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## Not compelling: Commentary on Evans 2014

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VOULOUMANOS, ATHENA; ALIA MARTIN; and KRISTINE H. ONISHI. 2014. Do 6-month-olds understand that speech can communicate? *Developmental Science* 17.872–79. DOI: 10.1111/desc.12170.

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## Not compelling: Commentary on Evans 2014

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Evans has written a book that contains all of the key ingredients of an introductory textbook on linguistics. It covers most of the subjects one would typically expect, and the reader encounters most of the big names any introductory text in linguistics usually mentions. The difference is that E couches everything in a pungently anti-nativist rhetoric. The empirical evidence presented is systematically taken to imply that tenets formulated by Chomsky and his followers, notably Steven Pinker, are incorrect. According to the author, everything we have learned about language—its structure, evolution, history, variability, acquisition, and representation/processing in the brain—since Chomsky famously proposed that language is an innate faculty of the human mind actually serves to disprove that thesis.

E's alternative to what he calls the language-as-instinct point of view is that language is an outgrowth of cultural intelligence—a specifically human trait—and that all of its properties are rooted in patterns of communicative use. The tone of the book is thus polemical. It is also occasionally tendentious, and the author does not eschew derogatory qualifications of the school of thought he is attacking or its representatives, suggesting that advocates of linguistic nativism are not objective and not sensible. Consider the following quotations:

The findings I've been discussing add up to the body of evidence that any objective person would find compelling. (57)

... does any sensible person really believe that language could plausibly have evolved for anything other than communication? (258)

Even the title, which includes the term 'myth' as a qualification for a scientific theory, reflects the book's polemical stance.

Setting aside these caveats, we can ask: does E have a case? Let me try to answer this by considering the points he makes about primary language acquisition. E does two things: he argues that the nativist account of primary language acquisition is not supported by the evidence, and he puts forward an alternative, usage-based account, arguing that this is adequate and complete. A major theme in E's critique of the universal grammar hypothesis is that the predictions it makes for the process of language acquisition are incorrect. On this count, I can go along with E. The available evidence does not show that acquisition of properties of a native language grammar is instantaneous and uniform across the board, and the trajectories that we see in young children's natural language development do not establish that a mechanism such as parameter setting is psychologically real. It is important, however, to remember that the original ideas about language acquisition in the Chomskyan framework were motivated by formal considerations; the acquisition of a grammar was approached as a purely computational problem. Psycholinguists subsequently took the computational theory as an idealized version of a theory at the level of implementation and tested its predictions. In fact, much of the evidence E considers to contradict the nativist approach results from empirical work on child language development propelled by the very proposals made by Chomsky and his followers. Science progresses.

E claims that the field of developmental psycholinguistics today has a complete and firmly grounded answer to the question of how children acquire their native language, one that avoids any association with language-specific innate abilities. He argues that two generic skills are sufficient for young children to attain full competence in their native language, without an innate universal grammar: pattern recognition and cultural intelligence.

Pattern recognition refers to children's ability to extract statistical patterns from sequences of linguistic units. A classic example of this capacity is provided by a study (Saffran, Aslin, & Newport 1996) that shows that eight-month-old infants exploit transitional probabilities to segment words from a continuous stream of syllables. Over the years, extensive research has made clear that this ability is not restricted to strings of linguistic units; children are also sensitive to the statistical structure of musical tone sequences, series of visual patterns, and much more. Moreover, many nonhuman species show similar statistical sensitivities, and so the underlying mechanism would seem to be neither specifically linguistic nor specifically human.

Cultural intelligence 'predisposes us to being pro-social, which facilitates cooperative behaviours, of which language is the paradigmatic example' (121). E borrows the concept of '[h]umans' especially powerful skills of social-cultural cognition' (Herrmann et al. 2007:1360) from Michael Tomasello. A crucial component of cultural intelligence is the ability to recognize conspecifics as intentional agents, who act in certain ways in order to achieve certain goals. Newborn children possess this ability and will therefore understand that the speech produced by humans is meant to have a communicative effect; this thus motivates children to work out the meaning of the units that their pattern recognition skills allow them to extract from human speech.

To my mind, the claim that pattern recognition and cultural intelligence together are sufficient for language acquisition is too optimistic and not in sync with the state of the art in language acquisition research. Many studies have shown that infants can extract statistical regularities from strings of linguistic units (as well as from other types of physical stimulation). However, this ability has typically been demonstrated in experiments in which children are exposed to miniature artificial languages, which, as the name implies, are far less complex than any natural language. The structural properties of artificial languages are carefully controlled to enable testing whether the learner can pick up on a specific structural characteristic—which is to be seen as a (miniature) model of a structural property of natural languages. If such an experiment produces a positive result—that is, shows that children are sensitive to artificial manipulations—this serves as a proof of concept, but it can only mean that the ability to acquire language MAY build on this mechanism. What remains unclear is whether and how such a mechanism would survive 'upscaling' from the level of a miniature artificial language to a full-blown natural language. Evidence that a child can extract a simple statistical pattern from a sequence of elements that is unidimensional, strictly controlled, and without other variation that may interfere with the learning task at hand does not mean that this ability is sufficient to recognize the complex structural patterns (at the levels of phonology, morphology, syntax) in a natural language (see Newport & Aslin 2004, Erickson & Thiessen 2015).

While pattern recognition/statistical learning abilities are claimed to be instrumental in detecting the structure of speech, cultural intelligence is claimed to be necessary for discovering the communicative meanings of spoken language utterances and, hence, the mapping between form and meaning. That cultural intelligence plays a role in language may well be correct, but what bothers me is that while E states this, he does not explicate it. If the statistical learning hypothesis is incomplete, at least it is computationally explicit; however, how cultural intelligence, or its subsidiary dubbed 'interactional intelligence' (the predisposition to engage in interactions with a conspecific in communicative settings for specific ends), propels the acquisition of language is not fleshed out in any measure. This leaves the impression that E replaces one *deus ex machina* (language is innate) with another (innate cultural intelligence causes language).

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