

Visualisation of semantic shifts: the case of modal markers


Helena Bermúdez Sabel, Francesca Dell’Oro, Paola Marongiu

Swiss National Science Foundation – University of Lausanne

1. Rationale


A visual representation can replace complex cognitive calculations, presenting data in a more accessible and attractive manner. However, selecting the most efficient visualization can be challenging, especially when dealing with abstract concepts. The importance of an efficient visualization in our case arises from:

Need for condensation



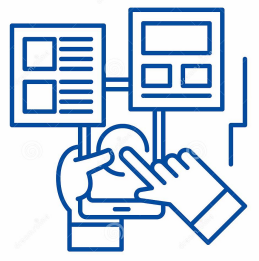
Can a visualization summarize pages and pages of dictionaries and historical grammars?

Need for simplicity



How do we add more information to previous models to better convey the multidimensionality of semantic shifts?

Need for legibility



Can we update the traditional visualization models by incorporating animation, color and user interactivity?

2. State of the art

The semantic map visualisation method was introduced by Haspelmath (2003) to describe and illustrate the multifunctionality patterns of linguistic elements. The semantic map appears as a geometric representation of functions connected together in a semantic space. Semantic maps were employed in various ways. To name a few, see:

- Anderson (1982): tense and aspect
- Anderson (1986): evidentiality
- Traugott (1985): conditionals
- Croft *et al.* (1987): voice
- François (2008): monolingual and cross-linguistic approach.

Van der Auwera and Plungian (1998) apply this resource to visually represent and predict universal patterns of modalisation. Our proposal follows their model but our aim is to produce a digital visualisation with additional features.

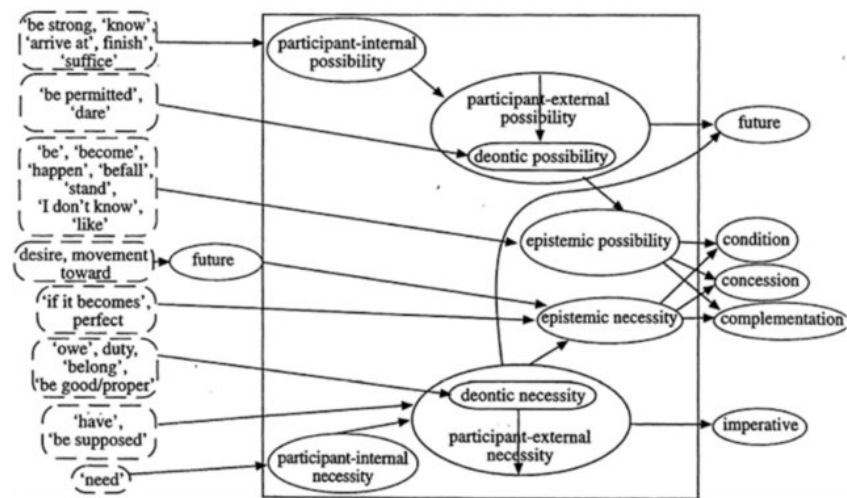


Fig.1. “Unifying the possibility and necessity paths”: Example of a semantic map representing the shifts of possibility and necessity (van der Auwera and Plungian 1998: 98).

3. New functionalities in a nutshell

POTESTAS

Select language: **EN** LA

5

Modal: deontic
Modal: dynamic
Modal: epistemic
Premodal
Postmodal
Likely modal (see color)
Semantic relation
Hypothetical relation

4

PIE *pót-i 'master'
PIt *poti- 'master, in control of'
PIt *pot-é- 'to be master, to be able'
potestas

1

III BCE II BCE I BCE I CE II CE III CE IV CE V CE

POTESTATEM DO

chance, opportunity
to give the chance

power, control, by which someone (or something) is in control, can impel a particular line of thought or action, or by the means of which s/he can obtain something

permission, freedom
capacity, abilities
control over oneself
to be in the power of someone
to give permission

IN POTESTATE(M) SUM

POTESTATEM FACIO

referred to what indicates, means something
that has some power
it is possible
to offer oneself to someone else

IN POTESTATE(M) SUM

IN POTESTATEM SUI FACIO

the person on whom the power of someone else relies
value of something
by which something can exist or happen (transl. possibility, potentiality)
something that has been done powerfully or is proof of power
possessions, borders under someone's power, domains

2

3

III BCE II BCE I BCE I CE II CE III CE IV CE V CE

PIE *pót-i 'master'
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power, control, by which someone (or something) is in control, can impel a particular line of thought or action, or by the means of which s/he can obtain something

IN POTESTATE(M) SUM

to be in the power of someone

PLAUT. Aul. 534 Nam quae indotata est, ea in potestate est viri.

7

8

IN POTESTATE(M) SUM

it is possible

Fig. 2, Fig. 3. Screenshots of the semantic map of POTESTAS

1: A timeline (fixed on scroll) provides the chronological information: the time (here expressed through a segmentation in centuries) works as the x axis.

2: In the y axis the different meanings are displayed and ordered according to the organization of the description of the headword in the dictionary of reference (the ThLL), i.e. according to semantic groups.

3: Collocations containing the headword are also registered (they appear on the left outside the arrow).

4: The etymology of the headword is provided on the left side

5: Colors indicate the type of modality.

6: Language selection: besides a bilingual map (English-Latin), a monolingual (Latin) version is also available.

7: When you click on a sense, semantic relations between meanings become visible (while loosely related meanings disappear). The visualization is reset by double-clicking.

8: The first attestation is visible when hovering the mouse over a sense.

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Try it yourself!

<http://woposs.unil.ch/semantic-modal-maps.php>



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