

CARSTAIRS-McCARTHY, ANDREW. *The origins of complex language: an inquiry into the evolutionary beginnings of sentences, syllables, and truth*. xii, 260 pp., illus., bibliogr. Oxford: Univ. Press, 1999. £45.00 (cloth), £14.99 (paper)

This book offers a superb review of recent debates on the origins of language, supported by an exhaustive and up-to-date bibliography. This in itself makes it a worthwhile buy. The scholarship is meticulous, displaying close familiarity with most central controversies in the field.

Carstairs-McCarthy not only reviews others' work; he also presents us with an original theory of his own. The novelty of his approach is the relentlessness with which he pursues mechanistic explanations for everything. He begins his story with the evolution of hominine bipedalism. The repositioning of the head atop a now-vertical spinal column caused space constrictions in the mouth and upper vocal tract, necessitating a lowering of the larynx. One incidental by-product was a substantial increase in the variegated vocalizations which our ancestors could produce. This faced hominines with an unprecedented problem: with so many new and different sounds, how could meanings be found for them all?

Our ancestors experienced this as a problem because of the principle of 'synonymy avoidance'. For the author, it is no mystery that humans are driven to minimize synonymy: chimpanzees, too, 'are biologically endowed with the expectation that such principles should be observed' (p. 218). As mechanical factors enabled them to keep producing and encountering novel sounds, synonymy-resisting hominines must surely have felt impelled to provide correspondingly distinct and varied meanings. In a nutshell, this is the author's theory of language origins. As he succinctly puts it, 'meanings exist in order to provide something for spoken words to express' (p. v).

What, then, of syntax? Syntactic structure is syllabic structure writ large. Once syllables were being produced (thanks initially to a descended larynx), phrase structure was destined to assume a corresponding, precisely specifiable, form. For good mechanical and physiological reasons, the syllable displays asymmetry between nucleus and margins, between onset and coda, and between the whole syllable and its constituents. Syntax inevitably mirrored all this in distinguishing main verb from noun phrase, subject from object – and whole sentence from its constituent phrases (pp. 143–8).

Initially, however, syntax was simple. *Homo erectus* could produce sentences, but 'her slow articulation and her difficulty in prolonging exhalation would have kept her sentences

short'. Such constraints on sentence length made recursion impossible and so obstructed syntactical elaboration. Recursion – hence syntax-as-we-know-it – emerged thanks to longer exhalations plus more rapid vocal articulation in *Homo sapiens* (p. 191).

Language evolved, then, not under social selection pressures but thanks simply to a lifting of physical constraints. The author is aware of the growing Darwinian consensus that the unusual vocal capacities of hominines must always have been adaptive, functioning from the outset as social signals of some kind. But he explicitly rejects this approach, along with the view that syntactical competence must ultimately be rooted in primate mind-reading and social intelligence (pp. 192–4). His alternative to Darwinian adaptationism is an idiosyncratic version of 'exaptation': linguistic capacity emerges through anatomical or physiological accident, following which novel social communicative uses ('meanings') are found for the surfeit of sounds (p. 119). Carstairs-McCarthy concedes that social selection pressures may play a role in historical linguistics (shaping such cultural processes as diversification of the lexicon); he denies any role for such factors in determining the biological evolution of linguistic competence (p. 132).

'The origins of complex language' is somewhat technical in places, yet makes for a refreshing read. The author presents language origins as quite independent of social, cognitive or cultural developments. This controversial agenda leads to some astonishing claims. Humans, asserts Carstairs-McCarthy, 'are not unique in using non-iconic, arbitrary signs'. Arbitrariness – of the kind long held to be specific to human language – is an inherent feature of 'many calls of other species, both mammals and birds' (p. 73). A linchpin of the whole argument is the claim that primates – and hence by inference evolving hominines – act on the principle of 'synonymy avoidance'. Unfortunately, no evidence for this bewildering assertion is provided. Wild chimpanzees produce internal variations in their complex long-calls *without* supplying variegated meanings to match. Why should we deny the possibility of comparable redundancy in ancestral human vocal signals? Clearly, humans eventually *did* establish speech as an efficient way to represent and communicate 'meanings'. But how might we account for this unusual development? Ruling out social explanations, Carstairs-McCarthy is driven to invent purely mechanical alternatives. The idea that 'meanings exist in order to provide words with something to express' has little to commend it. Yet for those aiming to demote language origins to the status of a mechanical puzzle, this book offers an ingenious solution.

CHRIS KNIGHT

University of East London