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Emergent patterns in cross-sectional L2 data: a complexity theory perspective

Abstract:

I propose in this paper that the cognitive usage-based model of language (Dabrowska 2014) can benefit from the complexity theory concept of emergent patterns; and I show this on a study of L2 English data (Gustafsson, forthcoming).

Firstly, I argue that this concept is implicit in the cognitive usage-based model. According to Dabrowska (2014), linguistic patterning represents central tendencies in language use at a community level and is best understood from a complexity theory perspective on language (Beckner et al, 2009; de Bot et al 2007). Patterns observable in complex systems are nested (larger patterns contain smaller patterns in scale-free and self-resembling structures) and emergent (patterns are the sedimented by-products of recurring processes in the system). Similarly, the cognitive usage-based model sees the characteristic nested structure of language as the result – or, the by-product - of productive cut-and-paste mechanisms utilizing various degrees of schematicity. Patterns in language at community level can, therefore, be interpreted as the accumulated traces of constructions and productive mechanisms employed by individual language users; and they can likely be observed at different levels of schematicity.

Next, I present a qualitative study of learner expressions for two task-elicited notions (DEPOSITING MONEY and DONATING MONEY) in a community of L2 English learners (N=167; L1 Dutch). Analysis of all learner expressions across the learner community revealed emergent patterns at various structural and schematic levels. For example, for the notion of DEPOSITING MONEY, a pattern in the use of verbs (e.g., put) is also part of an emergent V PREP pattern (e.g., put on), which is part of an emergent slot-frame (e.g., put NP on the bank); and all these are part of an emergent abstract schema V NP on NP.

Finally, based on this study, I suggest that emergent patterns at community level can provide insight into productive mechanisms and developmental processes. For example, the findings indicate that the learners do not use target-like L2 constructions derived from the most frequent, generic, and prototypical L2 English exemplar which became entrenched or schematized (put NP in the bank - only 4% of all learner expressions for DEPOSITING MONEY). Instead, learners tend to break the notions down into their constituent meaning units (PROCESS, THING, LOCATION) then construct a linguistic solution for each meaning unit, and finally paste the linguistic solutions in the correct slots of an abstract L1 Dutch or L2 English verb-argument construction in order to assemble the whole expression for the notion (do it on
The commonalities in their solutions then give rise to the patterns at different structural and schematic levels of the expressions (V NP on NP schema sanctions 56.3% of all learner expressions for DEPOSITING MONEY).

References:

