

## Towards an Evolutionarily Plausible Theory of Language

In linguistics, theory is underdetermined by data. Consequently, theories of language are constructed with some constraining factor in mind – acquisition, neurology, variation, parsing, among others. This paper examines the implications for linguistic theorising of taking an evolutionary perspective. What would our theory of language look like if the constraining factor we adopt is evolvability?

Evolution is often construed as an optimising agent. However, evolution does not usually provide us with optimal solutions, but with solutions that are just good enough (Simon, 1984). Even clearer is the fact that typical evolutionary processes do not result in perfect systems. Imperfect systems abound in nature – the inefficient mammalian recurrent laryngeal nerve that follows a circuitous route from brain to larynx posterior to the aorta, the unreliable human spine that is prone to injury, the clumsy retina that is structured in an inverted fashion, the vestigial human appendix that no longer serves any purpose at all.

Human cognitive systems too exhibit the type of imperfect features that suggest they have evolved through the usual gradual adaptive process of natural selection. Marcus (forthcoming) observes that we blur together memories of similar events, retaining the general, but forgetting the specific details, that memories can be distorted by environmental factors (such as clever questioning in a courtroom), and that rational and objective reasoning is warped by our unconscious biases and by the particular memories we can retrieve at that particular moment.

Imperfections are similarly numerous in human language. Degeneracy (following Edelman & Gally's 2001 definition) in the system is exhibited in synonymy (where multiple signals are associated with the same meaning) in case marking (where both word order and inflectional morphology are available, and are often used concurrently) and in person and number marking (where plural morphology may exist on multiple words in a sentence). Structural ambiguity is sub-optimal by virtue of upsetting the simple one-to-one mappings of form to meaning that we might expect the syntax to generate. And irregularity in, for example, verbal paradigms opposes the regular systematicity we would anticipate if language were a perfect system.

Using evolvability as a constraining factor on language theorising suggests eschewing perfection as a central property of the system. In mainstream generativism, recent minimalist theorising falls foul to the conceptual and empirical dangers of taking a perfectionist stance (Parker, forthcoming). I will show that approaches which are construction-based (e.g. Langacker, 1987; Goldberg, 1995; Kay & Fillmore, 1999), on the other hand, offer promising evolutionarily plausible alternatives. A number of properties closely associated with evolvability in the evolutionary biology literature are clearly evident in construction-based theories: 1. redundancy is exhibited in lexical storage, arising out of the manner of learning, 2. robustness to environmental pressures and damage arises, in turn, as a result of this redundant storage, 3. in the Simpler Syntax

framework (Culicover & Jackendoff, 2005), which shares the construction-based view, modularity is manifested in the parallel architecture and the GF-tier. This marks the beginning of an exciting direction for evolutionarily plausible linguistic theorising.

### References

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