

INDEFINITENESS MAPS:  
PROBLEMS, PROSPECTS, AND ‘RETROSPECTS’<sup>1</sup>

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1. SEMANTIC MAPS

Semantic maps have become an important tool in linguistic typology, both in synchrony and diachrony.<sup>2</sup> For synchrony, a semantic map represents correspondences between form and use (or meaning). A classical<sup>3</sup> semantic map has two layers. The bottom layer represents categories of use and the top layer categories of form. The bottom layer represents these use categories as map points, which are more or less close to one another and which are directly or indirectly related. Figure 1 represents a skeleton bottom layer.

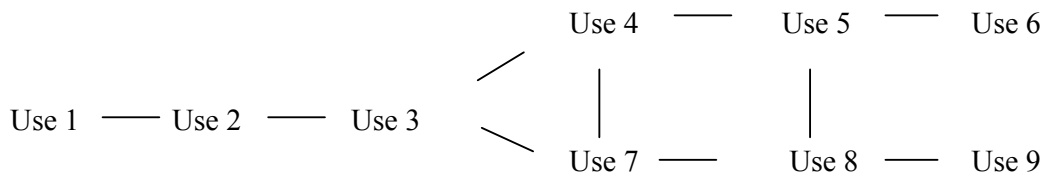


Figure 1: A skeleton map, bottom layer

The idea is that when a formal category has more than one use, the latter are related in a systematic and semantically motivated way. *Ceteris paribus*, the multiple uses of a formal category are adjacent as well as directly connected. In Figure 2 we add an overlay with three formal categories, called ‘FORM 1’, ‘FORM 2’, and ‘FORM 3’. FORM 1 is well behaved category and FORMS 2 and 3 are not.

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<sup>2</sup> This is evidenced also in the appearance of two recent theme issues, the July 2008 issue of *Theoretical Linguistics* and a forthcoming issue of the e-journal *Linguistic Discovery*. On the wider linguistic relevance of semantic maps, see Janda (2009).

<sup>3</sup> On what distinguishes a classical semantic map from the newer developments, see Croft and Poole (2008) and van der Auwera (2008).

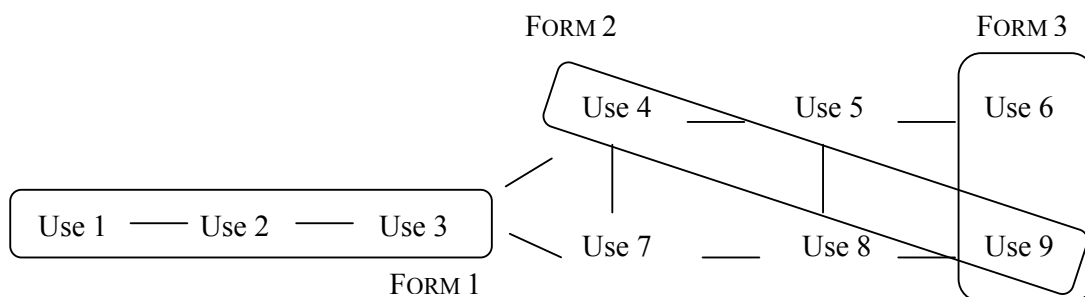


Figure 2: A skeleton map, with both a use and a form layer

FORM 1 is well-behaved: the three uses are connected and adjacent. FORM 2 is not well-behaved: the two uses (Use 4 and Use 9) are not adjacent. FORM 3 is not well-behaved either: though its uses (Use 6 and use 9) are adjacent, they are not directly connected. The prediction is that FORM 2 and FORM 3 do not occur at all or only under very special circumstances.<sup>4</sup>

To make the semantic maps diachronically relevant, all we have to do is to turn connecting lines into arrows. In Figure 3 all the lines have become arrows pointing to the right (for the horizontal and diagonal ones) or to the bottom (for the vertical ones). This means that when a form acquires new uses it will acquire them in the direction shown by the arrows. If a form already has Use 1, the next one will inevitably be either Use 2 on its own or a set of adjacent and connected uses including Use 2.

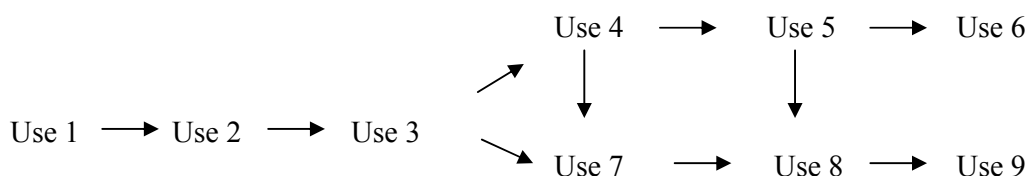


Figure 3: A diachronic skeleton map

## 2. HASPELMATH'S INDEFINITENESS MAP

Classic works in the typological literature include Anderson (1982), usually claimed to be the first use of the semantic map method, Croft (2001), which is an entire theory of grammar

<sup>4</sup> There are three types of exceptions. They concern (i) homonymy, (ii) language contact, and (iii) the loss of intermediate categories – see van der Auwera & Temürçü (2006) and van der Auwera, Kehayov & Vittrant (Forthcoming).

based on semantic maps, Haspelmath (2003), an overview of the early use of semantic maps in typology, and Haspelmath (1997), the most thorough typological study of a category which gives pride of place to semantic maps. This category is that of the indefinite pronoun. Consider the following nine examples or example sets, all of which concern the expression of human indefiniteness.

- (1) *Somebody* called you while you were away: guess who?
- (2) I heard *somebody*, but I couldn't tell you who.
- (3) Please ask *somebody* else.
- (4) a. Has *somebody* told you about it?  
b. Has *anybody* told you about it?
- (5) John doesn't think that *anybody* will be there.
- (6) a. I haven't seen *anybody*.  
b. I have seen *nobody*.
- (7) a. If you see *somebody*, tell me immediately.  
b. If you see *anybody*, tell me immediately
- (8) He is better than *anybody* else in the group.
- (9) *Anybody* can solve this problem.

According to Haspelmath (1997), (1) to (9) illustrate the nine uses for which languages show interesting variation and for which they may or may not use different markers. As far as English goes, there are three main pronominal strategies: *somebody* (or *someone*) is used in (1-4, 7), *anybody* (or *anyone*) in (4-9), and *nobody* (or *no one*) in (6). Or take Italian, which also has three main strategies, but they do not distribute along the lines of English. In the Italian translations, one will find *qualcuno* in (1-5, 7), *chiunque* in (8-9), and *nessuno* in (4-6). (Haspelmath 1997: 262-3). The English and Italian pronouns do not match and the more languages Haspelmath (1997) studies, the more variation he finds. Nevertheless, he also finds there to be a great deal of unity. Thus all languages map their strategies on the same 'semantic space'. This is where a semantic map comes in. It has the geometry already illustrated with the skeleton maps in section 1. Figure 4 shows the map once more, but this time the map points are labeled. The labels are the ones proposed by Haspelmath (1997) and the numbers correspond to the example sentences (1-9).

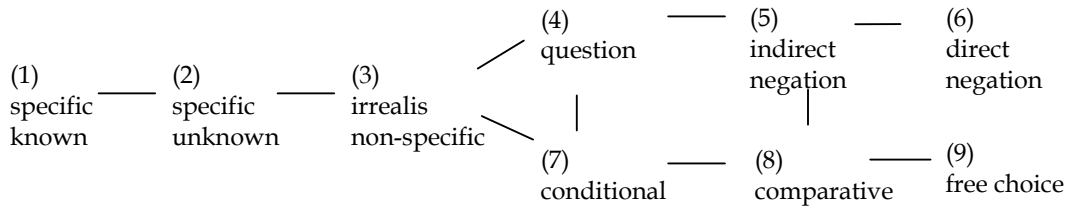


Figure 4: Haspelmath's indefiniteness map

Another dimension of universality is (the hypothesis) that every pronoun covers a contiguous area. Figures 5 and 6 show the overlays needed for English and Italian.

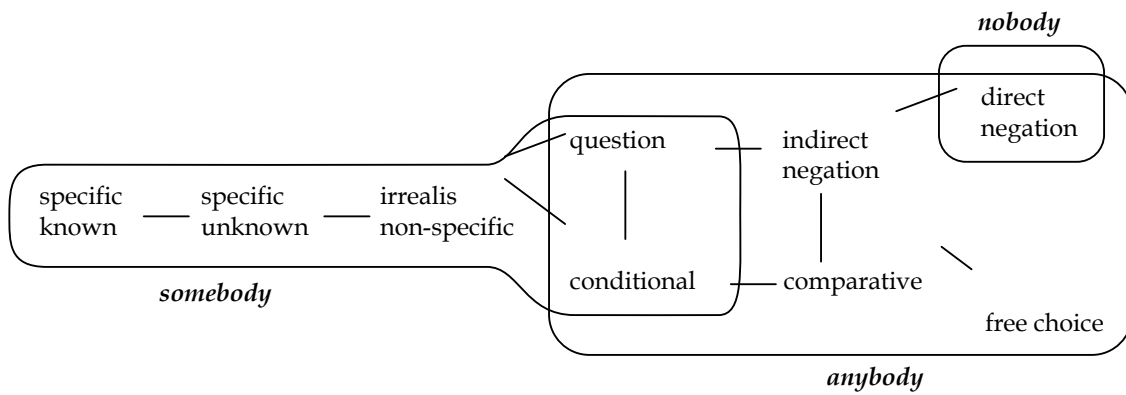


Figure 5: Indefinite pronouns of English

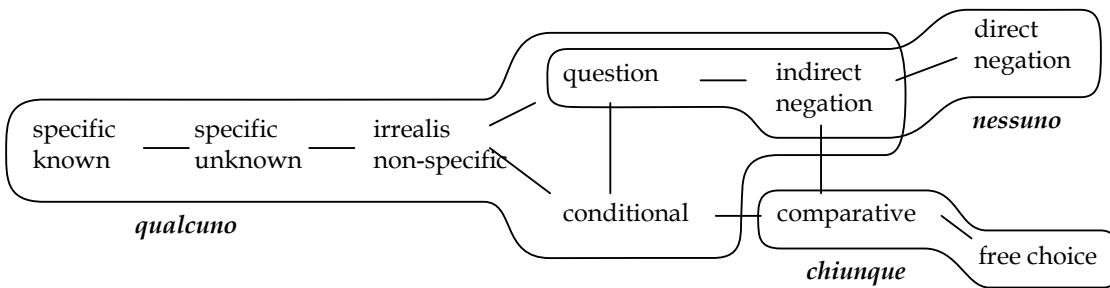


Figure 6: Indefinite pronouns of Italian

The semantic map in Figure 4 is the central hypothesis of Haspelmath (1997). Haspelmath compares it to earlier hypotheses, he discusses it with respect to 140 languages, he tries to explain why the map looks the way it does, and he sketches a great many additional hypotheses as well as tasks for future research. He also sketches the origin and more generally, the diachrony of some of the markers, and although there is no general

diachronization of the map, we do see lines interpreted as arrows. Figure 7, for instance, sketches a pathway of free choice markers (Haspelmath 1997: 148-150).

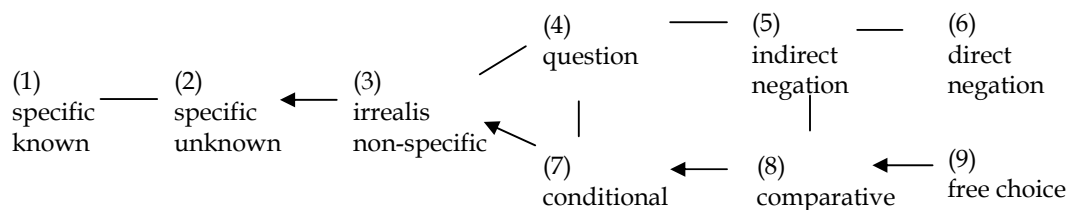


Figure 7: Haspelmath's indefiniteness map, partially diachronized

As adumbrated already, the work has been very influential, especially as an example of semantic map based typology, and also an ingredient of additional work on indefinites (e.g. Fobbe 2004, van der Auwera, De Cuypere & Neuckermans 2006). Yet, there are problems as well. In section 3 we discuss the nature of the map points in the Haspelmath map, and in section 4 we discuss a property of the map as a whole.

### 3. THE NATURE OF THE MAP POINTS

The nine points on the map are supposed to represent uses or functions, which are claimed to be neither 'contexts' nor 'meanings', but entities that are intermediate (Haspelmath 1997: 59-61). The point of this strategy is to avoid taking sides in the monosemy vs. polysemy debate. Some linguists would, for instance, want to claim that the English pronoun *some* only has one meaning, which of course, occurs in various contexts, viz. the ones illustrated with sentences (1)-(4) and (7). Other linguists would claim that *somebody* is polysemous and that each of the uses/functions are actually meanings. The semantic map method allows Haspelmath to stay neutral. All that matters for descriptors such as "specific known" to acquire the status of a map point is that the descriptor is necessary to distinguish between languages, more particularly, between what the monosemist would call 'contexts of use' and the polysemist 'meanings'. To distinguish between English *no one* and Italian *nessuno*, for instance, the notion of indirect negation is necessary: see the Italian sentence (10) and its translations, one with *no one*, the other with *anyone* (Haspelmath 1997: 263).

- (10) Non è necessary on que venga *nessuno*.  
'It is not necessary that *anyone*/\**no one* comes.'

So far, so good. The general strategy of non-committal on monosemy vs. polysemy debate is excellent and it is indeed a general property of semantic maps (see also Haspelmath 2003: 214-218). But there are problems. This section will discuss two. The first concerns the fact that map points can host constructions that have meanings that one would want the map to distinguish. The second problem is the opposite: a map point may host constructions that are formally different and one would want an account to distinguish between them.

Consider, first, the use of *any* words in conditional contexts.

- (11) If she can solve *any* problem, she will get a prize.

It has long been known that the conditional of the type illustrated in (11) can be interpreted in two ways.

- (12) a. If there is a problem that she can solve, ...  
b. If every problem is such that she can solve it, ...

Haspelmath (1997: 116-117) is aware of this and discusses what the two readings have in common. This discussion is insightful but the fact remains that the two readings are very different, so different, in fact, that many linguists claim that English has two different *any*'s. From that perspective, the *any* paraphrased in (12a) is called the 'negative polarity' *any*, and the one paraphrased in (12b) is the 'free choice' *any*. On the semantic map approach, however, there can only be one *any*. When Haspelmath's one *any* occurs with the direct negation function, as in (13), it corresponds to what other linguists would identify as the negative polarity *any*, and when it occurs with a free choice use – understood in Haspelmath's way – as in (14), it corresponds to the free choice *any* of the other theorists.

- (13) I don't like *any*.  
(14) *Any* will be fine.

The trouble is that conditionals such as (11) allow both readings. Though the map correctly shows that *any* is allowed in conditionals, the map is incapable of showing that in this conditional *any* may be ambiguous or, if one prefers, vague between a reading that is similar or identical to the meaning/use illustrated in (13) and another one that is similar or even identical to the one illustrated in (14).

It is also strange that Haspelmath does use the notion of free choice, but it is assigned to the bottom right corner of the map only, as for example (15), but not for the comparative context illustrated in (16), for the latter defines a map point of its own.

(15) *Anyone* runs faster than me.

(16) I run slower than *anyone*.

It seems clear though that the meaning/use of *anyone* in (15) and (16) is the same. So again, the usefulness of the indefiniteness map is limited: on the one hand, it does show that the *any* words can occur in comparative contexts, but on the other hand, it does not show that the comparative meaning is none other than the free choice meaning that defines the bottom right corner point.

Two types of solutions suggest themselves. First, one could accept that English has two *any*'s, both of which have to be mapped, i.e., a 'negative polarity' *any* that covers uses (4), (5), (6), but also (7) in the sense illustrated in (12a), and a 'free choice' *any* that covers uses (8), (9) and again (7), but this time in the sense illustrated in (12b). The resulting map would be the one shown in Figure 8.

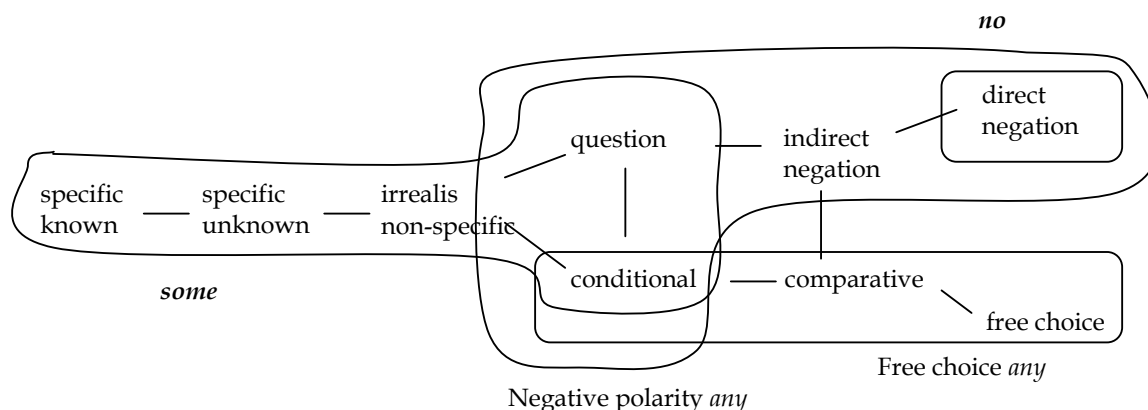


Figure 8: The English indefiniteness map with two *any*'s

However, the map in Figure 8 is impossible. In principle the overlay of the map is one of form and the only formal category related to *any* is, simply, ‘*any*’, not ‘Negative polarity *any*’ or ‘Free choice *any*’.<sup>5</sup> So we discard this ‘solution’.

Let us, in a second attempt, question that the map points should represent entities that are intermediate between meanings and contexts. It is not that there is no relevant distinction between meanings and contexts. On the contrary, it is very relevant, and arguably so relevant that the map should have space for both, the more general meaning as well as the more specific context. With respect to the distinction between negative polarity and free choice *any*’s, one could say that the map should have a point or, better, a ‘region’ for negative polarity and another one for free choice. The description of the region should then allow for some strategy of showing in what contexts the meaning in question is realized. Impressionistically, the new map will have both negative polarity and free choice meanings and it will have to show that both can be realized in conditional contexts.

Let me now come to the second problem: one map point accepts two formally different strategies. Consider the examples in (6) again. They illustrate the direct negation point and the fact that it allows both *nothing* and *anything*.

- (6) a. I haven’t seen *anybody*.  
b. I have seen *nobody*.

The map adequately shows that this use has two strategies: the *nobody* and the *anybody* overlays both cover direct negation. But is there really no interesting semantic difference between *nobody* and *anybody*? We believe that it is uncontroversial to believe that there is: in English *nobody* carries an inherent negative meaning, and *anybody* does not. The map itself cannot show this, but all we have to do is to distinguish between meaning and context along the lines sketched in the above. The application to (6) is fairly trivial: (6a) expresses negation by placing a marker *anybody*, which is not inherently negative, in a negative context (expressed by *n’t*), and (6b) expresses negative by placing the inherently negative *nobody* in a context which is actually positive.

To conclude, the indefiniteness map suffers from at least two problems: one could be called ‘multiplicity of meaning’ (one point two meanings) and the other ‘multiplicity of form’

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<sup>5</sup> We suppose that the constellation in Figure 7 could be given some sense, if one takes a homonymy view of the two *any*’s, but that would not be plausible either, for as Haspelmath (1997: 116-117) and others have argued, the relation between the two *any*’s is by no means accidental.

(one point two forms). For both problems, it would seem useful to consistently distinguish between meanings and contexts. Haspelmath (1997) did not want to do this, but we claim that one should. And interestingly, the current plea for considering both meanings and contexts is quite in line with current hypotheses on negative polarity and free choice items, arrived at independently (Vlachou 2007, Hoeksema Forthcoming).

#### 4. THE NATURE OF THE MAP

Though Haspelmath's indefiniteness map has served as an example for other map building, it is in fact a rather unusual type of map. The reason is that it includes negative concepts, in this case, of course, negative indefiniteness. Other maps do not do this. Thus Haspelmath's own Dative map (Haspelmath 2003: 219) caters for direction, recipient, beneficiary, judicantis, predicative possessor, external possessor, purpose, and experiencer, but there is no attempt to account for how these notions interact with negation. Possibly, this would not be interesting anyway. Or consider the imperative map offered by van der Auwera, Dobrushina and Goussev (2004): it maps imperatives in terms of person (representing the terrain from the most typical 2<sup>nd</sup> singular to the most untypical 1<sup>st</sup> singular imperative), but the map does not room any notion of prohibitive, and this time the reason is not that prohibitives are not an interesting category (see e.g. van der Auwera 2006). Third example: van der Auwera and Plungian (1998) offered a semantic map for modality, taking care of the usual notions of capacity, permission, obligation, inference and uncertainty. This map too involves no attempt to account for the interaction of the relevant notions (modal ones this time) and negation, and again the reason is not that this interaction is of no interest. On the contrary, it has in fact attracted the interest of logicians and philosophers since at least Aristotle. What is more, at least part of this interest has been expressed in a format which is at least strongly reminiscent of what one would now call a "semantic map". This format is the "Aristotelian square" or the "Square of Oppositions", represented in Figure 9.

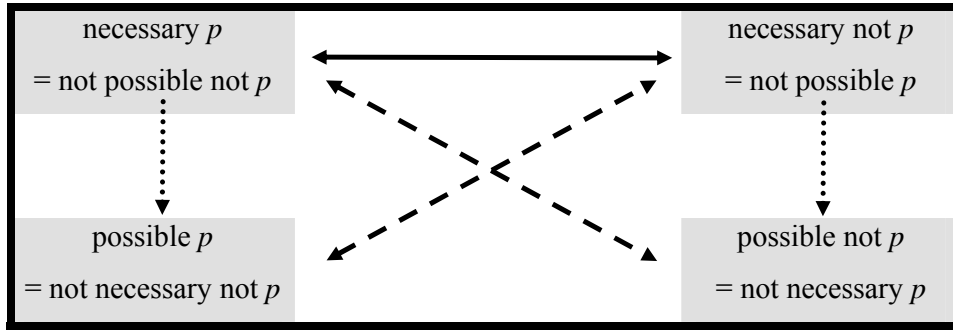


Figure 9: The Aristotelian square for modality

↔ : Contrariness   ← - - - -> : Contradictoriness   .....▶: Entailment

The square captures a ‘positive’ semantic intuition that when  $p$  is necessary,  $p$  is also possible, but most of the intuitions concern the interaction of the modal notions of necessity and possibility, on the one hand, and negation, on the other hand. These include the following: (i) when  $p$  is necessary it is not possible that not  $p$ , and (ii) when it is necessary that not  $p$ , it is not possible that  $p$ . So modality has two maps, a recent ‘semantic map’ in the sense defined in section 1 and the old Square of Oppositions.

Let us now go back to Haspelmath’s indefiniteness map. On the one hand, it is a semantic map in the sense of section 1, but on the other hand, it brings in negation, unlike the other semantic maps, briefly described, but rather like the Square of Oppositions. And the similarity of the Haspelmath indefiniteness map and the Square of Oppositions is in fact bigger still. The logic of the Square of Oppositions does not just hold for modal notions, but also for quantifiers, more particularly for *all* and *some*.

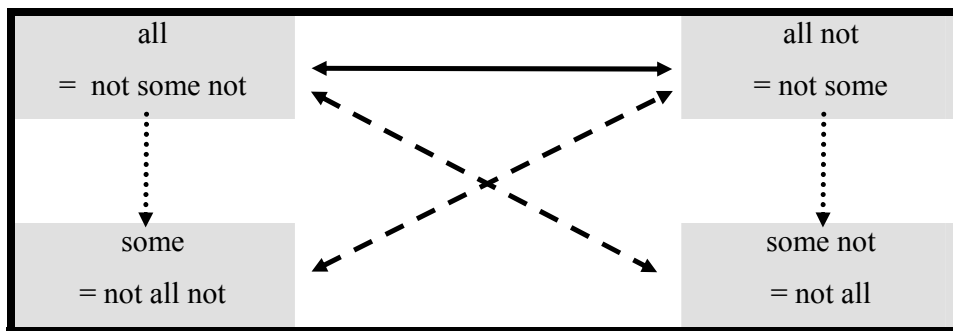


Figure 10: The Aristotelian square for quantifiers

↔ : Contrariness   ← - - - -> : Contradictoriness   .....▶: Entailment

Now the analogy is indeed more pronounced still: not only do both Haspelmath's map and the Quantifiers Square in Figure 10 represent negation, they also represent *some*. And there is more.

Linguists, the most prominent ones being Larry Horn (1989, 1990), have noted that languages often have one or more words for 'all not'/'not some', but never for 'some not'/'not all'. In English words for 'all not'/'not some' are *no* and *none*, and while one might imagine a language to come up with a word like *nall*, meaning 'not all'/'some not', no language has been found with a *nall* word. This fact together with a logico-philosophical worry or even inconsistency about the 'some not'/'not all' notion has led logicians, philosophers and linguists alike to amend the geometry of the square. The 'neo-Aristotelian' amendments have taken various forms (see Horn 1989, 1990 and van der Auwera 1996), but what they share is that the basic set up does not involve four notions, like in the classical Aristotelian Square shown in Figure 10, but just three. Thus the geometry is not quadrangular, but triangular. The three notions of these amendments are *all*, *some* and *no*. Figure 11 sketches how Horn (1990: 458) projects the square onto a triangle, essentially by cutting off the 'some not'/'not all' corner.

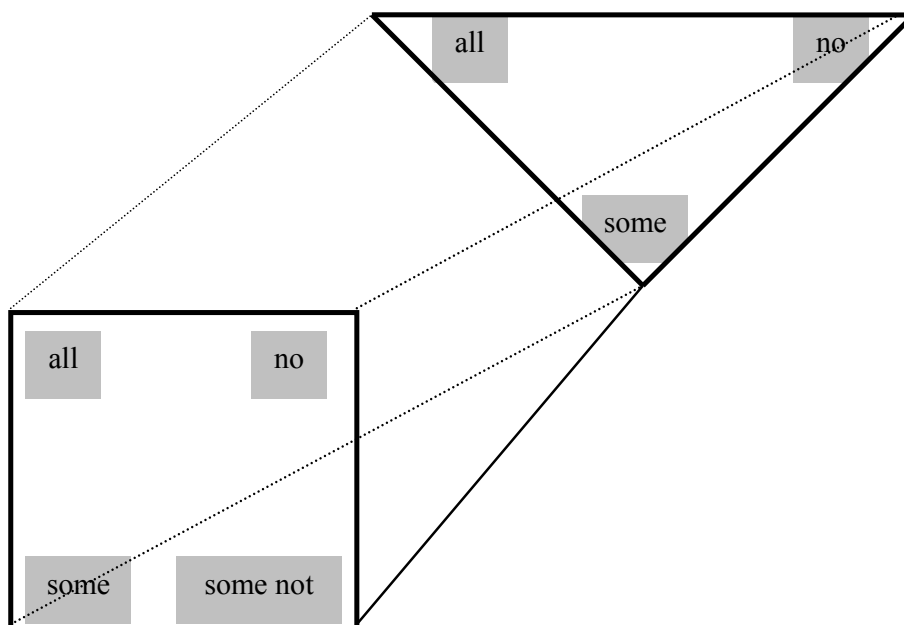


Figure 11: Horn (1990: 459) on turning a square into a triangle

If some triangular constellation is indeed more adequate, both from a logico-philosophical point of view and a linguistic one, then we are approaching the Haspelmath indefiniteness map even more. It is not only the case that the neo-Aristotelian proposals for quantifiers involve negation in some general sense, they focus on one negative quantifier, viz. *no*, and this negative quantifier is on the same footing as the positive ones *all* and *some*, with each one occupying a corner of the triangle.

But once more ... there is more. There is nothing sacrosanct about the positioning of the quantifiers in the corners shown on Figure 11. Thus *all*, for instance, need not be in the left top corner, etc. Figure 11 rearranges the *all*, *some* and *no* quantifiers in a constellation that is as close as possible to the Haspelmath map. We furthermore project it to the Haspelmath map itself, shown with the overlays for English *some* and *no* and also free choice *any*, the way it was done on Figure 8.

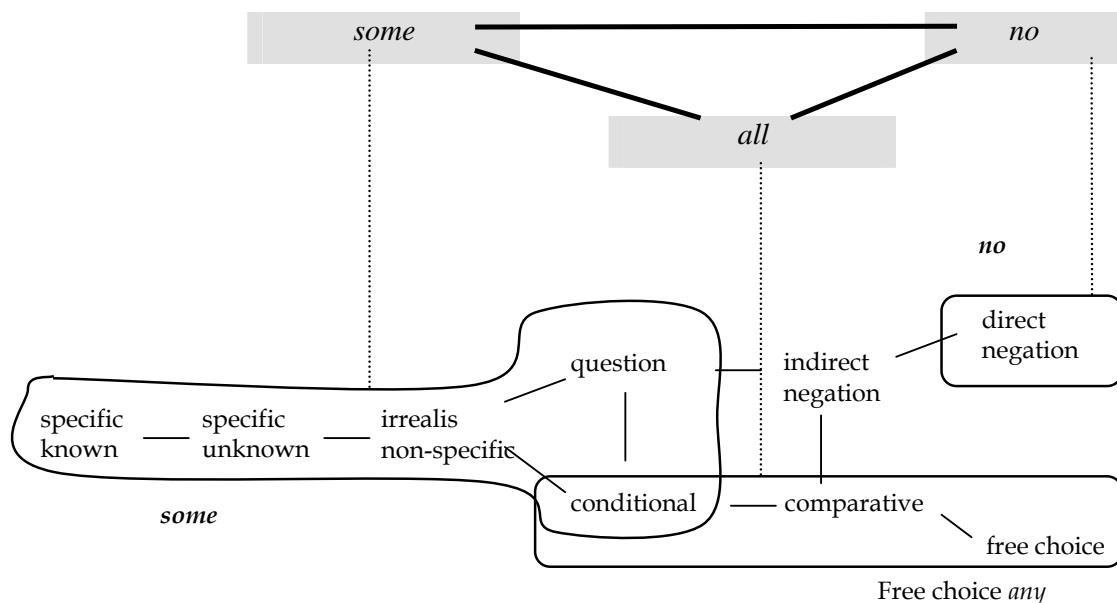


Figure 12: The resemblance between a neo-Aristotelian quantifier map and Haspelmath's indefiniteness map

The resemblance is obvious. Of course, it is not complete. For one thing, universal quantification, as expressed by *all*, is close to free choice, as expressed by *any*, but they are not the same. Nevertheless, the resemblance coupled to the hypothesis that one should distinguish regions of meaning, 'big enough' to room more than one formal strategy, distinguishable according to context, suggests that it is worthwhile to explore whether the

Haspelmath map could not be reconceptualized in terms of three regions. In terms of the triangular set-up, the left top region would be that of specificity (specific choice), the right top region would be that of negativity (negative choice), and the bottom region would be that of free choice. At this stage, however, this suggestion can serve to define a research program, and still a very shaky one, not least, also because the one neo-Aristotelian recategorization represented at the top of Figure 11 is just one among many. It is the simplest one, and I have argued that it is too simple (van der Auwera 1996). Yet even at this stage, the resemblance between the lay-out of this simple, neo-Aristotelian triangle, and that of the Haspelmath map is strong enough to warrant further research.

## 5. CONCLUSION

The paper starts from observing the importance of semantic maps, both for synchrony and diachrony, and from observing the crucial role played by the indefiniteness map proposed by Haspelmath (1997). We then focus on some problematic aspects of this map and plead for distinguishing between meanings/uses and contexts. Finally, we associate the map with Aristotelian and neo-Aristotelian quantifier maps, sketching the high degree of similarity and suggesting that this analogy needs to be explored further.

## REFERENCES

- ANDERSON, Lloyd. B., 1982, “The ‘perfect’ as a universal and as a language-particular category”, In HOPPER Paul. J. (ed.), *Tense-aspect: Between semantics & pragmatics*. Amsterdam: Benjamins, 227-264.
- CROFT, William, 2001, *Radical construction grammar: Syntactic theory in typological perspective*, Oxford: Oxford University Press.
- CROFT, William / POOLE, Keith T., 2008, “Inferring universals from grammatical variation: multidimensional scaling for typological analysis”. *Theoretical Linguistics* 34: 1-37.
- FOBBE, Eilika, 2004, *Die Indefinitpronomina des Deutschen. Aspekte ihrer Verwendung und ihrer historischen Entwicklung*, Heidelberg; Winter.
- HASPELMATH, Martin, 1997, *Indefinite Pronouns*, Oxford: Oxford University Press.

- HASPELMATH, Martin, 2003, "The geometry of grammatical meaning: Semantic maps and cross-linguistic comparison". In: TOMASELLO, Michael (ed.), *The new psychology of language: Cognitive and functional approaches to language structure, Volume 2*. Mahwah, New Jersey: Lawrence Erlbaum, 211-242.
- HOEKSEMA, Jack, Forthcoming, "Negative and positive polarity items: an investigation of the interplay of lexical meanings and global conditions on expression", In: VAN GELDEREN, Elly (ed.), *Cyclical change*, Amsterdam: Benjamins.
- HORN, Laurence R., 1989, *A natural history of negation*, Chicago: Chicago University Press.
- HORN, Laurence R., 1990, "Hamburgers and Truth: Why Gricean explanation is Gricean", In: HALL, Kira / KOENIG, Jean-Pierre / Meacham, Michael / REINMAN, Sondra / SUTTON, Laurel A. (eds.), *Proceedings of the Sixteenth Annual Meeting of the Berkeley Linguistics Society*. Berkeley: Berkeley Linguistics Society, 454-471.
- JANDA, Laura, 2009, "What is the role of semantic maps in cognitive linguistics?", In: STALMASZCZYK, Piotr / OLEKSY, Wiesław (eds.), *Cognitive approaches to language and linguistic data. Studies in honor of Barbara Lewandowska-Tomaszczyk*. Frankfurt am Main: Lang, 105-124.
- Linguistic Discovery*, Forthcoming, Theme issue on semantic maps, <http://journals.dartmouth.edu/ljournal/sitemap.html>
- Theoretical Linguistics*, 2008, Theme issue on Croft and Poole 2008.
- VAN DER AUWERA, Johan, 1996, "Modality: the three-layered scalar square", *Journal of Semantics* 13: 181-195.
- VAN DER AUWERA, Johan, 2006, "Why languages prefer prohibitives", *外国语 (Wai guo yu - Journal of Foreign Languages)* 161: 2-25.
- VAN DER AUWERA, Johan, 2008, "In defense of classical semantic maps". In *Theoretical Linguistics* 34: 39-46.
- VAN DER AUWERA, Johan / DE CUYPERE, Ludovic / NEUCKERMANS, Annemie, 2006, "Negative indefinites: A typological and diachronic perspective on a Brabantian construction", In: NEVALAINEN, Terttu, / KLEMOLA, Juhani / LAITINEN, Mikko (eds.), *Types of variation. Diachronic, dialectal and typological interfaces*. Amsterdam, Benjamins, 305-319.
- VAN DER AUWERA, Johan / DOBRUSHINA, Nina / GOUSSEV, 2004, "A Semantic Map for Imperative-Hortatives", In: WILLEMS, Dominique / DEFRANCO, Bart / COLLEMAN, Timothy / NOËL, Dirk (eds.), *Contrastive Analysis in Language. Identifying Linguistic Units of Comparison*. Basingstoke: Palgrave Macmillan, 44-66.
- VAN DER AUWERA, Johan / KEHAYOV, Petar / VITTRANT, Alice, Forthcoming, "Modality's semantic map revisited: acquisitive modals". In: HOGEWEG, Lotte / DE HOOP, Helen / MALCHUKOV, Andrej (eds.), *Cross-linguistic Studies of Tense, Aspect, and Modality*, Amsterdam, Benjamins.
- VAN DER AUWERA, Johan / PLUNGIAN, Vladimir, 2008 "Modality's semantic map", *Linguistic Typology* 2: 79-124.

VAN DER AUWERA, Johan / TEMÜRCÜ, Ceyhan, 2006, “Semantic maps in Typology”. In: BROWN Keith (ed.), *Encyclopedia of Language and Linguistics*. (2<sup>nd</sup> ed.) Oxford, Elsevier, Volume 11: 131-134.

VLACHOU, Evangelia, 2007, *Free choice in and out of context: Semantics and Distribution of French, Greek and English Free Choice Items*. Doctoral dissertation Universities of Utrecht and Paris IV.