Ellen Fricke – Bridging the gap: Syntactic complexity and recursion between empirical observation, algorithm, and language theory

Syntax is still an understudied area in gesture studies and research on linguistic multimodality. Recent studies on this topic that take into account the media-specific properties of articulators (for multimodal integration in noun phrases, see Fricke 2008, 2012, 2013; Ladewig 2011; for syntactic complexity in gestural stroke sequences, see Fricke 2008, 2012; Bressem 2012; for representations of co-speech gestures in unification-based grammars, see, for example, Lücking 2013) indicate that further research is needed in order to gain a deeper understanding of the syntactic structures that characterize each modality and how these may be related across modalities.

In the current debates about recursion and linguistic complexity, various positions have been adopted (see, for example, van der Hulst 2010; Zwart 2011; Sauerland and Trotzke 2011). Hauser, Chomsky, and Fitch (2002) assume that recursion is specific to the human faculty of language and is not to be found either in animals or in human cognitive abilities other than the faculty of language. Fricke (2007, 2008, 2012, in press) has shown that constituency and recursion can be manifested by co-speech gestures alone. Gestural constituent trees and phrasestructure rules based on the analysis of empirical examples reveal the structural property of selfembedding, in that gestural constituents can contain other gestural constituents of the same type. Within the framework of generative grammar, and admitting Hauser, Chomsky, and Fitch's (2002) hypothesis that recursion is the only defining criterion for the human faculty of language in the narrow sense (FLN), finding recursion in co-speech gestures has the language-theoretic implication that natural spoken languages have to be conceived of as inherently multimodal. Conversely, rejecting the claim that language is therefore fundamentally multimodal implies that recursivity cannot be taken to be the defining criterion of the language faculty in the narrow sense, as the Chomskyan model proposes.

In view of these findings on recursion and syntactic complexity in co-speech gesture, the following questions will be discussed: What kind of mutual relationships between empirical observation, formal description, and language-theoretical implications can be observed by reconstructing the process of scientific elaboration underlying each approach to inquiry? What kind of interdependencies occur at which step of analysis? Do empirical observations and nonformal descriptions only generate scientific heuristics, as some formal linguists assume? How far can both formal descriptions and observation-based descriptions contribute to heuristics in gesture studies? What are the specific goals and achievements of each approach? To what extent can formal approaches be used to describe information residing in gesture and multimodal communication? How can both formal and descriptive approaches benefit from each other?

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