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Trust

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Abstract

Children rely extensively on others' testimony to learn about the world. However, they are not uniformly credulous toward other people. From an early age, children's reliance on testimony is tempered by selective trust in particular informants. Three- and 4-year-olds monitor the accuracy or knowledge of informants, including those that are familiar. They prefer to seek and endorse information provided by someone who has proved accurate in the past rather than someone who has made mistakes or acknowledged ignorance. Future research is likely to pinpoint other heuristics that children use to filter incoming testimony and may reveal more generalized patterns of trust and mistrust among individual children.

Introduction

A great deal of research in cognitive development implies that young children actively explore the world, and construct increasingly coherent theories about what they observe. A limitation of this framework is that there are many domains that children cannot actively explore for themselves. For example, they cannot observe events or entities that are remote in time or space or generally invisible. So, to understand the historical past, the microscopic, or the metaphysical, children presumably depend on other people for relevant information. There is ample evidence that young children do just that (Harris & Koenig, 2006). In several domains where it is virtually impossible to make any first-hand observations, children nevertheless arrive at accurate conclusions. For example, they come to understand that mental processes depend on the brain (Gottfried, Gelman & Schultz, 1999; Corriveau, Pasquini & Harris, 2005; Johnson, 1990), that the shape of the earth is a sphere (Nobes, Moore, Martin, Clifford, Butterworth, Panagiotaki & Siegal, 2003; Siegal, Butterworth & Newcombe, 2004) and that the life-cycle is regulated by the functioning of hidden bodily organs (Slaughter, Jaakkola & Carey, 1999; Slaughter & Lyons, 2003). Nor is children's trust confined to information about objective or scientific issues. Depending on the set of beliefs that are prevalent in their local community, children also come to accept various religious claims: about the extraordinary capacities of God (Giménez-Dasí, Guerrero & Harris, 2005), the nature of the afterlife (Harris & Giménez, 2005) or the existence of the Ancestors (Astuti & Harris, 2006). Children's wide-ranging acceptance of adult testimony raises the question of whether they trust everything they are told, or exercise caution, especially when given contradictory information about the same topic.

Children are likely to have various heuristics at their disposal for evaluating what they are told. One strategy that they might use is to check claims for their internal coherence. However, a variety of studies suggest that children are surprisingly oblivious toward internal contradiction, even when the inconsistency is blatant (Harris, Kruithof, Meerum Terwogt & Visser, 1981; Markman, 1977, 1979).

An alternative strategy is to check other people's claims against known facts. Certainly – even at the earliest stage of language acquisition – children do appear to monitor assertions for their veracity. For example, Koenig and Echols (2002) found that 16-month-old infants were prone to look inquisitively at an informant who misnamed a familiar object whereas they typically looked at the referent following accurate naming. Indeed, some infants sought to correct the speaker through their own corrective pointing and labeling. In addition, Pea (1982) found that 18-month-olds rejected false but not true affirmatives by saying 'no'. An obvious limitation of this strategy, however – a limitation directly pertinent to the proposal that children are frequently dependent on others' testimony – is that children will frequently hear claims that they have no obvious way to check for themselves. They cannot check whether an unfamiliar object has been named correctly, whether an historical event has been accurately described, or whether God or germs truly exist.

In discussing our dependence on others' testimony, Hume pointed out that we could use inductive checks.

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More specifically, having observed that testimony has corresponded with our first-hand observation in the past, we may reasonably infer that it will likely correspond in the future. However, this inductive strategy is highly fallible. The global correspondence between prior testimony and prior observation is no guarantee of future correspondence. Greater inductive security can be achieved, however, not by tracking testimony in its entirety but by tracking the testimony of particular individuals. More specifically, it is plausible to expect that individuals who have proved accurate in the past will prove accurate in the future.

Granted that toddlers are alert to an informant's inaccuracy – and, as noted above, they register, deny, and correct false assertions – we may ask if they use that record to construct a trustworthiness profile for a given individual. More specifically, we may ask if preschoolers prefer information – particularly information that they cannot check for themselves and must take on trust – that comes from a hitherto reliable informant as compared to someone who has proved unreliable. Below, I describe our ongoing research program on the emergence of selective trust in particular informants.

Selective trust

In the experiments that we have conducted, preschoolers are typically introduced to two informants. In a familiarization phase, they can observe the two informants making conflicting claims. For example, one informant names a familiar object correctly whereas the other informant names it incorrectly. This phase is typically quite brief – children observe the informants disagree on each of three or four trials.

In the subsequent test phase of the experiments, children are invited to learn from one or other of the two informants. Specifically, they are shown an unfamiliar object and asked whether they know its name or what it is for. Insofar as the object is unfamiliar, children generally acknowledge their ignorance. They are then prompted to ask one of the two informants for help. Irrespective of whom they ask, both informants proffer help. For example, each informant suggests a different name for the unfamiliar object or demonstrates a different use. Having received this contradictory input, children are asked for their judgment – to indicate what they think the object is called or used for in the light of the contradictory claims made by the two informants.

It will be clear that the set-up is fairly demanding. Ideally, children should monitor the two informants during the familiarization phase, noting who makes false claims and who makes true claims; by the end of the familiarization phase, they should have come to the conclusion that one of the two informants is more trustworthy than the other. During the test phase, in the absence of any means of checking the claims of the two informants – given the unfamiliarity of the objects – it is appropriate to both ask for and endorse information supplied by the informant who has proved more reliable hitherto.

Summarizing across several experiments (Clément, Koenig & Harris, 2004; Koenig, Clément & Harris, 2004; Koenig & Harris, 2005; Corriveau, Pasquini & Harris, 2006) the following conclusions have emerged. First, focusing on 4-year-olds, they are selective in their trust. During the test phase, they prefer to put questions to the more accurate informant and they are also likely to endorse information from that informant. This selective trust emerges following various types of familiarization phase. For example, it emerges if one informant is consistently accurate and the other is consistently inaccurate. It also emerges if one informant is consistently accurate and the other consistently acknowledges ignorance. Finally, it emerges even if the difference between informants is not fully consistent across familiarization trials. Suppose that one informant is predominantly accurate (75% accurate) whereas the other is predominantly inaccurate (25% accurate). Even in these circumstances, 4-year-olds endorse the more accurate of the two informants.

Turning to 3-year-olds, they too display selective trust but they have more difficulty than 4-year-olds in assessing the relative reliability of informants. On the one hand, if one informant is consistently accurate whereas the other consistently acknowledges ignorance, 3-year-olds are selective: they prefer to ask and endorse the accurate rather than the ignorant informant. Moreover, if one informant is consistently accurate across four trials whereas the other is consistently inaccurate across the same four trials, 3-year-olds are also selective. On the other hand, when faced with a less consistent difference between informants – for example, one informant is mostly but not completely accurate (75% accurate) whereas the other is either completely inaccurate (0% accurate) or mostly inaccurate (25% accurate) – 3-year-olds are not selective. A plausible, but not yet fully established, explanation of the age change between 3- and 4-year-olds is that 3-year-olds are inclined to make a dichotomous assessment of an informant – as either trustworthy or untrustworthy. More specifically, 3-year-olds are relatively unforgiving – an informant who has made a single error is judged as harshly as someone who has made several. Four-year-olds, by contrast, appear to adopt a more nuanced assessment, recognizing that overall – despite the occasional error – one informant may still be more trustworthy than another.

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Granted that there is an age change between 3 and 4 years, it is tempting to link it to another age change that has been well established in the last 20 years: the superior grasp of false beliefs displayed by 4-year-olds as compared to 3-year-olds. Arguably, 3-year-olds are less able to interpret the inaccurate claims of an informant. In particular, they may have more difficulty in ascribing those inaccurate claims to various false beliefs on the informant's part. In that case – unlike the 4-year-olds – they might fail to regard the errors as indicative of the informant's likely future accuracy. This focus on 3-year-olds' difficulty in interpreting an informant's false claims is consistent with the finding that 3-year-olds do perform in a selective fashion when one informant is knowledgeable whereas the other is ignorant. Three-year-olds are generally more accurate in attributing ignorance than in attributing false beliefs (Hogrefe, Wimmer & Perner, 1986; Perner & Wimmer, 1988). Despite the plausibility of this explanation, we have not obtained support for it. More specifically, we have found that preschoolers who fail a standard false belief task are nevertheless capable of showing selective trust in the paradigm described above. For the time being, we conclude that although selective trust almost certainly calls for differential mental attributions to the two informants, the ability to pass a standard false belief task is not a good index of the capacity for such mental attributions.

Other indices of trustworthiness

So far, I have reported on preschoolers' monitoring of the relative accuracy or knowledge of two informants and their willingness to extrapolate from past to future reliability. We assume that children will use a variety of cues by which to appraise an informant and that each is likely to add to or subtract from some overall reservoir of trust. What other cues are they likely to use? Two candidates suggest themselves. First, preschoolers display some awareness of the degree to which a speaker is confident of his or her claims and are guided by that apparent confidence in choosing whether to accept information from that speaker. For example, when preschoolers were introduced to two puppets who gave conflicting information about the location of an object, children of 4 years and up were likely to search in the box indicated by the speaker expressing greater confidence via his/her choice of mental verb (e.g. 'I *know* it's in the red box' versus 'I *think* it's in the blue box' or 'I *know* it's in the red box' versus 'I *guess* it's in the blue box') (Moore, Bryant & Furrow, 1989). A similar sensitivity to speaker confidence among 4-year-olds was revealed in an experiment of Jaswal (2004). When 4-year-olds heard a speaker name a catlike animal as a dog, they were reluctant to accept the label. However, in a subsequent study, the speaker prefaced the disconcerting name by saying: 'You're not going to believe this, but this is actually a dog.' Under these circumstances, 4-year-olds were much more likely to accept the otherwise puzzling name.

Both of these studies index an immediate or on-line monitoring: children choose to accept or ignore what the speaker has just said depending on his or her confidence. However, such monitoring of speaker confidence might have longer-term effects. Borrowing from the paradigm described at the outset, suppose that two speakers make claims during a familiarization phase, one expressing confidence, the other expressing uncertainty. It is plausible that in a subsequent test phase (when the two informants express equal confidence) children will display selective trust in the hitherto more confident speaker. Just as they think of ignorance and inaccuracy as mental characteristics, so too they might think of uncertainty as characteristic of some, less trustworthy individuals.

Speakers vary not just in their accuracy and confidence but also in the reception that they receive. Listeners may assent to or dissent from what a speaker says. Preschoolers may be alert to such listener reactions and use them to assess the trustworthiness of a potential informant. Fusaro and Harris (2005) recently initiated a study of this issue in the following way. Preschoolers aged 3 and 4 years watched as an informant made claims that were implausible. For example, children were shown a picture of a fish and told by the informant that: 'This fish lives in the trees.' When two bystanders listened to the claim and nodded in acquiescence, children were more likely to accept the claim than when the two bystanders frowned in apparent disagreement. Thus, 3- and 4-year-olds show some sensitivity to whether or not a particular claim provokes assent or dissent. The next step is to ask whether children assess not just particular claims but also particular informants. Again, borrowing from the paradigm described earlier, we may imagine two informants who consistently differ in the bystander reactions that they evoke. One might consistently evoke dissent and the other assent. On test trials, we may ask whether preschoolers prefer to ask for and endorse information from the informant who has evoked assent – even in the absence of any current guidance from bystanders.

Conclusions

Given their extended emotional dependence on other people, attachment theorists have long argued that infants and young children establish an emotional profile of their caregivers – they come to regard some as

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emotionally reliable and others as emotionally unpredictable or unavailable. We conjecture that young children, disposed as they are to rely on the testimony of others, also establish a cognitive profile of their informants – they form a global impression of each individual, regarding some as more epistemically trustworthy than others. We assume that this global impression regarding any given informant is based on some kind of aggregated metric. Information about the informant's past inaccuracy, ignorance, uncertainty, or apparent idiosyncrasy is fed into that profile.

Future important questions spring to mind. If a child has a secure attachment to a caregiver, but that caregiver proves epistemically unreliable, will the child continue to trust what he or she says? Alternatively, could a caregiver be construed as emotionally reliable and yet cognitively unreliable? Once children have profiled their primary informants, how does that affect their epistemic trust in other people that they meet? Finally, given children's wide-ranging beliefs in the existence of beings and entities that they cannot observe (Harris, Abarbanell, Pasquini & Duke, in press; Harris, Pasquini, Duke, Asscher & Pons, 2006) does this mean that children's trust in apparently reliable informants eventually trumps their own first-hand observation?

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