LANGUAGE EVOLUTION WITHOUT TRUST

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Most researchers in the field of language evolution share the assumption that *before* the evolution of language could even begin, a complex social development must have taken place, establishing new forms of collaboration and trust between the members of a group, not seen among any other apes. The reason for this is that linguistic communication requires trust since it is typically not backed up by direct evidence. According to Dor, Knight, and Lewis (2014, p. 4), virtually all researchers agree that an *unprecedented* level of collective cooperation and trust *was* needed for the first steps toward the evolution of language to occur. This paper aims to show that this dominant assumption is unnecessary.

We support our claim through a methodological suggestion: the investigation into language evolution should *not* begin with the traditional assumptions about language, but with the use of contemporary evolutionary theory to inform us how language should be conceptualized to be evolutionary explainable. One well-supported view is the *function-first approach* (von Heiseler, 2020), where a new function is initially fulfilled by a *behavioral shift* that exploits an already existing structure (Mayr, 2001, pp. 224-229). Since in a novel configuration, the new behavior is adaptive, the elements that were used for this behavior will adapt by natural selection to fulfill the new function. This process usually begins with a change in the *evolutionary configuration* (an arrangement of the physiological, environmental, and social components and constraints that jointly constitute the development and sustainment of an adaption by natural selection), making the new function adaptive.

We apply the *function-first approach* to the evolution of language by suggesting that the proper evolutionary function of language is to convey propositions, especially about *displaced* actions. There are two mutually exclusive and jointly exhaustive classes of signs: natural and non-natural signs (Grice, 1957). In a world without non-natural signs (such as mimetic or conventional symbols), only natural signs (if anything) can refer to a displaced action. An example of such referential displacement can be found in the display of objects that imply a past action of the communicator, e.g., communicating a past kill by displaying the hunted animal as a trophy. Such use of natural signs could be reproductively beneficial for an individual by enhancing their attractiveness to potential partners for cooperation, or mating, or social status in general.

The *function-first approach* predicts that language evolved from such display behavior. This proposal has the potential to solve both major problems of language evolution—the *problem of the graduality of the emergence of syntax* and the *bootstrapping problem of language and cooperativeness/trust*. The problem of graduality is solved by identifying a structural similarity between understanding the display of an indexical object implying a past action—such as a trophy—and the simplest linguistic syntactic patterns—that of the simple transitive sentence: the presenter of the trophy constitutes the *agent*, the trophy represents the *patient*, and the verb is implied by the state of the *patient* (von Heiseler, 2019). By integrating a single mimetic gesture that represents an action by reenactment and which marks the thematic roles by being directed from the *agent* to the *patient*, a simple proposition is expressed. Moreover, since this approach suggests that the first language-like communication included indexical objects as evidence, the problem of trust disappears. We show how the function of referring to displaced actions could have evolved further in various niches of trust, such as in mother-child communication and teaching (kin selection; Fitch, 2004, Gärdenfors & Högberg, 2022), displaying performative qualities (a quality in which individuals vary naturally; Mithen, 2005), and bonding (building reciprocal relations; Dunbar, 2011). Thus, as these two problems, which are intractable in the dominant view of language evolution, are solvable under our proposal, we suggest that the best course of action in language evolution research is to search for evolutionary configurations in which referential *displacement* and *propositional communication* became adaptive (see e.g., Bickerton & Szathmáry, 2011, von Heiseler, 2022). We conclude with the hope that we have shown that the hypothesis that an unprecedented level of collective cooperation was needed before the first step towards the evolution of language could have occurred, is not only unnecessary but is also unwarranted.

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