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What Language Change can Tell us About the Mental Organization of Linguistic Competence

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Basic Assumptions and Purpose

On a theoretical level, this presentation – which is based on my 2004 monograph *Selfish Sounds and Linguistic Evolution* – sketches and defends an approach to human linguistic competence that views it as a system of neural link patterns embodying schematic instructions for communicative behavior that are transmitted faithfully enough to qualify as mental or cultural replicators in the sense of Dawkins ²1989. It is assumed that linguistic competences are replicator systems and best explained in terms of evolutionary theory, while the assumption of speakers as extra-systemic agents that control language acquisition and communicative behavior is bound to confuse matters from the start. The approach differs in this respect from most established theories of language, because they assume such agents either explicitly (such as semiotic, functionalist theories, e.g. Dressler 1985), or implicitly (such as formalist approaches in the Chomskyan tradition). On the other hand it is compatible with the assumptions underlying much of contemporary cognitive science, and in particular with connectionist approaches to linguistic competence modeling (e.g. McClelland, Rumelhart et al. 1986), with evolutionary psychology (e.g. Plotkin 1998), with theories of cognition as a complex adaptive system (e.g. Hawkins & Gell-Mann (Eds.)1992), or with generalized Darwinian approaches to human cognition and culture (e.g. Dawkins ²1989 or Hofstadter et al. 1995). What this presentation attempts to show is how the evidence of historical linguistic change can be made relevant to the question of how linguistic competence is implemented in, and transmitted among human mind/brains.

The co-adaptive relation between language rhythm and lexical morphotactics

First, the question is addressed whether linguistic competence constituents are indeed conceivable which are transmitted faithfully enough to qualify as replicators and to establish systems that can evolve on Darwinian principles. It is shown that this is very likely to be true for (a) instructions for articulating and distinguishing phonemic speech sounds, (b) instructions for producing and identifying lexicalised morpho-tactic units, i.e. the formal side of morphemes, and (c) instructions for producing and recognizing rhythmical configurations such as metrical feet.

It is shown that the successful replication and evolutionary stability of each of the identified competence constituents must necessarily reflect the fact that none of them can be expressed independently of the others. Since their trans-

mission depends on successful co-expression, it is likely that they should exert co-adaptive pressure on one another and enter into relationships that might be called symbiotic. It is hypothesized that co-adaptive pressures of this type should represent more plausible causes of long term historical developments in individual languages than either universal physiological constraints (whose impact can by definition not be language specific) or historical accidents (whose impact will typically be locally and temporally restricted).

This hypothesis is tested against a large sample of attested sound changes that have occurred in the history of English during the last millennium. It is shown that the large majority of them produced morphemes which co-expressed more harmoniously with the dominant rhythmical configuration of trochees than their immediate ancestors: a bird's-eye view on the evolution of English morphotactics reveals a 'conspiracy' of morphemes to become optimal trochees.

Since classical, speaker-centered approaches to linguistic change are unable to provide coherent explanations of this striking pattern, it seems that the historical development of English represents corroborative evidence for models which view linguistic competence as complex, self-organizing systems of co-adapted constituents, whose properties can be explained without making recourse to Cartesian, system external, and ultimately mysterious agents and beneficiaries.

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