Word grammar and the grammaticalization of new morphology

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In this paper, I model the grammaticalization of new morphology in Word Grammar, focusing on the genesis of Modern French's future tense. Word Grammar is organised around a default inheritance architecture, within a network model of language where it is argued that language is part of general cognition and not a discrete module; WG morphology falls in the lexeme-based tradition.

It is a commonplace of research in grammaticalization that there is a cline in the processes of grammatical change, given in (1), which I've taken from Hopper and Traugott (2003: 142).

(1) Lexical item in a specific syntantic context > clitic > affix

There is plenty of evidence for such changes, such as the emergence of Romance future tenses. For example, *je chanterai* 'I will sing' ultimately derives from the construction in (2), not the Latin future in (3).

(2) Habeo cantare
Have-1SG:PRES sing-INF
'I have to sing'

(3) Cantabo
Sing-1SG:FUT
'I will sing'

Hopper and Traugott (2003: 52-55) sketch a story from examples such as (2) to the modern French future of *je chanterai*, which claims that first there is a change in word order, so that *habeo* comes after the infinitive, then there is a reanalysis of *habeo* and the infinitive so that they are treated as instantiating a single clause rather than a hierarchical relationship between clauses, and then there are further changes which "include fusion across morpheme boundaries, phonological attrition, and semantic reanalysis to a future-tense marker" (2003: 55).

In the grammaticalization literature, it is commonly assumed that morphs are sound-meaning pairs—Hopper and Traugott (2003) assume this, as does Bybee (1985), and Traugott (p.c. January 16) currently takes the view that morphs "must be constructions because they come from constructions". But this position is at odds with theories of morphology that adopt the lexeme rather than the morpheme as the minimal sign, such as A-morphous morphology (Anderson 1992), Paradigm Function Morphology (Stump 2001), Network Morphology (Brown and Hippisley 2012). Although it isn't a straightforwardly sign-based theory—the network architecture prompts a complex view of the relationship between meanings and forms—Word Grammar belongs in the tradition of lexeme-based morphology (Hudson 2007).

However, in WG, this model of morphology cannot be taken for granted as part of inherited UG. It has to arise naturally for each individual out of the process of learning, and for each community it must arise naturally as a solution to the problems of handling a rich communication system. This is because Word Grammar is a theory that treats language as a cognitive network—it can be thought of as a radical network grammar. All the parts of the language system are treated as part of a larger cognitive network, and so semantics, syntax and morphology, for which there are existing WG analyses, are all

treated in network terms. The language network, then, is a symbolic or semantic network, and fully compatible with a number of the functionalist and cognitivist assumptions that underscore work in grammaticalization—Hopper and Traugott (2003: xvi) state, "we consider linguistic phenomena to be systematic and partly arbitrary, but so closely tied to cognitive and social factors as not to be self-contained." However, WG parts company with the grammaticalization tradition in its theorising about morphology. In this, it isn't unique among theories that are sympathetic to or within the cognitive/functionalist traditions: Construction Morphology (Booij 2010) likewise assumes a lexeme-based morphology.

There has been some success in modelling constructional change in Word Grammar (Gisborne 2011) but this work generally looks at changes which take place within a single domain of grammar—typically, the changes explored have been within syntax or within semantics. The challenge of the emergence of the French future tense system is that it involves a change where a fully compositional construction loses compositionality, and where the head word in that compositional construction ultimately becomes reanalysed (through a succession of smaller reanalyses) as the realization of a morphosyntactic category and is not only recategorized, but belongs to an altogether different subsystem of the grammar.

The formal nature of this challenge is much the same for WG as it would be for any theory that assumed a lexeme-based morphology, but there are advantages to the WG model which indicate particular solutions. Not least, WG's theory of morphology is embedded in a larger theory of grammar, which means that there is an architecture that enables us to model diachronic processes that take place through the language system. Another advantage is that it is assumed in WG that Default Inheritance is part of human reasoning: we assign tokens to categories on the basis of best fit, so categorization takes place on the basis of analogical reasoning. But we have a plastic network, which makes it possible to model a degree of variability within an individual speaker, and that applies to categorization. Some example of categorial change are trivial in that a non-default instance of a category is reassigned by the speaker to another, or a new, category where there is a better fit with its overall properties. In the case of the emergence of new morphology, however, the change is non-trivial because it is from symbolic anchor (the bit of form that has a meaning) to symbolic reflex (the bit of form that realises the abstract feature which is the real symbolic anchor).

This process of creating new morphology involves creating new exemplar nodes in the network Hudson (2010: 80), and assigning them to new categories in a different part of the network. WG has a general solution to problems created by new exemplar nodes, because the theory identifies the tokens of each new utterance as nodes of this kind. The answer to the problem of how to classify (parts of) utterances lie in the mechanisms of spreading activation, which govern information retrieval in networks. Spreading activation also offers a mechanism for modelling change in a network: as speakers we sometimes find ourselves having to make things up on the fly because there isn't a ready-made solution to our precise communicative needs; there is also a feedback loop because people who hear us may then turn our innovation into a stock resource (see also Bybee 2010). Spreading activation guides the speaker to the best available solution. Finally, spreading activation is global: activation can spread from anywhere at all in your mind and so not only does it not limit a change to a single domain of grammar, but also it offers an explanatory theory of how a change can take an item classified as a word, and reclassify it in a different domain of grammar as a morph.

The argument, then, is that it is possible to solve the problem of how categorial change happens across different combinatory systems in the grammar by linking spreading activation to default inheritance within an appropriately formalized and explicitly cognitive theory.

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