



## Suggestibility under pressure: Theory of mind, executive function, and suggestibility in preschoolers

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### ARTICLE INFO

#### Article history:

Received 12 June 2007

Received in revised form 28 April 2009

Accepted 17 May 2009

Available online 28 June 2009

#### Keywords:

Suggestibility

Theory of mind

Executive function

Event memory

Preschool-age children

### ABSTRACT

Eighty preschoolers, ages 3 to 5 years old, completed a 4-phase study in which they experienced a live event and received a pressured, suggestive interview about the event a week later. Children were also administered batteries of theory of mind and executive function tasks, as well as the Video Suggestibility Scale for Children (VSSC), which assesses children's assents to misleading questions (Yield), changes in responses when given mild negative feedback (Shift), and their final number of assents after feedback (Yield 2). The results showed that, controlling for age, children with better executive function were overall less suggestible in the pressured suggestive interview. On the VSSC, executive function was only related to Yield 2 in younger children. When interviewers provided specific negative feedback to older children about their responses, children with more developed theory of mind were less suggestible. Children with executive function deficits may be especially vulnerable to interviewer pressure.

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### 1. Introduction

Over the past 30 years, researchers have investigated with renewed interest a child's ability to provide accurate testimony for witnessed events in a suggestive interview situation (Ceci & Bruck, 1993). In the last decade, children's suggestibility research has focused more on individual differences that moderate susceptibility to suggestion (reviewed in Bruck & Melnyk, 2004). Instead of examining the circumstances in which suggestibility occurs and age differences in suggestibility, individual difference research has been concentrating on the cognitive and psychosocial factors that underlie suggestibility. Proponents of this approach posit that higher levels of suggestibility reflect young children's cognitive weaknesses (e.g., deficits in memory, theory of mind, intelligence, or language) or personality factors (e.g., shyness, suggestibility as a trait-like characteristic). The major objective of the current study was to utilize the individual difference approach to examine the extent to which theory of mind and executive function explain differences in children's tendencies to assent to misleading questions. In addition to this individual difference approach, we focused on whether these relations change across the 3- to 5-year-old age range. We also examined whether these relations are affected by a social component of suggestibility—the degree to which interviewers exert social pressure on children to change their answers.

Theory of mind refers to the ability to understand that people have mental states that affect their actions, and in some instances that people can have false beliefs (Astington, 1993; Wellman, Cross, & Watson, 2001). In addition, theory of mind refers to the understanding that one's own beliefs may not be consistent with reality. Theory of mind may be relevant among young children in interrogative situations because it may give children insights into their own and the interviewer's false or inaccurate beliefs. Executive function, or higher-level action control, is a multi-faceted construct that includes children's problem solving/planning ability, inhibition of prepotent responses, coordination and control of action sequences, working memory, and shifting focus when task demands change (reviewed in Garon, Bryson, & Smith, 2008). Executive function may play a role in helping children deal with

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the task demands of an interview situation. Reviews of the research on theory of mind (Wellman et al., 2001) and executive function (Garon et al., 2008) found that both of these constructs undergo important developmental changes during a child's fourth year. As a result of these changes, there may be age differences between older and younger preschoolers in the relations between these constructs and suggestibility. In the following sections, we will briefly discuss suggestibility in investigative interviews, followed by a discussion of the relations between theory of mind, executive function, and suggestibility.

### 1.1. Children's suggestibility in investigative interviews

In this article we adopt Ceci and Bruck's (1993) definition of children's suggestibility, "the degree to which children's encoding, storage, retrieval, and reporting of events can be influenced by a range of social and psychological factors" (p. 404). This conception of suggestibility is broader than the traditional view of suggestibility as the destructive updating of memory due to incorporation of misinformation into the memory trace, and includes the possibility that children may provide inaccurate answers due to lying or due to acquiescence to suggestions from an interviewer.

There is some controversy about the nature of the social and cognitive mechanisms that are related to suggestibility in investigative interviews. Schooler and Loftus (1986) argued that suggestibility during interrogations was generally a reflection of a central cognitive mechanism they referred to as discrepancy detection. If a person does not detect a discrepancy between an interrogator's suggestions and his or her memory for an event, the person will be more likely to accept the suggestion. Two factors that can affect a person's discrepancy detection include the strength of the memory trace and the manner in which the person is interrogated. With regard to interrogation techniques, negative feedback can adversely affect discrepancy detection by inducing anxiety and reducing a person's confidence in his or her memory. Among young children, additional social and cognitive mechanisms may come into play that may affect discrepancy detection, such as theory of mind (understanding that another person's thoughts may be discrepant from one's own) and executive function (inhibiting responses long enough to reflect upon discrepancies). Gudjonsson (2003) argued that although discrepancy detection is an important component of interrogative suggestibility, numerous other social and cognitive factors may play a role in suggestibility such as an avoidance coping style, eagerness to please, low IQ, and how the person appraises the best way to obtain a positive outcome in the interview situation.

In the next two sections we discuss the elicitation of suggestibility through techniques that differ in the amount of social pressure placed upon children—the assessment of interrogative suggestibility and suggestibility in a pressured interview about a real event.

### 1.2. Interrogative suggestibility

Much of the research on children's and adults' interrogative suggestibility has focused on interviewing techniques that use comparatively mild elicitations of suggestibility. For example, Gudjonsson and Clark's (1986) two-factor model of interrogative suggestibility focuses on eliciting simple assents to misleading questions (referred to as Yield) or changes in responses following non-specific negative feedback (referred to as Shift). Individuals are not given clear expectations about what the correct answer to a question is or feedback on their performance following each question. Both Yield and Shift may be assessed in adults with the Gudjonsson Suggestibility Scales (GSS1 & GSS2; Gudjonsson, 1984, 1987, 1997). In addition to Yield and Shift, the GSS assesses: (1) memory recall, a measure of free recall prior to suggestive questioning, (2) Yield 2, the number of Yields after the Shift feedback has been administered, and (3) total suggestibility, the sum of Yield and Shift.

In Gudjonsson's view, Yield may be viewed as a more cognitive component of suggestibility—individuals may be more likely to exhibit weaker discrepancy detection and go along with the interviewer in response to poorly remembered details. Conversely, Shift may be viewed as a more social component of suggestibility, reflecting an individual's sensitivity to interviewer feedback. However, Yield and Shift may be affected by both social and cognitive factors. For example, some individuals may adopt a social strategy of assenting to an interviewer's questions during Yield questions, and Shift's negative feedback may cause individuals to recalibrate their discrepancy detection and be more willing to assent to suggestions.

In 2001, Scullin and Ceci developed the Video Suggestibility Scale for Children (VSSC), which extended Gudjonsson's research on adult and adolescent interrogative suggestibility to preschool-age children. Scullin and Ceci preserved the major components of the GSS, but used a videotape for the stimulus, which is arguably more analogous to an actual eyewitness situation when compared to the GSS audiotapes, and provided more frequent feedback to children about their performance. Consistent with Gudjonsson's (1984, 1987) findings, Yield and Shift items were found to generally load on different factors (Scullin & Ceci, 2001).

In two different studies, a moderate negative correlation was found between Yield and Shift in children below 54 months of age, but not among older children (Scullin, Kanaya, & Ceci, 2002; Scullin & Bonner, 2006). Some younger children had a tendency to change most of their initial "no" responses to the leading yes/no questions to "yes" when confronted with non-specific negative feedback (e.g., "You have made a few mistakes. Let's go over the questions again and see if you can do better."), and when questions were repeated. This strategy of indiscriminately changing "no" to "yes" suggests that young children may have difficulty either assessing the accuracy of their initial response, or that they may be responding in a way that they think will be rewarded, both of which may be related to deficits in executive function. Alternatively, young children's less developed theory of mind may make it harder for them to strategically evaluate what type of response an interviewer desires after this feedback, and cause them to use a simple strategy of changing "no" responses to "yes" regardless of the truth value of these responses. In the current study, we used Yield and Shift as a measure of suggestibility when low social pressure is applied to the child.

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