Commentary

Infants appreciate the social intention behind a pointing gesture: Commentary on “Children’s understanding of communicative intentions in the middle of the second year of life” by T. Aureli, P. Perucchini and M. Genco

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No human social behavior could seem simpler than pointing. But it turns out that underlying the simple surface reality of a protruding finger are several layers of intentionality (Sperber & Wilson, 1986; Tomasello, Carpenter, & Liszkowski, 2007). First, the pointer directs the recipient’s attention toward a certain referent in the environment—expressing his referential intention that she attend to it with him jointly. But second, the pointer is not directing attention for its own sake, but rather for a reason—his motive or social intention is that the recipient think or do or feel something as a result of attending to the referent. Third and finally, the pointer is signaling to the recipient that this is indeed an act of communication, that he is performing this act for her—which motivates her to search for his reason for performing this act. (Often authors, including Aureli et al., do not differentiate these last two layers and use the term communicative intention broadly to subsume both.)

For all of this to coalesce into a successful communicative act, some shared experience or common conceptual ground between the pointer and the recipient is needed (Clark, 1996; Lewis, 1969; Schiffer, 1972; Tomasello, 2008). If I suddenly point to the clock on the wall for you, my meaning is not clear without some common ground between us. On the level of the referential intention, I could be referring to the clock’s special craftsmanship, its color, or any of an indefinite number of its aspects. On the level of the social intention, I could mean indefinitely many things as well, from ‘fetch that clock’ (imperative) to ‘isn’t that a beautiful clock’ (declarative) to ‘it is late’ (informative). However, in most instances common ground determines meaning in a relatively straightforward way (for individuals with normal human social-cognitive skills, that is). Thus, if we are packing our belongings into boxes for our anticipated move across town next week and you ask me what should go in the box next, within that common ground my point to the clock has only one reasonable interpretation.

Most previous studies, as well as the study by Aureli et al., have looked at infants’ comprehension of the referential aspect of a pointing gesture—whether the infant visually tracks an adult’s point and
correctly locates the intended referent (Desrochers, Morissette, & Ricard, 1995; Lempers, 1979; Leung & Rheingold, 1981; Morissette, Ricard, & Decarie, 1995; Murphy & Messer, 1977). However, in addition, Aureli et al. also focused on infants’ understanding of the motive or social intention underlying a pointing gesture—something investigated in very few previous studies. They demonstrated that 18-month-old infants recognize two different social intentions underlying a pointing gesture depending on the common ground involved. In the context of a hiding game, infants interpreted an adult’s pointing gesture as informing them of the hidden toy's location. In a different context, they responded to an adult’s pointing gesture by smiling or commenting/vocalizing toward the adult after they had identified the referent—seemingly interpreting the pointing gesture as a declarative invitation to share attitudes about the referent. The study by Aureli et al. is one of the few studies to demonstrate infants’ differential understanding of different social intentions underlying pointing gestures (see also Camaioni, Perucchini, Bellagamba, & Colonnese, 2004).

The Aureli et al. study is the only one we know of to test for a correlation between these two types of pointing. And they found no correlation. Even though infants performed well in each of the tasks separately, no relationship was found between them. We think there are at least two different explanations that might account for this extremely interesting result.

The first is that common ground and the inferential processes involved work somewhat differently in the two cases. In the declarative pointing task, in each trial the experimenter pointed to an object in the room with no previous common ground established. In order to interpret her point (‘What is she going to tell me?’), infants had to reason about or construct common ground – in that case perceptual common ground (Clark, 1996; Clark & Marshall, 1981) – and identify the perceptually co-present object as the referent (‘She is showing me the cat!’). In the informative pointing task, in contrast, the infant and the experimenter had already established common ground (the shared hiding game) and infants relied on that common ground to interpret the experimenter’s subsequent point. Note that it was not sufficient in this case to take the perceptually co-present opaque container as the intended referent of the point. Instead, infants had to go beyond this to infer what was relevant within their common ground (‘She is informing me about the location of the hidden toy.’). To do this, they needed to keep track of what particular experiences they had shared with the pointing adult (the hiding game), which we know infants of this age can do (Liebal, Behne, Carpenter, & Tomasello, in press; see also Ganea & Saylor, 2007; Moll, Richter, Carpenter, & Tomasello, 2008; Saylor & Ganea, 2007, for similar procedures). Thus, one explanation for the finding of no correlation between infants’ comprehension of declarative and informative pointing is that two different kinds of common ground and inferential processes are involved in the two tasks.

The second possible interpretation is given by Aureli et al.: “it could be that the declarative motive is managed by young children independently from the informative motive” (Aureli et al., 2009). Indeed, Tomasello et al. (2007) argued and presented evidence that the basic social motives underlying declarative and informative pointing have different developmental origins. The fundamental motive underlying declarative pointing is the sharing of emotions and attitudes (‘This is cool, don’t you think?’), rooted in infants’ earliest social and emotional interchanges with others from soon after birth (as described by, for example, Trevarthen, 1979). In contrast, the fundamental motive underlying informative pointing is altruistic helping and/or offering—providing others with needed information to help them fulfill some goal such as finding an object (‘Here is the information you need’). The helping/offering motive in general does not seem to be present in infants until sometime around the first birthday, since it depends to some degree on understanding others’ goals (Warneken & Tomasello, 2006, 2007). Thus, a second explanation for the lack of correlation between infants’ comprehension of declarative and informative pointing is that these are two different social acts based on two different social motives—which, it turns out, both can be expressed in the same referential act of the pointing gesture (typically with different accompanying emotional expressions).

One final comment: Aureli et al. sometimes seem to favor a kind of anti-cognitivist explanation of pointing: infants “had only to perform a social practice” (Aureli et al., 2009). But, in our view, the concept of “social practice” can only carry explanatory weight if it includes sophisticated social-cognitive abilities to read the intentions of others in social contexts and to create joint attention and common conceptual ground with them (Tomasello, 2008). The current study itself has helped to demonstrate the infant’s amazing social-cognitive abilities for reading the communicative intentions of others when
they attempt to direct her attention to an almost infinite variety of referents for an almost infinite variety of reasons (see also Liszkowski, Carpenter, Henning, Striano, & Tomasello, 2004; Liszkowski, Carpenter, Striano, & Tomasello, 2006; Liszkowski, Carpenter, & Tomasello, 2007). These underlying social-cognitive abilities are what make the pointing gesture such a powerful – and species unique – tool of communication in the first place, and they constitute the basic pragmatic infrastructure which will soon support infants' ability to acquire and use a conventional, symbolic language.

References


