

In Cinderella's Slippers? Story Comprehension From the Protagonist's Point of View

Jaime Rall and Paul L. Harris
University of Oxford

Research on text comprehension shows that readers construct a model of the situation described in a narrative. A major factor in constructing a situational model is the perspective from which the action of the narrative is imagined. J. B. Black, T. J. Turner, and G. H. Bower (1979) found that adults recall a deictic verb of motion more accurately if it is spatially consistent with the point of view of the main protagonist. Recall is more accurate for the verbs *come* and *bring* if they describe a movement toward the protagonist; recall is more accurate for *go* and *take* if they describe a movement away from the protagonist. Thus, adults interpret movements in a narrative from the perspective of the protagonist. This study indicates that 3- and 4-year-old children show the same pattern of recall. They accurately recall verbs of motion that are consistent with the protagonist's perspective but make substitution errors on verbs inconsistent with that perspective.

Being absorbed in a narrative and "seeing" the fictional scene as vividly as if one were personally involved in it is an experience familiar to most competent readers. Indeed, it is the picture in one's imagination that often brings about the subjective enjoyment of reading. Recent research on text comprehension by adults has suggested that rather than mentally constructing a representation of the text alone, the reader constructs a model of the situation described in the narrative (Johnson-Laird, 1983; van Dijk & Kintsch, 1983). This text-based situation model is posited to be perceptual and multisensory in nature. In that respect, it is not fundamentally different from a model constructed from personally witnessing that situation (Zwaan, 1999; Zwaan & Radvansky, 1998). Consistent with the situation-model theory is the fact that adult text comprehension and recall is influenced more strongly by characteristics of the situation described in the narrative than by linguistic characteristics of the text itself (Bransford, Barclay, & Franks, 1972; Glenberg, Meyer, & Lindem, 1987).

A coherent situation model will include the selection of a particular location and time frame within the imagined scene from which to interpret the setting and action. In other words, a "here and now" point-of-view is adopted to make sense of the narrative. Such a perspective is important for placing in the foreground information that is immediately relevant to the situation being described and thereby making it more rapidly accessible (Bower & Morrow, 1990; Glenberg et al., 1987). The factors determining the reader's point of view may include the omniscient narrator's implied position or the position of the protagonist. In particular, by adopting the protagonist's perspective, the reader can focus attention on that character and information relevant to him or her (Zwaan & Radvansky, 1998).

Having adopted a given perspective, readers find it easier to assimilate texts that maintain a consistent point of view in describing subsequent events. Black, Turner, and Bower (1979) showed that adults read statements exhibiting a consistent point of view more quickly and recalled them more accurately than statements exhibiting an inconsistent point of view. Black et al. devised stories that included deictic verbs of motion (e.g., *come/go* and *bring/take*) as their test stimuli. These verbs describe a movement either toward or away from a reference point. For example, if one is moving toward the reference point, one *comes* or *brings* an object; if one is moving away from it, one *goes* or *takes* an object. Black et al. first prompted readers to take up the protagonist's point of view by introducing a named protagonist and indicating his or her location. For example, one story began, "Bill was sitting in the living room reading the paper . . ." Next, the story described another character's action with relation to Bill's location, the presumed reference point; this description contained a deictic verb that was either consistent or inconsistent with Bill's point of view. A consistent continuation of the sentence would be ". . . when John *came* into the living room," because the verb *come* describes a movement toward the reference point, Bill. An inconsistent continuation would be linguistically similar but inappropriate from the assumed perspective, for example, ". . . when John *went* into the living room," because the verb *go* describes a movement away from the reference point. Black et al. found that readers not only read the sentences consistent with Bill's perspective more quickly but also misrecalled the inconsistent verbs more often, particularly by substituting the consistent verb. These findings suggest that the reader adopts a point of view within the situation model, takes in new information more quickly and accurately if it is described from that point of view, and will even recode input so as to make it consistent with that point of view.

The situation-model approach has had a limited impact on developmental research. Thus, there is evidence that children, like adults, construct a representation of the text that goes beyond what is literally stated. For example, they draw causal inferences when it is appropriate to do so (Casteel, 1993); they

Jaime Rall and Paul L. Harris, Department of Experimental Psychology, University of Oxford, Oxford, United Kingdom.

Correspondence concerning this article should be addressed to Paul L. Harris, Department of Experimental Psychology, University of Oxford, South Parks Road, Oxford OX1 3UD, United Kingdom. Electronic mail may be sent to Paul.Harris@psy.ox.ac.uk.

also display comprehension and recall difficulties when a coherent representation is rendered difficult to construct by the presence of spatial or causal anomalies in the text (Harris, Kruithof, Meerum Terwogt, & Visser, 1981). However, there has been virtually no investigation of the extent to which young children take up a point of view when they listen to a story. This lack of research is especially surprising when we consider the fact that children's perspective-taking ability has been actively investigated for more than 40 years, ever since Piaget and Inhelder (1956) conducted their pioneering investigations using the three mountains task. Part of the reason for this paucity of research may be methodological. Some of the most persuasive evidence that adults adopt a point of view has come from reading-time studies. As noted earlier, readers are more or less quick to read a word or phrase depending on whether or not it maintains the point of view that they have adopted (Black et al., 1979). It is not obvious that children's reading speed would display a similar pattern given that reading is a more recently acquired and less automatic skill for children. Indeed, to the extent that we might wish to investigate the early emergence of perspective taking in young preschool children's discourse comprehension, the study of reading time is obviously precluded.

However, it is important to note that Black et al. (1979) used two quite different measures that each yielded the same pattern of findings. On the one hand, they measured reading time for consistent or inconsistent verbs; on the other hand, they measured the accuracy of recall for such consistent or inconsistent verbs. They found that in each case, adults performed better (i.e., read more quickly or recalled more accurately) if they were presented with a consistent rather than an inconsistent verb. Although it is not feasible to use reaction time to study perspective taking by preschool children, it is feasible to use recall. More specifically, we may ask whether children will display the same pattern of accurate recall for consistent verbs and of substitution errors for inconsistent verbs that was reported by Black et al. (1979). In the current study, we adopted Black et al.'s comprehension paradigm to test whether 3- and 4-year-old children would adopt the spatial perspective of a protagonist in a familiar story, measured as in the original adult study by misrecalls of crucial deictic verbs.

Such an investigation should serve three purposes. First, results similar to those of Black et al. (1979) would strengthen the claim that perspective taking is a disposition that emerges early in development. Although this finding would not be consistent with the developmental timetable proposed by Piaget and Inhelder (1956), it would be consistent with more recent demonstrations of early perspective taking that used simpler materials (e.g., Flavell, Green, & Flavell, 1990; Hughes & Donaldson, 1979; Masangkay et al., 1974). Second, early sensitivity to verb consistency would provide an important demonstration that young children take account of another person's perspective not just when they are explicitly asked to consider that perspective but also spontaneously when listening to a story. Third, it would open up the possibility that recall might serve as an important tool for a more wide-ranging application of the situation-model theory to language comprehension by young children.

Method

Participants

A total of 27 children, divided into a younger group of 13 children (mean age = 3 years 10 months; $SD = 3.8$ months) and an older group of 14 children (mean age = 4 years 8 months; $SD = 2.7$ months), participated. All children were tested in local playgroups and preschools in the city of Oxford, England. They were all monolingual English speakers. Family background ranged from lower class to middle class.

Materials

Test sentences were presented in the context of familiar fairy tales to engage children's attention and to facilitate their memory for content. Each child was tested on two stories, "Little Red Riding Hood" and "Cinderella," and each story contained four test sentences.

Each test sentence contained a deictic verb that was either inconsistent or consistent with the perspective of the protagonist. The verbs were embedded in four separate story sections. Within each section, a protagonist was identified in a given spatial location. Then a movement was described either to or from that location using one member of the verb pairs *come/go* or *bring/take*. The verb could be either consistent or inconsistent with the perspective of the protagonist. An example is "Little Red Riding Hood was sitting in her bedroom when her mother *came* (*went*) in and asked her to go to Grandmother's house." Here, the protagonist Little Red Riding Hood and her location ("in her bedroom") are first established. Then a movement is described, in this case toward that location. In the case of a consistent sentence, the verb used was *came*, because that verb describes the action from the spatial perspective of Little Red Riding Hood; if the sentence was inconsistent, the verb used was *went*, because that verb describes the movement from a different perspective (i.e., outside the bedroom).

There were four possible sentence types, depending on (a) which verb pair was involved (i.e., *come/go* or *bring/take*) and (b) which verb from that pair was consistent with the implied perspective. Finally, within each of these four sentence types, the text could specify either the consistent or the inconsistent verb. The four sentence types are described below. Note that the inconsistent member of the verb pair for that sentence type is given in parentheses.

1. *come* (*go*): The movement of another character toward the established character's location is described (*come* is consistent with the implied perspective; *go* is inconsistent).
2. (*come*) *go*: The movement of the main character away from the established location is described (*go* = consistent; *come* = inconsistent).
3. (*bring*) *take*: The movement of an object by the established character away from the established character's location is described (*take* = consistent; *bring* = inconsistent).
4. *bring* (*take*): The movement of an object by another character toward the established character's location is described (*bring* = consistent; *take* = inconsistent).

Both stories were written to include each of the four sentence types (in the numbered order). Within a story, one consistent and one inconsistent sentence were presented for each verb pair, yielding two consistent and two inconsistent sentences per story. Corresponding sections of the two stories always differed as to consistency. Thus, where Sentence 1 included the consistent verb *come* for one story, it included the inconsistent verb *go* for the other story. The full text of the two stories is given in the Appendix.

There were four different test sequences depending on which of the two stories was told first and whether the first test sentence of that story included the consistent or the inconsistent verb. Test sequence was varied across children within each age group.

Procedure

At the start of the procedure, children were asked to "pay attention" to what they were about to hear so that they could later "tell the story back" to the experimenter. This request was repeated as necessary in the course of the two narratives.

Following each test sentence, children were given a prompt to recall what they had heard. These prompts were used to elicit recall, but they made no direct reference to the motion verbs. First, the spatial location of the primary character was established (e.g., "Now remember, Little Red Riding Hood was sitting in her bedroom" or "Now remember . . . in her bedroom at the beginning of the story"). Next children were given a generalized prompt for recall ("What happened next?"). Finally, if children failed to include a relevant deictic verb in reply to the plot prompt, they were given a more specific prompt referring back to either the action or intention of the character in the critical test sentence (e.g., "And then what did her mother do?" or "And then what did Little Red Riding Hood want to do with the cakes?"). Recall responses were tape-recorded and later scored for recall of the critical deictic motion verbs.

At the end of the testing session, children were thanked and told that they had done very well. In those rare cases where children commented on the fact that a story was incomplete, the experimenter invited the child to complete it by saying, "So, can you tell me how the story ends?"

Results

The recall response for each test sentence was allocated to one of the following four mutually exclusive categories: (a) verbatim recall—repeating the verb exactly as the experimenter had said it; (b) perspective-shift misrecall—producing the verb-pair partner of the verb that had been used by the experimenter (i.e., recalling *come* when the experimenter had said *go* or recalling *bring* when the experimenter had said *take*); (c) neutral misrecall—producing a neutral nondeictic verb in the place of the crucial verb (e.g., recalling *walk* instead of *come* or *go* or recalling *give* instead of *bring* or *take*); (d) no response—usually a "don't know" or "can't remember" response.

It should be noted that Black et al. (1979) collapsed their data over type of misrecall by including both perspective-shift errors and neutral misrecalls in a general "inaccuracy" score. However, perspective-shift errors and neutral misrecalls are substantially different responses. In particular, neutral misrecalls indicate no particular adoption or understanding of perspective, which is the main interest of this study, whereas perspective-shift misrecalls do. Therefore, these two error types were classified and analyzed separately. Table 1 shows the mean number of responses in each

of the four response categories as a function of age and type of verb.

Inspection of Table 1 reveals that both age groups were affected by the consistency of the verb. Verbatim recalls were more frequent for consistent than inconsistent verbs, whereas perspective-shift misrecalls were more frequent for inconsistent than for consistent verbs. Neutral misrecalls and "don't know" responses, on the other hand, were unaffected by verb consistency. To check these conclusions, we carried out a $2 \times 4 \times 2$ (Age \times Test Sequence \times Verb Consistency) analysis of variance with repeated measures on the last factor for each of the four response types.

These analyses confirmed the above conclusions. First, as expected, age was not a significant factor for verbatim responses, perspective-shift misrecalls, or neutral misrecalls. Age was, however, significant for the category of no response, $F(1, 19) = 5.63$, $p = .0284$. Inspection of Table 1 indicates that, overall, younger children failed to make a response more often than did older children. Finally, there were no significant interaction effects with age. In sum, age did not affect the overall pattern of results with respect to verb consistency, but younger children were more likely than older children to make no response in the recall test. Test sequence was not significant for any of the four response types, and this factor did not enter into any interactions.

With regard to the key results, there was a highly significant effect of verb consistency for both verbatim recalls, which were more likely for consistent verbs, $F(1, 19) = 29.43$, $p < .0001$, and for perspective-shift misrecalls, which were more likely for inconsistent verbs, $F(1, 19) = 40.70$, $p < .0001$. Verb consistency was not a significant factor either for neutral misrecalls or for the category of no responses. Finally, verb consistency did not interact with any other variable in any of the four analyses. The overall pattern of findings is illustrated in Figure 1, which shows that verb consistency had differential effects on verbatim recalls and perspective-shift misrecalls but no effect on neutral misrecalls and the category of no responses.

Observation during data collection suggested that children produced more neutral misrecalls for the verb pair *bring/take* than for the verb pair *come/go*. Scrutiny of individual scores confirmed that among the 19 children who differed in the frequency of such misrecalls across the verb pairs, 16 children showed more misrecalls for *bring/take* than for *come/go*, whereas only 3 showed the reverse pattern ($p < .004$, two-tailed sign test). To assess whether this difference in the frequency of neutral misrecalls might be

Table 1
Mean Number of Responses for Each of Four Types of Recall as a Function of Age and Verb Consistency

Recall type	Younger				Older			
	Consistent		Inconsistent		Consistent		Inconsistent	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Verbatim	2.15	1.29	0.69	1.14	2.57	1.12	0.79	0.56
Perspective-shift	0.08	0.27	1.46	1.08	0.07	0.26	1.93	1.03
Neutral	0.69	0.91	0.85	0.86	1.29	1.03	0.93	0.80
No response	1.08	1.00	1.00	1.24	0.07	0.26	0.36	0.72

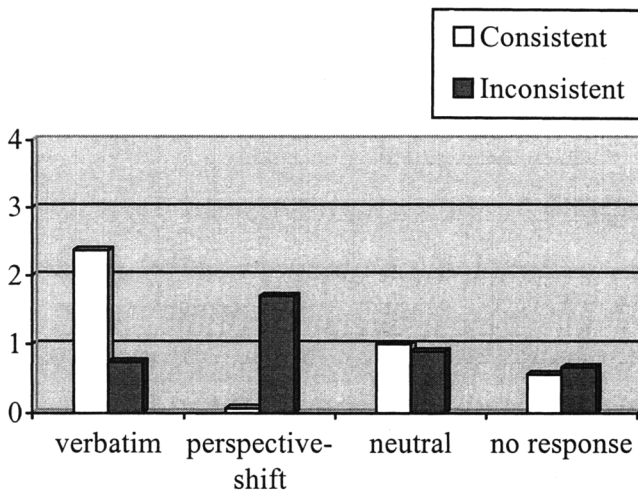


Figure 1. Mean number of responses for each of four types of recall as a function of verb consistency.

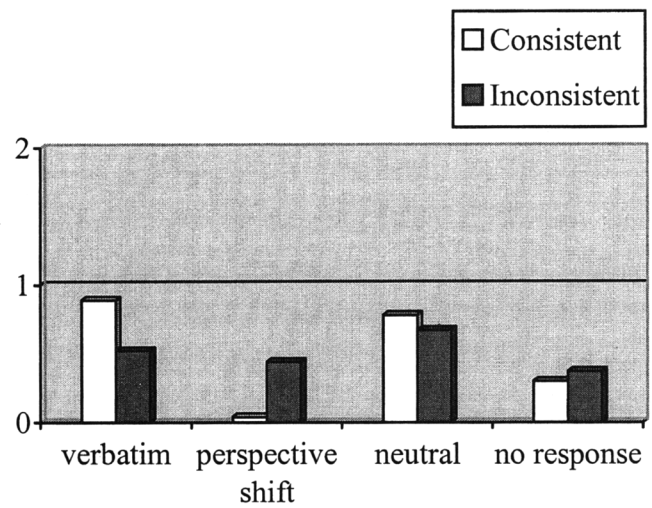


Figure 3. Mean number of responses for each of four types of recall as a function of verb consistency for bring/take.

associated with differences for the other three types of recall, we examined separately the data for sentences using the different verb pairs. Data from the two age groups and the four test sequences were collapsed together because, as described above, with the sole exception of an age difference for the category of no responses, these two variables had no effect on the pattern of results.

Figures 2 and 3 show the mean number of responses for the four types of recall as a function of verb consistency. Figure 2 displays the findings for *come/go*, and Figure 3 displays the findings for *bring/take*. A comparison of the two figures confirms that there were more neutral misrecalls for *bring/take* sentences than for *come/go* sentences, but this finding does not alter the critical pattern of results. Both for *come/go* and *bring/take*, verbatim recalls occurred more frequently for verb-consistent sentences, whereas perspective-shift misrecalls occurred more frequently for verb-inconsistent sentences.

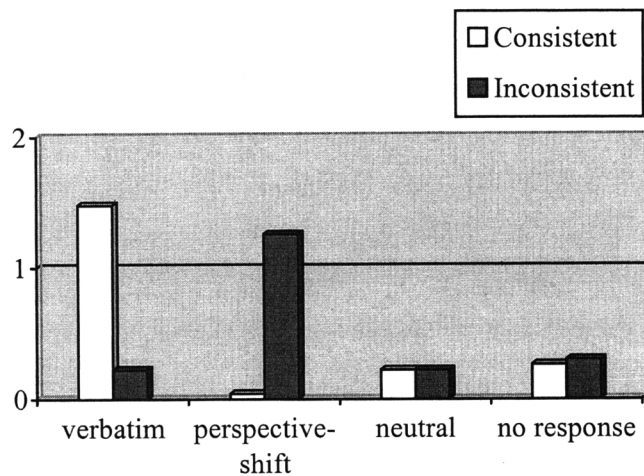


Figure 2. Mean number of responses for each of four types of recall as a function of verb consistency for come/go.

Discussion

Children's misrecall of deictic verbs that are inconsistent with a given point of view implies, first, that children adopt a point of view within the scene being described and, second, that they have a competent grasp of the relevant deictic verbs and their relation to the locus from which the action is perceived. Neither of these abilities in isolation would be sufficient to produce a perspective-based pattern of recall errors. Thus, the strong evidence for such perspective errors in the present study shows that children are competent both in understanding deictic verbs of motion and in adopting a point of view. We consider each of these claims in more detail below.

Earlier research on children's understanding of deictic verbs of motion has yielded mixed findings. Some investigators have claimed that mastery of the relevant contrasts is not achieved until approximately 9 years of age or later (Abkarian, 1988; Clark & Garnica, 1974), whereas others have argued for mastery at 4 years of age, at least with respect to *come* versus *go* (Richards, 1976). However, in these studies, children were assessed for their sensitivity to the appropriate choice of verb given a particular spatial relation between speaker and addressee. By contrast, in our study, children did not need to consider the speaker-addressee relationship. The key consideration was whether the movement being described was one of approach or retreat relative to the reference point. Analysis of children's spontaneous speech suggests that children are sensitive to that distinction from an early age (Macrae, 1976). Our results suggest that this sensitivity can also be applied to narrative comprehension.

We now turn to the second issue—namely, children's sensitivity to point of view. Our results show that young children interpret the narrative from a given perspective. The key displacements involved the relocation of a character from one room to another or from one setting to another. Hence, the character either became visible at or disappeared from the reference point that was situated in a given room or setting. Children's sensitivity to these different displacements is consistent with the finding that children can solve

simple visual perspective-taking tasks. In particular, when they are asked to say whether an object is or is not visible from a given perspective, 3- and 4-year-olds are relatively accurate, even if they are prone to error when asked to make more subtle distinctions, such as whether an object appears the right way up or upside down (Flavell, Miller, & Miller, 1993; Hughes & Donaldson, 1979). At the same time, the findings of the present study indicate that such perspective taking is not just an occasional capacity that is sometimes deployed to override a predominantly egocentric stance. The systematic tendency to misrecall inconsistent verbs indicates rather that children spontaneously and tenaciously maintain an alternative perspective.

These conclusions raise two theoretical issues. First, we can ask how exactly children consider a different point of view; do they imagine themselves in a different position or do they adopt a simpler and less "mobile" heuristic? Second, we can ask what features of the narrative anchor the listener to a particular perspective within the imagined scene. We explore each of these issues in turn.

Developmental research on perspective taking started with Piaget's investigation of the so-called three mountains problem, in which children were invited to consider how a scene would appear to someone occupying a different position (Piaget & Inhelder, 1956). The tacit, albeit unproven, assumption of this line of research was that children are increasingly able to imagine their own displacement to the relevant position. Arguably, children in the present study also engaged in this type of imaginative displacement. More specifically, once the main protagonist or his or her location was identified, children imagined themselves at the same location in the same space seeing events from that perspective. We refer to this as an "internal" perspective in that the child imagines himself or herself located within the space in question. However, it is feasible that children might adopt a different strategy. They might adopt an "external" view of the scene being described by mentally locating themselves outside the space as an observer. Once the protagonist or the protagonist's location is identified, they treat that location as a landmark or "anchor." Children then code any displacement that is described in the narrative in terms of whether it consists of an approach toward the anchor or a retreat away from it: An approach is encoded as a "coming" or "bringing," whereas a retreat is encoded as a "going" or "taking." According to this account, children do not need to locate themselves alongside the protagonist, much less in his or her shoes. They need only identify the relevant anchor point. By implication, although children display a sensitivity to the narrative reference point, they do not take up this perspective themselves.

Our results do not permit a distinction between these two interpretations. It is worth noting, however, that the type of imaginative displacement postulated in the first interpretation is adopted by adults when representing spatial relations in a described scene that leaves open what perspective they should adopt (Bryant, Tversky, & Franklin, 1992). For the narrative with an unspecified perspective, readers are faster to judge the location of objects situated ahead of rather than behind the central character; these results are consistent with the pattern obtained when readers are explicitly led to adopt an internal perspective. When readers adopt an external perspective, they display equally fast judgments for all objects located both ahead of and behind the fictional protagonist. Insofar as our results point to considerable continuity

between young children and adults, we can hypothesize that children also spontaneously adopt the internal perspective.

We may now consider what features of the narrative determine the listener's choice of anchor. A plausible hypothesis is that the introduction of the main protagonist is critical. Thus, objects located near the protagonist become more cognitively available (Black et al., 1979; Glenberg et al., 1987; Morrow, Greenspan, & Bower, 1987). At the very least, this hypothesis implies that the presence of a protagonist is critical for the type of perspective taking indicated by the present results. However, it is also possible that an inanimate object or event serves as an anchor, as found for adults under particular task conditions (Bryant et al., 1992). According to this account, the protagonist is only one of many types of entity that might anchor the listener's perspective. If, for example, the story began by referring to some inanimate object or untended event in a particular location, that too might serve as an anchor. The listener would encode subsequent events with respect to that anchor. Consider the following sentences:

1. Little Suzy was cooking in the kitchen when the dog came (went) in to see if there was something to eat.
2. The dinner was cooking in the kitchen when the dog came (went) in to see if there was something to eat.

The protagonist-as-anchor model predicts that misrecalls of the inconsistent verb *went* will occur for Sentence 1 but not for Sentence 2. The object-or-event-as-anchor model, by contrast, predicts that misrecalls will occur for both Sentences 1 and 2. Note that whichever prediction turns out to be correct, the more general claim that children readily encode perspective when listening to fiction will not be undermined. Rather, the results will indicate more clearly the range of conditions under which such encoding occurs.

The above two issues are separable only insofar as it is possible to adopt either an internal or an external perspective whether the reference point is occupied by a person or an inanimate entity. Nonetheless, it is worth emphasizing that there may be important conceptual links between the two issues. For example, if listeners are inclined to mentally relocate themselves, and if they do so primarily when they have identified the main protagonist, it would be plausible to conclude that listeners engage in what we might call "altercentric participation" (Bråten, 1998). This would allow us to make sense of the fact that listeners not only encode movements and locations in relation to the protagonist but also anticipate the emotional implications of impending events for the protagonist (De Vega, León, & Díaz, 1996; Gernsbacher, Goldsmith, & Robertson, 1992). In short, this proposal suggests that perspective taking is a form of empathic identification with the protagonist and his or her fictional situation.

Finally, it is worth emphasizing that this kind of paradigm could be adapted to investigate the perspective-taking abilities of even younger children. The memory and concentration of 2-year-olds, for example, could be facilitated by the addition of a pretend enactment. In the Little Suzy example above, this might involve showing children a doll's house version of the setting. Then children would see and be told that either "Little Suzy is cooking in the kitchen" or "The dinner is cooking in the kitchen." Next, the dog could be "walked" to the kitchen, and children could be asked, "What did the dog do?" Children's choice of verb ("He *came/went*

into the kitchen") would index their point of view. It might even be possible to act out a story without any verbal narration and then ask the child to say what happened. Older 2-year-olds are known to be competent at describing simple pretend enactments (Harris & Kavanaugh, 1993). In either case, the paradigm has good prospects for studies with very young children because it mimics the familiar situation of joint pretend-play.

In conclusion, in the current study we have shown that preschool children spontaneously adopt a point of view within a fictional space. Further investigation is needed to establish the nature and eliciting conditions for this shift in perspective and indeed whether children can be said to engage in a more personalized form of altercentric participation.

In the meantime, the present findings provide a clear demonstration that the situation-model theory of text comprehension that has been developed primarily on the basis of research with adults can be applied to young children's comprehension of spatial displacements within an imagined space. In future research, it should be feasible to examine whether the same model can be extended to other aspects of children's language comprehension and its relationship to children's imaginative capacities, notably their processing of causal relationships between story events and the goals and beliefs of story characters (Zwaan & Radvansky, 1998). Indeed, it is worth noting that the theoretical assumptions that guide the situation-model approach should apply not just to children's language comprehension but also to their language production. More specifically, we may ask whether children strive to adopt a consistent point of view whether as speaker or listener. There is preliminary evidence for such consistency in early storytelling (Duchan, 1995). To the extent that children's language becomes increasingly displaced from the here and now, as they start to tell stories and to recollect what happened to them earlier or elsewhere, the task of maintaining a consistent point of view is likely to become increasingly complex. In the future, we may expect more detailed investigation of the extent to which children master this complexity.

References

- Abkarian, G. G. (1988). Acquiring lexical contrast: The case of bring-take learning. *Journal of Speech and Hearing Research, 31*, 317-326.
- Black, J. B., Turner, T. J., & Bower, G. H. (1979). Point of view in narrative comprehension, memory, and production. *Journal of Verbal Learning and Verbal Behavior, 18*, 187-198.
- Bower, G. H., & Morrow, D. G. (1990). Mental models in narrative comprehension. *Science, 247*, 44-48.
- Bransford, J. D., Barclay, J. R., & Franks, J. J. (1972). Sentence memory: A constructive versus interpretive approach. *Cognitive Psychology, 3*, 193-209.
- Bråten, S. (1998). Infant learning by altercentric participation: The reverse of egocentric observation in autism. In S. Bråten (Ed.), *Intersubjective communication and emotion in early ontogeny* (pp. 105-124). Cambridge, England: Cambridge University Press.
- Bryant, D. J., Tversky, B., & Franklin, N. (1992). Internal and external spatial frameworks for representing described scenes. *Journal of Memory and Language, 31*, 74-98.
- Casteel, M. A. (1993). Effects of inference necessity and reading goal on children's inferential generation. *Developmental Psychology, 29*, 346-357.
- Clark, E. V., & Garnica, O. K. (1974). Is he coming or going? On the acquisition of deictic verbs. *Journal of Verbal Learning and Verbal Behavior, 13*, 559-572.
- De Vega, M., León, I., & Díaz, J. M. (1996). The representation of changing emotions in reading comprehension. *Cognition and Emotion, 10*, 303-321.
- Duchan, J. F. (1995). Preschool children's introduction of characters into their oral stories: Evidence for deictic organization of first narratives. In J. F. Duchan, G. A. Bruder, & L. E. Hewitt (Eds.), *Deixis in narrative: A cognitive science perspective* (pp. 227-237). Hillsdale, NJ: Erlbaum.
- Flavell, J. H., Green, F. L., & Flavell, E. R. (1990). Developmental changes in young children's knowledge about the mind. *Cognitive Development, 5*, 1-27.
- Flavell, J. H., Miller, P. H., & Miller, S. (1993). *Cognitive development* (3rd ed.). Englewood Cliffs, NJ: Prentice-Hall.
- Gernsbacher, M. A., Goldsmith, H. H., & Robertson, R. R. W. (1992). Do readers mentally represent characters' emotional states? *Cognition and Emotion, 6*, 89-111.
- Glenberg, A., Meyer, M., & Lindem, K. (1987). Mental models contribute to foregrounding during text comprehension. *Journal of Memory and Language, 26*, 69-83.
- Harris, P. L., & Kavanaugh, R. D. (1993). Young children's understanding of pretense. *Monographs of the Society for Research in Child Development, 58*(1, Serial No. 231).
- Harris, P. L., Kruithof, A., Meerum Terwogt, M., & Visser, T. (1981). Children's detection and awareness of textual anomaly. *Journal of Experimental Child Psychology, 31*, 212-230.
- Hughes, M., & Donaldson, M. (1979). The use of hiding games for studying the coordination of viewpoints. *Educational Review, 31*, 133-140.
- Johnson-Laird, P. N. (1983). *Mental models*. Cambridge, England: Cambridge University Press.
- Macrae, A. J. (1976). Movement and location in the acquisition of deictic verbs. *Journal of Child Language, 3*, 191-204.
- Masangkay, F. S., McCluskey, K. A., McIntyre, C. W., Sims-Knight, J., Vaughan, B. E., & Flavell, J. H. (1974). The early development of inferences about visual percepts of others. *Child Development, 45*, 357-366.
- Morrow, D. G., Greenspan, S., & Bower, G. (1987). Accessibility and situation models in narrative comprehension. *Journal of Memory and Language, 26*, 165-187.
- Piaget, J., & Inhelder, B. (1956). *The child's conception of space*. London: Routledge & Kegan-Paul.
- Richards, M. M. (1976). *Come and go* reconsidered: Children's use of deictic verbs in contrived situations. *Journal of Verbal Learning and Verbal Behavior, 15*, 655-665.
- van Dijk, T. A., & Kintsch, W. (1983). *Strategies of discourse comprehension*. New York: Academic Press.
- Zwaan, R. A. (1999). Situation models: The mental leap into imagined worlds. *Current Directions in Psychological Science, 8*, 15-18.
- Zwaan, R. A., & Radvansky, G. A. (1998). Situation models in language comprehension and memory. *Psychological Bulletin, 123*, 162-185.

(Appendix follows)

Appendix

The Stories as Told to the Children

Little Red Riding Hood

1. *come/go* (where *come* is consistent with the protagonist's perspective):

Little Red Riding Hood was sitting in her bedroom when her mother *came (went)* in and asked her to go to Grandmother's house.

2. *go/come* (where *go* is consistent with the narrator's perspective):

Little Red Riding Hood got up from her chair in her bedroom and *went (came)* to the kitchen to fill a basket for her grandmother.

3. *take/bring* (where *take* is consistent with the narrator's perspective):

Little Red Riding Hood gathered lots of lovely cakes from the kitchen and put them in the basket because she wanted to *take (bring)* them to Grandmother's house.

4. *bring/take* (where *bring* is consistent with the narrator's perspective):

While Little Red Riding Hood was filling the basket in the kitchen, her mother *brought (took)* her lovely red hood. "It might get cold in the forest on the way to Grandmother's house," she said.

Cinderella

1. *come/go* (where *come* is consistent with the narrator's perspective):

Cinderella was sitting on the chair by the fireplace, dreaming about the ball. Then her fairy godmother *came (went)* into the cottage. Cinderella was very surprised.

2. *go/come* (where *go* is consistent with the narrator's perspective):

Her fairy godmother needed a pumpkin, so Cinderella got up from the chair next to the fireplace and *went (came)* into the kitchen to look for one.

3. *take/bring* (where *take* is consistent with the narrator's perspective):

Cinderella was looking and looking in the kitchen for a pumpkin so that she could *take (bring)* it to her fairy godmother to turn into a carriage.

4. *bring/take* (where *bring* is consistent with the narrator's perspective):

While Cinderella was still in the kitchen looking for a pumpkin, her fairy godmother *brought (took)* her two beautiful glass slippers. "You can go to the ball, but you must be home by midnight," she said.

Received March 22, 1999

Revision received September 15, 1999

Accepted September 15, 1999 ■