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The effects of readers' goals on inference generation and memory for texts

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We investigated the effects of readers' goals on inference generation and memory for expository text. College students ($N = 82$) read texts for the purpose of either study or entertainment. On-line inference generation was recorded via think-aloud procedures, and off-line memory was assessed via free recall. Reading goal strongly influenced inferential activity: Readers with a study goal produced more coherence-building (i.e., backward/explanatory and forward/predictive) inferences, whereas readers with an entertainment goal produced more associations and evaluations. These differences were associated with superior memory for the texts in the study condition. The results indicate that inference generation during reading is partly strategic and is influenced systematically by reading purpose. We propose that reading goals influence readers' *standards of coherence*, which in turn influence the types of inferences that they draw and the final memory representations that they construct.

We read texts for many different purposes. Do these purposes influence the kinds of inferences that we generate, and, if so, in what way do they do so? It is generally agreed that the generation of inferences is an integral component of reading comprehension. Inferences allow readers to connect the different parts of the text and, hence, to perceive the text as consisting of a series of connected events or facts rather than isolated statements (Black & Bower, 1980; Graesser, 1981; Kintsch, 1988; Kintsch & van Dijk, 1978; Trabasso, Secco, & van den Broek, 1984). However, inference making and comprehension of a text vary across reading situations and across readers (see, e.g., Lee-Sammons & Whitney, 1991; Lorch, Lorch, & Matthews, 1985; Lorch, Lorch, & Mogan, 1987; Noordman, Vonk, & Kempff, 1992; van den Broek, Fletcher, & Risden, 1993; van den Broek, Tzeng, Risden, Trabasso, & Basche, 2001; Walker & Meyer, 1980; Zwaan, 1994). According to current models of reading, comprehension of a text is affected both by readers' abilities to generate appropriate inferences and by their goals in understanding the text (Graesser, Singer, & Trabasso, 1994; McKoon & Ratcliff, 1992; Singer, Graesser, & Trabasso, 1994; van den Broek, Young, Tzeng, & Linderholm, 1999). The ability to create inferences is affected by reading skill, understanding of the demands of the reading task, working memory capacity, and background knowledge relevant to the text topics. However, how readers apply their skills and knowledge depends on their goals or purpose for reading. In this study, we examine the possible effects of readers' goals on the production of inferences and recall of texts.

The idea that readers' goals control inferential processes is subject to some constraints. Various factors affect the extent to which readers can allocate resources to the generation of inferences, regardless of their reading goals. For example, comprehension problems due to inefficient decoding of words (Perfetti, 1994), limited lexical and syntactic skills, and limited working memory capacity (Just & Carpenter, 1992) may inhibit readers' ability to generate inferences (Oakhill, 1994). Likewise, language proficiency and comprehension skill affect the number and kind of inferences that readers generate (Zwaan & Brown, 1996).

Despite these constraints, college students report using different strategies when the reason for reading varies (Lorch, Klusewitz, & Lorch, 1995; Lorch, Lorch, & Klusewitz, 1993). For example, according to their self-reports, reading in order to study involves slow reading, memorization, and monitoring of understanding. In comparison, reading for entertainment involves fast reading, no reread-

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ing, and generally less careful attention to the text. These reports suggest that readers may match at least some of their processing of texts to the reading situation.

In fact, there is evidence that the pattern of inferences that readers make is related to their reading purpose (e.g., Lorch et al., 1985; Lorch et al., 1987; Noordman et al., 1992; Schmalhofer & Glavanov, 1986; Zwaan, Magliano, & Graesser, 1995). In general, this evidence suggests that readers are sensitive to the instructions given to them prior to reading, and that their processing is oriented toward the goal provided through those instructions.

Despite the evidence that inference generation is influenced by readers' purpose for reading, there has been little systematic attention in the cognitive literature to the connection between particular goals and the resulting inferential pattern and the mechanism by which goals affect inference making. This situation is due, at least in part, to the lack of a theoretical framework to guide such research. We propose that the concept of *standards of coherence* may provide a productive framework for capturing how reading goals affect inference making in specific, systematic ways. In general, this concept suggests that as readers proceed through a text, they maintain standards of coherence that act as criteria for comprehension. These standards or criteria, in turn, dictate the inferential activities in which the readers engage at each point during reading. The inferential activities that are employed directly determine the level of comprehension achieved. For different reading situations, such as when the text genre, reading task, and/or reader motivation varies, readers systematically alter their criteria for comprehension and, hence, generate predictably different patterns of inferences (van den Broek, Risden, & Husebye-Hartmann, 1995; see also Hacker, 1998).

The notion of standards of coherence is in line with recent models of reading comprehension (Goldman & Varma, 1995; van den Broek et al., 1999; Zwaan et al., 1995). These models implicitly or explicitly posit that as readers proceed through a text, they attempt to maintain certain levels of coherence and engage in different inferential processes to do so. Thus, readers' standards of coherence determine to a large extent under what circumstances various types of inferences (e.g., reinstatements from prior text, background knowledge inferences, forward/predictive inferences, associations, etc.) are generated on line, as well as the kinds of coherence that these inferences construct (e.g., referential/anaphoric, causal, spatial, logical). Although it is assumed in these models that reading goals influence the standards that readers employ, none of the models provides details on how goals may do so.

Thus, the notion of standards of coherence is useful for several reasons. First, it provides an explanatory account of precisely how goals influence the reading process. According to this account, a reading goal prompts the reader to select particular standards to maintain as he or she proceeds through the text. Without the construct of standards of coherence, the claim that processing is influenced by a reader's goals would rely on some unspecified process by which the reader constantly checks his or her understanding against an abstract goal. Second, the notion of standards of coherence allows the integration of two distinct—and sometimes opposing—theoretical perspectives of reading comprehension, those emphasizing bottom-up processes (e.g., McKoon & Ratcliff, 1992) and global, top-down processes (e.g., Graesser et al., 1994), respectively. We propose that both types of processes occur in text comprehension, with the reader's standards of coherence—and the ease with which they can be attained—determining the exact combination of bottom-up and top-down processes at each point during reading (van den Broek et al., 1993; van den Broek et al., 1995). Third, the concept of standards of coherence connotes a limited number of standards that can be applied over an indefinite number of reading purposes—as well as other variations in reading situations, due to text genre, reading task, and so on. Thus, despite the myriad of different reading goals that a person may face in his or her experience, the reader translates any given goal into relevant standards of coherence, thereby operationalizing the goal. In summary, standards of coherence provide both explanatory power and theoretical parsimony for the role of reading goals in reading comprehension.

In this study, we use a think-aloud procedure and a recall task to investigate readers' processing of expository text in two different reading tasks. College students read a text for the purpose of preparing for an essay examination or for the purpose of entertainment. We selected these two purposes because students perceive reading for entertainment and reading for study as very distinct reading "modes," and furthermore, there is reasonable agreement within each condition about what constitutes an appropriate approach to reading (Lorch et al., 1995; Lorch et al., 1993). Thus, the two tasks should contrast sharply in the standards of coherence they lead readers to adopt.

We chose to use a think-aloud methodology to study inferencing because this methodology is well suited to the exploratory investigation of strategic processing. Think-aloud methodologies can provide valuable insights into the developing representations of readers (Ericsson & Simon, 1993; Long & Bourg, 1996; Pressley & Afflerbach, 1995). Furthermore, they allow one to consider a wide array of different responses by the reader. When coupled with measures of recall, think-aloud protocols help present a rich view of readers' strategies and effectiveness in comprehending text.

We investigated the effects of reading task on coherence-producing inferences by categorizing the think-aloud responses of readers to each sentence in each of four texts. Three of the response categories corresponded to distinct classes of inferences: backward, explanatory inferences; forward, predictive inferences; and lateral, associative inferences. In addition, we coded think-aloud responses into five other categories: paraphrases; evaluative comments; self-monitoring of comprehension; emotional, affective

comments; and explicit repetition of text phrases (adapted from Coté, Goldman, & Saul, 1998; Narvaez, van den Broek, & Ruiz, 1999; Pressley & Afflerbach, 1995; Trabasso & Magliano, 1996; Zwaan & Brown, 1996).

Our main hypothesis was that readers' purpose for reading would affect the frequency with which they made coherence-producing inferences. In general, we expected that readers with the goal of studying for an exam would seek to construct a highly coherent representation of the text they read. Thus, they would generate many coherence-producing inferences but produce few associative inferences. Explanatory and predictive inferences are examples of processes that readers use to further comprehend a text event, the former by connecting the currently read statement to its antecedents and the latter by identifying its implications. In contrast, associations typically provide elaborative or descriptive detail that does not contribute to a more coherent text representation. This pattern of inferences for readers in the study condition would mirror previously observed patterns for narrative (Trabasso & Magliano, 1996; Zwaan & Brown, 1996) and expository texts (Coté et al., 1998).

We expected that readers' use of paraphrasing, explicit repetition, and self-monitoring also would reflect their goals. One would expect readers in the study condition to make more self-monitoring statements than readers in the entertainment condition. Although it seems intuitively clear that monitoring is a direct reflection of a standard for comprehension, the role of paraphrasing and repeating of text is less clear. On the one hand, it might be that paraphrasing and repeating text indicate readers' attempts to understand it—for example, by extending processing time (Coté et al., 1998; Trabasso & Magliano, 1996). On the other hand, generating inferences requires time to complete (Keenan, Baillet, & Brown, 1984), so paraphrasing and repeating the text might actually occur in lieu of inferences. The relations between standards of coherence and paraphrasing and repeating text are unclear, so we made no specific predictions about these strategies.

In a similar sense, evaluative or affective comments might indicate a reader's involvement with a text. The potential nature of evaluations or emotional comments as defined in our study covered a broad spectrum; they might indicate a deep interest in the text or a more surface involvement. In both cases, they reflected a reader's personal experience with a text rather than an attempt to comprehend a text at that specific moment. We expected, therefore, that these comments would also reflect a reader's standards of coherence: Readers in the entertainment condition would make more evaluations and affective comments than readers in the study condition would.

To summarize, we expected that participants reading to study would engage in processing aimed at understanding the internal structure of the textual information, making more forward and backward inferences and engaging in more self-monitoring. In contrast, participants reading for entertainment would be more likely to relate text events to their own experiences, making fewer text-connecting inferences and more associations and evaluative comments.

METHOD

Participants

Participants were 82 volunteers from undergraduate psychology classes at the University of Minnesota. Results from 10 participants were eliminated because portions of their audio recordings were inaudible. The data from another participant were omitted from all analyses because of missing recall data. Of the remaining 71 participants, 50 were women and 21 were men. Their ages ranged from 17 to 51 years, with a mean age of 22 years. All participants received course credit.

Materials

The materials consisted of four expository texts adapted from *Scientific American* magazine articles. The average number of words was 724.75 (range = 656–771), the average number of sentences was 36.25 (range = 32–40), and average text difficulty was at grade 11.2 (Flesch-Kincaid Grade Level reading measure, range = 10–12). Each text began with an introduction of a problem found in nature, and then discussed a series of alternative explanations proposed as answers to the problem. The topics of the texts were the origin of the moon, the migration of sea turtles, the development of treatments for meningitis, and the decline in songbird populations. The texts were presented on index cards, with one typed sentence per card.

Each text had two different versions, in which 12 target sentences were manipulated with the goal of affecting the amount of inferential processing in response to each target sentence. However, these manipulations did not influence the observed patterns of inference generation and therefore will not be discussed further.

Procedure

The participants were randomly assigned to either a *study* or an *entertainment* condition and were tested individually. Test sessions, including instructions and practice, averaged 45 min; all participants completed the task within 1 h.

The participants were seated at a table with a tape recorder and, depending on condition, either college textbooks or magazines. Textbooks or magazines were displayed in an attempt to help the participants maintain either a study or an entertainment goal in reading. Before reading the expository texts, the participants in the study condition were asked to imagine that they were preparing for an essay exam, whereas the participants in the entertainment condition were asked to imagine that they were browsing through a magazine and had come upon an article of interest. All participants received the same instructions regarding the think-aloud task.

The procedure for the think-aloud task was based on existing methods (Narvaez et al., 1999; Trabasso & Magliano, 1996; Zwaan & Brown, 1996). The participants read one of the texts out loud from the index cards. They were asked to say out loud any thoughts that came to mind following each sentence, before turning over the index card and proceeding to the next sentence. Before reading their assigned text, the participants practiced thinking aloud by reading the first seven sentences from one of the other experimental texts. The experimenter reminded the participants of the think-aloud instructions in both the practice and experimental sessions if they did not produce think-aloud responses for two consecutive sentences. The responses were recorded by tape recorder.

After completing the text, the participants answered 10 written mathematics questions as a distractor task. The distractor task was assigned to counteract any recency effects during recall of the text. The participants then completed a written free recall task. They were instructed to write everything that they could remember from the text, duplicating it as closely as possible.

Scoring

Think-aloud protocols. Think-aloud protocols were transcribed from the audiotapes, and the predominant think-aloud comment associated with each sentence in the text was scored for category of re-

sponse by two judges who had no knowledge of the experimental condition. A comment was considered predominant if the two judges considered it to constitute the essence of the utterance in response to the sentence under consideration. The total numbers of responses were 816 and 988 for the entertainment and study conditions, respectively. The categories of response were similar to those used by Trabasso and Magliano (1996) and Zwaan and Brown (1996). They included *association* (retrieval of information not related to text coherence; e.g., "That reminds me of a documentary I saw on sea turtles."); *backward inference/explanation* (retrieval of information from either prior text or background knowledge that explains the current text sentence; e.g., "Oh, this is related to what I read earlier about how magnetic field affects wave direction."); *predictive inference* (forward inferences that anticipate upcoming text; e.g., "I bet the turtles will use sense of smell to return to their nesting place."); *paraphrase* (comments that capture the gist meaning of a sentence; e.g., "So this sentence is saying that turtles use waves to get to where they need to go."); *evaluation* (opinions about the text; e.g., "These turtles are really intelligent creatures."); *monitor comprehension* (reflecting on one's own understanding, e.g., "Oh, I never knew that!"); *affective response* (emotional comment regarding the text; e.g., "It makes me sad to think that hatchlings could be eaten by predators."); and *text repetitions* (verbatim repetition of all or a large proportion of the text sentence). Nonresponses and responses that did not fall into any of these categories were scored as *other*. Interrater reliability was 84%. Disagreements between judges were resolved by discussion. To ascertain that observed patterns were not due to consideration of only predominant responses (as is customary in think-aloud methodologies), the nondominant responses were also scored. Analyses of the total set of responses yielded results identical to those for the predominant responses, so only the data on the latter will be reported.

Free recall. Each text was parsed into clauses to score the participants' written free recalls. Each participant's recall protocol was parsed into clauses and compared with the text analysis. A text clause was credited as having been recalled if the participant recalled all or part of the clause verbatim or if the gist of the text was accurately reproduced. Two judges independently scored 52% of the protocols without knowledge of the experimental condition. Interrater reliability was 84% and disagreements were resolved by discussion. The remaining written recalls were divided among the two judges and scored separately.

RESULTS

Analyses of Think-Aloud Protocols

The response of a participant to each sentence was noted, and these responses were then averaged across all sentences of the text (means were computed instead of sums, because the number of sentences per text varied slightly). These data, provided in Table 1, clearly show different patterns of responses in the study and entertainment conditions. To test the specific predictions concerning each response category, separate analyses of variance (ANOVAs) were computed for each of the eight response categories. Each ANOVA included the between-participants factors of text (four levels) and reading task (study or entertainment). Tests were conducted against both participant variability (F_1) and item variability (F_2). All reported effects are reliable at or beyond $p = .05$ unless noted otherwise.

It was predicted that the readers in the study condition would generate more coherence-producing explanatory and predictive inferences than would the readers in the entertainment condition. The data in Table 1 demonstrate that both predictions were confirmed. First, more explanatory inferences were made in the study condition than in the entertainment condition [$F_1(1,55) = 13.86$, $MS_e = .0098$; $F_2(1,135) = 41.61$, $MS_e = .0255$]. Second, more predictive inferences were made in the study condition than in the entertainment condition [$F_1(1,55) = 6.80$, $MS_e = .0080$; $F_2(1,135) = 21.87$, $MS_e = .0199$].

The readers with a study purpose were expected to devote their resources to explanatory and predictive inferences at the expense of associative inferences, whereas those reading for entertainment would devote their resources to connecting text information with personal experiences via associative inferences. Table 1 shows that the readers in the entertainment condition produced more associations than did the readers in the study condition, although the effect was marginal in the test against subject variability [$F_1(1,55) = 3.86$, $MS_e = .006$, $.05 < p < .1$, $F_2(1,135) = 20.57$, $MS_e = .0107$].

With regard to monitoring comprehension, it was expected that the participants studying for an exam would monitor their comprehension more closely than would those reading for entertainment. Contrary to this expectation, the readers with an entertainment goal were more likely to make monitoring responses than those preparing

Table 1
The Effect of Reading Purpose on Inferential Activity During Reading

	Reading Goal			
	Entertainment		Study	
Response Category	*M*	*SE*	*M*	*SE*
Explanatory inferences	.062	.018	.151	.016*
Predictive inferences	.060	.016	.117	.015*
Associations	.072	.014*	.035	.013
Monitor	.240	.018*	.142	.017
Paraphrase	.093	.033	.192	.031*
Repetition	.008	.006	.025	.006*
Evaluation	.132	.015*	.056	.014
Affective	.008	.003	.007	.003

Note—Numbers indicate the average frequency of each inference category, per participant and per statement. The average number of "Other" responses were .325 and .275 for the entertainment and study conditions, respectively. *$p < .05$

for an exam [$F_1(1,55) = 15.54$, $MS_e = .0105$, $F_2(1,135) = 36.58$, $MS_e = .0358$].

If we turn to paraphrasing and repetition, the participants in the study condition produced both types of responses more often than did the participants in the entertainment condition [for paraphrasing, $F_1(1,55) = 4.89$, $MS_e = .0342$, $F_2(1,135) = 42.22$, $MS_e = .0291$; for repetitions, $F_1(1,55) = 4.06$, $MS_e = .0012$, $F_2(1,135) = 16.49$, $MS_e = .0041$].

Finally, it was expected that evaluative and affective comments would be more common in the entertainment condition, reflecting the greater emphasis of that condition on those dimensions of the reading experience. Again, Table 1 confirms that evaluative responses were more common in the entertainment condition [$F_1(1,55) = 13.00$, $MS_e = .0074$, $F_2(1,135) = 34.58$, $MS_e = .0211$]. However, there were no differences between the two reading conditions with respect to affective responses (both Fs < 1).

Analyses of Recall Protocols

The recall data were submitted to a between-participants ANOVA in which the factors were instructional condition, text, and text version. As predicted, recall was higher in the study condition ($M = 18.20$ clauses) than in the entertainment condition ($M = 15.08$ clauses) [$F(1,65) = 4.22$, $MS_e = 37.99$]. No other main effects or interactions were significant.

Discussion

The aim of this study was to determine whether readers' goals influence the type of inferences generated during reading. College readers read expository texts with either a study or an entertainment goal. We assessed on-line inferential activity via think-aloud procedures, and memory, via free recall. The think-aloud results show that the readers with a study goal generated more backward and predictive inferences during reading than did those with an entertainment goal. The readers with a study goal also more often paraphrased and repeated the information in the text. In contrast, the readers with an entertainment goal more often generated monitoring and evaluative statements as well as associations to what they were reading than did those with a study goal. The recall results show that text memory was best for the readers with a study goal, who remembered 20% more statements than did their counterparts with an entertainment goal.

The Effects of Reading Goals on Standards of Coherence

The results demonstrate that reading goals affect both readers' inference making during reading and their subsequent memory for the text. The particular pattern of results confirms the notion that readers employ *standards of coherence*, which guide their inferential activity and memory representation for the text, and that readers' goals influence these standards. As they proceeded through the text, the readers with a study goal employed stringent standards focused on intratextual relations, striving for deep understanding and coherence in their representation of the texts. By generating inferences, these readers sought explanations and identified consequences for the text currently in their focus of attention. In addition, they frequently repeated or paraphrased text statements. Paraphrases have been associated with good comprehension and, together with repetitions, may reflect an effort to "buy time" for grasping the meaning of the text (Coté et al., 1998; Smith, 1967; Trabasso & Magliano, 1996). These findings indicate that readers with a study goal seek to explain and connect events within a text.

The readers in the study condition displayed little self-monitoring. We had not expected this, because self-monitoring is a strategy frequently used by good comprehenders, particularly in study situations (Lorch et al., 1993; Pressley & Afflerbach, 1995). Closer inspection of the monitoring responses revealed, however, that the range of responses in this category was quite broad. For example, they included readers' confirmation of their understanding (e.g., "I knew that"), recognition of new knowledge (e.g., "I did not know that"), reminders to remember an event (e.g., "I would make note of this because it might be on an exam"), and detection of inconsistencies (e.g., "That does not fit with what I read before"). Given the wide variety of responses, results for this category should be interpreted with caution.

In contrast to the readers with a study goal, the readers with an entertainment goal were much less concerned with constructing a coherent representation of the text itself but instead focused more on connecting text events to their own personal experiences. These readers generated more associative inferences (e.g., "This reminds me of the movie about Apollo 13. I liked the song at the end") and evaluative comments (e.g., "How strange!") than did their peers with a study goal. Both types of responses represent a (momentary) withdrawal from involvement with actual text information, to the position of a commentator rather than a reader concerned with comprehension of the text per se.

The description of the on-line activation patterns in terms of differing standards of coherence suggests that readers with a study goal exert more cognitive effort than do those reading for entertainment. Direct evidence for differing levels of cognitive effort was obtained in a follow-up study in which college readers read slightly modified versions of the same texts for either a study or an entertainment purpose at their own pace and without the think-aloud task (Brannon, 1998). Reading times differed significantly as a function of reading goal, with the readers with a study goal reading considerably more slowly (239.32 msec/syllable) than did those with an entertainment goal (209.09 msec/syllable).

Thus, the readers with a study goal adopted a strict standard of coherence, reading relatively slowly and emphasizing the need for explanations and connections between text elements, whereas the readers with an entertainment

goal read more quickly and focused on establishing connections to their personal experience. As a consequence of the different text processing activities, the readers with a study goal had better memory for text content than did the readers with an entertainment goal. This conclusion is consistent with the speculation that reading for study purposes is concerned primarily with the construction of a mental representation that emphasizes within-text connections, whereas reading for enjoyment entails the construction of a mental representation that emphasizes connections to one's own background knowledge (e.g., Zwaan et al., 1995).

The Role of Standards of Coherence in Reading

The different patterns of inferences generated by readers with distinct reading goals suggest powerful top-down effects on readers' inferential processes. Apparently, specific reading goals induce readers to allocate their efforts differently. The notion of standards of coherence operationalizes how these effects may occur and, in doing so, provides a conceptual bridge between research on the influence of reading goals in inference making and recent computational models of text comprehension. According to these models, readers attempt to maintain coherence as they proceed through the text and engage in inference generation in order to do so (Goldman & Varma, 1995; van den Broek et al., 1999; Zwaan et al., 1995). The definitions of "coherence" differ among the models. For example, some focus on referential/anaphoric coherence, others on causal coherence, yet others on global thematic coherence. We propose that readers, in fact, employ different standards—or different combinations of standards—depending on their reading goals. These standards, in turn, lead to differences in the type and number of inferences that readers generate. Thus, the notion of standards of coherence provides both explanatory power and theoretical parsimony by connecting abstract goal-based reading theories to current computational models of reading.

Standards of coherence may capture other variations in reading situations as well. For example, text genre, readers' expectations about the text, reading tasks, and so on, may evoke specific standards and, hence, elicit specific patterns of inference generation. Thus, the reader translates each situation into a combination of relevant standards of coherence. In the end, we may observe a relatively limited number of distinct reading "modes"—characterized by different standards—which, in their various combinations, account for the myriad of reading situations that a reader may face.

Standards of coherence also allow us to resolve the apparent contradiction between the theoretical position that inferential activity is predominantly automatic (Kintsch, 1992; Kintsch & van Dijk, 1978; McKoon & Ratcliff, 1992; Myers & O'Brien, 1998) and the theoretical position that inferential activity predominantly reflects a goal-directed search for meaning (Graesser et al., 1994; Singer et al., 1994; Stein & Trabasso, 1985). If the reader's goal evokes a relatively strict standard of coherence, coherence-producing inferences will be common, although at a cost of greater effort by the reader. If the reader's goal evokes a relatively relaxed standard of coherence, reading will be less effortful, but the cost will be a less coherent text representation. From this point of view, the question of which reading goals are associated with particular standards of coherence is more fruitful than the question of whether readers' inferential activities are strategic or not.

In this study, we have investigated the effects of two reading goals: reading for entertainment, and reading for study. These particular goals were chosen because readers experience them as maximally distinctive (Lorch et al., 1987). Indeed, our results indicate that their perceptions are quite accurate. Other reading goals are possibly quite distinctive as well (e.g., to obtain a specific piece of information, to be able to summarize, etc.). In addition, different standards of coherence may be associated with different text genres. For example, there is ample evidence that standards of causal and referential coherence play a major role in comprehension of narrative texts (see van den Broek, 1994, for a review). For comprehension of different types of text, the same standards also may be central or they may be supplemented or substituted by different standards (Goldman & Bisanz, in press; van den Broek, Virtue, Gaddy, Sung, & Tzeng, in press). Theoretical accounts of text comprehension would benefit enormously from a thorough mapping of readers' goals—and other factors such as text genre, overall motivation, and reading task—and the standards of coherence. It seems likely that some standards apply across a broad range of reading situations. Probable candidates for such "basic" standards are referential and perhaps causal coherence. Other standards, such as thematic coherence, may build on the basic types of coherence, and their adoption may be more situation specific. Interestingly, such a view is consistent with findings that young children gradually develop the ability to recognize these types of coherence, from referential to causal, and then to thematic (van den Broek, 1997, for a review).

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