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Commentary: What We Can Learn From Research on Evidentials

Elizabeth J. Robinson

Abstract

Young children's well-documented difficulty reporting the sources of their knowledge, and their susceptibility to misleading suggestions about what they saw for themselves, might be reduced when their linguistic community expresses knowledge sources with grammatical evidential markers. Alternatively, until children have acquired certain cognitive prerequisites, they may interpret evidentials simply as markers of speakers' certainty. There is evidence supportive of both views, but with more precisely formulated research questions, specially tailored tasks, and more cross-linguistic comparisons, we can come to understand better the developmental intertwining of linguistic, metalinguistic, and cognitive aspects of children's handling of sources of knowledge. © Wiley Periodicals, Inc.

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As children's mastery of language renders them increasingly capable of learning about the world indirectly from what other people tell them, they need ways of evaluating the likely truth of what they are told. If you tell me the world is round when I can see perfectly well that it is flat, should I believe you? Should I believe you when you tell me there are invisible things called germs that can make me ill? Should I accept that this unfamiliar object is called a dak?

Compared with knowledge the child (or an adult) gains directly from her own experience of seeing, hearing, and feeling, information that comes from other people is subject to additional sources of error. Even speakers who intend to be truthful and informative can be wrong without knowing it, and listeners can misunderstand without realizing. Do these additional sources of error mean that listeners automatically doubt the truth of whatever they are told? Probably not, although there has been discussion among philosophers as to whether listeners should do so.

If what we are told contradicts what we know from our own direct experience, and we cannot resolve the contradiction, it seems justifiable to give greater weight to direct experience. Even three year olds can follow this rule of thumb. Imagine a game in which either a red or a blue ball has been hidden inside a container, and the child is asked, "Which ball do you think it is, the red one or the blue one?" If the child has looked inside the container and seen that the ball is red, she is unlikely to change her mind when an adult who, on being asked the same question, suggests without looking that it is blue. Similarly, if the hidden object is either hard or soft and the child has felt it to be soft, she is unlikely to change her mind when an adult who has only looked at the object suggests it is hard. This is not just because three year olds disbelieve whatever they are told in this game. When the adult has informative access and the child can only guess, children generally believe the adult's suggestion. That is, children take into account the source of their own knowledge and what they know directly about the source of the adult's knowledge (for example, having seen the adult look or not look inside the container), and they weigh them appropriately against each other to come up with a correct evaluation of the likely reliability of what the adult tells them (Nurmsoo & Robinson, 2009; Robinson, Champion, & Mitchell, 1999; Robinson, Haigh, & Nurmsoo, 2008; Robinson & Whitcombe, 2003).

In real life, listeners often have no relevant direct experience against which to evaluate the likely truth of what they are told. If you tell me something about the history of the United States, I cannot draw on my own direct experience to decide whether to believe you. Furthermore, listeners often have no direct access to the source of the speaker's knowledge. When you tell me about U.S. history, I may not see which book provided you with that knowledge or even whether your knowledge came from a book.

Sometimes an informant chooses to report the source of her knowledge, saying, for example, "I saw on television last night . . ." or "I read in the

paper . . ." Adult listeners can use this reported source information to help them judge the likely truth of what they are told. Would children do something similar? Suppose we changed the game described above so that children could not see the source of the adult's knowledge. Instead, suppose on being asked, "Which ball do you think it is, the red one or the blue one?" the adult said, "I'm not allowed to look. The red one." Would four year olds see the implications of linguistic information about the source of the informant's knowledge? To my knowledge, this experiment had not been carried out, but I would be surprised if children found this as easy as they do when they can see for themselves how the adult's knowledge was gained.

From the chapters of this volume, we begin to learn the answer to a related question: How effectively do children evaluate the likely truth of what they are told on the basis of a speaker's grammatical evidential marker? It would be interesting to compare the development of reliability evaluations based on all three of these source indicators: (1) seeing the speaker's knowledge source, (2) hearing a verbally explicit statement of that source, and (3) hearing an evidential marker that indicates the source. Being able to make correct evaluations on the basis of indicator 1 seems likely to be a prerequisite for doing so on indicator 2. It would be surprising if children understood the implication of the speaker's saying, "I'm looking. The red one," without yet understanding the implications of seeing the speaker looking and then saying, "The red one." It might also be that among children whose language contains evidential markers, indicator 1 is a prerequisite for indicator 3. That is, children might be unable to interpret correctly a particular evidential marker unless they can make an appropriate evaluation when they have direct experience of the speaker's knowledge source.

The research in this volume informs us about the developmental course of children's ability to use or interpret evidential markers. The Turkish-speaking children tested by Aksu-Koç, Ögel-Balaban, and Alp began to use evidentials for direct knowledge very early, well before three years of age. However, three year olds in an experimental setting overextended the use of direct evidentials into situations involving hearsay, so could not be credited with understanding direct evidentials. Importantly, even when children appear superficially to produce or comprehend evidentials correctly, they may interpret them as if they were confidence markers rather than indicators of source knowledge, as shown in the carefully probing studies by de Villiers and colleagues involving Tibetan-speaking children. Since evidentials in different languages express source information in different ways, we cannot assume that children in other linguistic communities make this same misinterpretation, but we should be alert to the possibility that they do.

The relationship between the meanings of evidentials and expressions of speakers' certainty takes on greater complexity in the light of comments by de Villiers and colleagues (Tibetan), Fitneva (Bulgarian), and Papafragou, Li, Choi, and Han (2007) (Korean) concerning the relationship between adults' use of evidentials and the source of their knowledge. For example, de

Villiers and colleagues report that adult speakers sometimes use evidential markers of direct experience as a means of indicating their confidence in the truth of their assertion, despite their assertion not actually being based on direct experience. We do not know whether children are exposed to this use.

Another warning against making too simplistic an interpretation of evidentials comes from Fitneva. She points out that whether a listener takes a particular evidential marker to imply that its accompanying assertion is likely to be true depends in part on what the listener is trying to find out (see Fitneva, 2008, for a more detailed account of the tasks). The general point to take away from Fitneva's chapter in this volume is that evidential markers do not map straightforwardly onto likely truth values. To repeat the analogy drawn by Fitneva, knowing the speaker has seen a hidden object indicates that her assertion about its color is likely to be true, but that her assertion about its hardness cannot necessarily be trusted. "I saw it" does not necessarily indicate that the accompanying assertion is likely to be true.

Unlike evidential markers, indicators of speakers' certainty are available to children in all linguistic communities. The speaker might sound hesitant, or she might preface her assertion with "I'm not sure but . . ." Children aged three to four years are likely to be sensitive to such indicators (Harris, 2007; Jaswal, 2004; Sabbagh & Baldwin, 2001). As de Villiers and colleagues and Matsui and Miura in this volume both argue, interpreting or using certainty markers requires less complex processing than do evidential markers. In many circumstances, interpreting evidentials as if they were simply markers of speaker certainty would lead to a correct evaluation of the relative reliability of two assertions. For example, Aydin and Ceci outline their task in which Turkish-speaking children heard two different accounts of an event: one with a direct evidential marker and the other with an indirect evidential marker. Children then chose between pictures showing the two versions of the event. This is broadly similar to Matsui and Miura's tasks (and to Fitneva's) in which children heard pairs of brief utterances with different evidential markers. In all these cases, children could perform correctly on any one trial if they interpreted the evidentials as markers of a speaker's certainty, and comparisons between trials with different contrasts are needed to exclude that interpretation. Such additional comparisons may not be necessary for Aydin and Ceci's argument about the possible protective function of evidentials for children's suggestibility. However, when it is the precise interpretation children are making that is of interest, it takes carefully designed comparisons to tease apart the possibilities.

Another way of ascertaining how children interpret evidential markers is simply to ask them. Such assessments of children's metalinguistic understanding of evidentials were included by Aksu-Koç, Ögel-Balaban, and Alp in their research involving Turkish-speaking children, and by Matsui and Miura in their research with Japanese-speaking children. Children aged four and five years were often unable to give appropriate justifications for correctly believing a speaker who used a direct evidential over one who used

an indirect evidential. Similarly, Papafragou et al. (2007) asked children to judge whether a speaker was silly when she used a correct or incorrect evidential in her assertion. Three and four year olds performed very poorly. In all these cases, the ability to comment on or explain evidentials appeared later than the ability to use them. However, as with Fitneva's research, some tasks that require only interpretation of evidentials, rather than explanations of interpretations, are still very difficult for young children.

On the surface, the dichotomy between linguistic and metalinguistic tasks seems straightforward: Does the task require the child to produce or interpret language, or does the task require her to comment on or give justifications for her use? The distinction between linguistic and metalinguistic tasks is similar to the contrast between implicit and explicit understanding or between online and offline tasks. The child's use of evidentials in her spontaneous speech is seen as an online task (Matsui and Miura) or as demanding only implicit understanding (Aksu-Koç, Ögel-Balaban, and Alp; Aydin and Ceci).

Yet the distinction between implicit and explicit understanding has proved to be less than straightforward in the domain of children's cognitive development, even when treated as a dimension rather than as a simple dichotomy. One problem is that tasks of implicit and explicit understanding in a particular domain may be assessing different concepts rather than different levels of understanding of the same concept. For example, children might appear to show precocious ability to behave as if they understand the source of their knowledge, with later ability to report the source explicitly. On closer inspection, it could turn out that their behavior could be characterized in terms of a conceptually simpler understanding (Robinson, Haigh, & Pendle, 2008).

This same question of just what understanding is assessed by implicit, online and by explicit, offline tasks, arises again in connection with the relationship between children's use or understanding of evidentials, on the one hand, and their understanding of knowledge sources as assessed by traditional cognitive, nonlinguistic tasks, on the other hand. To tackle this question, Aksu-Koç, Ögel-Balaban, and Alp used source reporting and source memory tasks that demanded verbally explicit answers. One task, based on Gopnik and Graf (1988), required children to report the source of knowledge just acquired by seeing or by being told. The other task, based on Drummey and Newcombe (2002), required them to recall after a week which of two speakers had told them a novel fact. Performance on these tasks was compared with children's production of direct and indirect evidentials in experimental settings. Performance on the linguistic tasks was unrelated to children's ability to report the source of knowledge just acquired. There was, however, a significant relationship between children's correct use of an evidential marker for hearsay and their performance in the source memory task. Given that the age range tested was three to seven years, it is particularly important that age was factored out in this analysis. Interestingly, the evidential that, so Aksu-Koç, Ögel-Balaban, and Alp argue,

helped children perform well in the source memory task did not actually mark which of the two speakers had provided them with the new fact. Despite this, these authors suggest, the evidential allowed children to mark the new fact as having been acquired by linguistic report and thereby helped them to differentiate the knowledge gained in the experimental setting from knowledge gained outside it.

Hence, the source reporting task, which mapped closely onto the linguistic evidentials the children were exposed to, was unrelated to linguistic performance. Yet the source memory task, which had a poorer match with the linguistic evidentials, did show a relationship. The idea that evidentials help with longer-term source memory, rather than with immediate awareness of sources, is particularly interesting and connects with the work on suggestibility by Aydin and Ceci. The value of using established tasks of source understanding, such as those used by Aksu-Koç, Ögel-Balaban, and Alp, is that it enables researchers to make connections with previously published work. It would now be interesting to follow up this research using specially tailored cognitive source understanding tasks in which the source memory demands map more precisely onto the linguistic evidential markers the child is exposed to. It would also be interesting to use cognitive tests of source understanding that assess the child's understanding in a more implicit way, again to form a closer match with the linguistic tasks.

This discussion of the relationship between children's exposure to linguistic evidentials and their understanding about sources of knowledge leads us to the big question tackled by several of the authors: Does growing up in a linguistic community that marks knowledge sources grammatically help children to become aware of the sources of their knowledge? The answer is a strong no according to research referred to in all but one of the chapters. Papafragou et al. (2007) studied child speakers of Korean, a language whose evidential markers differentiate a speaker's direct experience of the matter in question from hearsay. Papafragou et al. point out that all languages with evidentials make the same broad distinction between direct and indirect (hearsay) evidence, implying that cognitive structures shape linguistic structures rather than vice versa.

Authors of two of the chapters in this volume draw conclusions that are broadly consistent with that of Papafrago et al.: Matsui and Muira and de Villiers and colleagues. Matsui and Muira speculate that the ability to handle second-order mental representations ("she thinks that he thinks X") is necessary for correct handling of evidentials. De Villiers and colleagues provide evidence in support of their argument that mastery of evidentials recruits cognitive resources from outside the linguistic module. The cognitive resources referred to are the ability to take different perspectives as measured by the shadow hat task in which children could work out which hat a protagonist was wearing, seen only in shadow outline, by drawing inferences from the assertion made by another story character. To make the inferences

correctly, the children needed to take the perspective of that character. Tibetan children's performance in the shadow hat task was positively related to their ability to use evidentials correctly.

Yet even if there are cognitive prerequisites for correct handling of linguistic evidentials, a language that makes salient the source of a speaker's knowledge by means of compulsory evidential markers could serve to bootstrap the development of those cognitive prerequisites. Papafragou et al. (2007) found no evidence for this: Korean-speaking children in their sample were no better at understanding about knowledge sources than English-speaking American children were. In contrast, in the shadow hat inference task, the children in de Villiers and colleagues' Tibetan-speaking sample performed well in advance of children in an English-speaking sample. De Villiers and colleagues are appropriately careful not to draw the conclusion that exposure to evidentials was causally linked to advanced cognitive peformance, pointing out the need to ensure that the samples from two linguistic communities are matched in other respects. This precaution seems not to have been taken by Papafragou et al.

Aksu-Koç, Ögel-Balaban, and Alp draw a bolder conclusion from their evidence that the four-year-old children in their Turkish-speaking sample performed better than the sample of English-speaking children in Drummey and Newcombe's (2002) study, arguing that exposure to evidentials helped the Turkish children to hold in mind distinct mental representations. It would be interesting to follow up this finding with matched samples and with a task in which the evidentials map on more straightforwardly to the source memory task.

Finally, Aydın and Ceci pose a novel question about the relationship between exposure to evidentials and awareness of knowledge sources. Their prediction is that children with access to a language with evidentials will be relatively protected against suggestibility compared with children whose language has no grammatical markers for source. In typical studies of suggestibility, the child (or adult) participant is a direct witness to an event and then is given a conflicting account or is subjected to misleading questioning, and finally attempts to recall what she originally witnessed. This typical procedure has demands similar to those of a court situation, in which a witness must report what she actually experienced directly, even after repeated and possibly misleading questioning. The task of the witness in court is not to give an account of what she currently believes to be the truth about what happened, which might take into account hearsay evidence, or other information gained after the original event was experienced. As I understand it, Aydin and Ceci predict that for children whose language contains evidentials, the child's account of her original direct experience will be less likely to suffer from distortion following intervening misinformation or misleading questions than for children whose language does not contain evidentials.

Aksu-Koç, Ögel-Balaban, and Alps research seems relevant here. These authors concluded from their evidence that evidential markers reduced errors in children's memory for sources after a week (in the Drummey and Newcombe task), even though they found no effect for reporting the source of knowledge only just gained (in the Gopnik and Graf task). A related prediction might be that when a speaker includes direct evidentials in the initial account of an event she has witnessed, she will be less subject to influences from subsequent misleading questions. That is, a cross-linguistic comparison of witness reports might show greater consistency in the content of repeated reports with evidential markers than without.

It might be interesting to make cross-linguistic comparisons with suggestibility tasks already used with English-speaking children, for example, by Principe and colleagues (Principe, Kanaya, Ceci, & Singh, 2006). In one study children reported that they had actually seen a magician's escaped rabbit running about in their classroom, when in fact they had only inferred its presence from traces of carrot and from rumor spread by classmates. Would similar errors be apparent in children's evidential markers among children old enough to use evidentials correctly in their everyday speech?

This leads to a more general question about the accuracy of evidential markers among adult speakers. If listeners use speakers' evidential markers to assess the likely truth of what they are told, then presumably listeners treat the markers themselves as accurate. Yet we know that even adults make source errors on occasion, for example, by believing that they have seen something directly that they have in fact only read about or watched on television. What is the relationship between such errors of explicit source reporting and the evidentials speakers use in their recalled accounts? Aydın and Ceci's preliminary work on evidentials and suggestibility opens up exciting avenues for future research into inaccuracies in source memory. The consistency or inconsistency between linguistic markers of source and explicit source reports might help us pinpoint the nature of the processes underlying suggestibility effects.

Taken together, the chapters in this volume have set the scene and made the case for further research into the cognitive prerequisites for, and the cognitive consequences of, evidential markers. One line of research I hope might be pursued is to make comparisons across the languages that use evidential markers. So far, researchers seem only to compare against English as a language without evidential markers. The descriptions in this volume of Turkish, Japanese, Tibetan, and Bulgarian and the accounts of other languages provided by Papafragou et al. (2007) and by Willett (1988) raise the possibility of theoretically significant differences in the ways different languages express speakers' sources of knowledge. Cross-linguistic comparisons might provide a window into the developmental intertwining of linguistic, metalinguistic, and cognitive aspects of understanding about sources of knowledge.

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ELIZABETH J. ROBINSON is professor of psychology at Warwick University, U.K. E-mail: e.j.robinson@warwick.ac.uk.