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Did informational prominence evolve to ensure economy of processing?

Linguistic messages are organized into prominent and non-prominent units, traditionally referred to as *Focus* and *Topic* or *Rheme* and *Theme*, respectively. This property of utterances results mainly – but not only – from the necessity to ground for different cognitive treatments of information that is already present to the interlocutor's conscious attention ("Given") and information which is not ("New"). The origin of this design feature of language is to be understood, and the interpretations proposed so far are still tentative in many respects (Krifka 2007).

We propose a developmental explanation of Topic-Focus structure in terms of *processing economy*, based on the assumption that human processing systems are limited in their capacity to process new pieces of information in time (Sweller 2003, Dux et al. 2006), which makes it necessary to select certain stimuli as *prominent*, i.e. to be processed thoroughly (Pashler 1994), and some others as *less or not prominent*, i.e. to be processed with less effort. Focus and Topic may have emerged as a means to guide this selection process in linguistic utterances.

More in particular, we hypothesize that information encoded as Topic is processed through *automatic* attentional channels which require less effort, while the Focus of the utterance involves more effortful, *controlled* processing (Shriffin & Schneider 1984, Birch & Rayner 1997). This probably happens without regard to the actual activation status of the corresponding concepts in Short-Term Memory, i.e. of their being already Given or New at utterance time. This matches pretty well with our proposal to adopt a revised version of the so-called *one new idea at a time constraint* (Chafe 1987, Givón (1975), stating that each utterance cannot contain more than one chunk of "New" information. Real utterances actually often contain more than one new concept, but, crucially, this is only possible if only one of them is presented as a Focus, i.e. with the instruction to process it with full effort. Further pieces of new information, if presented as Topics, are acceptable because they go with less effort.

The evolutionary advantages of this hypothesis will be discussed, also in the light of Krifka's (2007) proposal concerning bimanual coordination processes, of recent literature on Information Structure processing (Wang et al. 2009, Schwarz 2015), and of the authors' recent brain imaging experiments on the different processing of Given/New information according to its presentation as Topic or Focus in actual linguistic contexts (Lombardi Vallauri et al., to appear).

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