How to Escape the Encodingism Stranglehold: Dynamic Syntax, Process and Interaction

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This talk responds to the "encodingism" challenge posed by Bickhard (2009, in prep) that if models of cognition are ever to receive a naturalistic grounding, cognition, and language as a sub-discipline, will have to be seen as interactive context-dependent processes subject to ongoing change, with constructs of individual entities as emergent, thereby making cognition commensurate with a quantum theoretic perspective (Laudisa and Rovelli 2002). His attack in particular on linguistic theorising is that grammars defining fixed context-independent string-representation mappings, "encodingism" as he dubs it, cannot explain the flexibility of natural language, context-relativity, openness to change, and learnability through error detection. Hence such theories should be abandoned in favour of process-based theories.

This talk will tell the narrative of how Dynamic Syntax (DS) has increasingly managed to escape this encodingism stranglehold, as a case study of how this can be achieved. In its early days, (Kempson et al 2001), DS was planned to model logical form construction to substantiate pragmatic theorising, so a proper subpart of the encodingism methodology. Yet even initially, in this modelling of a process, DS demonstrated striking parallels with the criteria for explanatory models of language and cognition put forward by Bickhard, and the framework was successively confirmed by re-analysing phenomena previously taken to be syntactic/semantic puzzles in process–based terms, with new structural universals becoming expressible (specifically the preclusion of multiple unfixed nodes, the DS reframing of the concept of movement underpinning discontinuities in language). However, the incorporation of the basis adopted for the DS implementation in Eshghi et al. (2011, 2015) into the grammar formalism confirmed a much more radical break from the competence-performance dichotomy, a move signalled by the immediate explanation and prediction of the fluent exchange of roles in conversation, moreover allowing potential for correction, clarification etc., hence a tool for learning.

The tree-theoretic perspective of DS might seem nevertheless to retain the representationalism fiercely criticised by Bickhard. However, in turning to a composite DS-TTR framework (Purver et al 2010), DS was shown to be transformable into a multi-modal model integrating all facets of cognition in context including verbal processing as a subpart (Gregoromichelaki 2017), with even tree transitions characterisable as processes of differentiation (Bickhard, in prep) expressed by the utterance of words which offer affordances to trigger them (cf. Bruineberg and Rietveld 2019, Gregoromichelaki et al 2020). So the concept of representation is essentially secondary and emergent. And the particular structural universal, that no more than one unfixed node of a type can be introduced from a node at any point in the process, can be seen as reducible to wholly general process dynamics.

A further hurdle to overcome in the struggle to escape encodingism is then the problem of extensive systemic ambiguity, a hangover from the encodingism underpinnings of the initial DS goal. In this connection, recent work in combining DS and distributional semantic methods is providing an alternative semantic perspective able to directly reflect the indeterminacy of word meaning. And culling data from vast corpora collections is arguably one way to access cross-speaker variability and its incremental resolution in particular contexts. So in some sense, recent work in combining DS and distributional semantic methods is providing an alternative semantic perspective which is able to directly reflect the indeterminacy of word meaning, and its essentially social grounding (Purver et al, 2021, cf also Gregoromichelaki et al, 2019a,b for an affordance-based account).

It is with this shift into seeing both computational and lexical actions as affordances for underpinning interaction in dialogue that we get the final shift into granting the social nature of language. The criterion of success in language exchanges, on this view, is notably different from classical truth-directed assumptions. The purpose of language is to coordinate joint action: description, which involves truth, is one facet of that, not the most crucial. Instead, the normativity of action lies in criteria as to whether it has achieved its goal or whether further attempts are needed to achieve that success; and this can only be defined in some sense outside the individual themselves (Wittgenstein, 1953). The grammar is thus no longer a neutral intermediary between comprehension and production, all three to be defined independently. Nor is it some psychological competence of the individual independent of others. It is a model of what underpins participants' interactions in the social exchange, enabling fluent effects of feedback as well as drawing on the physical/social environment which provides these affordances. Universal aspects of language will then have to be constraints imposed by domain-general mechanisms guiding perception and action in the form of probabilistic generalisations over predictive, anticipatory processes, as all the rest emerges from interaction, arguably from birth (Raczaszek-Leonardi, et al 2018). And going along this route, if it can be achieved, IS the final definitive break with encodingism.

Postscript: this is of course in one sense a repetition of other papers of ours, but I hope the diachronic spin on how we came to where we are is illuminating. My closing message, given the background influence of the quantum theory process-based perspective throughout science and the force of Bickhard's critique, is that the development of appropriate grammar formalisms which directly reflect the nondeterminism, change and process at the heart of all languages is urgently required.

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