

# Contributions of Ontogenetic Stages to the Evolution of Language

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## Abstract

It has long been claimed that *Homo sapiens* is the only species that has symbolic language, but only recently recognized that humans also have an unusual pattern of growth and development. Social mammals have two stages of pre-adult development: infancy and juvenility. Humans have two additional prolonged and pronounced life history stages: childhood and adolescence (Locke & Bogin in press). I offer several proposals regarding the role of selection in infancy, childhood, and adolescence. The first proposal, *parental selection*, holds that some of the vocal ability presupposed by spoken languages emerged from infancy, having been asserted initially by hominid infants and supported by interactions with their parents (Locke in press). According to this proposal, infants who cooed and babbled at appropriate intervals were more likely to engage with adults, to be liked by them, to receive more sophisticated forms of care as infancy progressed, and to generate complex phonetic patterns.

I also propose that some of these more sophisticated patterns of sound making in infants gravitated “upwards.” While there is a disposition to think about infants as imitators of adult behavior, there is a stronger tendency for *parents* to copy their infants. Dyadic interactions can produce durable changes of adult speech, which I have termed “trickle up phonetics” (Locke 2005). At some point, of course, there had to be pressures to use complex signals meaningfully, and this is addressed in a recent kin selection proposal by Fitch (2004). I suggest that the kin group provided a context in which it was advantageous to exchange information, and that infancy and childhood furnished raw vocal material that would have favored any system of spoken communication.

Selection would also have needed to operate in other stages if vocal material was ever to elaborate beyond some restricted core. I propose that in adolescence, elaborated vocal-verbal behaviors played a role in courtship and intrasexual competition, enhancing fitness and ultimately integrating performative and pragmatic skills with linguistic knowledge in a broad faculty of language. Contemporary adolescents manipulate standard languages in new ways, but revise them. In evolution, similar things may have occurred in response to the hormonal and social conditions that characterize the approach to sexual maturity. For it is typically phonological changes, which frequently involve an increase in the complexity of articulation, that serve to identify members of social groups.

Even after sexually mature individuals were using some form of verbal communication, the young would have continued to play an active role. When linguistically deprived children are exposed only to fragmentary symbolic behavior, whether in the form of vocal pidgins or manual gestures, they also improvise lexical material and grammatical structure. In effect, *they invent language*. Thus, a theoretical consequence of these proposals is that the development of language requires the whole of modern human ontogeny.

**References**

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