

## Natural languages as distributed action systems

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In this talk, I present a view of natural language (NL) which is compatible with an account of perception called *actionism* [Noë, 2012] and a view of action optimisation as conceived in the Skilled Intentionality Framework (e.g., [Bruineberg et al., 2018, Bruineberg and Rietveld, 2014]). I will outline a view of NL “syntax” and a programme for semantics/pragmatics assuming that NL interactions are realisations of distributed social cognition mechanisms. This view conceives of NLs as *processes* orchestrating the interacting agents’ behaviour patterns as they dynamically establish and follow normative standards that emerge synchronically and diachronically during social interactions (cf. [Rączaszek-Leonardi, 2010]). This contrasts with orthodox static accounts where NLs are investigated as codes, i.e., sign systems registering synchronic correspondences between representational levels.

The present view is motivated by the inability of such standard syntactic/semantic frameworks to account adequately for dialogue data demonstrating the supra-individual nature of NL licensing and the need of complementary and synchronised interlocutor actions for temporally-extended multimodal conversational phenomena to arise incrementally [Gregoromichelaki et al., 2020b, Gregoromichelaki, 2018, Mills and Gregoromichelaki, 2010, Mills et al., to appear, Eshghi et al., to appear, Rączaszek-Leonardi and Scott Kelso, 2008]. Such phenomena pose representation dilemmas for orthodox frameworks in that they do not seem to be the outcome of (propositional) intentions or individual inference [Gregoromichelaki et al., 2011, Rączaszek-Leonardi et al., 2014]. Instead, they seem to arise spontaneously under the influence of social organisation processes (i.e., sociocultural practices) [Hutchins, 2011, Rączaszek-Leonardi et al., 2013] and practical knowledge of sensorimotor dependencies [Noë, 2012] expressed as flexible dispositions to act when embedded in ongoing dynamic engagement with other agents, the self, and/or the environment.

I will argue that the key explanatory factor of such processes is not internal mental states or brain-bound mindreading capacities but situated prediction and temporality in human processing. This externalist processual view takes NLs as resources for generating (joint) predictions of action opportunities (*affordances*) extending language mechanisms beyond individual brains/bodies to include constitutively other agents and the physical resources of the environment [Gregoromichelaki, 2013, Gregoromichelaki and Kempson, 2018, Gregoromichelaki et al., 2019, 2020a,b]. Seen from an actionist perspective, what are usually considered strictly intra-individual linguistic mechanisms are part of the sensorimotor skills that allow humans to achieve optimal grip with respect to acting in the world but are, in fact, inadequate to ground accounts of NLs. NL elements, like words and syntactic structures, should instead be modelled as properties of social settings [Heft, 1989, Rączaszek-Leonardi and Nomikou, 2015, Rietveld et al., 2018] relative to (groups of) human agents who can explore or exploit them to gain access to these settings. The knowledge and control required to deploy such affordances is distributed across agents and the physical resources of their environment as exhibited in the NL phenomena of *split utterances*, *non-sentential utterances*, “ellipsis” (e.g., [Gregoromichelaki et al., 2020b]) and the seamless incorporation of language and (joint) physical action within single utterances or pieces of discourse [Gregoromichelaki, 2018].

Modelling of such resources in *grammars* can only take a constraint-based formulation to avoid well-known intractability issues like the frame-problem (see, e.g., Bickhard [2001]; cf Rączaszek-Leonardi et al. [2018]). I will present a model (DS-TTR, e.g., Kempson et al. [2001], Gregoromichelaki et al. [2020a]) that provides a way of capturing the continuities in the processing of (joint) linguistic and physical actions by relying on the goal-directed, predictive, and distributed nature of cognition.

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