

Carrying, caring, and conversing

Constraints on the emergence of cooperation, conformity, and language

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Social and ecological research and theory are used to elaborate and enrich two important sets of accounts of language origins. One is the interdependence and shared intentionality hypothesis (e.g., Tomasello, 2014a) of the ways in which humans became cooperative and conforming in ways that other apes did not, eventually leading to language. A second set of accounts addresses the emergence of bipedalism and its connections to language and to many other anatomical, cognitive, and social features that are distinctive in humans. Particular attention is given to the carrying and caretaking of infants. Research and theory challenging common assumptions about the role of conformity in cooperation and conversation are reviewed and integrated into these accounts. Together these varying perspectives point toward a more dialogical, dynamic, and distributed understanding of social interactions and the values that motivate and constrain humans' social and linguistic skills.

Keywords: bipedalism, caring, carrying, cooperation, conformity, divergence, language evolution, social learning, values

1. Introduction

Humans have travelled farther than most other animals, including chimpanzees and bonobos, their closest kin, extending their range to a wide variety of novel and challenging habitats. To accomplish this, they have had to cooperate in unprecedented fashion, working together in ways that demanded care, creativity, and conformity. Without their ability and willingness to learn from each other, and to contribute to joint projects that spanned long periods of time, humans would have never survived to develop various practices, such as language, that mark their life as cultural beings (Boyd, Richerson, & Henrich, 2011; Suddendorf,

2013). This has led a number of researchers and theorists to make strong claims about the role of conformity and imitation in the formation and development of human cultures (e.g., Richerson & Boyd, 2005; Tomasello, 2009). For example, developmental researchers have become increasingly impressed with the fidelity with which children imitate (e.g., Over & Carpenter, 2012), and a number of researchers (e.g., Rekers, Haun, & Tomasello, 2011) have provided evidence that children differ from chimpanzees and other apes in their motivations to imitate and conform to others.

In this article, two scenarios about language origins are considered. The first is Tomasello's (2008, 2009, 2014a) "shared intentionality" or "interdependence" account of the emergence of cooperative and conventional communication and thinking, along with some differing, but related accounts, such as Hrdy's (2009) cooperative caretaking (or "alloparenting") account. The accounts are used to provide a reference point for discussing cooperation, conforming, and language. There is no intention to offer a comprehensive evaluation of these specific accounts, and the hypotheses and arguments offered here need not be tied to them. The second scenario considered is one that emerges from a variety of accounts (e.g., Amaral, 2008; Bråten, 2009; Falk, 2009) that consider the shift to bipedal walking as a critical turning point in the emergence of language. Although these two general approaches are substantially different in a number of ways, both of them suggest that crucial changes in the social and moral infrastructure of the hominid ancestors of humans were necessary for the emergence of languages, as we know them. The two sets of accounts may complement each other in important ways, since changes related to bipedal walking may help to answer critical questions posed by the shared intentionality hypothesis. Furthermore, both kinds of accounts suggest that many factors, not just one or two critical ones, shifted in interdependent, integrated ways to make possible existing cultural and communicative skills and structures.

First, a number of important aspects of the interdependence thesis of Tomasello (e.g., 2008) and his colleagues (e.g., Tomasello, Melis, Tennie, Wyman, & Herrmann, 2012) will be described. Second, a wide variety of accounts focused on bipedalism, and its relation to carrying and many other factors, are described and related to issues raised by the shared intentionality account, and to issues posed by values-realizing theory (Hodges, 2007a, 2007b). What emerges is a new hypothesis about how humans came to be caring and cooperative. Third, research from social, developmental, and anthropological psychology is briefly reviewed that challenges assumptions about strong tendencies to imitate and conform. The research indicates that social learning theories need to address pervasive tendencies to diverge as well as to converge. Finally, a values-realizing approach to social interaction and language is briefly explored as a way of integrating some of the

insights gained from the dialogue of evolutionary hypotheses and current research related to convergence and divergence.

2. The evolution of interdependence

Tomasello (2008, 2009, 2014a; Tomasello, Melis, et al., 2012; Tomasello & Vaish, 2013) has offered a broad, carefully considered scenario of the “origins of human communication,” that attempts to account for why humans developed linguistic practices that are not found in chimpanzees and other apes. The crucial shift that put human ancestors on a different path than other apes was that humans became interdependent, relational, and cooperative in exceptional ways (Sterelny, 2003; Tomasello, 2014b). Briefly, Tomasello (2008) hypothesizes that communicative efforts by humans began with pointing and pantomiming, with the slow emergence of displacement. Later, pantomimed gestures would have become increasingly abstract and arbitrary, leading to conventionalized gestures (i.e., signs). The emergence of conventionalized signs in gestures and speaking and the development of grammatical markers was a social-cultural-historical process, involving imitation, conformity, and social norm formation. The task for scientists, then, is not primarily to explain biological adaptations for “Language,” but to account for the way in which thousands of differing languages, each with its own conventions emerged. The major explanatory problem is to account for how social interaction in humans became so cooperative and caring.

To address the question he poses, Tomasello (2014a, 2014b) and various colleagues (e.g., Tomasello, Melis, et al., 2012; Tomasello & Vaish, 2013) have proposed the *interdependence hypothesis*, which identifies two critical transitions in the hominid ancestry of humans that they believe must have occurred to make it possible for humans to become the distinctively cooperative, cultural animals that they are. The first critical transition was that human ancestors found themselves in an ecological situation in which they were forced to engage in collaborative foraging in order to survive. Such activities required that members of small bands of hominids give up their own individual efforts to find food, and coordinate their activities with each other, increasing their chances of claiming a larger prize for their efforts. In such ad hoc collaborations, each individual can benefit if he or she plays a role with others in finding and sharing a food source that cannot be obtained without a group effort. Chimpanzees sometimes work as a group to hunt for monkeys, but the evidence suggests that their efforts are more individualistic and competitive than they are cooperative. Each chimpanzee competes to be the one that captures the prey, and sharing of the kill is done under immedi-

ate pressure from other group members and is subject to dominance hierarchies (Boesch, 2005).

Human ancestors, by contrast, somehow learned to collaborate in a quite different fashion: They learned to generate joint intentions in which different individuals played different roles, helping each other, and sharing with each other in ways that benefitted others as well as themselves. Over time these collaborative efforts led to individuals in collaborative projects caring about the well-being and productivity of their partners, and about their own adequacy in being productive in their contributions to group tasks, and equitable in their sharing when there was success. If a partner in the collaborative effort experienced difficulty, instead of treating that as an advantage in the competition for resources, it increasingly came to be seen as a situation that invited (or demanded) helping and sharing, so that the group as a whole could function effectively. The shift from individualistic, competitive, hierarchically organized chimpanzee social organization to the sharing, caring, and cooperating that is typical of hunter-gatherer social organization would have required major shifts in social-moral motivations. But it also would have created selection pressures for increased communicative skills to aid in coordination, and increased cognitive skills to select good partners and to monitor one's own reputation as a possible partner for others.

The second critical transition proposed by Tomasello and his collaborators is the scaling up of the intermittent collaborative efforts among relatively small groups of individuals into the collective efforts of much larger groups, leading eventually to stabilized norms, practices, conventions, and institutions. They believe that the most likely causes of this transition were the destabilizing effect of two developments. One was the formation of larger groups that exceeded an individual's ability to know all the members of the group well enough to know whether they could be trusted as collaborative partners. The second was increased competition between groups and pressure to increase interdependence within one's own group, leading to an increased need to identify with the group, and a greater desire to express that identity and recognize it in others. The increased complexity of interdependence along with the strong need for identity markers led to the emergence and expansion of conventional ways of acting, communicating, and evaluating within groups. Once conventions became established, between-group differences became accentuated, such that the defense of one's group identity became increasingly important. This led to the emergence of new forms of social learning; in particular, conformity, imitation, and teaching. These new forms were necessary if the integrity and identity of the culture's ways, practices, and conventions were to be extended and replicated among peers and across generations.

The development of the argument by Tomasello (2008, 2009, 2014a) and his colleagues (e.g., Moll & Tomasello, 2007; Tomasello, Melis, et al., 2012; Tomasello

& Vaish, 2013) has been steady, and the developmental and comparative evidence they have offered in support (see Tomasello, 2014a, 2014b for reviews) has been impressive. The reason for including this brief overview of the interdependence hypothesis is to use it as a framework for offering two “amendments” that are intended to be “friendly” ones, but that nonetheless could require some serious re-adjustments. The first may help to fill in the first part of the “interdependence and cooperation” story; the second challenges and complicates aspects of the second part of the story, but strengthens the larger intentions of Tomasello et al.’s project. The first amendment is intended to make their account more comprehensive, and the second is intended to make it more complex. The two sets of proposals could be treated independently, but I have chosen to treat them in a more integrated fashion since they are interrelated. Finally, these various concerns are brought together and discussed relative to claims about the dialogical, values-realizing nature of language, as well as action and cognition more generally.

3. Walking, carrying, caring, and dialogical arrays

Tomasello (2008) poses the following questions: How did humans come to care, especially about others, and to cooperate so frequently and willingly? How did ancestral humans (hominins) come to have the social-cognitive prerequisites for language? A major anatomical change that many have thought is related to the emergence of the prerequisites for language is the development of bipedal locomotion. Niemetz (2010) recently reviewed a range of hypotheses addressing the genesis of bipedal walking in humans, and concluded that the most likely candidate for early stages of bipedal walking was hominins in search of food, wading in water deep enough to force standing and walking. However it began, it is likely that there were multiple constraints that encouraged and sustained upright walking. Many possibilities related to language open up with bipedal walking (Provine, 2004), but three of them are relevant to the hypothesis to be offered here. One possibility is that bipedal walking enabled greater distances to be travelled efficiently (e.g., Isbell & Young, 1996); another is that it enabled carrying infants more safely (e.g., Falk, 2004); and a third is that it enabled reaching and carrying valuable sources of food more reliably (Carvalho, Biro, Cunha, Hocking, McGrew, Richmond, & Matsuzawa, 2010; Hunt, 1994). All three of these may have played a role in human ancestors becoming more caring, careful, and cooperative over time in the ways needed to make language a possibility. This is especially the case if these are understood as an integrated set of co-occurring selection constraints.

Some (e.g., Sockol, Pontzer, & Raichlen, 2007) have argued that upright walking in hominins emerged from variations in gait in hominid precursors, and

bipedal gaits were selected for because they require less energy than quadrupedal gaits. Others have argued that it is extremely unlikely that bipedalism initially had advantages for locomotion; in fact, it is far easier to argue the reverse (Lovejoy, Suwa, Spurlock, Asfaw, & White, 2009). Nevertheless, given its emergence, presumably for other reasons, the evidence suggests bipedal walking did become increasingly efficient (Pontzer, Raichlen, & Sockol, 2009), and may have become stabilized in *Homo* by 1.6 MYA (Niemitz, 2010). Clearly, over time the ability to walk (and at some point, run) great distances, which were made possible by bipedalism, contributed to humans' ability to forage and scout over much larger ranges, and to migrate in search of new places to live (Lovejoy, 2009; Niemitz, 2010).

However, Watson, Payne, Chamberlain, Jones, and Sellers (2008, 2009) have argued that bipedal walking is not more efficient if it requires carrying infants, claiming that the kinematics of walking do not vary between kinds of loads. They had humans carry a mannequin "child" (10 kg) on one hip or carry two dumbbells (5 kg each), one in each hand, and found that energy efficiency, especially for asymmetric loads (e.g., "child"), does not generate an energy savings sufficient to provide a selective advantage for bipedalism. There are at least three reasons for doubting Watson et al.'s (2008) conclusion. One is that they do not address other possibilities for the importance of carrying, such as its enhancement of infant-parent relations. Second, they assume that infants would have been carried on one hip, but infants may not have been carried this way for longer distances where energetic constraints would be most severe. Third, research by Hodges and Lindhiem (2006) on humans carrying their infants and other items suggests that the value of what is being carried alters walking patterns so that they are judged "more careful" by observers. Parents carried their child or a bag of equally weighted groceries or trash across uneven steps with gaps between them, while being filmed with point-light reflectors on their joints. All items were carried in the same manner, with the item resting against one shoulder supported by both arms; thus, the items were carried slightly asymmetrically. Observers of point-light films of the action, who could see only the kinematics of the walking, and who did not know anything was being carried, rated walkers who were carrying children as walking more carefully than when they carried groceries or trash. There was no difference in mean walking speed. Hodges and Lindhiem's study suggests that what may be lacking in Watson et al.'s carrying task is *caring*, since it is the moral weight (i.e., value) that appears to lead to the kinematic differences that are rated as being more careful. Thus, there may be insufficient evidence to support a selective advantage for carrying infants due to decreased energetic costs, but if careful carrying led to decreased mortality of infants (and there is wide agreement that this is the case; Amaral, 2008; Niemitz, 2010), then it could have functioned as a strong selection constraint.

A more convincing scenario is Amaral's (2008) work relating body hair, walking, and carrying. The gist of Amaral's account is that hominins lost their body hair, so that infants could not hold on safely. Thus, the demands of carrying infants safely may have generated selective pressure toward bipedal locomotion. Although having to carry an infant and forage for food would not be an advantage to the mother, it may be that the efficiency of foraging for males (greater travel distances with bipedal walking), and the greater safety of offspring that were carried by mothers, strongly favored further development of bipedalism. Given that carrying had disadvantages for the mother, it would have created selective pressures for the development of division of labor, and a greater sense of interdependency within the group, with the advantages entailed in more complex group structures. Other changes in addition to bipedalism (e.g., body hair loss; toe-anatomy changes; heavier infants) may have mandated carrying infants (Amaral, 2008), requiring increased infant-parent cooperation (Johansson, Zlatev, & Gardenfors, 2006) and division of labor in adults (Amaral, 2008). In short, and to oversimplify, bipedal walking may have led to carrying, which may have led to cooperative behavior.

Tomasello (2009, p. 84) observed that, "it is a startling fact that among all the great ape species except humans, the mother provides basically 100 percent of childcare. Among humans, across traditional and modern societies, the average figure is closer to 50 percent." Hrdy (2009) has argued humans are cooperative breeders in a way other hominids are not: Children in all human cultures are passed around among caretakers, including those genetically unrelated to the infant, which almost never occurs among chimpanzees and gorillas. As noted earlier, humans naturally engage in sharing, and one form of that sharing is caring together for infants.

Falk (2004, 2009) has proposed an account of bipedalism and language development that contributes two pieces to the puzzle. One, she assumes that since carrying would have made foraging more difficult, this would have led to mothers "parking" their infants while foraging, which could have led to singing, cooing, and motherese that would have provided the contact desired by infants. From this perspective, it is the separation of the mother and the child, not the carrying itself, that contributes to language. It is the distance that is crucial. Second, she notes that as infants lost their ability to grasp maternal body hair, brain areas formerly used for grasping in non-hominin apes were co-opted for linguistic processing. Bråten (2000, 2004, 2007, 2009) provides the dialogical counterpoint to Falk's proposals. His account is focused on the infant rather than being focused on the mother. Rather than riding on the mother's back, looking at the world in much the same way as the mother, the infant was now face to face with the mother. In this new position the infant had little choice but to attend to the mother and to information she provided by gesture or vocalization, if the infant was to survive. Learning

about the world was now centered on the mother in a way that was not true for other apes. The longer period of infancy for humans, which was a bi-product of pelvic narrowing related to bipedal walking (Locke & Bogin, 2006), increased the time that the mother was face to face with a helpless infant demanding care if it was to live.

Carrying is, by definition, an act of caring – humans do not carry what they do not care about. It is also an act of values-realizing, since to carry an object is to perceive where it *is*, and move it to where it *ought better to be* (Hodges, 2007b). Humans carry food from outside the home to inside, and trash from inside to outside, and (generally) human parents carry their infants with them wherever they go, except to leave them in the care of others they trust. Thus, carrying may have increased caring. Increased face-to-face contact may have led to the emergence of an *intimacy* and an *alterity* (Bråten, 2007; Cowley, 2004) that established the beginnings of a dialogical array (Hodges, 2009). A *dialogical array* is a group of hearer-speakers surrounding a given speaker-hearer, listening and talking in ways that provide information about themselves as here-and-now events/objects, but also provide information about places and events from which they have come and to which they are going. The array is dialogical because each individual depends on others to participate and contribute their perspectives, and there is perception-action gain only if there is joint participation (Hodges, 2007a, 2009). Both social solidarity and a separation in perspectives are required for a dialogical array to lead to joint learning, and the emergence of ordered gestures as a way of expanding the horizon of learning.

Tomasello (2008, 2014a; Moll & Tomasello, 2007) appears to have something similar to a dialogical array in mind when he notes that humans are the only species that “conceptualizes the world in terms of different potential perspectives on one and the same entity” (Tomasello, 2008, p. 344). Early on, around a year of age, children show signs of appreciating that other people may have different perspectives than they do (Tomasello & Haberl, 2003), something that chimpanzees do not appear to do ordinarily. Children, however, may have difficulty appreciating how conflicting views of the same thing at the same time are possible (Moll & Tomasello, 2012), although evidence discussed in the next section suggests that they will challenge others whose views fail to accord with reality. Humans grow up sharing a world that they discover can be seen in multiple ways, and through dialogue, they discover – together – that the world is larger than any participant, and larger even than any of the perspectives that form the dialogical array. The dialogical array points beyond the horizon of the present moment and the present participants to a larger world that provides the resources for those participants and their common activity, a world that can come to be appreciated by travel. In all likelihood, bipedalism increased not only caring, but travel.

This relation between caring and travel, both emerging from bipedalism, is reinforced and complicated by further factors that differentiate humans from other apes. As noted earlier, there are tradeoffs for the mother in carrying her infant. Lovejoy's (1981, 2009) solution to this paradox is that a suite of anatomical changes that are central to humans' distinctive way of life emerged together, which changed social relations in the fundamental sort of way that Tomasello has posited was necessary for language to emerge. He has proposed the vested provisioning hypothesis, which centers on a shift from competition among males for sexual access to females to pair-bonding with fathers provisioning their female mates and offspring. This

shift probably reduced male-to-male conflict and combined three previously unseen behaviors associated with their ability to exploit both trees and land surface: (i) regular food-carrying, (ii) pair-bonding, and (iii) reproductive crypsis (in which females did not advertise ovulation, unlike the case in chimpanzees). Together, these behaviors would have substantially intensified male parental investment – a breakthrough adaptation with anatomical, behavioral, and physiological consequences for early hominids and for all of their descendants, including ourselves. (Lovejoy, 2009, p. 74)

The co-evolution of bipedalism, males losing their projective canines which were previously crucial to reproductive success, as well as changes in penis structure that would have led to less rapid ejaculation, and females ability to trade sexual access for food given ovulatory crypsis, yielded the smaller, more intimate context in which cooperation, care, and eventually conversation, could have emerged (Lovejoy, 2009). With the rise of bipedalism there was a move toward monogamous sexual relations and a division of labor. The greater time between births, and the increased time required for infants to be nurtured to maturity, demanded greater care in rearing infants. Lovejoy believes the shift in reproductive strategies is most likely to have been critical early on in the shift to bipedalism, with the mechanical advantages for energy conservation developing later. Eventually though, bipedal males were able to travel farther and to carry larger amounts of food to take care of the mother and infant, while the mother was able to carry her infant without having to be the sole provider for the infant and herself. Males who provided food for mother and infant were selectively given sexual access (which McBride, 2014, refers to as “anytime sex”). The reduction in agonistic behavior between males, the greater sexual receptivity in the female for the provisioning male, and the division of labor and the bonding of parents and infants allowed for the extended travel benefits of bipedal walking and the feeding and safety of infants.

Greater efficiency of bipedal walking for males allowed more comprehensive hunting or foraging, and the need for greater geographic skills, which would have

encouraged the emergence of dialogical arrays to provide an embodied perception-action system for wayfinding. Given that females were often carrying infants, it would have increased their caring and the emergence of dialogue in social solidarity and alterity (face-to-face closeness and distance), which might have expanded in time to include males, and other infant-mother pairs. From this solidarity and alterity, something like Tomasello's story may have emerged.

Sutou (2012) has focused on the relation of hairlessness to upright walking and to the change in social and sexual relations, suggesting that it would have led to more physical touching and bonding that would have produced "a sympathetic mindset trying to help and support each other" (Sutou, 2012, p. 268). Why hairlessness emerged is not known (e.g., Allen, Worman, Light, & Reed, 2013), but the evidence supports its appearance at 1.2 MYA or earlier, so that it would broadly fall into the time frame in which other major physical and social changes occurred in the hominin line. McBride (2014), too, suggests that "pairs were always together, cooperating, foraging and sharing with their young and each other" (p. 2), indicating that such closeness, physical and social, played a key role in the emergence of coordination and cooperation. He notes that, "It was never language that evolved; it was the conversation" (McBride, 2014, p. 4). Finally Lovejoy concludes that it would be extremely difficult to believe that the dramatic changes in sexual anatomy and the loss of agonistic dentition in males in concert with the refinement and stabilization of upright walking in human ancestors were unrelated to each other and to the "unparalleled demographic success in a terrestrial primate" (Lovejoy, 2009, p. 74e7). Tools, weapons, fire, and neural expansion and complexification all appear to have come later (Lovejoy, 2009).

It is likely that Bråten (2009) is correct when he argues that the survival of early hominins depended as much on the ability of infants to attend closely to their mothers and other caretakers and follow their lead, as it did on the caretaking skills of adults. He provides suggestive evidence that caring by the adult may have been led by the infant, first, by being held face-to-face, and then by the infant actively grasping the adult caretaker, not haptically, but by shared joint attention at-a-distance. The direct touching of the infant being carried, and the direct grasping of the infant attending to the mother or other caretaker, both embody what Bråten describes as a "plea": "Here I am. I am like you, and I like you, and I shall do like you; teach me!" (2009, p. 141). Thus, the child's actions invite the adult to care and to converse.

However, as Bråten (2009) observes in discussing Hrdy's (1999) work, mothers may well have found themselves with too many offspring for them all to be carried. Thus, the mother herself would have been in need of help no less than her infants. Like the child, the mother's actions would need to invite others to join in the caring and the conversation. A radical reading of Bråten's thesis points

to the possibility that humans come to their unprecedented cultural powers – to their extended phenotype in the web of caring, cooperative conversation (Waters, 2012) – by a most unusual route, namely by expressing vulnerability and need. It is the child's helplessness that invites the mother's care and concern, and it is the mother's need that must similarly attract the attention and assistance of fathers, kin, and other group mates. If this is true, then a willingness to express truthfully one's weakness might have opened up the possibility for the peculiar strength that humans find themselves to have – finding their way in the world together, by way of trust and social solidarity.

This scenario suggests that early human infants might have done even better than Bråten's altercentric hypothesis proposes. Infants who sometimes dissented or tried things on their own (in their naiveté) may have done better than those who simply mirrored their caretakers. If the evidence presented in the next section is applicable to the time in human evolutionary history under consideration, then human bonding and caring is not restricted to mirroring and matching; humans diverge, dissent, and argue, but they do so in a way that is cooperative, not simply competitive. This tendency to diverge has apparently affected traveling as well as caring. Hominin bands were small and dispersed, splitting when they became too large: "Without splitting, there could be no accounting for the millions of bands that spread throughout the world at least twice" (McBride, 2014, p. 10).

To summarize, the revolution in social coordination and cooperation that Tomasello believes must have preceded the beginnings of language may well have begun on the order of 1–2 MYA, shortly after the emergence of the genus *Homo* (Tomasello, 2014a, p. 36). The account offered here integrates and extends a variety of hypotheses in an attempt to provide greater substance and richness to the broad sweep of the first portion of Tomasello's hypothesis. It suggests the emergence of the social-moral skills and proclivities necessary to the emergence of language were very likely far more extensive, far more integrated, and took far longer to develop than some accounts (e.g., Bolhuis, Tattersall, Chomsky, & Berwick, 2014), including Tomasello's, have suggested. Nothing in the thesis argued is pinned on a single emergent (e.g., bipedal locomotion) as being the fountainhead of all that makes humans distinctive as caring, trusting, cooperating, traveling companions who converse on the way. What is remarkable about the brief account offered above is how many different factors intertwine in ways that plausibly contribute to the revolution in social-moral sensitivities and skills that made language possible and perhaps even probable. Among the many factors that may have played a crucial role are the following: (1) the emergence of bipedal walking with its implications for travel and for carrying of infants and of food, and for the length and character of childhood dependency; (2) a broad suite of changes in anatomy (e.g., hair, dentition, toe-structure, penis-structure) in addition to bipedalism that had

major consequences for the nature of sexual relations, bonding, division of labor, and how infants were carried and provisioned; (3) a set of likely effects of these changes, including how infants were treated in ways that increased both solidarity (e.g., face-to-face carrying) and separation of perspectives (e.g., “parking”) that may have encouraged more dialogical relations, as well as the emergence of sharing of infant care (and carrying) with other kin and group members; and (4) the emergence of the need for infants to learn to invite attention and care from “mothers and others” (Hrdy, 2009), in ways that encouraged caretaking and a sense of group solidarity larger than parent-child or biological kinship. Caring, altercentric mirroring was made possible by these many interrelated evolutionary changes, but it developed into the social solidarity and trust necessary for the dialogical relations that will be discussed further in the following section.

However, before turning to that set of issues, a few complications to the story presented thus far should be noted. As complex as the story just told is, it is no doubt too simple, and even if it is generally correct, no doubt there are other factors that contributed to the emergence and shaping of the strong tendency of humans to care, to cooperate, to help, and to share. Nonetheless, the evidence reviewed provides a good case for consideration, precisely because it weaves together threads and skeins of so many other accounts in a way that is stronger and richer than any of them alone. However, it is worth noting some of complications that will need to be addressed going forward. Almost certainly, caring, cooperating, sharing, and informing did not spring up suddenly in humans or their hominid ancestors, with no precursors prior to the emergence of *Homo*. Hrdy (2009) points out that rattlesnakes and crocodiles are known to “linger protectively” (p. 39) to watch over offspring too young to fend for themselves and adult meerkats take into account the skill level of youngsters in demonstrating how to eat scorpions safely (p. 282). More generally, she argues, evidence for empathic concern and care run as deep into history as the story of mammals (220 MYA).

Recent studies suggest that differences between humans and other apes may have been drawn too sharply (Adornetti, 2015). Crockford, Wittig, Mundry, & Zuberbühler (2012), as well as Schel, Townsend, Machanda, Zuberbühler, & Slocombe (2013), have provided evidence that chimpanzees will sometimes inform ignorant members of one’s group about the location of a danger, showing selectivity and intentionality in their alarm calls. While this may require rethinking aspects of Tomasello’s (2008, 2009) arguments about the distinctiveness of informing and sharing as human activities, it tells us little about the emergence of caring in human ancestry.

Crockford, Wittig, and their colleagues (Crockford, Wittig, Langergraber, Ziegler, Zuberbühler, & Deschner, 2013; Wittig, Crockford, Deschner, Langergraber, Ziegler, & Zuberbühler, 2014) have explored the possibility that

oxytocin may provide a common link in bonding and sharing activities seen in wild chimpanzees, that avoids having to hypothesize about social and cognitive skills that may play a more important role in human care and concern (Duguid, Wyman, Bullinger, Herfurth-Majstorovic & Tomasello, 2014). Hrdy (2009), on the other hand, proposes that researchers may be looking in the wrong place with their comparisons of chimpanzees and humans: The more appropriate comparison to humans among primates may be the callitrichids (New World monkeys), since they are the only other primates besides humans that show strong impulses to give to others, that demonstrate sensitivity to the needs of others, and that have closely spaced offspring requiring help from others to provision and care for them. Without extensive sharing of parental responsibilities of caring and provisioning infants, Hrdy thinks the human story never would have happened. Given that necessity, it became imperative for infants to learn to engage their caretakers in ways that invited caring and provisioning, and in doing so they became “connoisseurs of commitment,” (Hrdy, 2009, p. 285), attuned to gestures, tones, and rhythms that marked caretaking on which they could depend. Modern human infants continue to engage their caregivers emotionally, long before they speak linguistically, participating in dialogical interactions that make clear both their convergence and divergence with those who face them and hold them (Reddy, 2008). It is to that divergence and convergence that we turn next.

4. Diverging, converging, and the complexity of social learning

The second major transition in Tomasello’s story focuses on humans’ tendencies to conform to each other. Other apes sometimes will follow the lead of a human or conspecific, but their behavior appears motivated by obtaining a reward, rather than doing things as others have done. Sometimes, chimpanzees will conform to a pattern of behavior they have observed in others, but if they already know a well-practiced way to achieving the reward, or they see the possibility of achieving the reward more easily another way, they do things their own way (e.g., Haun, Rekers, & Tomasello, 2014). By contrast, children enjoy sharing activities with others (e.g., Rekers, Haun, & Tomasello, 2011) and they tend to imitate the particular movements of others much more carefully than is required to solve a puzzle or obtain a reward (e.g., Over & Carpenter, 2012). Starting as children, humans are drawn to affiliate and identify with others, and this leads, according to Tomasello, to a strong tendency to conform “as a marker of group identity” (Haun & Tomasello, 2011). “At some point in human evolution, it became important for individuals in a group to all behave alike; there arose pressure to conform. The proximate motivation [was] ... to be accepted in the group ... It may be that imitation and

conformity were in many ways the central processes that led humans in new directions evolutionarily” (Tomasello, 2009, p. 93–94).

The emphasis on conformity and the claim that it must be a strong force is one that is shared by other theorists, most notably, Richerson and Boyd (2005). It is believed that “strong conformity” (Haun & Tomasello, 2011) is essential to the formation of many different cultural groups, each with its own set of conventions. Conformity is seen as necessary for several reasons. First, it is difficult to explain how there could be so many distinctive groups (i.e., cultures) if there were not a strong tendency for people to adopt common practices, dispositions, and artifacts within a group (Richerson & Boyd, 2005). Second, one of the reasons that culture works is through what Tomasello (1999) calls the “ratchet effect,” which is the diffusion of creative solutions (e.g., new tools and methods) to other members of the group and their passing these new, improved ways of doing things on to later generations. Without strong tendencies for other members to adopt the new ways of doing things, leading to their becoming common practice, insights and improvements would be lost. Third, it is argued that the tendency to conform not only leads group members to become increasingly alike, but that it also leads to various cultural groups becoming increasingly diverse and distinctive. In short, conformity is seen as making a crucial contribution to the explanation of group selection, since it helps to account for heterogeneity of competing groups and the homogeneity of each of the groups individually. Fourth, in terms of communicative practices and specifically the development of language, Tomasello (2009) argues, it would be difficult or impossible to establish common ground (Clark, 1996) with others if there were not common practices, both cultural and linguistic, to ground group members’ cooperative efforts.

Whatever one’s quibbles about one point or another might be, this array of reasons for believing that there is something distinctive about humans’ tendencies to form groups that take on an identity that encourages, if not forces, individuals to bend their will and ways to those of others is noteworthy. Tomasello and his colleagues rightly observe that something crucial and special occurs when groups of cooperating individuals go beyond their individual desires, and beyond the goals of particular cooperative projects, to identify with group norms and the well-being of the group. In this acknowledgement of their interdependence on each other (Tomasello, Melis, et al., 2012), lie the beginnings of humans’ morality (Tomasello & Vaish, 2013), ultra-sociality (Tomasello, 2014b), cognition (Tomasello, 2014a) and intelligence (Moll & Tomasello, 2007).

Despite the attractiveness and plausibility of this account, there is a very large complication that must be addressed: Conformity is not nearly as pervasive and powerful as is often advertised (Hodges, 2014, 2017; Jetten & Hornsey, 2014). More precisely, divergence, dissent, and disagreement are pervasive and potent

realities that form the counterpoint to the chorus of conformity. To begin, there are a number of voices within cultural anthropology that have raised doubts about the purported role of conformity in culture formation. Experimental and field studies have found that people often fail to conform even in circumstances where it is clearly to their advantage to do so (e.g., Efferson, Lalive, Richerson, McElreath, & Lubell, 2008; McElreath, Lubell, Richerson, Waring, Baum, Edsten, Efferson, & Paciotti, 2005), and often they appear to prefer to stick with their own individual learning experiences rather than following the lead of others (e.g., Efferson, Richerson, McElreath, Lubell, Edsten, Waring, Paciotti, & Baum, 2007; Erickson & Strimling, 2009). Some have argued that within-group similarity has been overestimated, suggesting that the more common outcome of learning from others is within-group diversity rather than homogeneity (Eriksson & Coultas, 2009). There have even been theoretical arguments that conformity-biased learning is not a stable or adaptive strategy (Eriksson, Enquist, & Ghirlanda, 2007), and that what is needed instead is “critical social learning” (Enquist, Eriksson, & Ghirlanda, 2007). Even Richerson and Boyd (2005) have suggested that perhaps a “success bias,” rather than a bias to do what most other people do, would yield better outcomes. Finally, Mesoudi (2011) has proposed that humans may be so successful culturally, not because they conform to each other, but because they are willing to switch strategies, and try novel technologies and skills to see if they are improvements.

The evidence in favor of strong conformity is particularly weak when people are motivated to be accurate (Claidière & Whiten, 2012). In this regard, it is particularly interesting to consider what is probably the most famous study that supposedly establishes conformity’s power, Asch’s (1956) experiments in which he had a number of confederates all give the same incorrect answer about straightforward, observable facts, to see if others would agree or disagree. He found that his participants dissented from the unanimous majority two-thirds of the time. Whether one is impressed by this demonstration of dissent depends on what one expects. If one believes that people are independent, in the way Tomasello (2008) says that apes are, then one is impressed with how often humans conform (e.g., Cialdini & Goldstein, 2004). If one assumes humans are interdependent in the way Tomasello et al. (2012) describes, then one sees the agreement with wrong answers in a quite different light, and is impressed with people’s truth-telling dissent and their sensitivity to the complexity of pragmatics when one is disagreeing with relative strangers (Hodges & Geyer, 2006). The difficulty is to explain the entire range of results, not selected aspects: People clearly dissent, struggling to speak truthfully and tactfully to those with whom they disagree. Whatever aspect of the results one chooses to emphasize, it seems fair to say that Asch’s results do not provide a blank check for explanatory accounts looking to cash out on the powers

of conformity to explain cultural evolution (Hodges, 2017). That lesson has been reinforced in recent experiments based on Asch's studies, but done with young children. If there is anyone we might expect to conform, it is children; however, in two studies, the results were much the same as in Asch's studies (Corriveau & Harris, 2010; Haun & Tomasello, 2011). Dissent was by far the most common response and increased over trials, whether the majority was formed by adults or by peers. Children were more attuned to answering truthfully (and accurately) than to agreeing with the consensus, particularly when something of significance was at stake (e.g., winning a prize).

While the results just described reinforce the weakness of simple, straightforward claims about the powers of conformity to affect humans' ability and willingness to submit to social consensus, a more promising possibility for the Tomasello thesis is the tendency of children to be trusting and accepting of others' claims about matters about which they do not have settled convictions (e.g., truth). Children are quite willing to accept adults' claims about what the right name of an unfamiliar object is (i.e., linguistic labels), and if there is variation about a matter of which they are ignorant, they accept consensus as a marker of truth, other things being equal (e.g., Corriveau, Fusaro, & Harris, 2009). Much of what Tomasello and his colleagues have in mind, regarding conformity shaping cultural patterns, are the aspects of culture that are conventional. Conventions are optional, agreed upon, widely replicated ways of solving coordination problems (Lewis, 1969; Millikan, 2005), where there are not compelling reasons for adopting one way relative to other options. Speaking French, wearing sarongs, or eating fried clams are not necessarily better than other ways of speaking, dressing, and eating. If one is born into a community that speaks French, then one is extremely likely to adopt that way of engaging in conversation, because not to do so would preclude having conversations. The "other options" (e.g., speaking other languages) are not really options, so it becomes somewhat murky as to whether we should count adopting constitutive practices that make up the world of possibilities (e.g., one's "native language") as conformity in any very strong sense. What does seem remarkable about humans and differentiates them from apes is the enthusiasm with which they engage other humans and act in ways indicating a deep motivation to become part of the community and its ways (Reed, 1996; Tomasello, 2014b). It is that difference, I suspect, that Tomasello and his colleagues have in their sights in making their claims about conformity. However, even in domains such as fashion, divergence contributes more than we might guess (Berger & Heath, 2008).

More importantly, even language itself, which has been one of Tomasello's foci, and is in view in this article as well, gives rise to diversity as readily as commonality. Recent research is providing new, and sometimes surprising insights, into ways in which both convergence and divergence occur in dialogical interactions.

Reports of convergence in conversation – synchrony, mimicry, and imitation, for example – have commonly been made in the past two decades (e.g., Pickering & Garrod, 2004; Marsh, Richardson & Schmidt, 2009). This cross-person priming is often claimed to be automatic and ubiquitous. However, samples of real conversations have revealed that people sometimes tend to diverge from others in their syntactic constructions rather than converging (Healey, Purver, & Howes, 2014). In controlled experimental conditions, when solving a problem jointly, pairs of participants rapidly develop conventions for communicating, but these conventions tend to be elliptical and idiosyncratic, with meanings of referents often changing as the dialogue unfolds. Exchanges become “progressively divergent” rather than converging on fixed conventions (Mills, 2014). On the other hand, studies have shown that the postural sway of two people who are discussing a picture they are looking at together tends to become synchronized (e.g., Shockley, Santana, & Fowler, 2003), and other studies indicate that pragmatic choices (e.g., using irony) are often aligned as well (e.g., Roche, Dale, & Caucci, 2012). Overall, conversations reveal convergence and divergence: They require disagreement as well as agreement, variation as well as repetition. In productive conversations, alignment is selective, with complementary coordination on a variety of factors and partial alignment (Fusaroli, Bahrami, Olsen, Roepstorff, Rees, Frith, & Tylén, 2012). Complete alignment would likely be a conversation stopper.

More generally, it has been argued that, “Any language spoken by more than a handful of people exhibits this tendency to split into dialects, which may differ from one another along many dimensions ... vocabulary, pronunciation, grammar, usage, social function, artistic and literary expression” (Francis, 1983, p. 1). It seems that theorists who have claimed that conformity is crucial to account for the relative homogeneity of members of a given linguistic group have been looking at only one set of parameters in a much more complex set of cultural dynamics. While evidence suggests that speakers of a language adjust their ways of speaking (e.g., rate, syntax) to fit their interlocutors, “language is not a fixed and homogeneous structure but rather a dynamic system changing in both space and time. Differences in definitions, phonology, grammar, and semantics are widely distributed in language” (Strigul, 2009, p. 2635). Some recent investigators have proposed that speakers deliberately introduce variation into the timing and pronunciation of “identical” articulatory targets (e.g., a vowel, a word) (e.g., Tilsen, 2015). These variations reflect greater, not less, motor control (Riley & Turvey, 2002), and serve not only pragmatic intentions of discourse (Laks, 2013), but also prepare speakers to understand the variable and novel productions of other speakers (e.g., Rost & McMurray, 2010; Whalen, 2014). Thus, even in domains where one might expect that it would be necessary to have precise imitation, such as in the use of conventional communicative signs (e.g., Moore, 2013), it appears that

diversity and divergence as well as continuity and convergence appear necessary to competent functioning and development.

More generally, research from studies of imitation in children, and mimicry and synchrony in adults, has revealed the same general pattern noted in other areas of social, developmental, and anthropological psychology (Hodges, 2014, 2015). There is considerable matching (i.e. conformity) and there is persistent anti-conformity as well. It is too early, perhaps, to discern deeper patterns in the dialogical dynamics of convergence and divergence, but I will mention one that will serve as a transition to the final section where I return to a values-realizing approach to language, and which helps make sense of some interesting observations in Tomasello's work as well. If the interaction in which one is engaged seems to be going in a good direction, then people tend to mimic more, and synchronize more readily. However, if the other person is perceived as acting inappropriately, or the interaction seems misdirected in some way, then alignment decreases (e.g., Hofman, Bos, Schutter, & van Honk, 2012; Karremans & Verwijmeren, 2008; Lumsden, Miles, Richardson, Smith, and Macrae, 2012).

Children tend to imitate models relatively precisely, including movements made by the demonstrator that are not necessary to achieve the goal of the task (e.g., solving the puzzle; turning on a light). However, they are selective in the faithfulness with which they follow another's lead (Over & Carpenter, 2012). Often children do things their own way, rather than imitating others (Hodges, 2014), but when they do imitate they pay attention to the prior and current accuracy of demonstrators (Pasquini, Corriveau, Koenig, & Harris, 2007), and the warmth and care with which demonstrators have interacted with them previously (e.g., Nielsen, 2006). If accuracy and ingroup allegiance are put in conflict, the accurate model is followed more often than the model from one's ingroup (Corriveau, Kinzler, & Harris, 2013). This suggests that the evaluative standards guiding actions are not simply group norms; rather, they are values to which groups as well as individuals answer. Children's selectivity in whom and what they imitate, and their precision in following another's lead, indicates that they "take care" in their imitative activity.

Some investigators have considered the faithfulness of children's imitations as a defect (e.g., Whiten, McGuigan, Marshall-Pescini, & Hopper, 2009), but Nielsen and Tomaselli (2010) make the case that it reflects the trust that is distinctive among humans. They suggest that learning to imitate others' actions precisely, even when the particular movements do not seem crucial to success in the task has several possible benefits. One is that it prepares children for learning about tasks that are too complex to readily "see through" in terms of what constitutes success. Second, engaging in precise imitations may be one of the ways children learn to engage actions that go against their personal preferences. Haun, Rekers, and

Tomasello (2014) provide some evidence consonant with this suggestion. Third, recent studies indicate that children may “learn to learn” better (i.e., flexibly adapting to new learning situations), if they have had practice imitating others carefully (Nielsen, Mushin, Tomaselli, & Whiten, 2014).

In summary, conformity, imitation, synchrony, mimicry, and other forms of social learning are far more complex than is generally appreciated. As a consequence, evolutionary, social, and developmental accounts about how humans have come to be distinctively cooperative and communicative will need to become considerably more complex as well. In general, there will need to be a greater emphasis on dialogical or complementary dynamics, as opposed to simple appeals to conformity to explain the formation and functioning of cultural groups. Creativity emerges from diversity rather than conformity, so theoretical accounts for explaining ratchet effects, social learning, and diffusion of innovations will need to diversify as well.

5. A dialogical, values-realizing approach to social interaction and language

It appears that humans engage with each other in ways that are caring and careful, as demonstrated both with respect to walking and carrying, as well as in social interaction and conversation. To be caring and careful is an important aspect of conversational pragmatics (Hodges, 2009). There are many functions of language (e.g., Redhead & Dunbar, 2013), but it is worth considering the hypothesis that they are integrated by the larger-scale activities of *caretaking* and *wayfinding* (Hodges, 2007a, 2009). Caretaking is to be careful for others and to be careful of others; it is a form of attention to protecting and enhancing the integrity of the goods that make it possible for an ecosystem with its ways of life, its inhabitants, and their projects to exist and to flourish (Hodges, 2007b). Wayfinding (e.g., Heft, 1983; Raubal, 2008) is acting and perceiving over space-time scales that require moving beyond the horizon of the immediate surroundings. It involves the active orienting of perceptual systems to environmental information, and then using information that is revealed by that exploratory activity to guide further performatory and exploratory activity. If language is understood as caretaking and wayfinding, it places constraints on the other functions of conversing (e.g., persuading, coordinating, proposing).

Competition among individuals is not primary, as is generally the case with other apes. However, the evidence on divergence, dissent, and disagreement, suggests that the dynamics of cooperation are not matters of “blindly following” (Cialdini & Trost, 1998) or automatically imitating (Heyes, 2011) the lead of

majorities, authorities, and teachers. What kind of caring and cooperation is it that motivates dispersion and diversity, as well as similarity and alignment? One possibility is provided by ecological values-realizing theory (e.g., Hodges, 2007b, 2009, Hodges & Baron, 1992). From an ecological perspective, all acting, perceiving, feeling, and thinking are movements toward realizing the multiple goods (i.e., values) that constitute the possibilities for animate life in an ecosystem (Reed, 1996). Values define the intentional dynamics of physical activities ranging from driving a vehicle (Hodges, 2007b) and carrying a child (Hodges & Lindhiem, 2006) to conversing with a friend (Hodges, 2007a) and negotiating a social dilemma (Hodges & Geyer, 2006). From this ecological perspective, values are not personal preferences or cultural norms, or simply physical laws or biological imperatives; rather, they are the boundary conditions that constrain the dynamics of ecosystems (Hodges, 2009; Hodges & Baron, 1992).

For example, as noted earlier, the act of carrying something is values-realizing: One moves something from one place to another with the intention of increasing safety, freedom, or comfort, for example. Ordinarily, many values are being jointly realized by the moves that are made. Travel itself is a value; it provides access to a greater range of resources and possibilities than if a group's habitat is more circumscribed (Hodges, 2007b). Similarly, with respect to the development of coordination and cooperation among group members, a diversity of viewpoints and perspectives is valuable. It provides a greater range of options among which to choose and a greater range of perspectives with which to comprehend the behavioral challenges and cognitive tasks confronting the group. Within the constraints of travel and diversity, abilities to align, to coordinate, to conform, to teach, and to imitate become an essential set of skills. What is critical for values-realizing is to learn when and where to align, and when and where to complement or counter others' actions and perspectives. Whether it is travel or coordinating group activities, dialogical activities and relationships appear to be crucial to long term viability. That, at least, is the hypothesis offered for consideration here.

To illustrate how the values-realizing hypothesis helps to bring caring, carrying, and conversing together, consider the speaking-from-ignorance (SFI) situation (Hodges, Meagher, Norton, McBain, & Sroubek, 2014). The SFI situation inverts the Asch (1956) dilemma described earlier: Instead of creating a dilemma that invites dissent, it invites agreement with one's peers. Participants are placed in position of ignorance, where they cannot see the target clearly, but they can see two other people who are much more favorably positioned. On critical trials the two knowledgeable people answer questions about the target (i.e., words embedded in patterns on a screen) correctly, prior to the participant being asked to answer. The simple and obvious thing to do in this situation is to repeat the correct answer provided by others. Often this is what people do, but a surprisingly

large percentage of the time (about 30%), they do not; instead, they make up their own incorrect answer (Hodges et al., 2014). Results suggested that disagreements emerged because of participants' sensitivity to pragmatic constraints on having warrant for what they say, in this case having visual access to the relevant information, leading them (truthfully) to reveal their ignorance. Even participants who chose always to agree with their better-positioned peers gave evidence of experiencing the situation as a dilemma. These results are provocative: They indicate that people are motivated by more than wanting to be correct or be liked. Participants demonstrated interdependence, not simple conformity or independence.

The reasons for (sometimes) not agreeing when agreement is expected (SFI dilemma), and (sometimes) agreeing when disagreement is expected (Asch dilemma) are much the same. In both cases people work to realize multiple values that are in tension with each other in these particular situations. Hodges and Geyer (2006) proposed that there are at least three salient values constraining participants in the Asch situation, truth (i.e., describing the situation as a whole from one's position in it), trust (i.e., respecting others' positions and viewpoints), and social solidarity (i.e., a commitment to care for the group and self in a way that is kind and just). Given that one can never be sure that one's own take on reality is definitive, it is eminently sensible to take others' views into account. Even when an individual is quite sure of his or her own view, it is crucial to take social solidarity into account, as well as truth, in deciding what to say. If an individual were to dissent from others consistently, it would indicate a lack of trust, which would likely lead to a cessation of dialogue, undermining each individual's ability to gain from the insights of those others in the future. On the other hand, to honor social solidarity is to be concerned with the larger goods, such as truth and trust, which make group life and communal action possible.

Overall, the results of the Asch and SFI studies indicates that people care about the truth, but have a larger conception of truth than simply providing correct answers to isolated questions. Put differently, participants care about values, the constitutive standards that make it possible for the individual and the group to function effectively over the long term and across all tasks they face. Tomasello (2008, p. 341) observes that if humans were competitive in the way that other apes are, language would never have arisen. Truth, trust, and social solidarity are among the values that must be honored for human language to even be possible. Tomasello (2014a, p. 110) provides a compelling example in his discussion of Mercier and Sperber's (2011) account of reasoning. Mercier and Sperber propose that human thinking is often motivated by a desire to win arguments, leading individuals to engage in reasoning that is biased in favor of their point of view. However, Tomasello points out that if two people are hunting an antelope and they find themselves disagreeing about whether a set of tracks are those of an antelope that should be

followed, it is likely that the individuals involved would much rather lose the argument and be right about finding the antelope than the reverse. In short, there are larger goods (i.e., values) that guide conversations that go beyond “winning” or “conforming” and that point to crucial reasons why humans speak and listen to each other. They want to find their way and to care for themselves and others.

It is worth noting in passing that ecological values-realizing theory does pose a direct challenge to a claim made by Tomasello (2014a) in his concluding discussion. In considering important “open questions,” he asks why humans have a tendency to reify morality (including the linguistic terms in which we converse), making claims about right and wrong as if they were “realities that antedate our own existence and that speak with a larger authority than us” (p. 153), rather than recognizing them as the social norms they clearly are. Although this is not the place for tackling such an important question, ecological values-realizing theory agrees with Tomasello that sensitivity to cultural and social conditions is crucial (e.g., Hodges, 2007b, 2017; Hodges & Geyer, 2006), but also tries to locate the obligatory nature of values at ecosystem levels that cannot be reduced to cultural relativism, or to alternatives such as objectivism, subjectivism, or universalism. Tomasello is right to be exorcised that we humans often treat such matters simplistically and naively. Perhaps, however, realizing the irony of his taking a strong stance on the inappropriateness of reifying morality, he observes that, “this is a point on which reasonable people may disagree” (p. 153); thus, he is quite correct to call it an open question.

To conclude, humans converse and travel, and one of the primary reasons for doing so is to learn. By travel we learn if there is a better place to camp, to forage, to view the countryside. By conversing, as the brief discussion of dialogical arrays hinted at earlier, we gain multiple perspectives for coordinating our immediate task, but more importantly, we gain hindsight, limited to be sure, into what has come before, and even less definitively but more crucially into what is coming. Conversations and travel both help us to realize the value of comprehensiveness, an appreciation of the larger context in which we can coordinate our present purposes and anticipate our possibilities going forward. Pointing to the value of comprehensiveness indicates why it worthwhile to consider hypothetical scenarios such as those discussed earlier, or why it is valuable to do research comparing children, adults, and chimpanzees. Evolutionary scenarios are often denigrated for being too convenient and unconstrained to count as proper scientific theorizing. The value of considering such questions and generating possibilities about them is that it places our current perspectives into a larger framework that sometimes helps us to see interdependencies that are harder to notice when we focus only on immediate matters. One of the great virtues of Tomasello’s (2008, 2009, 2014a) proposals and arguments, and those of the many other theorists whose ideas have

been considered, is that they do just that, and hopefully the elaborations, complications, and proposals offered here will do so as well.

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