

Original Article/Commentary

The Bilingual Brain Revisited: A Comment on Hagen (2008)

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Abstract: L.K. Hagen (2008; *Evolutionary Psychology*, 6, 43-63) proposes that effortless first acquisition compared to more difficult second language acquisition provides evidence that the monolingual nature of our ancestral social environments implies a near-constant state of intergroup conflict. I argue to the contrary that the capacity to acquire multiple languages simultaneously in childhood without decrement to first language acquisition suggests that there was selection pressure for multilingualism. I further argue that this cognitive capacity is evidence for an ancestral environment in which distinct groups commingled (e.g., through long-term trading and marriage relationships) in relative security.

Keywords: bilingualism, language acquisition, ancestral social environment

Introduction

In his recent article, Hagen (2008) proposes an interesting hypothesis about language capacities, specifically bilingualism, and the nature of social environment our hunter gatherer ancestors inhabited:

Our remarkable facility in learning a first language at an early age – and our equally famous difficulty in learning another one later on – are thus easily predictable consequences of our prehistoric heritage. If language evolved in some group that did not have sustained and peaceful contact with others, then a bilingual brain would not be of much use, natural selection would not have favored it, and we would end up with exactly the state of affairs we now have (pp. 57-58).

I agree with Hagen that our capacity for bilingualism does provide insight into the nature of our ancestor's social ecology; I suggest however that what we know about human language capacities leads to a very different conclusion about prehistoric sociality.

Hagen argues that the difficulty in learning a second language compared to learning a first language is evidence that our ancestral communities lived in states of near constant hostility. I propose, to the contrary, that the ease with which children simultaneously learn

multiple languages evinces a state of sustained cooperation and exchange between groups such that speakers of different groups, speaking different languages, recurrently commingled over long periods of time (Hirschfeld, 2001).

A singular property of the language acquisition device (LAD) supports the conclusion that modern humans lived in markedly multilingual communities. The language acquisition device is in fact misnamed; it is device for acquiring multiple languages simultaneously. During the period in which young children acquire their first language, they are capable of (and often do) acquire several languages *without significant decrement to first language acquisition*. This ability to effortlessly acquire several languages is a singular design feature of the LAD. What other complex cognitive skill is unaffected by doubling or even tripling the acquisition task? Learning to add and subtract at the same time surely takes more cognitive effort and time than learning only to add by itself. Consider another task that like language is subserved by a special-purpose acquisition device, namely, learning to classify nonhuman living things. Flora and fauna represent two aspects of the same system which would lead us to expect that they are learned together. As Hickling and Gelman (1995) have demonstrated, however, young children initially over attribute animal properties to plants but not vice versa, suggesting that learning about the two biological kingdoms is to some extent not simultaneous but serial.

Hagen is correct that learning a second language *as an adult* is relatively more difficult than learning a first language as a child. However, this is not the relevant contrast. Bilingualism – the simultaneous acquisition of two languages – is simply no more difficult than learning a first language (to the extent that it makes sense to talk about first and second language acquisition when two languages are learned at the same time). This achievement is all the remarkable since some of the processes that enable bilingual acquisition (e.g., establishing two distinct lexicons) would otherwise seem to compete with processes that enable single language acquisition (e.g., a single word for each whole object).

This does not mean that all features of the language acquisition process support multilingualism. Consider accent. Children of nonnative speakers (i.e., speakers who learned a second language as an adult) do not acquire the nonnative accent of their parents, even though parental speech is plausibly the primary linguistic input (Harris, 1998; Hirschfeld, 2001). Indeed, these children develop the accent of the speech *community* in which they live. Presumably they accomplish this by giving greater weight to less frequent but more community relevant input. Nor is this due to the language learner's inability to distinguish accented from unaccented speech, as Kinzler, Dupoux, and Spelke's (2007) recent and elegant study with 6-month-old infants demonstrates. (More generally, differential attention to community standards is common among toddlers and preschool age children in domains ranging from accent to racial and gender stereotypes.)

Nor do multiple language environments in themselves always lead to reproducing multilingualism. An important distinction needs to be drawn between communities in which vestiges of multiple lingualism are found and communities in which several languages are spoken over long periods of time. As Hagen notes, massacre sites often do not contain the remains of fertile women, suggesting that they are taken as spoils of war. In such a context it is plausible that captured women would not establish sustained, parallel (i.e., bilingual) language communities. In such contexts, where a dispreference against cultural forms of captured women's native communities seems plausible, the learner's

propensity *not* to acquire foreign-accented pronunciation would inhibit acquiring the (captured) mother's native language.

Effortless multilingual acquisition, in contrast, is consistent with the peaceful movement of women between communities, a pattern of multilingualism that anthropological linguists have long acknowledged is the rule rather than the exception (Gal and Irvine, 1995). This pattern is also consistent with a long tradition in anthropology documenting the high frequency of exogamous marriage (and long-distance trade). As Levi-Strauss showed half a century ago, kinship systems with both direct and indirect "exchange of women" between groups are arguably the fundamental building block of human sociality. In sparsely settled landscapes with exchanging groups (whether through marriage or sustained long-distance trade relations) the evolution of a cognitive capacity for multiple language acquisition would subserve sustained and peaceful contact between communities speaking different languages.

Hagen's argument is consistent with a long-dominant view that our ancestral environment was wracked by warfare and near-constant threat of intergroup predation. Ignoring for the moment that even in the ancestral environment many important group differences were intragroup rather than intergroup, the evidence for this Hobbesian portrait is not overwhelming. Warfare may well not have been as endemic as this view holds, and evidence of frequent prehistoric warfare comes largely from more recent settlements (Ferguson, 2003). Even if competition for scarce resources did eventually reach a critical point in the late Pleistocene, the period during which most complex cognitive functions evolved was characterized by extremely sparse settlement patterns and (arguably) low levels of intergroup predation.

Much of my speculation here is based on a fairly simple observation: in terms of complex cognitive mechanisms, it is less languages that have evolved than language acquisition devices. Increasingly more complex linguistic structures emerged as distinct LADs evolved, presumably as adaptations to challenges grounded in shifts in the human and nonhuman environments. There is no reason to suppose that low cost multiple language acquisition is an especially ancient feature, as the scope and frequency of multiple language communities are likely a fairly late evolutionary condition. To conclude as Hagen does that bilingualism is largely a function of adult second language acquisition misses the point. Bilingualism – like recent work on evolved moral judgments (Haidt, 2007; Hauser, 2006) – is persuasive evidence against a brutish portrait of our ancestral past.

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