



Published in final edited form as:

Curr Dir Psychol Sci. 2008 October 1; 17(5): 344–347. doi:10.1111/j.1467-8721.2008.00603.x.

Children's Critical Thinking When Learning From Others

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Abstract

A key component of critical thinking is the ability to evaluate the statements of other people. Because information that is obtained from others is not always accurate, it is important that children learn to reason about it critically. By as early as age 3, children understand that people sometimes communicate inaccurate information and that some individuals are more reliable sources than others. However, in many contexts, even older children fail to evaluate sources critically. Recent research points to the role of social experience in explaining why children often fail to engage in critical reasoning.

Keywords

children; critical thinking; social cognition; skepticism

People living in modern societies are inundated with claims that they have no means to verify directly, such as assertions about the composition of the center of the earth, the ability of consumer products to improve their romantic prospects, or the pending arrival of telepathic aliens. The problem of how to evaluate these types of claims has concerned scholars since Plato (Adler, 2006).

Adults tend to be aware that they should not believe everything others tell them. For example, even though news reports of people being taken in by improbable scams are common, most adults would be skeptical of an unsolicited e-mail message from a stranger asking for help in recovering a large fortune. The extent to which children are capable of such critical evaluation has been the subject of substantial debate. To date, much of the empirical research on this topic has focused on properties of the claims that are being made, such as the presence of supporting evidence (Keil, 2006; Kuhn, 1999), as well as internal consistency and correspondence to known facts (Harris, 2007).

Researchers have recently begun to examine how children evaluate the credibility of specific individuals who serve as sources of information. The present article will focus on this question and its implications for the development of children's critical-thinking skills.

CHILDREN'S DIFFERENTIATION AMONG SOURCES

Koenig, Harris, and colleagues (e.g., Koenig & Harris, 2005; Harris, 2007) have found that 3- and 4-year-old children already have some appreciation that individuals can differ in their credibility. In the basic paradigm, children watch as two actors label familiar objects, one labeling the objects correctly and the other labeling them incorrectly (e.g., calling a ball a "shoe"). Children are then shown an unfamiliar object that each actor identifies using a

different novel label, such as “mido” or “loma.” Participants are asked what the object is called, and 4-year-olds tend to select the label used by the actor with a history of labeling objects correctly. Three-year-olds differentiate between the actors under a narrower range of circumstances, such as when one of the actors has admitted to not knowing what the object is called. Jaswal and Neely (2006) used this paradigm to show that preschool children’s preference for sources who had previously been accurate rather than inaccurate was stronger than their preference for sources who were adults rather than children. Pasquini, Corriveau, Koenig, and Harris (2007) found that 4-year-olds preferred sources who had responded correctly on 75% of trials to those who had responded correctly on only 25% of trials.

Understanding that Speakers Can Lack Relevant Knowledge

The finding that 3-year-olds choose not to rely upon sources who profess ignorance is consistent with other evidence that even young children understand that some sources are more knowledgeable than others. Robinson, Champion, and Mitchell (1999, Study 1) showed 3- to 6-year-old children an opaque container and, without allowing them to look inside, asked them to guess which of two plausible objects it held. Participants then observed an actor respond to the same question by selecting the object that the child had not chosen. In one condition, the actor was not allowed to see inside the container, but in another condition the actor was conspicuously allowed to look inside before responding. The children were asked once again to guess which object was in the container, and participants in all age groups were more likely to change their response when the actor had been allowed to see what was inside.

There is also evidence that preschool-age children take general knowledge into consideration when evaluating others as sources of information. Lutz and Keil (2002) found that children as young as age 4 thought that a doctor would be more likely to know about biology and that an auto mechanic would be more likely to know about the functioning of mechanical devices, which suggests an early awareness of differing domains of expertise.

Understanding That Speakers Do Not Always Convey What They Know

To effectively evaluate what speakers say, children must be aware that people sometimes choose to make false or misleading statements. During the preschool years, children come to understand the possibility of deception. For example, they learn that appearance and reality sometimes diverge and that people may hold false beliefs (Moses & Baldwin, 2005). As early as age 3, children understand that verbal statements might not reflect a deceptive speaker’s actual beliefs (Lee & Cameron, 2000).

Even though young children have the capacity to understand that people do not always accurately communicate what they know, they often fail to make the types of inferences that adults make in the presence of motives to provide distorted information. Mills and Keil (2005) asked kindergartners, second graders, and fourth graders to evaluate a speaker’s claims regarding an ambiguous event. One of the scenarios involved a running race in which it was not clear who had won, and a character claiming either that he had won or that his opponent had won. Children in second grade and older were more skeptical of claims that were consistent with the speaker’s self-interest. However, kindergartners were less skeptical of such claims, which Mills and Keil interpreted as a bias toward assuming that statements are accurate when they describe outcomes that are desired by the speaker.

There is further evidence that elementary-school-age children sometimes fail to critically evaluate statements for which speakers have obvious motives to provide distorted information. Cristine Legare and I (Heyman & Legare, 2005) asked children ages 6 to 7 and 10 to 11 whether they consider self-report an effective means to obtain information about

certain personal characteristics. For example, children were told, “smart people are good at learning new things” and were asked, “is asking someone if they are smart a good way to find out how smart they are?” Older children were far more skeptical of self-report than were younger children concerning *evaluative characteristics* (e.g., honesty or intelligence) but were no more skeptical concerning less value-laden *comparison characteristics* (e.g., a tendency to be outgoing). When children were asked to explain their answers, younger children were more likely to respond that people will or should accurately convey what they know, as in the following examples:

“If you ask them to tell the truth then they better tell the truth, otherwise it would be a lie.”

“Because telling the truth is the right thing.”

In contrast, older children were more likely to suggest that people might provide distorted information, as in the examples below:

“You can’t always trust people by what they say because sometimes people make up what they talk about.”

“Because they might be lying to make you impressed.”

This pattern of age-related change was also seen when children were asked to select among self report, behavioral observation, teacher report, and peer report as ways to learn about a hypothetical individual. Younger children were more likely than older children to identify self report as the best way to learn about evaluative characteristics, but there was no age-related difference concerning the comparison characteristics. These results suggest that, between the ages of 7 and 10, children become increasingly skeptical of the statements of individuals who may have strong self-presentational motives.

Social Experience and Critical Thinking

Given that even preschool-age children understand that people sometimes make false claims, why might early-elementary-school children fail to question the statements of individuals who have clear self-serving motives? One possibility is that they have yet to acquire social experiences that would help them to understand when this type of distortion of information is likely to occur. As a first step toward investigating this possibility, my colleagues and I (Heyman, Fu, & Lee, 2007) used the same age groups and basic methodology as Heyman and Legare (2005) to compare the reasoning of children growing up in the United States to that of children growing up in China, with nationality as a proxy for differences in children’s social experiences. We chose this particular comparison in light of differences in norms about communicating personal information, which include a greater emphasis on impression management in China that appears to relate to traditional Confucian Chinese values discouraging the expression of one’s own thoughts and feelings, because doing so might disrupt group harmony or make one vulnerable to being hurt by others (Gao, Ting-Toomey, & Gudykunst, 1996).

Children in each age group within each country responded similarly when they were asked about self report as a means to learn about nonevaluative comparison characteristics, but there were substantial effects of age group and country concerning the evaluative characteristics (see Fig. 1). Within each country, the older children showed greater skepticism than the younger children, but the degree of skepticism was greater overall among the children from China, with 6- to 7-year-olds from China showing levels of skepticism that were comparable to those of the 10- to 11-year-olds from the United States. These results suggest that social experience can substantially shape children’s reasoning about the claims of others.

ENCOURAGING CRITICAL THINKING

If the development of children's critical-thinking skills were simply a function of general maturational processes, there would seem to be little point in trying to encourage them to reason critically about the statements of others. However, the evidence of a link between critical thinking and children's social experiences suggests that it may indeed be worthwhile to attempt to teach children to reason critically. Nevertheless, such efforts will face some challenges, such as opposition based on the fear that children would be encouraged to challenge the authority of parents and teachers. It may also be that children would disregard cues that suggest critical evaluation is warranted if they expect to encounter information that contradicts what they want to hear. Similarly, Kuhn (1999) pointed out that children might not be motivated to engage in critical thinking unless they are convinced of the value of doing so. In addition, there may be limitations in children's ability to monitor and control their thoughts and actions (Moses & Baldwin, 2005). For example, children who are able to reason about the motives and techniques of advertisers in a sophisticated way may not put this understanding into practice if they are presented with a rapid stream of audiovisual information. Children may also have difficulty with impulse control at the time of a purchasing decision, even if they are aware that the purchase is not a good idea.

Prior research points to the value of social experiences that raise children's awareness of ways in which people can become misled by others (Lee & Cameron, 2000). For example, children could be encouraged to develop a "promotional intent" schema to help them understand that marketing campaigns are designed to influence the mental states and behavior of the audience by emphasizing positive features of products and deemphasizing negative ones (Moses & Baldwin, 2005). Although adults do sometimes discuss deception and related topics with children, in our current research my colleagues and I are finding that they often do so in a strictly evaluative manner that is unlikely to lead to psychological insights. For example, one parent reported that she teaches her children, "Lying is for bad people and witches. Good people and fairies never tell lies." Such a message may lead children to infer that anyone who is a "good person" can be trusted to honestly communicate what he or she knows, which may prove confusing for children who observe their parents lying or who are asked by adults to lie in the service of other goals such as protecting someone's feelings (Lewis, 1993). An alternative possibility is for parents to talk to their children about some of the reasons that lying can be morally problematic.

One way to discuss the topic with young children is to identify situations they are likely to understand intuitively, such as those involving obvious self-interest motives. It is clear that preschool children sometimes lie to further their self-interest (Lewis, 1993) and that they have some appreciation of the need to be skeptical about statements for which the speaker has a salient motive to provide distorted information. For example, in one study (Gee & Heyman, 2007), we found that preschoolers were more skeptical of a child's claim that he felt ill when they learned that the child did not want to go to camp that day. Discussing such topics could help children to reason about forms of deception that are less intuitive. For example, it may facilitate the understanding of other possible motives that can lead to distortion of information, such as efforts to be entertaining or coherent or to provide an appropriate level of detail (Gilovich, 1991).

Another way to promote critical thinking is by discussing heuristics. Both adults and children use a range of heuristics of varying effectiveness to determine who is a good source of information. For example, young children might seek out sources who project confidence (Harris, 2007) or who appear to have prosocial intentions. Adults can help children to understand that people sometimes exaggerate their degree of confidence or feign prosocial intentions in an effort to be persuasive.

FUTURE RESEARCH

Further research on the relation between children's source reasoning and their understanding of mental life is needed. Some researchers have sought to determine whether children's source reasoning relates to their performance on standard theory-of-mind tasks, but the nature of any such link remains unclear (Pasquini et al., 2007). Other questions remain, such as whether incorrect statements that are motivated by an intent to deceive are seen as holding different implications than are incorrect statements that result from mistaken beliefs. In addition, it is not yet clear whether young children sometimes choose between potential sources based on which source has been more reliable in the past but without making any mental-state inferences. For example, a child might respond to an individual who provides inaccurate information by simply avoiding him or her as a source in the future without considering possible reasons for the inaccuracy, just as an adult might simply avoid using a computer that crashes frequently without evaluating the underlying problem.

Another direction for future research is to study trust in the types of real-world contexts that children are likely to encounter, such as when a teenager is deciding whether to disclose personal information to someone she has met online. This work could build upon studies that have examined the way emotional states and expectations affect the encoding of new information (Schul, Mayo, & Burnstein, 2004), and the costs and benefits of being trustful or skeptical in different types of interpersonal relationships and different cultures (Yamagishi & Yamagishi, 1994). These approaches should point the way to new strategies for helping children to attain the benefits of relying upon others as sources of information, while minimizing the risks.

Acknowledgments

This research was supported by a grant from the National Institute of Child Health and Human Development (R01 HD048962). I thank Brian Compton, Susan Gelman, Kang Lee, and Yaacov Schul for comments on earlier versions of the manuscript.

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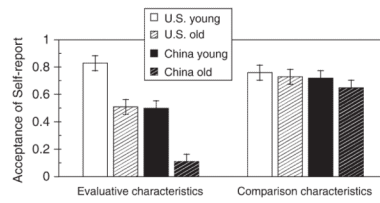


Fig. 1. Proportion of responses in which U.S. and Chinese participants of different ages accepted self-report as a good way to learn about highly value-laden *evaluative characteristics* and less value-laden *comparison characteristics* (data from Heyman, Fu, & Lee, 2007, Study 1). Low values for evaluative characteristics indicate an appreciation that self-report may be unreliable in the presence of self-presentational motives.