From memory processes to lexical self-organisation: a biologically-motivated integrative view of the morphological lexicon

According to "Words and Paradigm"approaches to morphological competence (Blevins 2006 among others), mastering the inflectional system of a language amounts to acquiring an increasing number of constraints on how paradigm are filled in by full word forms (see Ackerman et al. 2009; Finkel & Stump 2007; Pirrelli & Battista 2000; Matthews 1991; among others). Linguistic and developmental evidence on word paradigms has met recent developments in Computational Linguistics and Neurolinguistics. Self-organising artificial neural networks (Kohonen 2001; Pirrelli et al. 2015, Marzi & Pirrelli 2015) have offered an algorithmic account of the hypothesis that the mental lexicon is a highly-redundant, dynamic store of full words, which get co-activated and compete for selection during lexical processing. At the same time, recent advances in understanding the neuro-anatomical areas supporting memory (Wilson 2001; D'Esposito 2007; Ma et al. 2014) have showed that working memory consists in the transient activation of long-term memory structures, controlled and maintained by the integration of auditory-motor circuits in the perisylvian network (Catani et al. 2005; Shalom & Poeppel 2008). All these developments converge on the idea that stored lexical representations are in fact the long-term by-product of their processing history. In the talk, we illustrate simulative evidence supporting these insights and explore their theoretical implications for models of the mental lexicon.

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