Background

+ Children do believe an adult's verbal report when they are ignorant and not when the report contradicts what they know:

  "Robinson and Whitcombe (Robinson, 2000; Robinson & Whitcombe, 2003; Whitcombe & Robinson, 2000) report that when children's belief about a toy was based on uninformative access, such as feeling to determine its colour, children correctly believed an experimenter who contradicted them on the basis of informative access such as looking."

+ Children do believe what they are told, and can take into account how reliable a speaker is:

  "children aged 3- to 4- years can take into account relevant information about a speaker to make appropriate decisions about whether or not to believe what they are told. Koenig, Clement and Harris (2004) show that 3- and 4-year-olds are quite good at seeing the implications of a speaker's past reliability for the likely truth of that person's current utterance."

– Children are generally poor at reporting the source of their knowledge (e.g. whether it comes from seeing vs. feeling):

  "3- to 4-year-old children may be unaware that their knowledge was acquired from another's utterance. … In a typical study of source reporting […] children gain knowledge about an object by seeing it, or feeling it, or being told about it. Shortly afterwards they are asked to report back what they know, and how they know it. Children aged 3- to 4- years are accurate at reporting the content of their knowledge (*what* they know), but relatively poor at saying *how* they know.

– Children seem to be worse at reporting the source of their knowledge when it is a verbal report than when it comes from seeing or feeling:

  "Haigh and Robinson (2003). Each child played two games. In one game children *both* saw *and* felt a hidden toy, although only one of these modes of access was informative of its identity. In the second game children *either* saw *or* felt the toy, and were also told its identity by the experimenter who had the other mode of access, feeling or seeing. […] children were significantly more accurate at reporting seeing or feeling as the source of their knowledge in the first game than they were at reporting the experimenter's utterance as their source in the second game."

+ When a child and an adult make conflicting claims about an object, 4-year-old children *can* recall who said the right thing and also the content of the adult's utterance. (Having done this, they will still fail to answer "How do you know?" by mentioning the adult's utterance.[1])

Puzzle Experiment

6-year-old children may ask to see or ask to be told in order to identify an object. When seeing is informative, children do well. When asking is informative, children are at chance. The same is true for ask to feel vs. ask to be told.

Why? ER's earlier explanation was that "many children did not understand that utterances can provide knowledge about the world"

[1] Haigh and Robinson draft, "Understanding Utterances as Sources of Knowledge" Exp. 1

Two alternative explanations involve the idea that children are bad at asking for help (so on these explanations the deficit is not directly connected to understanding utterances). First, ER suggests children may overestimate their own abilities as adults sometimes do (adult examples of this are driving around lost and not asking for directions on the basis that you feel you will get there any minute now, and spending far too long on trying to find a function when using a spreadsheet application). This hypothesis may be related Frank Keil on the shallows of explanation.

Second (and preferred), ER suggests children may fail to understand that others can provide help. This doesn't imply that children never ask for help, but rather that this is something they would only do when they're absolutely stuck.

> "One consequence of children's late developing understanding that they gain knowledge about the world via minds of other people is that they over-estimate their own autonomy (gaining knowledge from direct sources) and under-estimate their dependence on others (gaining knowledge from utterances). … external observers might take a vygotskian perspective, construing the child's cognition as developing within her social context. In contrast, the child may view herself in a more piagetian way, developing through her own individual interactions with the physical world."

This hypothesis contrasts with the finding that children are spontaneously helpful and good at collaborating with adults in joint activities. For example, 12-month-old infants spontaneously point to inform adults (Liszkowski, Carpenter, *et al.* forthcoming).[2]

> 12-month-old infants can (a) point to an object that an adult has dropped, before and after the experimenter asks "Where is it?" (Liszkowski, Carpenter, *et al.* forthcoming: experiment 1); and (b) when adults repeatedly enact a sequence of actions which always requires a certain object, e.g. a hole punch, and then the object disappears from the adult's field of view (Liszkowski, Carpenter, *et al.* forthcoming: experiment 2). Infants will point even when they are passively observing activities and do not play with any of the displaced objects. This informative pointing suggests that 12-month-old infants can detect what adults need to know and are motivated to communicate that information to adults (Liszkowski, Carpenter, *et al.* forthcoming: experiment 2).

18-month-old infants will spontaneously help adults to complete activities.

> For example, when an adult drops a marker on the ground and fails to reach it, 18-month-olds infants will spontaneously hand it to the adult (Warneken and Tomasello 2006: 1301). They will also help adults who fail to perform a task by appropriately opening doors, retrieving inaccessible objects and replacing objects on a pile (Warneken and Tomasello 2006).

From around 18 to 24 months, infants will engage in collaborative games and problem-solving

> A typical game consists in an adult and infant bouncing a ball on a trampoline designed to be impossible for one person to lift alone; a typical problem-solving task requires one participant to push a cylinder up from beneath while another participant retrieves an object from the side. Some games and problem-solving tasks required infants to perform roles parallel to those of the experimenter (i.e. to do the same thing, as illustrated in the trampoline example), others required

[2] An example of informative pointing: " when we see another person wanting to open a lock but searching her pockets, and we see the keys for the lock, we will usually point to them. The motive here departs from the classical dichotomy of imperative and declarative pointing in infancy because it is neither to obtain an object for self nor to share interest in it. Instead, the motive is to provide information for the other." (Liszkowski, Carpenter, *et al.* forthcoming: 4)

the infant to perform complementary roles (as illustrated in the lifting-cylinder-to-retrieve-object example). Warneken, Chen and Tomasello studied infants' cooperative behaviour by having experimenters who were cooperating with infants abruptly become uncooperative for 15 seconds. When the experimenters became uncooperative, infants expressed a desire for them to resume rather than giving up or attempting to continue alone. Infants also frequently communicated information about what the experimenter needs to perform her role, and sometimes attempted to help the experimenter perform her role. Few differences were found between 12- and 18-month-old infants otherwise, but the older infants did use words more often (Warneken, Chen and Tomasello 2006: 652). These findings suggest that "children comprehended their own and the partner's actions as interconnected parts of a joint activity toward a joint goal (joint intentions)" (Warneken, Chen and Tomasello 2006: 653). There's also incidental evidence that children find cooperation rewarding in itself and not just as a means to some goal (Warneken, Chen and Tomasello 2006: 653).

Given that infants are so good at helping and collaboration, why do 6-year-old children prefer to look at an object themselves than to ask adults to feel it and tell them what it is? Why is asking for help so much harder than giving help?

Tomasello defines shared intentionality as "understanding and coordinating with intentional agents" (Tomasello and Rakoczy 2003: 122) and claims that it makes acquiring language possible.[3] The new ER hypothesis suggests a key limitation on children's understanding of others as intentional agents and on their abilities to collaborate.

Possible Experiments: (1) contrast requesting help with collaborating by transforming the ask-to-see vs. ask-to-be-told task into a game where the child and experimenter jointly have to identify the object. (2) contrast requesting help from an adult with obtaining help from pictures or words: will children who are asked to draw a bicycle or a map of the world consult a picture book lying near by?

References

Liszkowski, Ulf, Malinda Carpenter, Tricia Striano and Michael Tomasello (forthcoming), "Twelve- and 18-Month-Olds Point to Provide Information for Others".

Lohmann, Heidemarie, Michael Tomasello and Sonja Meyer (2005), "Linguistic Communication and Social Understanding", in J. Astington and J. A. Baird (eds.), *Why Language Matters for Theory of Mind*. Oxford: Oxford University Press.

[3] Cf. e.g. (Tomasello, Carpenter, *et al.* 2005: 675): "it is only if a young child understands other persons as intentional agents that she can acquire and use linguistic symbols—because the learning and use of symbols requires an understanding that the partner can voluntarily direct actions and attention to outside entities."

Cf. also (Lohmann, Tomasello and Meyer 2005: 245):"understanding others as intentional agents is necessary for human beings to comprehend and acquire the use of linguistic symbols and conventions".

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