

In defense of classical semantic maps¹

Johan van der Auwera

Croft and Poole (this issue) offer a powerful plea for having powerful computational methods do at least some of the work earlier done by hand and represented in ‘classical’ semantic maps. In this comment, I will clarify that classical semantic mapping shows more variation than is shown in the Croft and Poole paper and that classical semantic mapping has properties that will not allow the multidimensional scaling method to take over.

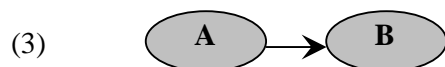
It is obvious that any semantic constellation of meanings comes about through time. Consider the map in (1). It is constructed according to the conventions adopted in van der Auwera and Plungian (1998). The meanings are represented by the ovals, the connecting line symbolizes that the two meanings are connected, and the shading identifies constructions. In (1) there is only one type of shading, hence one construction, and since it has two meanings, it can be called ‘polysemous’.



This abstract map can be illustrated with English *must*. *Must* may be said to have two meanings: a non-epistemic one, illustrated in (2a), and an epistemic one, illustrated in (2b). The two meanings both involve a sense of necessity, these senses are connected, but because they are different, *must* may be considered to be polysemous.²

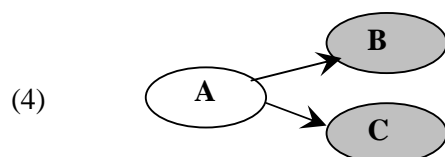
- (2) a. You *must* go home now.
b. He *must* have left four hours ago.

Unless there is a hyponymy relation between meanings A and B (see below), one of them will have been older and a process of semantic change will have led to the new meaning. Let us assume that A led to B. Now the line is replaced by an arrow.



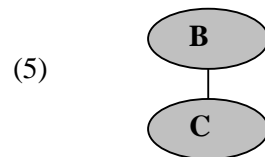
For English *must*, it is clear that the non-epistemic meaning came first and that the epistemic one developed from it. Van der Auwera and Plungian (1998) accepted without argument that if the diachrony of the relevant construction is known, the linguist should use the diachronically informed map, so (3) rather than (1). For the mapping of modality, much is indeed known about the history of modal expressions, and the maps in van der Auwera and Plungian (1998) are all of the type shown in (3).³ Obviously, if the subject of investigation is diachrony, the linguist has no choice: diachronic study needs diachronic maps (cp. Haspelmath 2003: 233-237). The point I want to make explicit, however, is that even a synchronic study is better served with a diachronic map.⁴ The argumentation concerns what Croft and Poole call the ‘Semantic Map Connectivity Hypothesis’, also known as the ‘adjacency’ or ‘contiguity’ requirement.

Consider the map in (4).



A marker has meanings B and C, both of which developed out of meaning A, in semantically different directions, and meaning A is no longer available for this construction. On this

diachronic map, meanings B and C are not directly connected (adjacent, contiguous), the missing link being meaning A. For empirical illustrations of this constellation, see van der Auwera and Plungian (1998: 111-114; 1999) and Haspelmath (2003: 237), the latter also referring to earlier work by Croft (Croft, Shyldkrot and Kemmer 1987). Note that the relations that map (4) represents are semantic ones. It goes without saying that B and C are also related: after all they use the same construction, and if the semantic relation is mediated by meaning A, meanings B and C are semantically related as well, but crucially, the semantic link is indirect. In any purely synchronic map, including the inherently synchronic multidimensional scaling ones, the semantic link between B and C will be a direct one and the purely synchronic map will come out as (5).



Since one may require a semantic map to get the semantics right or as ‘as right as possible’, (4) is to be preferred to (5), even for synchronic studies. Synchronically, meaning A will probably still be available in the language (and this is indeed the case in the empirical illustrations referred to above), the only point is that meaning A is not available for the relevant construction, but for one or more other constructions.

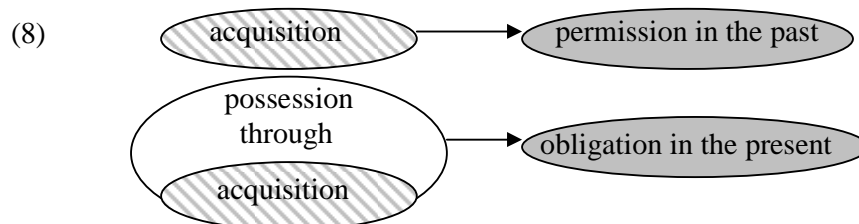
Another argument for wanting semantically optimal and diachronic maps concerns homonymy. The kind of polyfunctionality that semantic maps are supposed to cover is polysemy, not homonymy. However, it is clear that homonymous constructions may find themselves in the same semantic map. Van der Auwera, Kehayov and Vittrant (In print) is a study of acquisitive modals, i.e., modals that historically derive from a *get* etymons. English *get* is a case in point. (6) can express permission. Of course, (6) can mean more than one thing (see Gronemeyer 1999), but it is fine for a child to report parental permission with *get*.

(6) I *got* to watch TV last night.

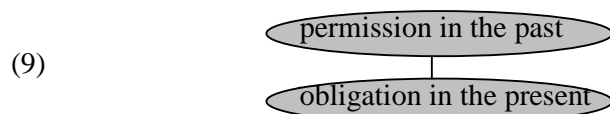
English also has *gotta* construction

(7) I *gotta* go.

This *gotta* construction derives from *have got to*, but since the *have* part ‘grammaticalized away’, we arrive at a superficial *get* construction. The *got to* in (6) enters modality’s map because acquisition can spawn modality; the superficially similar *gotta* in (7), however, enters the modal map because possession can yield modality. Let us assume that *got to* in (6) and *gotta* in (7) have become formally identical and that we have thus arrived at a kind of homonymy. Still, there is a semantic relationship as well, but I want to say that it is indirect, diachronic, and not modal, but ‘premodal’. (8) is a simplified map, with the meaning in (6) glossed as ‘permission in the past’ and the meaning in (7) as ‘obligation in the present’. Since I assume that *got to* and *gotta* collapsed, both meanings are shaded in the same way, meaning that they can be expressed by one construction, i.e. *got to/gotta*. The map further shows that the permissive meaning goes to back to acquisition, and the obligative one to possession, more particularly possession through acquisition. For both premodal source meanings a form of *get* can be used; so I use shading here too.



In a purely synchronic account of the uses in (6) and (7), assuming still that *got to* and *gotta* have become formally identical, one would connect them and end up with the claim that the meanings are connected. Of course, there is no semantic problem about connecting permission and obligation, but it is fully mysterious why *got to/gotta's* permission should be past and its obligation present. (9) is the simplified synchronic map.

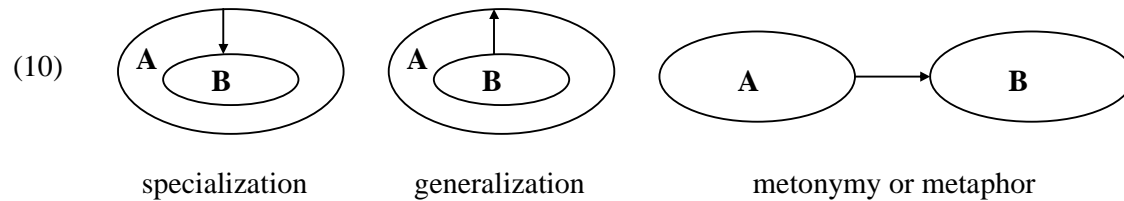


Like in the missing link scenario, I do not deny that the two meanings are related, first and foremost, formally (the assumed homonymy is certainly a kind of similarity), but even semantically, permission and obligation are both shades of modality. But I do claim that map (8) is more enlightening than map (9), not only diachronically (for that is obvious) but also semantically. *Mutatis mutandis*, the critique on purely synchronic semantic maps carries over to purely synchronic multidimensional scaling configurations.

Note that in both in the abstract missing link constellation and in the concrete *got to/gotta* example, the historical relation is ultimately a semantic one. In (4) meaning A is semantically related to both B and C. In (8) the premodal realm relates acquisition to possession. But the explanation for synchronic non-contiguity need not involve any diachronic relatedness. Language contact may also play a role. Speakers may want to give a construction a new meaning, not directly connected to a previous meaning, for social reasons, because they are bilingual and because they connect the two meanings in their other coterritorial and more prestigious language. Acquisitive modals are in case in point. The two hotbeds of acquisitive modality are mainland Southeast Asia and the Circum-Baltic area, both clear linguistic areas, and for both transfer scenarios for acquisitive modals have been posited (see van der Auwera, Kehayov, and Vittrant In print for references). The good news for semantic map makers is that they need not worry about non-contiguous meanings that are known to have developed only because of language contact: they are not counterexamples, they should not lead them to revise the map and there is no need for complexifying the synchronic maps with additional lines.

Much of what has been said before can be phrased provocatively as follows: the best synchronic semantic map is a diachronic one. The argumentation also supports the equally provocatively phrased claim that the best semantic map is a *semantic* semantic map. Thus I have pleaded for preferring a strong semantic link that is historical to a weak one that is not (better linking up meanings B and C indirectly via the defunct A, than directly), and I have also pleaded for not couching homonymy in terms of weak semantic similarity.⁵

There is one more argument supporting both claims. We know that there are various types of semantic processes. A minimal classification distinguishes between specialization, generalization, metonymic change and metaphorical change. If the maps are truly semantic and diachronic and we know how meanings developed, there is no reason not to reflect this in maps. A first step in this direction was taken by van der Auwera and Plungian (1998). They used the following conventions.



For the purposes of their study of modality, it was not necessary to reflect the difference between metaphorical and metonymic change, but it is of course easy to represent the two types of change in a different format.

Note that the inclusion of ovals used for representing the difference between specialization and generalization can be given a meaningful synchronic interpretation, too. With lines instead of arrows, we still represent hyponymy versus a relation of metaphor or metonymy.



But I don't see how a multidimensional scaling model can capture this. Since the difference between hyponymy and metonymy or metaphor is a semantic one, the conclusion is that multidimensional scaling representations can never be as semantic as semantic maps.

Historically and semantically informed semantic maps are of course difficult to draw. They do not simply 'emerge' from the cross-linguistic data without prior assumptions about the semantic and/or pragmatic properties that determine the relations' (Croft and Poole, this issue XXXX). They require the usual *va et vient* between arm chair hypothesis building and empirical validation. The need for diachrony makes them particularly difficult, and for some issues and language families probably impossible.⁶ Note also that the objection that classical semantic maps cannot deal with exceptions (Croft and Poole, this issue XXXX) is not correct. In fact, the very existence of exceptions (in the missing link, homonymy and contact interference scenarios) is used as an argument for preferring classical semantic maps that are truly semantic as well as diachronic.

Finally, the claim for the continued use of classical semantic maps should not be misunderstood as a rejection of the multiple scaling approaches, such as advocated by Croft and Poole, but also Levinson and Meira (2003), Wälchli (2006), nor of the reasons given by these authors. One excellent and simple reason, already hinted at, is that for many languages there is no or too little diachronic information, and if the best synchronic map is to be diachronic, then the best map is not going to be available. Another strong reason, one that is stressed by Cysouw (2007) and by Sansò (2007), is that multidimensional scaling techniques are useful for representing the frequency of the polysemies. It is correct that a classical semantic map does not show - and is not intended to show - which polysemies are frequent or infrequent or even unattested, even though possible. To conclude: we need both kinds of maps, and perhaps the very best map will be an overlay structure, not unlike Croft and Poole's Figure 6.

Notes

- 1 Thanks are to the participants of the Paris ALT VII Workshop on Semantic Maps in September 2007.
- 2 There are other analyses. The point here is not to present a convincing account of English *must*, but to illustrate the basic architecture of a semantic map.
- 3 They further relate to the grammaticalization paths discussed in Bybee, Perkins, and Pagliuca (1994). All that matters in this paper is the diachronic relation between meanings and whether one meaning is more or less grammaticalized is not relevant here.
- 4 The point is implicit in van der Auwera and Plungian (1998) and in van der Auwera and Temürçü (2006).
- 5 This also relates to a concern expressed by Cysouw (2007). Cysouw is an advocate of purely synchronic maps. Since he does not mind connecting meanings that have lost their semantic link, homonyms and incidents of language contact, it is understandable that he is afraid that 'in the end most (if not all) of the possible lines [...] will be needed to describe the wide variety of structural possibilities that the human language capacity can deal with'. Attempting to restrict oneself to lines that make semantic and historical sense will avoid this danger, at least to some extent.
- 6 Thus, in spite of the fact my first map, the one for modality in van der Auwera & Plungian (1998) was historical, I didn't initially dare to bring in diachrony in the map for imperative person marking (van der Auwera, Dobrushina, and Goussev 2004) (but here too diachrony is possible, see van der Auwera and Taeymans 2004 and van der Auwera. Schalley and De Vogelaer In print).

References

- Bybee, Joan, Perkins, Revere, and Pagliuca, William. 1994. *The evolution of grammar: tense, aspect and modality in the languages of the world*. Chicago: University of Chicago Press.
- Croft, William, Shyldkrot, Hava Bat-Zeev, and Kemmer, Suzanne. 1987. Diachronic semantic processes in the middle voice. In *Papers from the 7th International Conference on Historical Linguistics*, eds. Anna Giacalone Ramat, Onofrio Carruba and Giuliano Bernini, 179-192. Amsterdam: Benjamins.
- Cysouw, Michael. 2007. Building semantic maps: The case of person marking. In *New challenges in typology: Broadening the horizons and redefining the foundations*, eds. Matti Miestamo and Bernhard Wälchli, 225-247. Berlin: Mouton de Gruyter.
- Gronemeyer, Claire. 1999. On deriving complex polysemy: the grammaticalization of *get*. *English Language and Linguistics* 3:1-39.
- Haspelmath, Martin. 2003. The geometry of grammatical meaning: semantic maps and cross-linguistic comparison. In *The New Psychology of Language. Cognitive and Functional Approaches to Language Structure*, ed. Michael Tomasello, 211-242. Mahwah NJ: Lawrence Erlbaum.
- Levinson, Stephen, and Meira, Sérgio. 2003. 'Natural concepts' in the spatial typological domain - adpositional meanings in cross-linguistic perspective: an exercise in semantic typology. *Language* 79:485-516.
- Sansò, Andrea. 2007. How "semantic" are semantic maps? A pilot study of passive and impersonal constructions in European languages. *Workshop on Semantic Maps*. Paris, September 2007.
- van der Auwera, Johan, and Plungian, Vladimir. 1998. Modality's semantic map. *Linguistic typology* 2:79-124.

- van der Auwera, Johan. 1999. On the semantic and pragmatic polyfunctionality of modal verbs. In *The semantics/pragmatics interface from different points of view*, ed. Ken Turner, 50-64. Amsterdam: Elsevier.
- van der Auwera, Johan, Dubrushina, Nina, and Goussev, Valentin. 2004. A Semantic Map for Imperative-Hortatives, In *Contrastive Analysis in Language. Identifying Linguistic Units of Comparison*. eds. Dominique Willems, Bart Defrancq, Timothy Coleman and Dirk Noël. Basingstoke: Palgrave Macmillan, 44-66. (also as Semanticheskaja karta imperativa-gortativa, In *Tipologicheskie obosnovanija v grammatike. K 70-letiju prof. V. S. Xrakovskogo*. ed. A. P. Volodin Moscow: Znak, 36-60.)
- van der Auwera, Johan, and Taeymans Martin, 2004. Let's, in English and in Dutch, In *An International Master of Syntax and Semantics. Papers Presented to Aimo Seppänen on the Occasion of His 75th Birthday*. Ed. Bergh, Gunnar, Herriman, Jennifer, and Mobärg, Mats. Göteborg: Universitet, 239-247.
- van der Auwera, Johan, and Temürçü, Ceyhan. 2006. Semantic maps. In *Encyclopedia of Language & Linguistics*, ed. Keith Brown, 131-134. Amsterdam: Elsevier.
- van der Auwera, Johan, Kehayov, Petar, and Vittrant, Alice. In print. Acquisitive modals. In *Cross-linguistic Studies of Tense, Aspect, and Modality*. Eds. Lotte Hogeweg, De Hoop, Helen, and Malchukov, Andrej. Amsterdam: Benjamins.
- van der Auwera, Johan, Schalley, Ewa, and Gunther De Vogelaer. In print. Analogie und die Verbreitung der verbalen Kongruenz bei Imperativen, Konjunktionen und Antwortpartikeln. In *Verstärkung*. Ed. Rüdiger Harnish. Berlin: Mouton de Gruyter.
- Wälchli, Bernhard. 2006. Constructing semantic maps from etic parallel text data. Ms. http://ling.uni-konstanz.de/pages/home/a20_11/waelchli/publications.htm, accessed on November 24, 2007.