Aydın, Ç., & Ceci, S. J. (2009). Evidentiality and suggestibility: A new research venue. In S. A. Fitneva & T. Matsui (Eds.), *Evidentiality: A window into language and cognitive development, New Directions for Child and Adolescent Development, 125,* 79–93. San Francisco: Jossey-Bass.

6

Evidentiality and Suggestibility: A New Research Venue

Çağla Aydın, Stephen J. Ceci

Abstract

Recent research suggests that acquisition of mental-state language may influence conceptual development. We examine this possibility by investigating the conceptual links between evidentiality in language and suggestibility. Young children are disproportionately suggestible and tend to change their reports or memories when questioned. The authors discuss the extent to which components of mental-state understanding, specifically representational understanding and understanding origins of knowledge, are implicated in improvements in resistance to suggestions and comprehending evidentiality. The authors also review social-psychological evidence that has implications for evidential understanding. Integration of the literature on both topics is followed by suggestions for new research directions. © Wiley Periodicals, Inc.

NEW DIRECTIONS FOR CHILD AND ADOLESCENT DEVELOPMENT, NO. 125, FALL 2009 © WILEY PERIODICALS, INC.
PUBLISHED ONLINE IN WILEY INTERSCIENCE (WWW.INTERSCIENCE.WILEY.COM) • DOI: 10.1002/cd.251

Imagine you heard the following sentences by two different speakers:

1. Source A: I saw Joe break the cup.
2. Source B: I was told John broke the cup.

Human beings are faced with this sort of contradictory information from a variety of external sources. We are consumers of others' testimony, such as rumors, news stories, and personal narratives. In all of these situations, however, transmitted information may be subject to the introduction of errors and variations. Often the ways of checking the accuracy of the information, such as direct perception, are not immediate. In order to avoid being misled, we need to look for cues to check the statement's dependability.

This issue gains importance especially in the context of suggestibility, where information, or misinformation, is gained through verbal accounts of other people. Each year in the United States, millions of children become involved in some aspect of the family, juvenile, or criminal justice systems, for example, by giving statements in custody hearings. Notwithstanding their prevalence in legal proceedings, young children are disproportionately suggestible: they tend to change their reports, memories, and beliefs after they are exposed to postevent verbal communication by the interviewers (Ceci & Bruck, 1993).

When a child notices a mismatch between her memory for an event and the interviewer's account of it, among the variables that may resolve the mismatch is source evaluation: understanding a speaker's informational access or the evidential bases of the information. In fact, studies show that children who are better at identifying the origin of the information or are trained to monitor the sources are less susceptible to suggestibility (Warren, Hulse-Trotter, & Tubbs, 1991).

English speakers have the option of omitting information about the source of their knowledge either by intentionally misleading the listener or unintentionally by failing to mention it. In other languages, however, such as Turkish, speakers do not have the liberty to drop the evidence-based information. The language forces the speakers to choose among the range of sources of evidence by including an aspectual feature of the past-tense verb, called *evidentiality.*

For example, Turkish would obligatorily mark the past tense events in statements 1 and 2 about who broke the cup with one of the two morphemes, *–dI* (direct perception) and *–mIş* (hearsay). The sentences in the examples 1 and 2 in Turkish would be:

3. Source A: Joe fincanı kır *–dI*. (*Joe broke the cup; I saw him.*)
4. Source B: John fincanı kır *–mIş*. (*John broke the cup; I was told.*)

Given young children's difficulties in resisting erroneous information, it is of interest to investigate the relations between suggestibility and

acquisition of evidential language. Despite the relevance of this connection, it has not received attention in the empirical literature on children's suggestibility. Thus, our aim is to integrate the two literatures and suggest some key new research directions. Specifically, we will examine how the acquisition of linguistic marking of informational access in Turkish could influence children's proneness to suggestion. We start with discussing the proposed conceptual underpinnings of suggestibility, such as the development of general understanding of the mind. Does children's appreciation of mental perspectives inoculate them against inaccurate information? How do children deal with different information sources, especially when they contradict each other? Then, we will discuss how language—evidentiality, in particular—mediates this relationship. And finally, we propose a suggestibility paradigm to demonstrate this mediation effect. Such a design appears to reveal children's sensitivity to linguistic cues in assessing comparative informedness of the speakers to avoid being deceived.

Suggestibility and Understanding of the Mind

Children's developing understanding of the mind is critical in their evaluations of others. This understanding includes that other people can have different intentions when they demonstrate knowledge, they can possess a different perspective on the same information, and they can simply be wrong or less certain. In the following sections, we review how different aspects of understanding of the mind could be implicated in young children's resistance to false information by others.

Representational Understanding and Suggestibility. Suggestibility of children's memory has been best demonstrated in research as the postevent misinformation effect (Loftus, 1979). The standard paradigm consists of three parts: the participants experience an event, they are exposed to misleading information about the event, and they are tested on their memory for the original event. This effect has been studied with multiple test conditions, such as free recall, standard recognition, forced-choice recognition, and cued recall (Bruck & Ceci, 1999).

Research has demonstrated that younger children's memory is more vulnerable to misleading information compared to older children's. At around ages three to five years, children show an increase in resisting to false suggestions (Ceci & Bruck, 1993). In order to explain the mechanisms that are responsible for young children's suggestibility, two hypotheses have been proposed. The memory alteration hypothesis argues that report accuracy is damaged by a false suggestion that overwrites the representation for the original event (Tousignant, Hall, & Loftus, 1986). The original event representation gets permanently altered and updated by the postevent information. The memory alteration hypothesis asserts that a cognitive mechanism points to an underlying memory impairment. According to a rather socially driven hypothesis, the original event representation is preserved in

memory, but the postevent false suggestion coexists with it; hence, it is referred to as the coexistence hypothesis (Zaragoza & McCloskey, 1989). Later, the child may reject the original information in lieu of the postevent suggestion because the latter is perceived as more reliable and trustworthy. For example, the child may reason that although she recalls the original event, an adult suggested an alternative and adults are more knowledgeable than children, so it is best to report what the adult suggested even if it runs counter to her memory. In this situation, the child needs to keep track of each of the information sources—original and postevent—and assess their likely truth value in order to benefit fully from others' testimony or to avoid being deceived.

These hypotheses differ in the mechanism they propose of how postevent communication reduces the child's accuracy. However, both deal with how many representations children can hold in memory, and they both implicitly assume that representations are the basis for beliefs about events. Representational abilities are considered integral to children's understanding of the mind (Wellman, 1993; Perner, 1991). Understanding that other's mental states can be different from one's own and from the previous states is referred to as theory of mind in the literature (Wellman, Phillips, & Rodriguez, 2000; Perner, 1991). Researchers have proposed that resistance to misinformation effect requires certain theory of mind (ToM) abilities that may be missing in younger children (Bright-Paul, Jarrold, & Wright, 2008). Improvements in resistance to misinformation coincide with the age children pass the benchmark tests for theory of mind, between three and five years (Ceci & Bruck, 1993; Gopnik & Astington, 1998).

The first distinct component of ToM that might have an influence on children's suggestibility is the ability to handle different mental representations of reality (Welch-Ross, 2000). ToM development requires simultaneously considering multiple contradictory representations. This is an important skill in legal settings, where children need to provide accounts of what they originally knew about the event, without confusing it with postevent information from other sources. Studies have shown that understanding false belief makes children more resistant to misinformation. For example, children five years and older who also passed a standard false-belief task displayed a more accurate memory of a video segment than did a younger group that failed the task (Templeton & Wilcox, 2000). Other studies that looked at representational change ability showed that three to five year olds' performance on appearance reality tasks predicted their tendency to yield to new misleading information (Welch-Ross, Diecidue, & Miller, 1997). Interestingly, Thomsen and Berntsen (2005) demonstrates that a representational change question (change in their own belief) was a better predictor than others' change-of-belief questions for yielding to false information after seeing a staged event. Although the exact mechanism responsible for this pattern is unclear, it seems likely that younger children's belief that the world can be represented in only one way may prohibit them

from simultaneously reasoning about their original representation and the one derived from the suggestions. In contrast, older children, who realize that the same event can be represented differently by different people, may be better able to correctly resolve the contradiction created by suggestions.

Origins of Knowledge and Suggestibility. The second component of ToM development proposed by Welch-Ross (2000) that might have an influence on suggestibility is the emergence in understanding of the connection between origins of experience and knowledge. This requires growth in two skills: identification of information sources and evaluation of sources. In a misinformation context, although the content of the event and misinformation phases are well remembered, the origins of these memories may be confused, resulting in suggestibility (Ackil & Zaragoza, 1995; Poole & Lindsay, 2002).

Understanding that knowledge is dependent on informational access grows with age. Research has shown that three- to four-year-old children are able to associate seeing with knowledge (Pillow, 1989). However, explicit understanding that different knowledge states are results of different sources do not appear until four years of age (O'Neill, Astington, & Flavell, 1992). Children have difficulties in verbally reporting the evidential bases of their knowledge, for example, seeing the contents of a box for themselves or being told by the experimenter (O'Neill & Gopnik, 1991). Again, around five years old, children can distinguish speakers who are engaging in storytelling or fictional language (Harris, 2002). Thus, even young children are able to reason about the sorts of evidence that lead people to believe something. This skill is crucial in suggestibility paradigms where children's beliefs need to be updated based on available evidence; that is, children should be more likely to change their original account if they attribute a more valid status to the interviewers' accounts.

The developmental progression of identification of sources shows us that direct perception as a source of information appears first, then hearsay information, and finally inference. Does this progression mean that there is a succession in the reliability values that children attach to those sources and prioritize some over the others based on evidential access?

In suggestibility studies, there are two contradicting pieces of evidence: one from the original event information, and one from the postevent information. If the child retains a memory of both of these conflicting sources, her task is to judge beliefs that follow from different kinds of evidence. Findings from a growing number of studies show that in cases of contradiction, young preschoolers can judge which source is more likely to be reliable. For example, they rely on their own direct perception more than conflicting verbal reports of others and also on others' direct perception more than on people who were told about or just inferred the information and they are more likely to believe what they are told by an adult who has had visual evidence over one who has not (Robinson, Champion, & Mitchell, 1998; Robinson, Mitchell, & Nye, 1995).

More recent studies show how children consume others' testimony with paradigms closer in design to suggestibility paradigms. Robinson and Whitcombe (2003) and Whitcombe and Robinson (2000) asked children to guess the color of the toy that was hidden after they had only felt it, and then the speaker provided them with a contradicting color. Both three and four year olds believed this contradicting suggestion when the speaker had seen the toy (because the speaker was thus better informed than they were) but did not believe the suggestion when both themselves and the speaker had the same kind of perceptual experience (they felt the toy).

It seems that young children have some intuitive or implicit understanding that hearsay evidence is less reliable than direct perceptual evidence. Even three-year-old children who have difficulty in providing verbal accounts of the origins of their belief make use of accessibility to evidence cues when they are faced with contradicting information. Matsui, Yamamoto, and McCagg (2006) suggest that this finding points to the development of "possibly implicit understanding of speaker's epistemic states" before an explicit understanding of the mind (p. 159)(see also Chapter 5, this volume for a discussion of the idea). Children evaluate the utterance as less reliable if it conflicts with direct evidence but tend to accept it when there is no such basis. To be speculative, one could argue that the contradictive nature of the presented information might be pushing children to evaluate the possible cues and emphasizing the sensitivity to informational access. What is not explicit verbally may get evaluated on a more automatic level during a misinformation context.

In fact, representational accounts of children's cognitive development hold that when the representations are verbally expressed, they are fully accessible to consciousness, and hence explicit (Karmiloff-Smith, 1992). In other instances, although representations cannot be verbalized, some implicit level of understanding is present and can guide thought in nonpropositional, nonlinguistic procedures, thus resulting in success in handling the origins of beliefs among very young children.

Other data also show that children are critical of different sources that vary in reliability when they are faced with conflicting information in eyewitness paradigms. Preschool children engage in social evaluation of sources and are more likely to incorporate the false suggestions of adults than the identical false suggestions of peers (Ceci, Ross, & Toglia, 1987). Moreover, they distinguish between credible and noncredible adults. Children's memory reports were impaired only when misinformation was presented by a credible adult as opposed to a discredited adult or a child communicator (Lampinen & Smith, 1995).

Children's ability to evaluate and track the sources of beliefs has been associated with reductions in suggestibility levels. Monitoring the origins of beliefs, referred to as *source monitoring,* is considered part of theory of mind because it builds on the understanding that other people can entertain

different beliefs based on their informational relation to the world (Drummey & Newcombe, 2002). Overall, studies looking directly at this association have some version of intervention paradigms: alerting children to sources of their knowledge prior to postevent communication, putting contextual cues in retrieval questions, and explicitly warning about postevent misinformation (Giles, Gopnik, & Heyman, 2002; Thierry et al., 2001; Bright-Paul, Jarrold, & Wright, 2005; Holliday & Hayes, 2002). The findings revealed that some warning or training on the existence of source information helps even three to to four year olds to resist suggestibility. Then it is reasonable to assume that grammatically salient source cues would act similarly as the explicit source cues. Evidentiality markers, as linguistic cues that tag source distinctions, might help children be alert to sources during a misinformation paradigm, causing reductions in suggestibility levels.

Evidentiality and Suggestibility

So far, the evidence seems to point to a causal relationship between children's emergent understanding of mind—conflicting representation and origins of knowledge—and their ability to resist contradictory suggestions. It seems reasonable to assume that comprehension of evidentials, fostered more in some languages than others, is a mediating force in the association of understanding of mental states and the ability to resist contradictory suggestions.

It is our belief that the association between evidentiality and suggestibility offers a good testing ground for investigating the relationship between language and conceptual systems. In this section, we review why we think the association between evidentiality and suggestibility is an important one and why we think a misinformation paradigm is a suitable testing ground for this association.

Language's effects on children's resistance to suggestibility have long been known. The verbal nature of the instructions and questions in children's suggestibility studies points to a strong association between language and suggestibility. Studies looking directly at this relationship focus on general effects of language ability on children's proneness to misinformation. It has been demonstrated that legal interviews with children often are conducted in a language that exceeds the cognitive ability of the interviewed children. Typical examples include the use of long and complex sentences, as well as unclear references to persons and situations (Davies & Seymour, 1998, Brennan & Brennan, 1988; Zajac & Hayne, 2003) Using age-appropriate levels of language reduces children's suggestibility levels (Korkman, Santtila, Drzewiecki, & Sandnabba, 2008). Imhoff & Baker-Ward (1999) interviewed three- and four-year-old children about a personally experienced event with different protocols with regard to the degree of interviewer support and language appropriateness. The results indicated that young preschoolers' resistance to suggestibility increased when a language that is easily comprehensible

to young children was used, whereas language appropriateness was not as important for the older children.

Treated as an individual difference variable, narrative ability is found to make significant contributions to the individual differences in children's susceptibility to suggestions (Roebers & Schneider, 2005; Kulkofsky, Wang, & Ceci, 2007). In a recent meta-analysis of individual differences in children's suggestibility, Bruck and Melnyk (2004) found that among the cognitive factors that predict children's suggestibility, language ability and creativity were fairly consistent across many studies and measures. In a similar vein, Kulkofsky et al. (2007) found that children's level of narrative production skills influenced their ability to resist suggestions.

Another feature of language that has been proposed to influence children's suggestibility levels is their pragmatic language ability, such as understanding the intended meaning versus literal meaning (Beal & Belgrad, 1990). Young children questioned by adults may sometimes attempt to make their answers consistent with what they perceive to be the intent of the interviewer rather than what is consistent with their memory of the event. Newcombe and Dour (2001) employed a pragmatic competence scale to examine the relationship between children's conversational understanding and age-related differences in suggestibility. They found that suggestibility levels were moderated by the children's scores on the pragmatic task.

All of these findings point to the fact that general language ability—narrative or pragmatic abilities—has a mediating role in children's ability to resist verbal information from other sources. However, there is no, or limited, research on specific components of language and suggestibility. Linguistic structures such as evidentiality could have a guiding role in storing and organizing information we learn from others. As Johnson, Hashtroudi, and Lindsay (1993) noted, "In many of the cases of receiving information about the event through people, news reports, or personal narratives, the verbal cues alone provide the information" (p. 13). Being among those verbal cues, evidential markers have a potential to alert children to individual perspectives and make them more cautious in assigning trust to individual interviewers.

Emergent understanding of the mind has been suggested as a mediator in reductions in suggestibility. We have also seen that the two components of theory of mind—understanding the origins of knowledge and representational change—have been offered as cognitive correlates of evidentiality in language. It seems reasonable to assume that comprehension of evidentials, fostered more in some languages than others, is a mediating force in the association of understanding of mental states and the ability to resist contradictory suggestions. Welch-Ross (2000) suggests that ToM understanding aids in resisting suggestion by decreasing the likelihood of overwriting the original event trace with misinformation. Once children start simultaneously considering contradicting representations, they yield less to suggestions. Evidential language could provide listeners with salient

grammatical tags so that they could differentiate between original and postevent information, and have less difficulty holding them in mind simultaneously. For example, if the original event story in a misinformation paradigm is from an direct witness perspective (using the *–dI* marker in Turkish) and the postcommunication is from a hearsay perspective (using the *–mIş* marker), one would expect that Turkish-speaking children would be less prone to misinformation.

Bright-Paul et al. (2008) suggest that growth in understanding origins of knowledge results in better source monitoring. We have reviwed source-monitoring skills that are highly associated with resistance to suggestibility. If training children in source monitoring or warning them about the source cues helps them avoid being deceived by misinformation, one would expect evidentiality in language to act the same way. Evidential bases of the information attached to the utterance obligatorily, and possibly saliently, therefore act as alerts for tracking the source information. Also, evidentials vary by the reliability of the relevant informational sources, with direct perception considered more reliable than hearsay. In a misinformation context, children go through the effort to decipher these grammatical evidential markers to evaluate the informational stance of the postevent communicator. Thus, children acquiring an evidential language would be expected to be more alert to the trustworthiness of the reporter.

Children's representational limitations in both linguistic and nonlinguistic tasks have been a frequent theme in our discussion. In nonlinguistic tasks of source assessment, children are required to indicate their responses verbally. This requires an explicit representation and monitoring of sources and evaluation of the end product. In daily life, such assessments are made on a procedural level because we hardly need to indicate our reliability judgment. Robinson et al. (2008) alert to the need for focusing on a *working understanding* of trust in speaker knowledge instead of explicit demonstrations of such knowledge. We suggest that the misinformation paradigm can be used as an implicit measure of children's trust in different information sources. In this sense it follows a long tradition of distinguishing between performance and competence disjunctions (Flavell, 1970), as children may have the cognitive competence to appreciate epistemic markers long before they can demonstrate such competence in their explicit verbal performance. Similarly, in evidential (linguistic) studies, Matsui et al. (2006) points to the problem of asking children about their understanding of the sentences with evidential markers and looking for verbal judgments from them. It suggests that researchers should simply look for a rather spontaneous way to tap that kind of knowledge. The misinformation paradigm seems to be a good candidate in which we can see children's sensitivity to linguistic clues in assessing the comparative informedness of the speakers. It seems reasonable to assume that comprehension of evidentials, fostered more in some languages than others, is a mediating force in the association of understanding mental states and the ability to resist contradictory suggestions.

New Research Directions

Here we discuss some possible research directions and begin by reviewing findings from a new experimental paradigm we designed using Turkish evidentials as an initial step. We investigate whether differences in the grammatical explicitness with which languages express source distinctions might influence children's resistance to suggestibility. Previously children's suggestibility by testimony of others has been studied either by word learning tasks or origins-of-knowledge tasks. Since misinformation protocols provide children with opportunities to deal with extended and complex events, children might pay special attention to the reliability cues. We adopt a developmental perspective because we think this will provide us with a description of language's effects on suggestibility and an understanding of how acquisition of evidentiality might influence children's resistance to misinformation. We have two specific questions. First, does having an explicit form of evidentiality in one's language improve resistance to misinformation? Given the age shifts in suggestibility, learning a language that grammatically marks information source contrasts might help speakers reason about the connection between beliefs and the sort of evidence. Second, how might grammatically explicit forms for evidentiality help? If they help by focusing the children on informational access, children should be less suggested by sources that do not have firsthand knowledge, that is, hearsay. Similarly, they should be more prone to misinformation if they think the source has more reliable information than themselves.

Briefly, we wanted to see children's assignment of trust when the misinformation is provided from an informational perspective different from the original perspective. The children were randomly assigned to two informational conditions, direct witness and hearsay, in which they were going to receive the event details. The informational perspective was switched during the postevent communication phase: the group that learned about the event from a hearsay perspective heard the postevent information from a direct witness perspective. If children were sensitive to linguistic cues, they would assign more reliability to direct witness perspective; therefore, postevent information would overwrite the original event information, resulting in higher suggestibility levels.

Turkish evidentiality is well suited for examining reported events in a suggestibility context. The primary use of evidentials in Turkish is through talk about past events. There are two perspectives when talking about past events in Turkish: direct and indirect access to information, represented as direct perception, encoded by the suffix *–dI* and hearsay encoded by the suffix *–mIş*. Both forms are present in Turkish-speaking children's spontaneous speech before age three (Aksu-Koç, 1988; also see Chapter Two, this volume).

The paradigm follows the tradition of standard misinformation tasks (Ceci et al., 1987, Lampinen & Smith, 1995). Sixty-two children (3;7 to 6;3

years old) are presented with a surprise-birthday-party-themed videotaped story narrated by an adult. Half the children hear the unfolding of events from a direct witness perspective (using the marker *–dI* in Turkish), and half the children hear it from a hearsay or reportative perspective (using the marker *–mIş*). Then the participants listen to children's music for a ten-minute filler period. In stage 2, children see another videotape of a different adult telling the same story from a different informational stance this time: the originally hearsay perspective now becomes a direct perception perspective. The experimenter shows the child either the version with misleading details or the version without any contradictory information involved (unbiased condition). During the final stage, children are presented a two-alternative forced-choice test in which they will be asked to choose between the original still image in the story and an alternative picture containing the suggested detail. The actual and the suggested pictures will be identical in all other respects, so that the only difference is the erroneous information suggested to the children.

The findings from the Turkish-speaking children are worth mentioning. Young children (mean age = 4;2) seem to have some awareness of the contrast between *–dI* (direct witness) and *–mIş* (hearsay) in a misinformation context. They were capable of resisting suggestions made by the less reliable sources. When they heard the original story from a direct witness perspective, exposure to misleading information from a hearsay perspective produced lower suggestibility levels than did exposure to direct witness misinformation. However, when the original encoding was from a less reliable source, hearsay, they were equally suggestible by either a direct witness or hearsay misinformation. No effects of general language ability, as measured by Peabody Receptive Vocabulary Test, were observed. Older children (mean age = 5;5) were willing to accept the suggestion of the direct perception speaker regardless of the original perspective. In the control conditions, in which there was no switch in the perspective of the source, older children were more resistant to misinformation than the younger group.

Overall, these findings suggest that young Turkish children seem to appreciate the fact that a person who directly perceived the event should be more dependable. Children are more likely to notice discrepancies when the original source is higher in reliability and the misleading source is low in reliability. They also seem to attach a tentative status to the original source when it is low in reliability; they yield to misinformation that comes after it regardless of the reliability status. Even without cross-linguistic comparisons, we could argue that linguistic source credibility manipulations might interact with misleading information. Efforts should be made to develop this idea, which calls for cross-linguistic comparisons among languages with different evidential systems, grammaticalized versus nongrammaticalized, which we are currently working on.

Conclusion and Implications

Children's suggestibility is directly related to others' testimony. As we have illustrated, it is especially about testimonies that inform us about events in the past. Children need to be equipped with the means to evaluate testimonies in order to avoid being misled. We have reviewed how in certain situations, linguistic cues can act as a means for assessing what to believe and what not to believe. According to this view, understanding how specific elements of language and suggestibility intertwine is critical for the process of cognitive development. Children resist corrections and suggestions offered by adults in areas where they could practice firsthand exploration. However, we do not yet have developmental accounts to describe how they deal with secondhand information, especially when the information is contradictory.

This paradigm could be considered an initial step toward answering these questions. When children do not have any information about what had actually happened or the characteristics of the speakers, the next logical thing for them to do is to rely on other cues, such as informational access. As we have seen, young children suffer from limited reflective understanding of the relation between information access and consequent knowledge state. This has been discussed in both linguistic and nonlinguistic literature. It would be worthwhile to see how children's limitations in explicit understanding of the connection would be reflected in a misinformation setting. Another related and interesting line of research would be to focus on misinformation paradigms where children have perceptual access to the original event and the postevent communication comes from others' testimony (with or without evidentials in language); this design would mimic real-life cases of eyewitness testimony and thus better inform forensic psychological literature.

Research on grammatical evidentiality and suggestibility and eyewitness testimony would also be interesting because of its potential implications for linguistic relativity hypotheses. Intuitively, it would seem that learners of languages with grammatical markings of source distinctions would find such distinctions to be more salient than learners of languages that do not grammaticalize source distinctions. Linguistic relativity hypothesis argues for the role of language in shaping cognition, a view with a long history (Whorf, 1956), and deals mostly with language production. A suggestibility paradigm of the sort we suggest in this chapter would provide insights into the conceptual effects of language in the context of reception. Slobin (2003) writes, "It is quite likely that the language in which information is presented both fictional and documentary plays a role in the ways in which information is stored and evaluated. However, we still lack cross-linguistic research on such issues as eyewitness testimony or source monitoring, so the question of linguistic relativity in memory for reported events remains open" (p. 171). By manipulating the evidential basis of the language being used, we could find answers to how misinformation is evaluated with the paradigm examined here.

Theoretical reasons aside, adopting a linguistically mediated account of suggestibility of children also has important practical implications. Such a perspective suggests that age-related differences in suggestibility may be a function of how the social situation is perceived as a function of linguistic cues, and possibly as a function of the language community. If, in the future, there is accumulated evidence for this, then efforts should be made to develop methods of understanding the types of reliability cues, including linguistic ones, that children understand and the mechanisms through which they operate.

References

Ackil, J. K., & Zaragoza, M. S. (1995). Developmental differences in eyewitness suggestibility and memory for source. *Journal of Experimental Child Psychology, 60*, 57–83.

Aksu-Koç, A. (1988). *The acquisition of aspect and modality: The case of past reference in Turkish*. Cambridge: Cambridge University Press.

Beal, C. R., & Belgrad, S. L. (1990). The development of message evaluation skills in young children. *Cognitive Development*, *61*, 705–712.

Brennan, M., & Brennan, R. (1988). *Strange language: Child victim witnesses under cross-examination*. Wagga Wagga, Australia: CSU Literary Studies Network.

Bright-Paul, A., Jarrold, C., & Wright, D. B. (2005). Age-appropriate cues facilitate source-monitoring and reduce suggestibility in 3- to 7-year-olds. *Cognitive Development*, *20*, 1–18.

Bright-Paul, A., Jarrold, C., & Wright, D. B. (2008). Theory-of-mind development influences suggestibility and source monitoring. *Developmental Psychology*, *44*, 1055–1068.

Bruck, M., & Ceci, S. J. (1999). The suggestibility of children's memory. *Annual Reviews of Psychology*, *50*, 419–439.

Bruck, M., & Melnyk, L. (2004). Individual differences in children's suggestibility: A review and synthesis. *Applied Cognitive Psychology*, *18*, 947–996.

Ceci, S. J., & Bruck, M. (1993). The suggestibility of children's recollections: An historical review and synthesis. *Psychological Bulletin*, *113*, 403–439.

Ceci, S. J., Ross, D., & Toglia, M. (1987). Suggestibility of children's memory: Psycholegal implications. *Journal of Experimental Psychology: General*, *116*, 38–49.

Davies, G. M., & Seymour, F. (1998). Questioning child complainants of sexual abuse: Analysis of criminal court transcripts in New Zealand. *Psychiatry, Psychology, and Law*, *5*, 47–61.

Drummey, A. B., & Newcombe, N. S. (2002). Developmental changes in source memory. *Developmental Science*, *5*, 502–513.

Flavell, J. H. (1970). Developmental studies of mediated memory. *Advances in Child Development and Behavior*, *5*, 182–211.

Giles, J. W., Gopnik, A., & Heyman, G. D. (2002). Source monitoring reduces the suggestibility of preschool children. *Psychological Science*, *13*, 288–291.

Harris, P. L. (2002). Checking our sources: The origins of trust in testimony. *Studies in the History and Philosophy of Science*, *33*, 315–333.

Holliday, R. E., & Hayes, B. K. (2002). Automatic and intentional processes in children's recognition memory: The reversed misinformation effect. *Applied Cognitive Psychology*, *16*, 1–16.

Imhoff, M. C., & Baker-Ward, L. (1999). Preschoolers' suggestibility effects of developmentally appropriate language and interviewer supportiveness. *Journal of Applied Developmental Psychology*, *20*, 407–429.

Johnson, M., Hashtroudi, S., & Lindsay, S. D. (1993). Source monitoring. *Psychological Bulletin*, *114*, 3–28.
Karmiloff-Smith, A. (1992). *Beyond Modularity: A Developmental Perspective on Cognitive Science*. Cambridge, MA/London: MIT Press.
Korkman, J., Santtila, P., Drzewiecki, T., & Sandnabba, N. K. (2008). Failing to keep it simple: Language use in child sexual abuse interviews with 3–8-year-old children. *Psychology, Crime, and Law*, *14*, 41–60.
Kulkofsky, S. C, Wang, Q., & Ceci, S. J. (2007). Do better stories make better memories? Narrative quality and memory accuracy in preschool children. *Applied Cognitive Psychology*, *22*, 21–38.
Lampinen, J. M., & Smith, V. L. (1995). The incredible (and sometimes incredulous) child witness: Child eyewitnesses' sensitivity to source credibility cues. *Journal of Applied Psychology*, *80*, 621–627.
Loftus, E. F. (1979). *Eyewitness testimony*. Cambridge, MA: Harvard University Press.
Matsui, T., Yamamoto, T. & McCagg, P. (2006). On the role of language in children's early understanding of others as epistemic beings. *Cognitive Development*, *21*, 158–173.
Newcombe, P. A., & Dour, T. (2001). Conversational influences on young children's responses to misleading questions. *Journal of Applied Developmental Psychology*, *22*, 363–378.
O'Neill, D. K., Astington, J. W., & Flavell, J. H. (1992). Young children's understanding of the role that sensory experiences play in knowledge acquisition. *Child Development*, *63*, 474–490.
O'Neill, D. K., & Gopnik, A. (1991). Young children's ability to identify the sources of their beliefs. *Developmental Psychology*, *27*, 390–397.
Pillow, B. H. (1989). Early understanding of perception as a source of knowledge. *Journal of Experimental Child Psychology*, *47*, 116–129.
Pratt, C., & Bryant, P. (1990). Young children understand that looking leads to knowing (so long as they are looking into a single barrel). *Child Development*, *61*, 973–982.
Robinson, E. J., Champion, H., & Mitchell, P. (1999). Children's ability to infer utterance veracity from speaker informedness. *Developmental Psychology*, *35*, 535–546.
Robinson, E. J., Mitchell, P., & Nye, R. (1995). Young children's treating of utterances as unreliable sources of knowledge. *Journal of Child Languages*, *22*, 663–685.
Robinson, E. J., & Whitcombe, E. L. (2003). Children's suggestibility in relation to their understanding about sources of knowledge. *Child Development*, *74*, 48–62.
Robinson, E. J., Haigh, S. N., & Nurmsoo, E. (2008). Children's working understanding of knowledge sources: Confidence in knowledge gained from testimony. *Cognitive Development*, *23*, 105–118.
Roebers, C. M., & Schneider, W. (2005). The strategic regulation of children's memory performance and suggestibility. *Journal of Experimental Child Psychology*, *91*, 24–44.
Slobin, D. I. (2003). Language and thought on-line: Cognitive consequences of linguistic relativity. In D. Gentner & S. Goldin-Meadow (Eds.), *Language in mind* (pp. 157–192). Cambridge, MA: MIT Press.
Templeton, L. M., & Wilcox, S. A. (2000). A tale of two representations: The misinformation effect and children's developing theory of mind. *Child Development*, *71*, 402–416.
Thierry, K. L., Spencer, M. S., & Menon, A. (2001). Before misinformation is encountered: Source monitoring decreases child witness suggestibility. *Journal of Cognition and Development*, 2, 1–26.
Thomsen, Y., & Berntsen, D. (2005). Knowing that I didn't know: Preschoolers' understanding of their own false belief as a predictor of assents to fictitious events. *Applied Cognitive Psychology*, *19*(4), 507–527.
Warren, A., Hulse-Trotter, K., & Tubbs, E. C. (1991). Inducing resistance to suggestibility in children. *Law and Human Behavior*, *15*, 273–285.

Welch-Ross. M. (2000). A mental-state reasoning model of suggestibility and memory source monitoring. In K. P. Roberts & M. Blades (Eds.), *Children's source monitoring* (pp. 227–256). Mahwah, NJ: Erlbaum.

Welch-Ross, M., Diecidue, K., & Miller, S. A. (1997). Young children's understanding of conflicting mental representation predict suggestibility. *Developmental Psychology*, *33*, 43–53.

Wellman, H. M. (1993). Early understanding of mind: The normal case. In S. Baron-Cohen, H. Tager-Flusberg, & D. J. Cohen (Eds.), *Understanding other minds: Perspectives from autism* (pp. 10–39). Oxford: Oxford University Press.

Whitcombe, E. L., & Robinson, E. J. (2000). Children's decisions about what to believe and their ability to report the source of their belief, 329–346.

Whorf, B. L. (1956). *Language, Thought and Reality*. Boston, MA: MIT Press.

Zajac, R., & Hayne, H. (2003). I don't think that's what *really* happened: The effect of cross-examination on children's accuracy. *Journal of Experimental Psychology: Applied 9*, 187–195.

Zaragoza, M. S., & McCloskey, M. (1989). Misleading postevent information and the memory impairment hypothesis: Comment on Belli and reply to Tversky and Tuchin. *Journal of Experimental Psychology: General*, *118*, 92–99.

ÇAĞLA AYDIN is a doctoral candidate at Cornell University, Department of Human Development, Ithaca, New York. E-mail: ca94@cornell.edu

STEPHEN J. CECI is the Helen L. Carr Professor of Developmental Psychology at Cornell University, Ithaca, New York. E-mail: sjc9@cornell.edu.