Visualisation of semantic shifts: the case of modal markers

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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 defined by Haspelmath (2003) as the geometric representation of functions connected together in semantic space. The goal is to illustrate the multifunctionality patterns of linguistic elements (p. 213). 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.

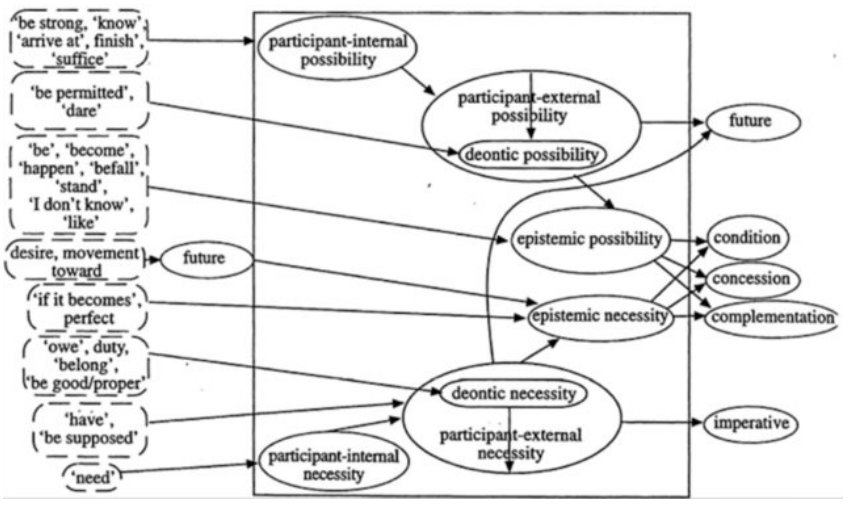

Fig.1. "Unifying the possibility and necessity paths": Example of a semantic map representing the shifts of possibility and necessity (van der Auwera and Plungian 1998: 98).

3. New functionalities in a nutshell

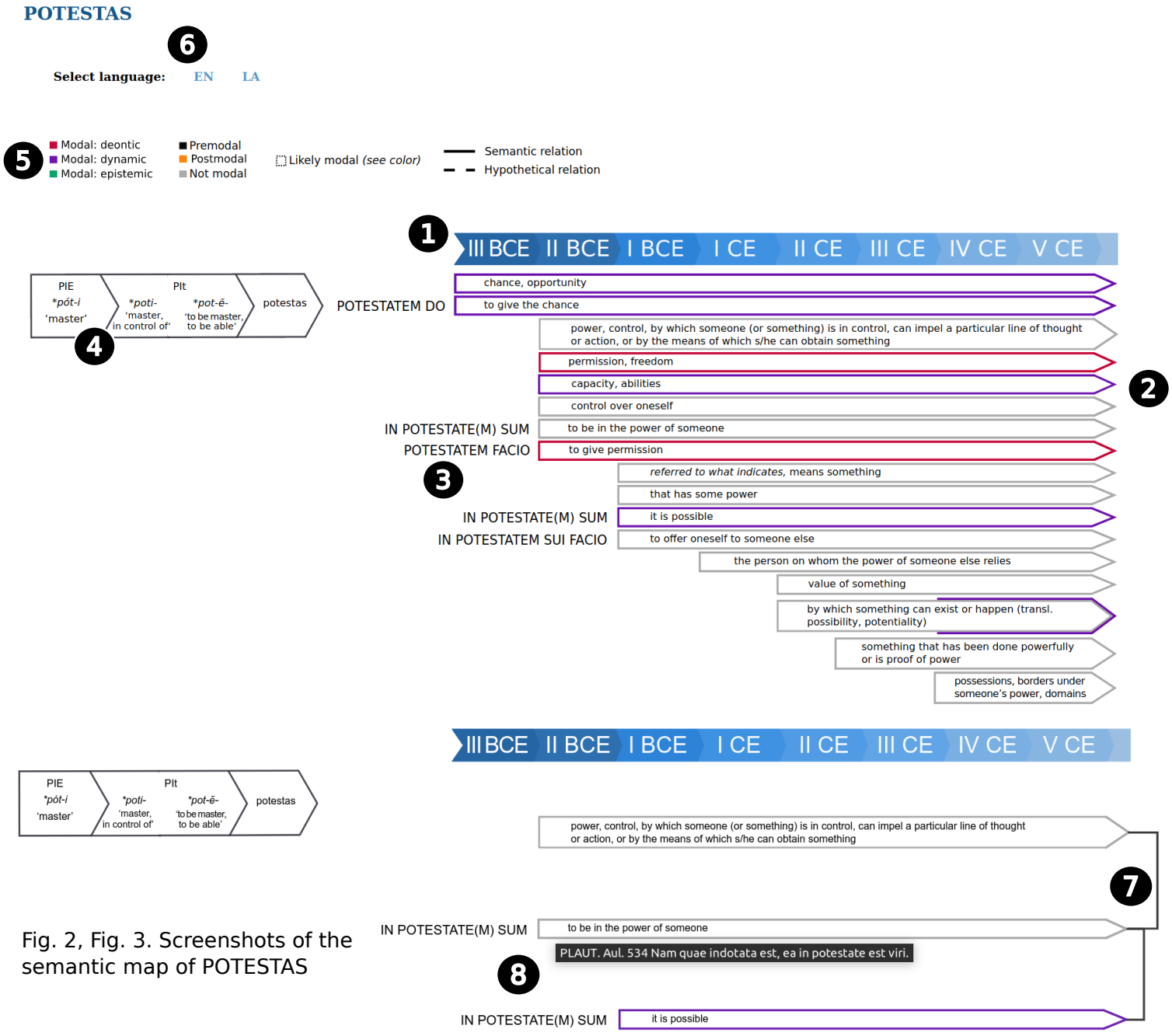

Fig. 2, Fig. 3. Screenshots of the semantic map of POTESTAS

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.

Try it yourself!

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

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