

SHARED INTENTIONALITY AND HUMAN PHYLOGENY: A CRITICAL ASSESSMENT OF TOMASELLO (2008)

BENOÎT DUBREUIL

*Department of Philosophy, Université du Québec à Montréal, 455 boulevard René-
Lévesque Est, Montréal, H2L 4Y2, CANADA*

Michael Tomasello (2008) identifies three basic motives of human communication—requesting, informing, and sharing—and uses them to reconstruct the evolution of language in human phylogeny. I argue that these three motives offer no ground on which to build a plausible evolutionary sequence, since there are no strong reasons to believe that they have distinct evolutionary origins. My criticism leaves intact Tomasello's main contention that the basic infrastructure of shared intentionality must have been central to the evolution of language in the human lineage.

1. Shared Intentionality and Human Phylogeny

In a number of influential papers, psychologist Michael Tomasello has argued that the cognitive and motivational infrastructure of shared intentionality has played a central role in the evolution of human culture and language (see, among others, Tomasello et al. 2005). In his recent book on the *Origins of human communication* (Tomasello 2008), he uses a distinction between three basic social motives involved in shared intentionality—requesting, informing, and sharing—to reconstruct the evolution of language in the human lineage. In this paper, I argue that the three motives distinguished by Tomasello offer no ground on which to draw principled distinctions between evolutionary stages in human phylogeny.

I begin by explaining what shared intentionality is and why it is essential to our understanding of human language and culture (1.1). I then sketch the evolutionary sequence proposed by Tomasello (2008) on the basis of his distinction between requesting, informing, and sharing (1.2). In the second part of the paper, I criticize the idea that distinct evolutionary stages can be associated with requesting and informing (2.1), as well as with informing and sharing (2.2). I conclude by presenting some hints as to how the concept of shared intentionality can still inform our understanding of the evolution of language in the human lineage (3).

1.1. *How Specific is Shared Intentionality in Humans?*

Communication in humans is inherently cooperative. Evidence for this comes from the study of both human children and nonhuman primates. Comparative psychology shows that “[a]pes understand that others have goals and perceptions and how these relate to one another in intentional action, perhaps even rational action.” (Tomasello 2008: 177) According to Tomasello (2008: 50-51), apes use gestures to communicate in at least two ways. First, they use “intention movements”, in which the communicator expects the recipient to understand his intention and then act accordingly. Second, they use “attention-getters”, movements in which the communicator attempts to attract the attention of the recipient in order to influence his behavior (Tomasello 2008: 50-51).

Despite their elaborate social-cognitive skills, apes differ from human children in important ways. The main difference is that apes “do not point declaratively to simply share interest and attention in something with another individual [...], and they do not point informatively to inform another of something she might want or need to know, as human infants do from early in ontogeny” (Tomasello 2008: 38). The defining feature of specifically human shared intentionality is thus that it is cooperative from the beginning. According to Tomasello (2008: 73), this specificity builds on specific “social-cognitive skills”, as well as specific “social motivations”. Human social-cognitive skills include the capacity to create a shared understanding of situations, what Tomasello (2008: 73-82) calls a “common ground”, as well as the capacity for recursive mindreading. The social motivations refer to the “basic motives” of communication, on which his phylogenetic reconstruction is based.

1.2. *Three Basic Motives*

Tomasello’s “basic motives” of human communication are requesting, informing, and sharing. I present briefly the three motives before to explain how Tomasello use them to build his evolutionary sequence:

“Requesting: I want you to do something *to help me* (requesting help of information);

Informing: I want you to know something because *I think it will help or interest you* (offering help including information);

Sharing: I want to feel something so that *we can share attitudes / feelings together* (sharing emotions and attitudes).” (Tomasello 2008: 87)

These motives appear in the second year of children development and are manifest in the different uses of pointing. In Tomasello's phylogenetic reconstruction, they also correspond to distinct evolutionary stages, as well as to different 1) selection mechanisms, 2) sets of collaborative activities and 4) sets of communicative actions (see figure 1). Tomasello's overall sequence aims at explaining how hominins could have departed from ape-like communication and evolved the abilities that we observe in *Homo sapiens*. He makes no use of the archeological record to support his view and rather presents his sequence as a "logical" and "plausible ordering" of events (Tomasello 2008: 191). He nevertheless contends that is three-step reconstruction is "more than just another 'just so story' of what some human behavior 'is good for'. It is more because cooperative communication actually shares an infrastructure of shared intentionality with collaborative activities" (Tomasello 2008: 191).

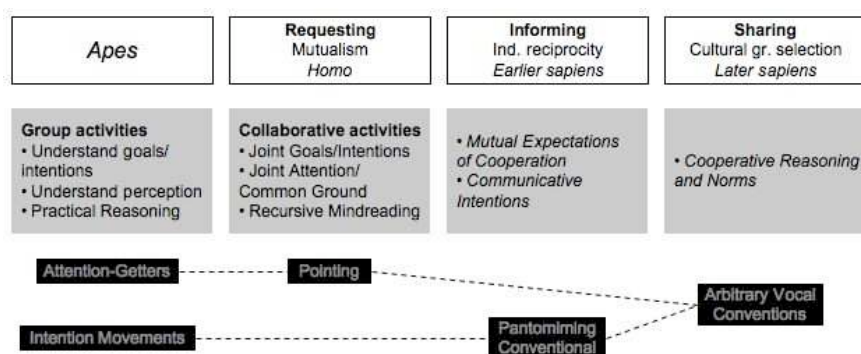


Figure 1. Evolutionary foundations of human cooperative communication (adapted from Tomasello 2008: 239).

First stage. The road from ape-like to human-like communication was primarily one from more competitive to more collaborative interactions. The first step in this process was "for individuals to become more tolerant, generous, and less competitive with one another, perhaps especially in feeding context." (Tomasello 2008: 193) This first change would have created a social context in which "mutualism"—situations in which I help me by helping you—could flourish. Within this context of mutualism, hominins would have evolved the "ability to create joint goals and joint attention." (Tomasello 2008: 194) This would have led to the first form of collaborative communication, pointing, especially in the context of requesting. Tomasello (2008: 198) also contends that it is in this context of collaboration for joint goals that the "skills of recursive

mindreading arose initially”, although he remains quite elusive on the cognitive foundations of recursive mindreading.

Second stage. Human communication would have subsequently expanded beyond mutualism and reached contexts in which in helping you, I did not directly help me. This is a defining feature of Tomasello’s second motive, informing. The expansion of communication beyond mutualism would have been possible because hominins were able to track each other’s reputations, which would have triggered the process of selection known as “indirect reciprocity” (Tomasello 2008: 171). This stage would also have been accompanied by a new form of communication: the use of iconic gestures (pantomiming) to refer to things displaced in space and time, which would have been possible because hominins would have evolved the capacity to understand Gricean communicative intentions (as when “I *understand* that you *want* me to *know* something”) (Tomasello 2008: 203-204).

Third stage. At this point in their evolutionary history, hominins were still not using language for the simple expressive pleasure of sharing emotions and attitudes. According to Tomasello (2008: 210), this feature of communication is based on humans’ desire to be “like others”, as well as to be “liked by others”. It would have evolved through a process of a cultural group selection favoring the evolution of mechanisms “maximizing within-group conformity and between-group difference” (Tomasello 2008: 213). An important consequence of the evolution of this “imitation / conformity / solidarity / affiliation dimension of things for communication concerns the establishment of norms. Pressure from the group for the individual to conform is the essence of social norms” (Tomasello 2008: 212). The evolution of full-fledged social norms would have paved the way to the conventionalization of language.

2. Criticisms

Tomasello’s evolutionary sequence is based on his typology of basic motives, which he connects to selection mechanisms, types of cooperative activities and types of communicative actions. The overall portrait is impressive, but does it identify real stages in the evolution of language in human phylogeny? Granted, Tomasello does not pretend to explain the evolution of communication in specific hominin species, as we can see in the labels that he uses (*Homo*, earlier *sapiens*, and later *sapiens*, see figure 1). But at the same time, he stresses that his framework is not a “just so story” and should be taken as a reconstruction of evolutionary stages that should logically follow each other given the cognitive infrastructure of human communication. I will claim that the ordering is

controversial from the point of view of human cognition and that there are more enlightening ways of using shared intentionality to inform our past.

2.1. *From Requesting to Informing*

Tomasello distinguishes his first two stages on the basis of the incentive structure associated with informing and requesting. While requesting is interested, informing is altruistic. But there is something odd in associating the motives of requesting and informing to distinct evolutionary stages, just as there is in associating the former with mutualism and the later to altruism. The problem is that requesting and informing seem to be closely related to one another. Indeed, my disposition to request information from you is closely dependant on your disposition to provide me with information. If you have no willingness to inform me altruistically whatsoever, then why would I request information from you? It would thus be odd to have a population of requesters that does not simultaneously comprise at least some altruistic informers. The fact that the two motives develop more or less simultaneously in infancy raises further doubts on the idea that they have distinct evolutionary roots.

Introducing the distinction between mutualism and altruism does not help much. The problem is that it is often hard in practice to decide if an interaction belongs to one type or the other. In mutualism, I help me by helping you, while in altruism, I don't. But what count as "helping oneself" in practice? As soon as I gain some benefits from helping you, the distinction is blurred. Moreover, real life benefits are often indirect, as in the case of reputational gains. Such gains transform a interaction in which only you have something to gain into one in which we both have something to gain, which is precisely the definition of mutualism. So how can we make sense of the hypothesis that mutualism and indirect reciprocity belong to distinct evolutionary stages? Only by assuming, as Tomasello does, that the first hominins capable of joint intentionality were incapable of tracking the reputation of conspecifics (or did not care about it).

One indication that this could have been the case is the apparent absence of reputational concerns among living apes. Although apes are capable of recognizing the other members of their group and of developing specific behavioral expectations toward them, they do not seem to care about reciprocating favors, even when they can do this at no cost (Brosnan et al. 2009). But this lack of concern for reputation might reflect apes' general lack of cooperative motives. Why should I build a reputation if others are not willing to cooperate in the first place? But the situation changes radically in a species whose members share attention, goals and intentions with one another, as

hominins in Tomasello's first stage. Wouldn't such hominins automatically develop a concern for reputation, that is, an interest in how much cooperative particular individuals are in the pursuit of joint goals? If they did, as it is reasonable to assume, then there would be no principled distinction in the evolution of shared intentionality between a stage of mutualism and another of altruism/indirect reciprocity.

2.2. *From Informing to Sharing*

The last stage of the sequence is defined by the motive of sharing attitudes, emotions and affiliation, which Tomasello sees at the foundation of social norms and linguistic conventions. Behind his argument is the idea that the cognitive and motivational mechanisms underlying joint intentionality (already present in Tomasello's first stage) are insufficient to explain the expressive, affiliative, and conventional nature of human communication. But is it really the case?

Joint intentionality exists, among others, because humans find the sharing of goals with conspecifics intrinsically pleasurable. In other words, they do not only enjoy reaching goals, they enjoy reaching them *cooperatively*. But if doing things together is intrinsically pleasurable, why couldn't hominins simply engage in emotion sharing or expressive pointing for the simple pleasure of doing so? To be sure, expressive pointing is distinct from informative or imperative pointing (Tomasello 2008: 118-124), but why would it have distinct evolutionary origins? Here again, the fact the three types of pointing develop synchronically during the second year of life suggests that they can be explained by the very same mental mechanism, that is, the pleasure of joint intentionality.

But what about the evolution of social norms and linguistic conventions? Here again, there is no need to imagine the evolution of a distinct mechanism. If hominins were engaging in joint collaborative activities, they were also developing mutual expectations about each other's behavior. Isn't that enough for norms to evolve? Tomasello (2008: 208) thinks it is not: "Mutual expectations are not norms because they have no punitive force, but they are one step in that direction." But why is this step insufficient? I can imagine a straightforward link between mutual expectations and punitive force. Humans, just like apes, are frustrated when their expectations are deceived. If hominins were developing mutual expectations in the pursuit of joint goals, they were also undoubtedly discontent when their expectations were deceived. This discontentment was probably expressed publicly in the form of frustration or anger. Hominins were thus probably also developing expectations about their conspecific's expectations, as well as a desire to meet these expectations in order

to avoid angry reactions. But that is precisely what normative punishment is about (Dubreuil in press, a).

What finally about the desire to be like (and liked by) others? Once again, there seems to be no need to posit a new mechanism, but simply to understand the full impact of the evolution of joint intentionality on the social life of hominins. The desire to be like (and liked by) others can result from a mix of motivations, including the intrinsic pleasure of engaging in joint activities (to do as others do), the desire to satisfy others' expectations (do what others want you to do), and more general reputational concerns (make sure that others have a good opinion of you), in a context of repeated interactions in which hominins try to find ways to distinguish good norm followers from bad ones. Altogether, the presence of these motives is sufficient for cultural group selection to kick in, as long as it reinforces variations between groups and similarity within groups.

In sum, as for requesting and informing, there seems to be no principled way to use the motives of informing and sharing to identify distinct stages in human evolution. In fact, there are reasons to believe that the features that Tomasello associates with the stage of sharing might have ensued from the evolution of joint intentionality itself.

3. Conclusion

The criticisms raised above do not challenge what I see as the central contention of Tomasello's phylogenetic reconstruction. They certainly dispute the particular sequence that he proposes, but leave intact the central idea that the social-cognitive and social-motivational infrastructure of shared intentionality must have played a foundational role in the evolution of properly human communication. I do not only regard this idea as highly plausible from a psychological viewpoint, but also as extremely useful for those looking in the archeological record for positive evidence about how language evolved. To be sure, language does not fossilize. But if human communication and cooperation share common origins, then the reconstruction of patterns of cooperation in extinct hominins may provide a window on language evolution (in the sense of Botha 2008).

Different lines of evidence, for instance, indicate increasing cooperation in early *Homo* population, including *Homo habilis* and especially *Homo erectus*. The general shift toward a higher quality diet in these species (including significant meat consumption) suggests more cooperative feeding, while the transition to exclusive bipedalism and more open environments indicates greater ability for group defense (Gärdenfors and Osvath in press). Similarly, evidence

from later hominins, including *Homo heidelbergensis* and *Homo neanderthalensis*, indicate a capacity to switch to subsistence strategies based on extensive sharing, such as large-game hunting, as well as a capacity to secure important intergenerational transfers through cooperative breeding (Dubreuil in press, b). The archaeological record thus provides evidence of an early increase in cooperation, as well as of an increasing engagement in costly and risky public goods games. Altogether, it suggests that the infrastructure of shared intentionality, as well as that of human communication, was in place much before the evolution of *Homo sapiens*.

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