994), or "grammaticalization chains" (Heine, Claudi, & Hünnemeyer, 1991, p. 220). However, as van der Auwera and Plungian (1998) have stressed recently, they are really completely equivalent to semantic maps, with arrows added to indicate directionality.

In a grammaticalization path, a newly grammaticalized item normally comes in at one margin and is then gradually extended to some of the more central functions. However, occasionally a new form may come to express a function in the middle of the map and "oust" a gram from this function that still expresses a number of adjacent functions. A simple concrete example comes from the domain of tense and aspect. A very rudimentary map links the functions "habitual," "progressive," and "future" as in (23).

(23) habitual —— progressive —— future

The English Progressive (*I'm leaving*) can express progressive and future, the Spanish Present (*Juan canta* "Juan sings/is singing") expresses habitual and progressive, and the German Present can express all three (*ich spiele* "I play/I'm playing/I'll play"). Now if a language with the German multifunctionality pattern develops a new progressive form that ousts the old form in its progressive function, the old form may end up with just the two functions "habitual" and "future" (cf. Haspelmath, 1998, for detailed discussion). This appears to have happened in Turkish, where the old present tense (e.g., *okut-ur* "teaches/will teach") is now restricted to habitual and future, whereas the progressive is obligatorily expressed by the new progressive form (*okut-uyor* "is teaching"). As a result, the Turkish old present tense no longer expresses a coherent area on the semantic map, but rather a region in the form of a doughnut, with a hole in the middle (cf. Croft et al., 1987, p. 190; van der Auwera & Plungian, 1998, p. 113). If this phenomenon turned out to be widespread, the idea that grammatical morphemes generally express a coherent region on a map would be jeopardized, and constructing semantic maps would become more complicated. This is thus an area where further research is needed most urgently.



## SOME FURTHER ISSUES

So far in this chapter I have limited myself to semantic maps that represent the mutual relationships of grammatical meanings. However, the problem of multifunctionality arises in the same way with lexical meanings, so for the sake of completeness I give one example here. It involves various senses or uses of words for "tree" and "wood," and it comes from Hjelmslev (1963, p. 53), an important theoretical work of European structuralism. Hjelmslev compared just four languages (Danish, German, French, Spanish) and found that five different functions have to be distinguished: "tree," "firewood," "wood (stuff)," "small forest," and "large forest." The semantic map is one-dimensional, so the boundaries of the lexemes in the four languages can be conveniently represented together (as in Fig. 8.19):

Being a structuralist, Hjelmslev used this example to show how different languages carve up the semantic space in radically different ways, but from the present perspective, the differences are not all that great. One could easily imagine the differences to be such that no non-trivial universal semantic map can be drawn. Thus, Hjelmslev's own example can be used to make a very different point, not for relativism, but for universalism of meaning.

Another topic that should briefly be mentioned is the relationship between semantic (or implicational) maps and *implicational hierarchies*, because the two are occasionally confused. The two concepts are related in that both stand for a series of implicational universals, but implicational hierarchies are much stronger statements. A simple example of an implicational hierarchy of lexical items comes from numerals. If a language has a

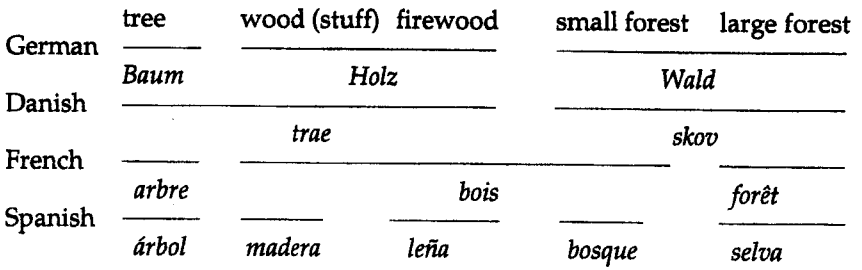


FIG. 8.19. A semantic map for "tree"/"wood," and the boundaries of four languages.

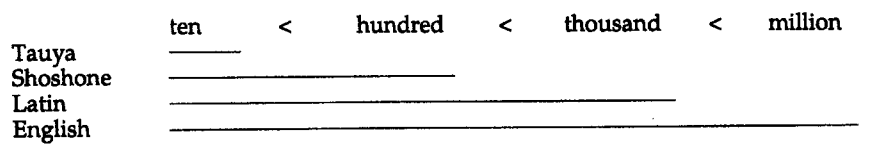


FIG. 8.20. An implicational hierarchy of numerals, and four exemplifying languages.

word for a high number, it also has words for all lower numbers. Thus, there are languages like Tauya (New Guinea) that have a word for "ten" but none for "hundred," languages like Tümpisa Shoshone (Nevada), which has "ten" and "hundred," but not "thousand," and so on (cf. Fig. 8.20).

Figure 8.20 is somewhat similar to Figs. 8.18 and 8.19, but there are important differences. The most salient one is of course that implicational hierarchies do not involve multifunctionality, but merely the existence of several different words (or more generally, patterns). More interestingly, implicational hierarchies differ from implicational maps in that the existence of one item makes a prediction about all items up to the beginning of the hierarchy, not just about an arbitrary part of the hierarchy. For example, there could be no language that has words for "thousand" and "million," but not for "hundred" and "ten." As a result, an implicational hierarchy allows far fewer language types and thus makes stronger predictions than an implicational map.

## CONCLUSION

Semantic maps are a powerful methodological tool for cross-linguistic and diachronic semantic studies, but they are also highly relevant for semantics itself. Semantics is difficult, because unlike phonetic substance, semantic substance cannot be measured or observed objectively. At least at the present stage of our knowledge, it is questionable whether one could motivate a structuring of semantic space that is independent of linguistic expression. Linguists have long been aware of this problem, and they have mostly shied away from speculation about universal semantic structures, concentrating instead on the semantic analysis of particular expressions in particular languages. By doing this, they are on much safer ground than by reasoning about a priori possibilities, but this self-restraint also means that the study of meaning is confined to the historically accidental structures of particular languages. The semantic-map approach takes us a step further: It is firmly rooted in empirical observation of individual languages, but through systematic cross-linguistic comparison we can arrive at well-motivated structural patterns in universal conceptual space.[13]



From the psychologist's point of view, a further natural question to ask is about the mental reality of the universal semantic structures discovered by this method, or indeed merely the mental reality of the language-particular structures that are represented by boundaries on the map. But this is a question that cannot be answered with the linguist's tools, that is, the observation of the behavior and distribution of expressions in naturally occurring texts and speakers' intuitions. As Croft (1998) and Sandra (1998) have emphasized, linguists have a tendency to claim more than their evidence warrants. In particular, they are vulnerable to both the "generality fallacy" (Croft) and the "polysemy fallacy" (Sandra). They can be guilty of the generality fallacy when they claim that a generalization that they have made (e.g., a monosemic analysis) is also the speakers' generalization. Thus, whereas a linguist would be tempted to claim that the spatial sense of *in* (e.g., *in Leipzig*) and its temporal sense (e.g., *in February*) are closely related or even constitute two contextual uses of a single monosemous sense, there is no basis for claiming that this generalization is also found in speakers' mental representations.[14] On the other hand, linguists who favor polysemic analyses (in particular cognitive linguists) may make a multitude of sense distinctions (e.g., those in [1a–d]) that are (explicitly or implicitly) attributed to speakers' mental representations. When no evidence for distinguishing these senses is cited (apart from the linguist's imagination), this may be a case of the polysemy fallacy.

But cross-linguistic comparison allows us to go one step further. Whereas someone who only looks at English has a hard time deciding whether the preposition *on* in *a fly on the table* and *a fly on the wall* are mentally represented as the same item or as different item, a cross-linguistic perspective immediately reveals that some languages use different prepositions for this case (e.g., German *auf* vs. *an*: *eine Fliege auf dem Tisch* vs. *eine Fliege an der Wand*). The fact that there are such languages makes an analysis in terms of separate representations much more plausible. Conversely, if no language uses different expressions for two supposedly distinct senses, this may serve as a warning against an analysis in terms of separate representations. Thus, although semantic maps are not a method for arriving directly at mental representations, they can give linguists some guidance in avoiding the Scylla of the generality fallacy and the Charybdis of the polysemy fallacy.

[13]Another approach that uses cross-linguistic comparison to arrive at semantic universals is that of Goddard and Wierzbicka (1994), which is, however, quite different in other respects.

[14]Cf. Sandra and Rice (1995) for relevant experimental evidence that points toward homonymy rather than polysemy or monosemy in this case.

For psychologists, they provide a useful summary of what linguists know about the mutual relations between the various senses of multifunctional expressions.

## ACKNOWLEDGMENTS

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Chapter 9

# Regularity and Idiomaticity in Grammatical Constructions: The Case of *Let Alone**

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## 1. BACKGROUND

This chapter advocates an approach to grammar that differs from most current approaches in several ways. The overarching claim is that the proper units of a grammar are more similar to the notion of construction in traditional and pedagogical grammars than to that of rule in most versions of generative grammar. This is not to say that the generative ideal of explicitness is foregone; nor is the necessity of providing for recursive production of large structures from smaller ones set aside. Constructions on our view are much like the nuclear family (mother plus daughters) subtrees admitted by phrase structure rules, EXCEPT that (1) constructions need not be limited to a mother and her daughters, but may span wider ranges of the sentential tree; (2) constructions may specify, not only syntactic, but also lexical, semantic, and pragmatic information; (3) lexical items, being mentionable in syntactic constructions, may be viewed, in many cases at least, as constructions themselves; and (4) constructions may be idiomatic in the sense that a large construction may specify a semantics (and/or pragmatics) that is distinct from what might be calculated from the associated semantics of the set of smaller constructions that could be used to build the same morphosyntactic object.

Not all current approaches to grammar in the broad generative tradition, in which the current effort situates itself, differ from Construction Grammar in each of the respects detailed above; for example, various forms

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