"He Forgot": Young Children's Use of Cognitive Explanations for Another Person's Mistakes

Bradford H. Pillow
Northern Illinois University

Suzanne B. Lovett
Bowdoin College

Children, ages 4 and 5 years, and adults were asked (a) to explain a story character's incorrect search for a desired object, and (b) to explain the source of the character's ignorance or false belief concerning the object's true location. The character either (a) did not receive information about the object's location, (b) received information about the object's original location, but not about a subsequent change of location, (c) received information but searched for the object after a delay, or (d) received information about the object's location, but was engaged in another activity when the information was presented. With increased age, there was an increase in explanations that referred to perceptual experience or cognitive activities as the source of the character's ignorance or false belief. By age 5 years, children shifted between explanations that referred to perceptual experience or to the cognitive activities of forgetting or attentional focus, depending upon the circumstances in which the incorrect search occurred. During the late preschool years a conception of cognitive activities as contributing to knowledge and belief becomes integrated into children's conceptual framework for explaining human action.

The past decade of research on children's "theory of mind" has established that preschool children conceptualize human action in mentalistic terms. That is, by 3 or 4 years of age, children begin to understand that other people experience mental states such as knowledge, ignorance, beliefs, desires, intentions, and emotions; that another per-

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Bradford H. Pillow, Department of Psychology; Suzanne B. Lovett, Department of Psychology.

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Correspondence may be sent to Bradford H. Pillow, Department of Psychology, Northern Illinois University, De Kalb, IL 60115. Electronic mail may be sent via Internet to pillow@niu.edu.

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son's mental state may differ from the child's own mental state; and that mental states influence a person's actions. Thus, the once prevalent view that prior to ages 7 or 8 years, children rely on external, situational causes rather than internal, psychological causes to explain human action is no longer tenable (Bartsch & Wellman, 1989; Miller & Aloise, 1989). At the same time, research on social cognitive development has shifted from an emphasis on investigating children's use of general principles of causal reasoning, such as the discounting principle, to an emphasis on investigating the knowledge base underlying children's causal attributions (Flavell & Miller, 1998; Miller & Aloise, 1990).

In particular, Wellman and Bartsch (1988) proposed that young children and adults share a basic belief–desire framework for reasoning about the causes of behavior. Within children's simple belief–desire framework, actions are seen to result from desires and beliefs: Desires often are seen to be derived from physiological states or emotions, and beliefs often are seen to result from perceptual experiences. Wellman (1990) further proposed that a more elaborated understanding of mental functioning and human action develops later in childhood. This more elaborated framework includes both a greater variety of concepts and new links among core concepts. For example, in addition to realizing that beliefs derive from perceptual experience, adults also realize that cognitive activities, such as reasoning, remembering, and forgetting, can influence beliefs.

However, it is not clear whether young children use concepts of cognitive processes, such as attention and forgetting, to explain another person's actions. Therefore, to examine one aspect of a more elaborated explanatory framework, in the present study we investigated whether young children explain others' actions by referring to cognitive processes.

Young children's use of a simple belief–desire framework to explain and predict behavior has been documented in a number of studies. Bartsch and Wellman (1989) asked 3-year-olds, 4-year-olds, and adults to explain events in which a character's action either conflicted with reality (e.g., the character searched for an object in the wrong location) or conflicted with the character's desires (e.g., the character ate a food he/she did not like). The majority of both children's and adults' explanations referred to psychological factors (e.g., beliefs, desires, emotions, perceptual experiences, preferences, traits). Furthermore, Wellman and Banerjee (1991) reported that 3- and 4-year-olds explained reactions of surprise or happiness in terms of a character's beliefs and desires. In addition to explaining actions in terms of mental states, many 4-year-olds also explain the origins of mental states such as knowledge or belief by referring to perceptual experience (e.g., Perner & Ogden, 1988; Wim-

mer & Hartl, 1991), and even 3-year-olds use information about belief and desires to predict actions (Wellman & Bartsch, 1988) and emotional reactions (Stein & Levine, 1989).

Although preschool children's use of simple belief–desire reasoning has been studied extensively, subsequent elaborations of children's explanatory frameworks have been investigated very little. Wellman (1990) proposed an elaborated framework to characterize older children's and adults' reasoning. This elaborated framework includes a concept of thinking that consists of a set of processes, such as reasoning, remembering, learning, and imagining, that contribute to the formation of beliefs. Wellman (1990) did not specify the age at which this more elaborated framework might begin to appear, but he did suggest that a conception of the mind as an active information processor may begin around 6 years of age (see Chandler, 1988; Pillow, 1988; and Taylor, 1988 for similar proposals). Thus, an understanding of cognitive processes is central to this more elaborated belief–desire framework. Integrating concepts of cognitive processes into an elaborated belief–desire framework is an important step because it would allow children to explain seemingly anomalous events.

For example, consider the following scenario. John puts his lecture notes in his briefcase, but a few minutes later he looks for the notes on his desk. On the basis of his perceptual experience, John should believe that his notes are in his briefcase. Therefore, his actions appear to conflict with the belief that he should have derived from his perceptual experience. Understanding that cognitive processes, as well as perceptual experience, contribute to beliefs would allow children to resolve this inconsistency by inferring that John forgot that he put his notes in the briefcase. In the present study we investigated children's references to cognitive processes, especially forgetting and selective attention, to explain another person's mistakes.

Studies of children's understanding of the terms "remember" and "forget" suggest that 4-year-olds may understand the meanings of these mental verbs. Although Wellman and Johnson (1979) found that 4-year-olds do not appreciate that both remembering and forgetting entail having had prior knowledge, but instead seem to think that "remember" refers to correctly finding a hidden object and that "forget" refers to incorrect search, two more recent studies suggest that 4-year-olds may understand the key features of remembering and forgetting. Lyon and Flavell (1994) reported that when asked which of two characters, both of whom claimed to be ignorant of an object's location, had forgotten, 4-year-olds chose the character who previously had known the object's location rather than the character who had never been informed. Like-

wise, 4-year-olds understood that only a character who had been informed previously could be said to remember. Furthermore, Lyon and Flavell (1993) found that 4-year-olds understand that forgetting is more likely with longer retention intervals. In contrast, in both of these studies, 3-year-olds appeared to have little understanding of remembering and forgetting (Lyon & Flavell, 1993, 1994). Beginning at 4 years of age, children appear to have a basic concept of forgetting; however, children's use of the concept of forgetting as an explanatory construct does not appear to have been investigated.

A concept of attention would include the understanding that because attention is limited in capacity and is selective, people are not aware of all the perceptible events around them. Children appear to begin to understand that attention is selective during the early school years. For example, Miller and Bigi (1979) found an increase between ages 7 and 11 years in children's tendency to say that engaging in an activity such as reading might interfere with hearing someone calling them. Pillow (1989) investigated whether children realized that they might not understand a story presented incidentally in one ear if they were focusing on instructions presented in the other ear or were concentrating on a visual task while the story was presented. Although most 4-year-olds did not anticipate that attending to a target task would interfere with comprehension of an incidental message, some 5-year-olds and most 6-year-olds did appreciate that attending selectively to the target task might reduce their reception of incidental information.

Likewise, Flavell, Green, and Flavell (1995) found that most 6- and 8-year-olds, but not most 4-year-olds, realized that a person who is mentally focused on one topic (e.g., trying to recall movies one has seen recently) will not be thinking about another unrelated matter (e.g., one's piano). Studies of children's understanding of attention appear to have focused primarily on investigating children's ability to infer how attentional activities influence what a person knows, understands, or is thinking about. Children's use of the concept of attention to explain other persons' actions does not appear to have been investigated.

The purpose of the present study was to trace the emergence of an elaborated framework of belief–desire reasoning that includes concepts of cognitive activities. As children progress from simple belief–desire reasoning to a more elaborated framework, concepts of the cognitive activities of attention and forgetting should be coordinated with children's understanding of the perceptual origins of beliefs and children's understanding that actions are derived from beliefs and desires. Thus, in addition to referring to false belief or ignorance to explain mistakes, children with a more elaborated framework should be able to explain

the origins of false beliefs or ignorance by referring to perceptual experience, selective attention, or forgetting, and they should use different explanatory constructs as circumstances warrant.

In the present study, children and adults were asked to explain why the protagonist of a story searched for a desired object in an incorrect location. The circumstances leading up to the search were varied to make certain explanations more or less plausible in different stories. Participants could explain the protagonist's incorrect search by referring to the protagonist's mental state or mental processes. At a fairly basic level, these mentalistic explanations might refer to a protagonist's knowledge state; for example, the protagonist's ignorance or false belief concerning the object's true location. More elaborate mentalistic explanations would explain the specific source of the protagonist's ignorance or false belief. We were particularly interested in (a) children's ability to provide these elaborate explanations that referred to the source of a protagonist's knowledge state and (b) children's ability to provide explanations that referred to the protagonists' perceptual experiences, such as not seeing or not hearing crucial information about the object's location in some situations, and to provide explanations that referred to the protagonists' cognitive activities, such as forgetting the object's location or not paying attention to information about the object's location in other situations.

Perceptual explanations for incorrect search are more plausible when a protagonist lacked perceptual access to information concerning the desired object's final location. However, cognitive explanations are more plausible when information about the object's location was perceptually available to a protagonist, but the protagonist nonetheless acted as if he or she were unaware of that information. For example, when the protagonist had never seen where the desired object was hidden, incorrect search may be explained by referring to the protagonist's lack of perceptual access to the visual information. Likewise, if a protagonist had been unable to hear a spoken message concerning the object's location, the protagonist's lack of perceptual access to the message provides an explanation for incorrect search. In contrast, if the protagonist previously had seen where the object was hidden and considerable time had elapsed before the protagonist attempted to find it, then claiming that the protagonist had forgotten the object's location provides a more plausible explanation for incorrect search than does appealing to lack of perceptual access. Similarly, if the protagonist had been told of the object's location immediately before searching for it, but was engaged in another activity when this verbal message was provided, failure to attend to the message would be a more plausible explanation for the protagonist's erroneous search. Therefore, stories

were created so that perceptual explanations were more plausible for some stories and cognitive explanations were more plausible for others.

METHOD

Participants

Nineteen young 4-year-olds (M = 4;2, range 4;0 to 4;6—10 girls, 9 boys), 20 old four-year-olds (M = 4;9, range 4;7 to 4;11—13 girls, 7 boys), and 20 five-year-olds (M = 5;4, range 5;0 to 6;0—11 girls, 9 boys) from daycare centers in the greater Portland, Maine, area participated. Most children were European American and middle class. Twelve college undergraduates (8 women, 4 men) also participated.

Materials

Several different dolls, a dollhouse with furniture, and a toy school building were used to act out brief stories. Several small containers (e.g., boxes, jars, toy bureaus, bowls with lids) and various small objects (e.g., a toy cat, toy dog, hat, gum, candy) that could be hidden in the containers were used to enact hiding events in the stories. In addition, a cassette tape player with a small set of headphones (made with small stereo earplugs) that fit the dolls' heads, and a toy "video game" (a small etch-a-sketch toy) were used as props.

There were eight stories in the main task and two warm-up stories. In the warm-up stories, the protagonist doll knew where the hidden object was located. In the visual access warm-up story, the doll put an object in one of two boxes. In the auditory access warm-up story, the protagonist doll did not see where another doll put an object, but was told the object's location by the other doll. In both stories, the protagonist stated that he or she wanted the hidden object and then moved toward the correct hiding place. Warm-up stories were intended to familiarize children with the procedure by presenting a simple event that should be easy to comprehend, but would not teach children the appropriate response to the main task stories.

The eight stories used in the main task were similar to the warm-ups, with two key differences: (a) the nature of the protagonists' access to information about the desired object's location was varied across stories, and (b) although the protagonist stated a desire for the object, he or she then searched for it in the wrong location. There were four perceptual access stories and four cognitive access stories. In two of the perceptual access stories the protagonist did not see the desired object's location

(visual stories) and in the other two perceptual access stories the protagonist could not hear a spoken message about the object's location (auditory stories). In addition, in one visual story and one auditory story, the desired object was placed in a container where it remained throughout the story (single location). In one visual story and one auditory story, the object initially was placed in one container and later moved to another location (change of location). Single-location and change-of-location stories were included to create two different visual stories and two different auditory stories. However, the desired object's location was not a variable of interest and was not included in the analyses reported later. In brief (see the Appendix for full stories), in the visual stories, the protagonist was at school when another character either (a) placed the desired object in a container at home or (b) moved the object to a new location. In either case, the protagonist did not see the desired object's final location. In the auditory stories, the character who either (a) hid the desired object or (b) moved the object to a new location, verbally described its location, but because the protagonist was listening to loud music with headphones covering her ears, she could not hear what the other character said (nor could she see the object being hidden, because her back was turned to the containers).

In the cognitive access stories, information about the desired object's location was perceptually available to the protagonist, but the protagonist acted as if he or she was unaware of that information. In two of the cognitive access stories the protagonist was engaged in an attention-demanding activity (i.e., playing a silent video game) when information about the desired object's location was presented auditorially (attentional focus stories) and in two cognitive access stories the protagonist saw the object's location, but searched in the wrong location following a delay (delayed search stories). In addition, in one attentional focus story and one delayed search story, the desired object remained in a single container throughout the story (single location), and in one attentional focus story and one delayed search story, the object was placed in one container and then moved to another location (change of location). In the attentional focus stories, the character who either (a) hid the desired object or (b) moved the object to a new location verbally described the object's location, but the protagonist was playing a silent video game, rather than paying attention to what the other character said (and the protagonist could not see the object being hidden because her back was turned). Thus, in the attentional focus stories the verbal message about the object's location was physically audible but not attended. In the delayed search stories, the protagonist herself either (a) hid the desired object in the morning or (b) hid the object and then moved it to

a new location. Then after spending the day at school, the protagonist returned and looked for the object in the incorrect location, as if he or she had forgotten where it had last been seen.

Procedure

Each participant was tested individually in a single 20-min session by two experimenters. The two warm-up stories preceded the eight stories comprising the main task. The warm-up stories were presented in counterbalanced order across participants and the eight stories in the main task were presented in random order. Each story was acted out using the house and/or the school, one or two dolls, two containers serving as potential hiding places, and an object to be hidden. During each story, participants watched the object being hidden in one of the two containers. Thus, participants always knew the hidden object's location.

At the end of each story, the protagonist stated a desire for the hidden object and then moved toward the correct hiding place in the warm-up stories or the incorrect hiding place in the main-task stories. Just as the protagonist was about to open the container, the story stopped and participants were asked a sequence of questions:

1. The behavior explanation question asked participants to explain why the protagonist looked for the hidden object in a particular location (e.g., "Why did Tom look for the cat behind the black door?").

2. The belief question assessed participants' ability to judge the protagonist's belief about the desired object's location (e.g., "Where does Tom think the cat is?"). For the warm-up stories the protagonist appeared to hold a true belief about the object's location, but for the eight main-task stories the protagonist appeared to hold a false belief.

3. The belief explanation question asked participants to explain the source of the belief that they had attributed to the protagonist (e.g., either "Why does Tom think the cat is behind the red door?" or "Why does Tom think the cat is behind the black door?", depending on the belief the participant previously attributed to the doll).

4. The reality question assessed participants' knowledge of the desired object's true location (e.g., "Where is the cat really?"). For the two warm-up stories, the procedure ended here. In the main task, the procedure continued.

5. For the two auditory stories and the two attentional focus stories, the verbalization question assessed participants' memory of the second story character's remark about the hidden object's location (e.g., "What did Sarah say to Tom?").

6. For each of the eight main-task stories, participants were asked a

false belief explanation question. For the two visual stories and the two delayed search stories, participants were asked why the protagonist did not think the desired object was in its true location (e.g., "How come Cathy doesn't think the gum is in the red drawer?"). Likewise, for the two auditory and the two attentional focus stories, participants were asked to explain why the protagonist did not think the desired object was in the true location even though the other character had said it was there (e.g., "If Sarah said it was behind the red door, how come Tom doesn't think the cat is behind the red door?").

Participants were never informed about the accuracy of their responses, nor were the contents of either container ever revealed. For eight stories in the main task, the belief question, the reality question, and the verbalization question were used as controls to screen participants who failed to understand or remember the stories accurately. Any participant who answered one or more of these control questions incorrectly for three or more stories was excluded from the analyses. Using this criterion, two young 4-year-olds and two old 4-year-olds were excluded from the analyses reported later. In the remaining sample, all 12 adults, 17 5-year-olds, 17 old 4-year-olds, and 13 young 4-year-olds answered the control questions correctly for all 8 stories; 3 5-year-olds, 1 old 4-year-old, and 3 young 4-year-olds answered correctly for 7 stories, and 1 young 4-year-old answered correctly for 6 stories.

RESULTS

Coding

Participants' responses were coded both as spontaneous explanations and as complete prompted explanations. Spontaneous explanations were answers given to the behavior explanation question, which was the first question asked after each story. Complete prompted explanations were composites including answers given to the behavior explanation, belief explanation, and false belief explanation questions following each story.

Three basic response categories were used to code both spontaneous and complete prompted explanations for the warm-up and main task stories: knowledge state explanations, perceptual source explanations, and cognitive source explanations. *Knowledge state* explanations consisted of references to (a) the protagonist's ignorance regarding the desired object's location or the verbal information provided by the other character or (b) the protagonist's false belief concerning the object's location (e.g., "She doesn't know that it's in the blue box," "She thinks it's in there, but it's not"). *Perceptual source* explanations were refer-

ences to perceptual sources of the protagonist's ignorance or false belief and thus included (a) references to the fact that the protagonist had seen or heard about the object's location or had placed the object in its hiding place, (b) suggestions that the hidden object usually was kept in the location where the protagonist was searching for it, or (c) mention of the fact that the protagonist had not seen or heard about the object's location (or change of location) or was absent when the object was hidden or moved (e.g., "Because he saw it in the blue jar, but Susan put it in the black jar," "That's where he usually keeps it," "He didn't hear her with the things on his ears"). *Cognitive source* explanations were references to cognitive factors contributing to the protagonist's ignorance or false belief. Cognitive source explanations included (a) forgetting explanations: suggestions that the protagonist had forgotten the hidden object's location (e.g., "She forgot that it was in the blue one"), or (b) focus of activity explanations: suggestions that the protagonist was engaged in or attending to some other activity when information about the hidden object's location was available (e.g., "He didn't hear her say it was in the red box because he was too busy playing a game," "Because he didn't think because he was playing the video game").

In addition to three basic response categories, *reality* responses mentioned the hidden object's true location, *desire* responses stated the protagonist's desire for the hidden object, and *not there* responses mentioned that the object was not in the location where the protagonist had searched. All other responses were coded as "other," "don't know," or "no response" and were not included in the following analyses. Participants could give more than one category of response for each story. For example, a participant might refer both to the protagonist's ignorance (knowledge state) and to the protagonist's forgetting (cognitive source). The second author coded all responses. As a reliability check, an independent judge who was blind to the purpose of the study coded all responses to all eight stories for five participants in each age group (Cohen's $\kappa = .86$ for both spontaneous and complete prompted explanations). Disagreements were resolved by discussion.

Scoring

Spontaneous explanations were scored for each of the eight stories by giving each participant a score of 0 or 1 for each response category. That is, if a participant gave a knowledge state explanation in response to the behavior explanation question for a particular story, the participant received a knowledge state score of 1 for that story. Otherwise, the participant's knowledge state score for that story was 0. Likewise, par-

Table 1. Mean Number (and Standard Deviation) of Spontaneous Explanations for Each Category by Age and Informational Access

Informational access	*Young 4-year-olds* n = 17	*Old 4-year-olds* n = 18	*5-year-olds* n = 20	*Adults* n = 12
		Knowledge state explanations		
Perceptual stories	1.00 (1.32)	0.72 (1.07)	0.95 (0.94)	1.17 (0.84)
Cognitive stories	1.29 (1.31)	1.06 (1.26)	0.55 (0.83)	0.42 (0.67)
		Perceptual source explanations		
Perceptual stories	0.88 (1.27)	1.56 (1.34)	2.00 (1.17)	2.83 (0.84)
Cognitive stories	0 .47 (0.94)	1.00 (1.14)	1.60 (1.14)	1.83 (0.58)
		Cognitive source explanations		
Perceptual stories	0.18 (0.53)	0.11 (0.47)	0.45 (0.76)	0.17 (0.39)
Cognitive stories	0.18 (0.39)	0.72 (0.90)	1.50 (1.61)	2.08 (0.79)
		Reality explanations		
Perceptual stories	0.47 (0.87)	0.11 (0.32)	0.15 (0.37)	0.00 (0.00)
Cognitive stories	0.35 (0.49)	0.28 (0.75)	0.05 (0.22)	0.00 (0.00)
		Desire explanations		
Perceptual stories	0.18 (0.53)	0.18 (0.53)	0.00 (0.00)	0.00 (0.00)
Cognitive stories	0.24 (0.66)	0.12 (0.48)	0.00 (0.00)	0.00 (0.00)
		"Not there" responses		
Perceptual stories	0.64 (1.11)	0.44 (1.15)	0.10 (0.31)	0.00 (0.00)
Cognitive stories	0.41 (1.00)	0.50 (1.15)	0.10 (0.31)	0.00 (0.00)
		Other responses		
Perceptual stories	0.47 (1.01)	0.39 (0.70)	0.30 (0.73)	0.28 (0.77)
Cognitive stories	0.41 (0.71)	0.17 (0.51)	0.20 (0.93)	0.01 (0.32)
		No response		
Perceptual stories	0.29 (0.77)	0.50 (0.79)	0.45 (1.05)	0.08 (0.29)
Cognitive stories	0.47 (1.07)	0.39 (0.70)	0.50 (0.89)	0.00 (0.00)

Note. The number possible per cell is 4.

ticipants received perceptual source and cognitive source scores of 0 or 1 for each story. The scores for each of the four stories within the two informational access conditions (perceptual access and cognitive access stories) were summed. Thus, participants' knowledge state explanation scores for each of the two conditions ranged from 0 to 4, depending on whether they gave a knowledge state explanation in response to 0, 1, 2, 3, or 4 of stories in each condition. Scores for the other explanation categories were calculated in a similar manner. Mean scores for each explanation category are presented in Table 1.

Table 2. Mean Number (and Standard Deviation) of Complete Prompted Explanations for Each Category by Age and Informational Access

Informational access	*Young 4-year-olds* n = 17	*Old 4-year-olds* n = 18	*5-year-olds* n = 20	*Adults* n = 12
		Knowledge state explanations		
Perceptual stories	1.59 (1.46)	0.83 (1.04)	1.25 (.97)	1.42 (1.00)
Cognitive stories	1.65 (1.41)	1.17 (1.15)	0.75 (0.91)	0.50 (0.67)
		Perceptual source explanations		
Perceptual stories	1.71 (1.61)	2.50 (1.46)	3.15 (1.27)	3.58 (0.67)
Cognitive stories	1.35 (1.32)	1.78 (1.17)	2.05 (1.15)	2.00 (0.60)
		Cognitive source explanations		
Perceptual stories	0.53 (0.87)	0.44 (0.86)	1.10 (1.16)	0.83 (0.84)
Cognitive stories	1.00 (1.46)	1.56 (1.15)	2.80 (1.36)	3.33 (0.78)
		Reality explanations		
Perceptual stories	0.59 (1.12)	0.17 (0.38)	0.30 (0.47)	0.00 (0.00)
Cognitive stories	0.53 (0.87)	0.28 (0.75)	0.05 (0.22)	0.00 (0.00)
		Desire explanations		
Perceptual stories	0.65 (1.32)	0.22 (0.73)	0.10 (0.31)	0.08 (0.24)
Cognitive stories	0.47 (1.07)	0.67 (0.91)	0.00 (0.00)	0.00 (0.00)
		"Not there" responses		
Perceptual stories	0.64 (1.11)	0.50 (1.20)	0.15 (0.37)	0.00 (0.00)
Cognitive stories	0.41 (1.00)	0.50 (1.15)	0.10 (0.31)	0.00 (0.00)
		Other responses		
Perceptual stories	1.12 (1.27)	1.06 (1.47)	0.45 (0.76)	0.28 (0.77)
Cognitive stories	0.82 (1.01)	1.67 (0.91)	0.35 (0.93)	0.17 (0.40)
		No response		
Perceptual stories	0.18 (0.53)	0.22 (0.43)	0.25 (0.91)	0.00 (0.00)
Cognitive stories	0.29 (0.98)	0.17 (0.38)	0.05 (0.22)	0.00 (0.00)

Note. The number possible per cell is 4. Standard deviations are in parentheses.

Complete prompted explanations were scored for each of the eight stories by giving each participant a score of 1 for a particular explanation category if the participant gave that type of explanation in response to either the behavior explanation question, the belief explanation question, or the false belief explanation question. Mean scores for each category are presented in Table 2.

RESULTS

Overview of Analyses

The primary goal of the present study was to examine whether children make appropriate use of explanations that referred to the protagonists' perceptual experiences and explanations that referred to the protagonists' cognitive activities. Knowledge state explanations are appropriate for both perceptual access and cognitive access stories. However, perceptual source explanations would be more plausible for the perceptual access stories, but cognitive source explanations would be more plausible for the cognitive access stories. Therefore, Age (young 4 vs. old 4 vs. 5 vs. adult) × Informational access (perceptual access vs. cognitive access stories) × Explanation category (knowledge state vs. perceptual source vs. cognitive source), ANOVAs (with informational access and explanation category as a within-subjects variables) were performed separately for the spontaneous and complete prompted explanations.

Because each ANOVA revealed a significant Age × Informational access × Explanation category interaction (spontaneous explanations, $F(6, 126) = 6.01$, $p < .001$, $MSE = 0.60$; complete prompted explanations, $F(6, 126) = 5.95$, $p < .001$, $MSE = 0.80$), for each of the basic explanation categories, an Age × Informational access ANOVA was performed separately for spontaneous and complete prompted explanations.

To fully examine participants' ability to use cognitive factors to explain a protagonist's incorrect search, cognitive source explanations were further subdivided into two more specific categories, forgetting explanations and focus of activity explanations. For each of these two more specific response categories, we performed Age × Story type (delayed search vs. attentional focus) ANOVAs (with story type as a within-subject variable) for both spontaneous and complete prompted explanations. These analyses allowed us to investigate the extent to which participants (a) used forgetting to explain erroneous searches in the delayed search stories but not the attentional focus stories, and (b) used focus of activity to explain erroneous searches in the attentional focus stories but not the delayed search stories.

Knowledge state explanations. For spontaneous explanations, an Age × Informational access (4 × 2) ANOVA performed on the Knowledge state explanation scores did not yield significant main effects of age or informational access, but there was a significant Age × Informational access interaction, $F(3, 63) = 3.26$, $p < .05$, $MSE = 0.60$. Knowledge state explanations tended to decrease with age for cognitive access stories, but not for perceptual access stories. More specifically, young 4-

year-olds gave significantly more knowledge state explanations for cognitive access stories than did adults, Tukey $HSD = 0.86$, $p < .05$. The pattern of results was similar for complete prompted explanations.

For complete prompted knowledge state explanations, an Age × Informational access (4 × 2) ANOVA did not yield significant main effects of age or informational access; however, the Age × Informational access interaction was significant, $F(3,63) = 2.79$, $p < .05$, $MSE = 0.85$. There were no significant age differences for the perceptual access stories. For cognitive access stories, young 4-year-olds gave significantly more knowledge state explanations than did adults, Tukey $HSD = 1.02$, $p < .05$.

Perceptual source explanations. An Age × Informational access (4 × 2) ANOVA performed on the spontaneous perceptual source explanation scores yielded significant main effects of age, $F(3, 63) = 7.02$, $p < .001$, $MSE = 2.07$, and informational access, $F(1, 63) = 24.16$, $p < .001$, $MSE = 0.42$. Young 4-year-olds gave significantly fewer perceptual source explanations than did 5-year-olds or adults, Tukey $HSD = 0.95$, $p < .05$. In addition, perceptual source explanations were used more often for the perceptual access stories than for the cognitive access stories.

For the complete prompted explanations, an Age × Informational access (4 × 2) ANOVA performed on perceptual source explanations yielded significant effects of age, $F(3, 63) = 4.14$, $p < .01$, $MSE = 2.42$, and informational access, $F(1, 63) = 41.18$, $p < .001$, $MSE = 0.65$. However, these effects were qualified by an Age × Informational access interaction, $F(3, 63) = 3.08$, $p < .05$, $MSE = 0.65$. Five-year-olds and adults gave significantly more perceptual source explanations for perceptual access stories than for cognitive stories, but 4-year-olds' explanations did not vary by story type, Tukey $HSD = 0.89$, $p < .05$.

Cognitive source explanations. For spontaneous explanations, an Age × Informational access (4 × 2) ANOVA performed on the cognitive source explanation scores yielded significant main effects of age, $F(3, 63) = 6.14$, $p < .001$, $MSE = 1.10$, and informational access, $F(1, 63) = 45.67$, $p < .001$, $MSE = 0.46$, and a significant Age × Informational access interaction, $F(3,63) = 9.89$, $p < .001$, $MSE = 0.46$. For perceptual access stories there were no significant age differences. Five-year-olds and adults gave cognitive source explanations significantly more often for cognitive access stories than for perceptual access stories, Tukey $HSD = 0.75$, but 4-year-olds' explanations did not vary for the two types of stories.

A similar pattern of results was found for complete prompted explanations. An Age × Informational access (4 × 2) ANOVA performed on complete prompted cognitive source explanation scores yielded signifi-

cant effects of age, $F(3, 63) = 7.43$, $p < .001$, $MSE = 1.92$ and Informational access, $F(1, 63) = 111.76$, $p < .001$, $MSE = 0.56$, and a significant Age × Informational access interaction, $F(3, 63) = 9.57$, $p < .001$, $MSE = 0.56$. As was the case for spontaneous explanations, among 5-year-olds and adults cognitive source explanations were significantly more common for cognitive access stories than for perceptual access stories. However, for complete prompted explanations, unlike spontaneous explanations, old 4-year-olds also gave significantly more cognitive source explanations for cognitive access stories, Tukey $HSD = 0.83$, $p < .05$.

In summary, examination of knowledge state explanations indicated that explanations referring to the protagonist's ignorance or false belief decreased with age for the cognitive access stories. By 5 years of age, children's performance was very similar to adults' performance. Examination of perceptual source explanations indicated that when the protagonist did not receive perceptual information about the desired object's location (perceptual access stories), 5-year-olds and adults usually explained the protagonist's incorrect search in terms of the presence or absence of perceptual experience. In contrast, when the protagonist searched incorrectly despite having been exposed to information about the object's location (cognitive stories), references to perceptual experience were less frequent and did not increase with age. Thus, with increased age, the use of perceptual source explanations became more differentiated. Examination of cognitive source explanations indicated that references to cognitive factors such as forgetting or focus of activity increased with age and were used specifically to explain why the protagonist searched incorrectly despite having been exposed to information about the desired object's location. Thus, cognitive source explanations were used frequently by 5-year-olds and adults in response to cognitive stories, but were rarely given in response to perceptual stories by any age group.

Forgetting and focus of activity. Responses for cognitive access stories were examined in more detail by comparing the use of forgetting and focus of activity explanations for delayed search and attentional focus stories. Forgetting explanations were suggestions that the protagonist had forgotten the hidden object's location. Focus of activity explanations mentioned that the protagonist was engaged in or attending to some other activity when information about the hidden object's location was available. Separate analyses were performed for spontaneous and complete prompted explanations.

To examine the use of spontaneous forgetting explanations, participants were given a score ranging from 0 to 2 for the two delayed search stories and a score ranging from 0 to 2 for the two attentional focus

Table 3. Mean Number (and Standard Deviation) of Complete Prompted Forgetting and Focus of Activity Explanations by Age and Story Type

	Young	*Old*		
	4-year-olds	*4-year-olds*	*5-year-olds*	*Adults*
Informational access	n = 17	n = 18	n = 20	n = 12
	Spontaneous forgetting explanations			
Delayed search stories	0.12 (0.33)	0.61 (0.78)	0.75 (0.91)	1.33 (0.65)
Attentional focus stories	0.00 (0.00)	0.00 (0.00)	0.20 (0.52)	0.00 (0.00)
	Complete prompted forgetting explanations			
Delayed search stories	0.47 (0.80)	0.89 (0.90)	1.30 (0.86)	1.83 (0.39)
Attentional focus stories	0.18 (0.53)	0.06 (0.24)	0.30 (0.73)	0.08 (0.29)
	Spontaneous focus of activity explanations			
Delayed search stories	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)
Attentional focus stories	0.06 (0.24)	0.06 (0.24)	0.55 (0.69)	0.67 (0.49)
	Complete prompted focus of activity explanations			
Delayed search stories	0.00 (0.00)	0.00 (0.00)	0.05 (.22)	0.00 (0.00)
Attentional focus stories	0.41 (0.80)	0.61 (0.78)	1.25 (0.91)	1.42 (0.67)

Note. The number possible per cell is 2. Standard deviations are in parentheses.

stories. Table 3 shows the mean number of forgetting explanations for the two types of stories. An Age × Story type ANOVA yielded significant effects of age, $F(3, 63) = 5.50$, $p < .005$, $MSE = 0.36$, and story type, $F(1,63) = 50.73$, $p < .001$, $MSE = 0.24$. However, these effects were qualified by an Age × Story type interaction, $F(3, 63) = 7.41$, $p < .001$, $MSE = 0.24$. Old 4-year-olds, 5-year-olds, and adults gave forgetting explanations significantly more often in response to delayed search stories than in response to attentional focus stories, Tukey $HSD = 0.54$, $p < .05$.

A similar pattern of results was found for complete prompted forgetting explanations. An Age × Story type (4 × 2) ANOVA yielded significant effects of age, $F(3, 63) = 4.29$, $p < .01$, $MSE = 0.61$, and story type, $F(1, 63) = 96.44$, $p < .001$, $MSE = 0.29$. However, these effects were qualified by an Age × Story type interaction, $F(3, 63) = 8.79$, $p < .001$, $MSE = 0.29$. Older 4-year-olds, 5-year-olds, and adults used forgetting explanations significantly more often for delayed search stories than for attentional focus stories, Tukey $HSD = 0.59$, $p < .05$.

Likewise, to examine the use of focus of activity explanations, for both spontaneous explanations and complete prompted explanations, participants were given a score ranging from 0 to 2 for the two delayed search stories and a score ranging from 0 to 2 for the two attentional focus stories. Table 3 shows the mean number of focus of activity expla-

nations for the two types of stories. For spontaneous explanations, an Age × Story type (4 × 2) ANOVA yielded significant effects of age, $F(3, 63) = 7.64$, $p < .01$, $MSE = 1.11$, and story type, $F(1, 63) = 30.71$, $p < .001$, $MSE = 0.11$. However, these effects were qualified by an Age x Story type interaction, $F(3, 63) = 7.64$, $p < .005$, $MSE = 1.11$. Five-year-olds and adults gave significantly more focus of activity explanations for attentional focus stories than they did for delayed search stories, Tukey $HSD = 0.36$, $p < .05$. A similar pattern of results was found for complete prompted explanations. An Age × Story type (4 × 2) ANOVA performed on complete prompted focus of activity explanations yielded significant effects of age, $F(3, 63) = 6.35$, $p < .01$, $MSE = 0.31$, and story type, $F(1, 63) = 73.54$, $p < .001$, $MSE = 0.35$. However, these effects were qualified by an Age × Story type interaction, $F(3, 63) = 4.97$, $p < .005$, $MSE = 0.35$. Five-year-olds and adults used focus of activity explanations significantly more often for the attentional focus stories than for the delayed search stories, Tukey $HSD = 0.66$, $p < .05$.

In summary, the use of forgetting to explain incorrect search increased with age. Older 4-year-olds, 5-year-olds, and adults used forgetting explanations specifically to explain errors when the protagonist had been exposed to information about the object's location, but searched following a delay. In contrast, if the protagonist had been engaged in another attention-demanding activity at the time information about the desired object's location was provided, 5-year-olds and adults frequently referred to focus of activity to explain the protagonist's incorrect search, but they did not use focus of activity explanations otherwise.

DISCUSSION

The present results indicate that some elaborations of the simple belief–desire framework begin to emerge during the late preschool years. The young 4-year-olds often provided some type of mentalistic explanation for the protagonist's incorrect search. That is, more than half of their explanations consisted of references to the protagonist's ignorance, false belief, lack of perceptual experience, or desire for the hidden object. Likewise, older 4-year-olds' explanations frequently referred to the protagonist's knowledge state (i.e., ignorance or false belief). These results are in keeping with the results reported by Bartsch and Wellman (1989), and demonstrate use of the simple belief–desire framework. By 5 years of age, children often referred to the perceptual or cognitive sources of the protagonist's knowledge state. Moreover, 5-year-olds demonstrated flexibility in their reasoning. That is, they gave perceptual or cognitive source explanations depending upon the details of the situation in which

a mistaken action occurred. When the protagonist did not receive perceptual information about the desired object's location, both 5-year-olds and adults explained the protagonist's incorrect search by referring to protagonist's perceptual experience. In contrast, when the protagonist had been presented with perceptual information about the desired object's location, but nevertheless searched incorrectly, both 5-year-olds and adults referred to cognitive factors, such as forgetting or focus of activity, to explain the protagonist's mistake. Furthermore, children and adults used different types of cognitive explanations in different circumstances. When the protagonist searched following a delay, older 4-year-olds, 5-year-olds, and adults explained errors by saying that the protagonist had forgotten the desired object's location. However, if the protagonist had been engaged in an attention-demanding activity at the time information about the desired object's location was provided, 5-year-olds and adults frequently suggested that the protagonist had not been paying attention or had been engaged in some other activity when the information was provided.

Wellman's (1990) distinction between young children's simple belief–desire scheme for understanding human action and a later-developing, more elaborated explanatory framework is useful for interpreting the results of the present study. Within the more elaborated framework, a greater variety of mental states and processes are differentiated and an increased number of causal connections among these concepts are represented. According to Wellman (1990), within the simple belief–desire framework, perceptions cause beliefs, but within the elaborated framework, cognitive activities, such as reasoning, imagining, and remembering, also may influence beliefs. Children's references to forgetting or attention to explain mistaken actions and false beliefs suggests that some conception of cognitive activities begins to emerge by 4 ½ or 5 years of age. Moreover, 5-year-olds' differential use of forgetting and attention explanations suggests that they have begun to appreciate that each process relates to perception and belief differently: Attending selectively may result in a failure to encode perceptually available information, but forgetting may result in the loss of information that was encoded previously. Thus, 5-year-olds' early concepts of cognitive activities such as attention and forgetting appear to be coordinated with concepts of perception, knowledge, belief, and action. However, children's awareness of the phenomena of forgetting and attending does not necessarily indicate that they conceive of the mind itself as an entity that actively interprets information.

Estimates of the age at which children begin to conceive of the mind as an active agent vary widely in the literature. Perner and Davies (1991)

claimed that 4-year-olds have such a conception, but Chandler (1988), Pillow (1988), and Taylor (1988) all proposed that before 6 or 7 years of age children regard knowledge acquisition as a passive process. In addition, although Wellman and Hickling (1994) suggested that children begin to conceive of the mind as an active agent around 8 to 10 years of age, Schwanenflugel, Fabricius, and Alexander (1994) argued that a constructivist conception of the mind develops sometime after 10 years of age. In the present study, conceptions of forgetting and attention began to emerge around 4 ½ or 5 years of age. Thus, to organize the present findings and previous results into a coherent developmental sequence, it is necessary to examine these discrepant claims. These discrepant views of development can be reconciled by considering the different criteria that have been used to determine when children can be credited with an understanding of the mind as actively processing information.

Perner and Davies (1991) suggested that understanding of the mind as an active interpreter of information is achieved when a child recognizes that a listener may evaluate the credibility of a message by comparing it with the listener's existing knowledge. In their study, 4-year-olds correctly predicted, for example, that Mary would believe Peter's assertion that a plastic brick was real if she had not touched it. However, if Mary had touched the brick and discovered it was fake, 4-year-olds predicted that Mary would reject Peter's assertion as incorrect. Thus, 4-year-olds understood that information may be accepted as true or rejected as false, depending on whether it matches a person's previously held knowledge. In the present study, 4-year-olds' references to forgetting indicate that 4-year-olds know that information may be retained or lost, and 5-year-olds' references to attention indicate that 5-year-olds know that information may be attended to or ignored. Therefore, around 4 to 5 years of age, children appreciate that mental activities influence the acquisition and retention of knowledge by selecting what information is encoded or represented.

Chandler (1988), Pillow (1988), and Taylor (1988) all proposed that children do not have an active conception of the mind until 6 or 7 years of age. These researchers used children's understanding that prior knowledge can be used to make inferences that go beyond immediately perceptible information as the criterion for crediting children with a conception of the mind as an active interpreter. That is, children eventually realize that mental activities not only influence what information is represented, but also influence how that information is represented (Pillow, 1995). For example, Pillow (1991) reported that 6-year-olds, unlike 4-year-olds, appreciated that an observer's expectations about another person might influence how the observer interprets that person's actions.

Six-year-olds recognized that an observer who witnessed another person holding a toy in ambiguous circumstances might interpret that person's action as taking the toy or giving the toy, depending upon whether the observer was biased to expect the other person to behave in an antisocial or prosocial manner.

Although 6-year-olds are becoming aware of activities that create a representation that goes beyond the information directly available, later in childhood, conceptions of cognitive activities become increasingly abstract. Thus, Wellman and Hickling (1994) distinguished between knowing about mental activity and conceptualizing an independent active mind. They proposed that children regard beliefs as actively constructed through inference and interpretation before children conceive of the mind itself as an independent, active entity. In support of this view, Wellman and Hickling (1994) reported that although 6-year-olds generally understood metaphors that personify natural or mechanical phenomena (e.g., "The wind was howling"), 6-year-olds typically did not understand metaphors that personify the mind as an active agent (e.g., "Her mind was racing"). Eight- and 10-year-olds usually understood personified metaphors for the mind, and many 10-year-olds also produced them.

Likewise, Schwanenflugel et al. (1994) argued that although 8- and 10-year-olds may possess some knowledge of mental activities, they have not yet organized their knowledge of mental phenomena into a constructivist conception of the mind. When asked to rate the similarity of various selective attention, recognition, and comprehension activities, 8- and 10-year-olds did not organize the activities into three distinct clusters. Schwanenflugel et al. (1994) suggested that children failed to distinguish among these activities because children focused on the inputs and outcomes of each task rather than the cognitive activities intervening between inputs and outputs. In contrast, Schwanenflugel et al. (1994) found that adults distinguished among a variety of mental activities and organized their knowledge of the mind in terms of similarities and differences among cognitive activities. Thus, Schwanenflugel et al. (1994) concluded that knowledge of the organization of cognitive activities develops sometime between 10 years of age and adulthood. The results reported by Wellman and Hickling (1994) and Schwanenflugel et al. (1994) trace the development of increasingly abstract conceptions of mental activity. By 8 to 10 years of age, children's knowledge of cognitive activities may be organized into a conception of the mind as an active agent, and by adulthood a conception of relationships among distinct mental activities may emerge.

The understanding of cognitive activities evident in 4-½ and 5-year-olds' explanations of another person's mistakes in the present study may

provide an early foundation for the more abstract conceptions of mental activity that develop later. For example, children's awareness of distinctions among cognitive processes appears to increase gradually during middle and late childhood. Thus, 6- and 7-year-olds make some distinctions among cognitive processes, such as memorization and comprehension (Lovett & Pillow, 1996), but even 10-year-olds do not recognize the same similarities and differences among cognitive activities that adults appreciate (Schwanenflugel et al., 1994). Five-year-olds' differential use of forgetting and attention explanations suggests that they have begun to differentiate these two processes. Recognizing this distinction may be an early step toward organizing knowledge of mental functioning in terms of distinct cognitive processes and abilities.

The understanding demonstrated in the present study constitutes an early elaboration of simple belief–desire reasoning. As Wellman (1990) suggests, further elaborations may develop later in childhood, including conceptions of intentions and personality traits. For example, the same action might be explained by appealing to cognitive activities, motives, or personality traits. A person's failure to keep a promise might be explained in terms of forgetting, indifference toward the particular matter in question, or a general trait of insincerity or selfishness. Thus, children may learn to choose among these different types of psychological explanations. However, children or adults eventually may come to see these different psychological constructs as intertwined. Traits can be viewed as framing beliefs and desires (Yuill, 1992), or as deriving from tendencies toward certain desires or patterns of thought (Bartsch & Wellman, 1989; D'Andrade, 1987). As Yuill (1992) suggests, children's early understanding of mental states and cognitive activities may contribute to the development of children's conception of personality traits. Thus, another area for potential developmental progress might be children's ability to coordinate their understanding of cognitive activities with other psychological constructs to explain behavior.

Five-year-olds' use of cognitive explanations for false beliefs and mistaken actions raises the question of how children discover the role of cognitive activities in the acquisition and retention of knowledge. First-person experience, third-person observation of others' actions, and conversational references to mental activities may contribute jointly to children's understanding of cognitive activities. In the case of forgetting, children may fail to recall specific information (e.g., another child's name), while being aware that they have encountered that information previously (e.g., knowing that the children's parents introduced them to each other just a few moments earlier). For such experiences to be informative, children would need to be able to monitor their own knowledge

state. Cultice, Somerville, and Wellman (1983) reported that 4- and 5-year-old children accurately judged whether or not they knew a piece of information that they were unable to recall. In addition, Gopnik and Slaughter (1991) found that after discovering that a crayon box actually contained birthday candles, 4-year-olds reported that initially they had believed the box contained crayons. The ability to detect changes in their own knowledge state and the ability to monitor their own feeling-of-knowing may facilitate children's awareness of their own forgetting. Observations of another person's lapses and mistakes (e.g., incorrect search, forgetting names, failure to complete an explicitly intended action, etc.) also may provide evidence for the occurrence of forgetting. Furthermore, conversational references to forgetting that occur in the context of child's own first-person experience or the child's observation of another person's forgetting behavior might be informative. Adults may explain both their own and the child's errors by referring to forgetting or describing retrieval problems and loss of information.

Although conversational references to forgetting do not appear to have been investigated, Dunn, Brown, Slomkowski, Tesla, and Youngblade (1991) reported that 3-year-olds' use of false belief explanations for another person's incorrect search was correlated with their mothers' discussion of feeling states and causality 7 months earlier, suggesting that mentalistic conversation is related to children's understanding of false belief. Similar types of information may contribute to children's learning about attention and other cognitive activities. Combinations of more than one of these three sources of information might be especially helpful. For example, the cause of another person's mistakes might be ambiguous, but if observations of another person's mistakes were combined with verbal explanations of forgetting, or if the child were able to relate such observations to the child's own experience of forgetting, these observations might be more informative. However, children's ability to coordinate first-person conscious experience, third-person observation of overt action, and mentalistic conversation remains to be investigated.

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Appendix

Warm-up stories

Visual: Here's Sally. She has some crayons. Sally puts her crayons in the red box. Then Bill comes over. Bill says, "Sally, let's color." Sally wants the crayons. Sally looks for the crayons in the red box.

Auditory: Here's Sam. Sam has a picture. Sam puts the picture in the blue box. Here comes Emily. Sam says, "Emily, the picture is in the blue box." Emily wants to see the picture. Emily looks for the picture in the blue box.

Perceptual access stories

Visual, single location: Here's Cathy. It's morning and she's going to school. She sits at her desk all day listening to her teacher. Look, here comes David. He has some gum. David puts the gum in the red drawer and then he leaves. Look, here comes Cathy. She's coming home from school. Cathy wants some gum. She looks for the gum in the green drawer.

Visual, change of location: Here's Richard. He has a toy car. Richard puts his toy car in the blue jar. Now, Richard is going to school. He sits at his desk all day listening to his teachers. Look, here comes Susan. Susan moves the car to the black jar and then she leaves. Look, here comes Richard. He's coming home from school. Richard wants his car. He looks for the car in the blue jar.

Auditory, single location: Here's Betty. She's listening to music on her headphones. It's very loud. Look, here comes Sam. He has some candy. Sam puts the candy in the green drawer, and says, "Betty, I put the candy in the green drawer." Then Sam leaves. Later, Betty wants some candy. She looks for the cookies in the yellow drawer.

Auditory, change of location: Here's Tom. He has a toy cat. Tom puts his toy cat behind the black door. Now he sits down and listens to music on his headphones. It's very loud. Look, here comes Sarah. Sarah moves the cat to behind the red door and says, "Tom, I put the cat behind the red door." Then Sarah leaves. Tom's all done listening to his music. Tom wants his cat. He looks for the cat behind the black door.

Cognitive access stories

Delayed search, single location: Here's Debbie. She has a ball. Debbie puts her ball in the blue drawer. Now Debbie's going to school. She sits at her desk all day listening to her teachers. Now school is over and Debbie is coming home from school. Debbie wants the ball. She looks for the ball in the red drawer.

Delayed search, change of location: Here's Carl. He has a toy dog. Carl puts the dog in the white bowl. Now, Carl moves the dog to the green bowl. Now Carl is going to school. He sits at his desk all day listening to his teachers. Now school is over and Carl is coming home from school. Carl wants the toy dog. He looks for the dog in the white bowl.

Attentional focus, single location: Here's Peter. Peter is playing a video game that he really loves to play. Look, here comes Sharon. She has some Legos. Sharon puts the Legos in the red box and says, "Peter, I put the Legos in the red box." Then Sharon leaves. Now Peter is done

playing his video game and he wants the Legos. Peter looks for the Legos in the brown box.

Attentional focus, change of location: Here's Mary. She has a hat. Mary puts the hat in the white box. Now Mary is going to play a video game that she really loves to play. Look, here comes Steve. Steve moves the hat to the blue box and says, "Mary, I put the hat in the blue box." Then Steve leaves. Now Mary is done playing her video game and she wants the hat. Mary looks for the hat in the white box.