

The "soap opera" effect in story recall

JUSTINE OWENS and GORDON H. BOWER
Stanford University, Stanford, California 94305

and

JOHN B. BLACK
University of Illinois at Chicago Circle, Chicago, Illinois 60680

When people learn a series of actions of a character, their memory is strongly influenced, we suggest, by beliefs about that character's motives. Motives serve as schema for deciding the meaning of the actions, their importance, and their interconnections. In two experiments, subjects read and later remembered some dull activities of a character. Experimental subjects knew what this character was worrying about (e.g., an unwanted pregnancy); control subjects did not. Recall and recognition showed that motive subjects distorted many of the colorless events to be motive relevant. Although the motive schema helped connect the disparate actions, it interfered with accurate recording and recall of the details.

We are interested in how people understand and recall simple narratives. We suppose that readers try to understand narratives by figuring out the goals of the main characters and how their actions and feelings relate appropriately to these goals. Often in texts, the character's goals and motives are transparent from stock situations; for example, she goes to a restaurant to eat because she is hungry. At other times, the same behavior in the same situation will have a different meaning because the reader is privy to special information about the character's hidden motives; for example, the heroine goes to the restaurant to shoot her lover.

Our experiments are concerned with how readers' ideas about a character's motivations affect the way they interpret text statements. Readers' beliefs about a character's motives should provide powerful schemata around which they organize their understanding of that character's actions and feelings. Events will be interpreted according to their relevance to the character's motives. Our beliefs about a character's motives guide the inferences we draw from his or her actions. As the example above illustrates, a character's motive can easily override the conventional reason why he or she engages in some activity. Just as the character's goal schema interprets and organizes the text, so should it also serve as an entry point for retrieving his or her organized network of interpretations during recall. An implication of this hypothesis is that the meaning derived from a text is not an invariant;

rather, it should vary with the reader's ideas about the character's motivations.

In the present experiments, we tried to demonstrate how beliefs about a character's motives influence the way readers interpret a text. We used a memory test (delayed recall) to look for evidence of interpretive distortions. We had four groups of subjects read and later recall the same neutral text under one of four conditions: two with no particular character or motive in mind, and two with a specific character and problem in mind. The neutral text was a sequence of five stereotyped action sequences, or "scripts" (Schank & Abelson, 1977), about the character making a cup of coffee, visiting a doctor, attending a lecture, going shopping in a grocery store, and attending a cocktail party. These were boring vignettes designed to serve like Rorschach "inkblots" upon which the readers' beliefs about the character's motivations and feelings could be projected. Subjects in the control conditions read the five scripts with only the name of the character, called Nancy for one group, Jack for another. Subjects in the two "problem" conditions read a three-line description of their character's problem as background just before they read the neutral scripts. The background for the Nancy character was the following: "Nancy woke up feeling sick again and she wondered if she really were pregnant. How would she tell the professor she had been seeing? And the money was another problem."

The college students who read this sketch interpreted Nancy to be an unmarried coed who is afraid that she is pregnant as a result of an illicit affair with her college professor and who is concerned about how to confront him and pay for a probable abortion. Her goals might be expected to include finding out if she is pregnant, informing the professor-lover, and persuading him to

We thank Gail and Larry Meyers for their assistance with Experiment 2. This research was supported by Grant MH-13950 to the second author from the National Institutes of Mental Health. Requests for reprints should be sent to Gordon Bower, Department of Psychology, Stanford University, Stanford, California 94305.

help her. Note that none of this "soap opera" was actually stated. The three-line description could just as well apply to a happily married woman who is overjoyed at the prospect of finally becoming pregnant, but she is slightly troubled that she will have to cancel the TV interview she was filming with a professor. Although it fits the text just as well, the "happy pregnancy" schema is definitely not a dominant idea for our college students.

Subjects in the alternate problem condition read the following description before the main text about Jack: "Jack woke up wondering how much weight he'd gained so far. His football coach had told him he would start in the game Saturday only if he gained enough weight and got a passing grade on his chemistry test." Subjects who read this description presumably set up a schema about Jack, whose goals are to gain weight and receive a passing grade in chemistry. With these goals in mind, the reader should think that text sentences relevant to weight gain and to class grades will be important.

Subjects read the dull, colorless scripts, then recalled them later. (In Experiment 2 a test for recognition was also given.) The comparison of interest is that between the problem conditions and the control conditions. The question is whether, relative to the controls, the problem subjects produce a recall colored by their beliefs about the character's problem, goals, and probable motives. Whereas the motive schema may produce a recognizable coherence in recall of the scripts, it may also distort memory in a manner to make it less accurate than in the control condition.

EXPERIMENT 1

Method

Materials. Five event sequences were written to represent making a cup of coffee, going to the doctor, going grocery shopping, attending a lecture, and attending a party. Each action sequence used 10 to 13 statements to capture common stereotypes. The final sequences are as follows.

"Nancy went into the kitchen. She took the pot out of the cabinet and also got out the mix. After she put water in the coffee pot, she put the coffee pot on the stove. Next she took a coffee cup and put it on the table. The water in the pot started to boil, so she put some instant coffee into the cup. Nancy looked at the beverage in the cup and decided to add some milk and sugar.

"Nancy went to the doctor. She arrived at the office and checked in with the receptionist. She went to see the nurse who went through the usual procedures. Then Nancy stepped on the scale and the nurse recorded her weight. The doctor entered the room and examined the results. He smiled at Nancy and said, 'Well, it seems my expectations have been confirmed.' When the examination was finished, Nancy left the office.

"Nancy decided to buy some milk so she went to the store. She looked around and found the right section. She noticed the date on the carton—9/14. She looked at the price and compared it to the money she had to spend. She decided that she should buy the milk. Nancy paid for the item and left the grocery store.

"Nancy arrived at the lecture hall and decided to sit in the front row. She walked down the aisle and sat down in the seat. The professor went to the podium and began the lecture immediately. All through the talk Nancy couldn't concentrate

on what was being said. The talk seemed especially long, but finally the speaker finished. The professor was surrounded with people so Nancy quickly left the building.

"Nancy arrived at the cocktail party. She looked around the room to see who was there. She went to talk with her professor. She felt she had to talk to him but was a little nervous about just what to say. A group of people started to play charades. Nancy went over and had some refreshments. The hors d'oeuvres were good but she wasn't interested in talking to the rest of the people at the party. After a while she decided she'd had enough and left the party."

The text for Jack simply used his name and "he" in place of Nancy and "she." We also prepared two alternative introductions of a character who had a specific problem he or she was brooding about (those presented in the introduction). The action sequences and one of the character introductions were typed on separate sheets of paper, and the sheets were stapled together with a blank cover sheet.

Procedure. Subjects sat at tables as the experimenter read a statement reviewing what they were to do. Then they were given the episodes to read. In the problem condition, the episodes were preceded by a brief character-plus-problem description, and subjects in this condition received the instructions below. The parts of the instructions in brackets were deleted for subjects in the control condition.

"The first thing you will read is a series of action sequences preceded by a brief description of a character. [I'd like you to read the action sequences with the character in mind.] Later on you will need to have read the action sequences to do another part of the experiment, so please read them very carefully. [Use the character to make the action sequences seem more like a story.] It is important that you read them slowly and carefully and I'll tell you when to stop."

Subjects were given 2.5 min to read the episodes, then the reading material was collected.

The second part of the experiment was an intervening rating task that subjects performed before they recalled the episodes. Subjects were asked to read and rate the relative importance of the sentences in two stories (the "Old Farmer" and "Circle Island" stories from Thorndyke, 1977). These tasks were not relevant to the present experiment except to serve as interfering tasks that engaged the subjects for about 30 min.

Finally, subjects were asked to recall the action sequences (involving Nancy or Jack) with instructions emphasizing that they were to recall as close to verbatim as possible. Subjects were given as much time as they wanted to write their recalls.

Twelve and eight Stanford undergraduates served in the problem and control groups, respectively, divided between the Nancy and Jack passages.

RESULTS

First, subjects' protocols were scored according to the number of different episodes recalled (e.g., making coffee, visiting the doctor). An episode was scored as recalled if at least one of its distinguishing events was recalled. Subjects in the problem condition recalled 4.7 episodes out of 5, which is reliably more than the 4.0 episodes recalled by subjects in the control condition [$t(18) = 2.50, p < .025$].

Second, the order in which the episodes were recalled was compared to the presentation order. Of the 12 subjects in the problem condition, 10 preserved the presentation order of the episodes in recall; only 3 of the 8 subjects in the control condition preserved the presentation order. The difference in preserving episode order in recall was significant [$\chi^2(1) = 4.42, p < .05$].

Therefore, providing the reader with a problem and motive for the central character enabled him to remember more episodes and remember them more often in the correct order.

Third, recalls were scored against a propositional analysis of the text (see, e.g., Kintsch, 1974). This analysis yielded two scores: the number of text propositions correctly recalled, and the number of new propositions in the subject's protocol that were not stated explicitly in the text ("intrusions"). Subjects in the two conditions did not differ reliably in the amount of correct recall (65.7 and 59.1 for the problem and control conditions). However, subjects in the problem condition produced many more intrusions in their recalls (17.3) than did subjects in the control condition (8.0). This difference is statistically reliable [$t(18) = 5.08, p < .001$]. Nearly all of the intrusions in the problem conditions were thematically related to the inferred motive and problem of the main character. These were different in content for Pregnant Nancy and Footballer Jack. A finer analysis of the recall intrusions was performed on the more extensive data of Experiment 2, and the intrusions of Experiment 1 are reported along with those of Experiment 2, below. Suffice it to say here that the intrusions in Experiment 1 indicated that the readers in the problem condition distorted their recall of many actions in the direction dictated by the inferred goals and motives of the main character.

EXPERIMENT 2

Although subjects in the problem condition of Experiment 1 distorted their recall in the direction of the probable motives and goals of the character, the absolute number of intrusions was small relative to the number of correctly recalled propositions. In Experiment 2, we hoped to boost the amount of forgetting and increase the opportunity for motive-related intrusions by increasing the retention interval to 24 h. It was expected, however, that subjects in the problem condition would continue to recall more episodes, since the idea of the character's problem and motive should continue to serve at 24 h as a useful retrieval framework for the events of Nancy's day.

Following the free recall test, subjects received an episode-cued recall test and, finally, a recognition memory test. In the cued recall test, subjects were given the titles of the five episodes they had read (e.g., "Visit to the Doctor," "The Lecture") and were asked to recall the sentences of that episode. Whereas the motive-theme organization for problem subjects should give them an advantage in free recall, we expected that advantage to be eliminated when the episodes were cued for recall.

The final recognition test was composed to elicit from problem subjects false positive recognitions ("false alarms") to motive-related inferences not stated in the

text. Therefore, some recognition test items were very plausible inferences given the motive of the main character, whereas other items were rather implausible given that perspective. It was predicted that problem subjects would false alarm to a test item according to its plausibility as an inference given the perspective of the character's problem and motive. A third class of script-filling inferences that were unrelated to Nancy's problem were expected to elicit the same false alarm rate from the problem and control subjects.

As an interesting sidelight, subjects were asked, immediately after reading the passage on Day 1, to estimate how much time they had been given to read the passage (actually 2.5 min). We expected that subjects in the problem condition would find the passage more enjoyable and more coherent, with the result that the time spent reading would seem shorter to them than to the control subjects, who should find the passage disconnected and dull. The time-estimation task also provided a rationale for having the subjects read the passage, so none of them suspected a memory test would be given at the experimental session the following day.

Method

Subjects. The subjects were 17 undergraduates, 13 females and 4 males, from California State University at Sacramento, who were students in a developmental psychology course. They received course credit for participating in the two experimental sessions. Sessions 1 (reading) and 2 (memory testing) occurred in the same experimental classroom on 2 consecutive days.

Material. The episodes of Experiment 1 were used, but only the Pregnant Nancy character problem was used, since it had given stronger effects in Experiment 1. A 50-item recognition memory test was constructed. It contained 10 true statements taken directly from the stated action sequences, 30 reasonable inferences (technically false), and 10 clearly false statements that either mentioned out-of-place actions or mixed-up roles, objects, and actions from different episodes. Many of the inferences tested were suggested by the recall intrusions of subjects in Experiment 1. Twenty of the test inferences were plausible but neutral with respect to Nancy's problem motive. These inferences referred to a natural bridging action between two stated actions, to an action that enabled or was enabled by an explicitly stated action, or to the natural location of a stated action. Five test inferences were appropriate to the Pregnant Nancy character; these were plausible statements to have been in the text if the text had been read from her perspective. Example test items covered her reason for going to the doctor, a particular interpretation of the doctor's remark, and the motivations for her actions and feelings given her relationship to the professor. We would expect these to be rejected by control subjects for whom mention of pregnancy or friendship with the professor should be detected as a novelty. Five test inferences were inappropriate or implausible given the perspective of Nancy's problem. For example, one item suggested that Nancy wanted to ask the professor a question about the content of his lecture; another item suggested that Nancy did not know the professor at the party well enough to talk to him.

Procedure. The subjects were instructed to read the materials as in Experiment 1. Nine read the booklet with the Nancy character-problem description included; eight read only the action episodes without any identification of Nancy or her problem. All subjects were given 2.5 min to read the booklet. After that, subjects were asked to write, on the back of the

booklet, an estimate of how many seconds they thought they had been given to read the story. The estimation task was given as the justification for the subjects' reading the episodes in Session 1, with no mention of the upcoming memory test. Upon returning to the experiment the next day, the subjects were asked unexpectedly to recall verbatim in writing the exact action sequences they had read. After all subjects finished this recall, they were instructed for cued recall as follows.

"Some of you have probably forgotten entire action sequences, so now I'm going to read you possible titles for these sequences. Use the titles as cues to recall additional episodes. Again, try to be as accurate as you can. I'm interested to see how well you can recall verbatim exactly what you read."

After the cued recall, the subjects received the recognition memory test. They were instructed to rate each statement on a 7-point scale, using 1 to indicate absolute certainty that the statement appeared in the text read the day before, 7 to indicate that the text sentence was definitely not stated in the action sequences they had read, and intermediate ratings to indicate degrees of belief that the test item was or was not in the text.

Results

Recall results are summarized in Table 1. The top two rows are measures of free recall, and the bottom two rows show the totals for the free recall and the additional recall produced by cuing subjects with titles of the five episodes.

Examining free recall, we find that the main results of Experiment 1 have been replicated, with problem subjects recalling more than control subjects. Problem subjects recalled more scripts [$t(15) = 2.20, p < .025$], and of the scripts recalled, the problem subjects were more likely to recall them in the same order as their presentation. Excluding two subjects who recalled too few scripts, only three of the remaining six no-problem subjects recalled scripts in the order presented, whereas all nine problem subjects did so ($z = 2.44, p < .01$). Problem subjects also recalled 45% more correct propositions from the text than did control subjects. The largest difference between conditions, however, was in the number of new propositions intruded into the recalls. The problem subjects intruded about four times as many new propositions as did the control subjects [$t(15) = 7.42, p < .001$]. The nature of the intrusions will be discussed below, but many were relevant to Nancy's pregnancy problem. As a result of recalling more episodes and intruding more inferences, the length of the problem subjects' protocols was nearly twice that of the control subjects. So, we may conclude that the concept of a character's problem plus motive

serves as an integrating focus allowing the reader to relate and connect the successive episodes of what is otherwise a dull disjointed narrative. The character's problem serves both as an organizational framework during learning and as a retrieval framework during free recall.

The episode titles given as cues prompted considerably more recall from the control subjects. Including the increment produced by the cues, the total episodes recalled were about equal (around 94%) for the control and problem conditions. The episode cues were treated rather differently by subjects in the two conditions: Those in the problem condition considered the cues to be largely redundant and believed that they had already recalled the main points of the narrative; the control subjects used the cues as an opportunity to retrieve many details they had missed in the former free recall test. As a result, the control subjects produced about four times as many newly recalled propositions (34.4) to the cues as did the problem subjects (9.2). Comparing the total number of correct text propositions recalled (bottom of Table 1), the control subjects retrieved marginally more facts (54.6) than did the problem subjects (38.4) [$t(15) = 2.08, p < .06$]. However, counting intrusions, the problem subjects wrote about the same number of sentences in their protocols as did the control subjects.

A possible interpretation of these observations is that the control subjects stored a more veridical version of the stated actions, since the problem subjects would be distorting the interpretation of some story statements while ignoring and not learning others that were not relevant to Nancy's goals. The result is a memory structure that is more coherent and interconnected yet less complete and more distorted (by implications) for the problem subjects. In free recall, the Nancy goal schema serves as a strong retrieval cue for accessing the salient episodes relevant to her problem. On the other hand, the control subjects have stored only disconnected vignettes in memory, with no efficient way to access all of them in free recall. But the cued recall test makes accessible the more veridical information stored by the control subjects. This interpretation of the group differences between free and cued recall is speculative and requires further experimentation.

The average recognition memory ratings are shown in

Table 1
Recall Measures for Problem and Control Conditions Before and After Cuing

	Condition	Scripts Recalled*	Propositions Recalled from Text**	New Propositions Intruded	Total Propositions Recalled
Before	Problem	3.67	29.24	15.20	44.44
Cue	Control	2.50	20.24	3.76	24.00
After	Problem	4.56	38.44	17.56	56.00
Cue	Control	4.75	54.63	8.88	63.51

*Out of 5. **Out of 190.

Table 2
Recognition Ratings for Different Item Types

	Condition	
	Problem	Control
Trues	3.97	2.47
Inferences:		
Character-Appropriate	3.07	6.43
Script Fillers	2.94	3.00
Character-Inappropriate	5.69	4.63
Falses	5.30	5.67

Note—A rating of 1 indicates "sure old"; 7 indicates "sure new."

Table 2 for "trues," "falses," and three types of inferences. A low number means that subjects believed that the item was stated explicitly in the text. The problem and control subjects did not differ in recognition of obvious falses. However, the control subjects were more accurate in recognizing true items [$t(15) = 9.95$, $p < .001$]. This result is consistent with the more accurate memory of the controls on the cued recall test.

The problem and control subjects did not differ in recognition ratings of the script-filler inferences that were neutral with respect to Nancy's problem and motive (e.g., "Nancy read a magazine while waiting to see the doctor"). However, inferences appropriate to Nancy's problem were rated by the problem subjects as significantly more likely to have appeared in the text [$t(15) = 5.36$, $p < .001$]. Note that the controls could reject these novel "pregnancy theme" sentences as even more bizarre than the obviously false statements. On the other hand, inferences that were implausible given Nancy's problem received lower recognition ratings from the problem subjects than from the control subjects [$t(16) = 2.52$, $p < .025$]. Therefore, recognition memory judgments were influenced by a subject's knowledge of Nancy's motive and themes relevant to her pregnancy problem.

Finally, consider the estimates of reading times. Recall that the actual reading time was 2.5 min. Subjects in the problem condition judged the time to read the story (2.2 min) to be shorter than did subjects in the control condition (2.8 min). This is despite the fact that the material read was longer for the problem subjects, since it included the character-problem description before the five episodes. The difference in time estimates was statistically reliable [$t(15) = 2.50$, $p < .025$]. Thus, the reading of episodes that seemed more coherent and interesting (because a relevant motive theme was known) was judged to take less time. This outcome is consistent with Ornstein's (1969) hypothesis that the subjective duration of an interval decreases as the events filling that interval seem more expected, coherent, congruent with each other, or related to one familiar schema. The "pregnant woman confronting lover" would seem to be such a familiar schema for interrelating the episodes and making them

more coherent. Subjective reports revealed that problem subjects found the experiment more interesting and worthy of attention. This subjective interest is a possibly significant correlate of distortions in time perception.

Intruded new propositions. The recall intrusions are in many respects the strongest and most interesting evidence for motive-caused distortions in memory. However, there is considerable variability in the nature of the intrusions, and with so few subjects, a quantitative description of intrusion categories is uninformative. In lieu of that, we will resort to noting qualitative impressions of the types of intrusions, combining the recall data from Experiments 1 and 2.

We may divide the intrusions into those due to knowledge of the standard activities used in the text ("script based") and those due to the interpersonal theme ("pregnant woman confronting lover"). In the control condition, nearly all intrusions were either script based or attempts to make coherent prose out of a sequence of scripts (e.g., by adding temporal connectives like "and then"). In the problem condition, about half of the intrusions were script based and half were theme based.

The script-based intrusions can be classified into five kinds. The first is "gap filling," reporting an intervening event from the stereotype to fill up a gap left by a text that mentions only occasional elements of the continuous action sequence. The second is specifying how one event in a script enables another. The subject recalls "Nancy turned on the stove in order to boil water," although the text did not mention the enablement. The third type of script inferences are location and referent specifications for the standard places and props of the script that are either not specified or are specified only generically in the text. Thus, Nancy paid for "the milk at the check-out counter"; the store was recalled as "supermarket"; party "refreshments" were recalled as "peanuts" and "pretzels." The fourth type of script-based intrusions are superordinate or summary action statements. An action spelled out in the text might be compressed in recall.

As noted, about half the intrusions for the problem subjects were related to the motive problem. These fell into several categories. First were thematic interpretations of ambiguous statements in the text. Thus, some Nancy subjects recalled the nurse's "usual procedures" as "pregnancy tests"; the doctor's vague "Well, it seems my expectations have been confirmed" was sometimes recalled as "Your fears have been confirmed." Second, problem subjects intruded many inferences about the thoughts, motives, and feelings of the character, particularly as these related to his or her problem. In recalling Nancy's failure to talk to a professor at the party, some subjects recalled that Nancy "didn't enjoy herself at all," "was feeling miserable," and "felt depressed."

Besides the intruded propositions, two further

effects of the motive-and-problem set on recall should be noted. First, problem subjects knotted the episodes together, placing them within the "successive events in the day" schema, and temporal connectives ("after that," "later that evening") were prominent in recall. Such transition sentences were largely missing from the recalls of the control subjects.

The theme also altered the salience and relative importance of events according to their relevance to the character's goal. The selective effect of salience on recall was clear. The most forgettable episode (zero recall) was Nancy's grocery shopping, since that was unrelated to her problem. Also, elements within episodes received selective emphasis. For Nancy subjects' recall, the professor was a very salient aspect of the party and the lecture, as were the nurse's tests and the doctor's remarks to Nancy; for Jack subjects, in contrast, the salient feature recalled about the doctor visit was how much Jack weighed, and the feature most recalled about the party was how many hors d'oeuvres Jack ate there.

DISCUSSION

The character-plus-problem introduction provides readers with a character schema by which they may interpret and interrelate the episodes in which that character appears. The schema presumably guides the comprehension of the text as well as its reconstruction during recall. The description of Nancy and her problem evoked in our subjects a character schema ("Nancy the coed"), filled in with some feelings (fear, dependency, helplessness), and some likely goals (check out pregnancy fears, confront professor-lover, perhaps arrange an abortion). This framework is provided by our subjects' familiarity with the "coed's unwanted pregnancy" scenario. The top-level goals provide reasons for subgoals such as "visit doctor" or "talk to lover," and reasons for actions relevant to their subgoals. As events are read in the text, the reader tries to link them to Nancy's problem and goals. Propositions that can be linked via causal chaining to the goals may then be fit into (and be associated with) the character schema in memory. Because the reader scans the text for reasons and goal-relevant facts, details that are unimportant according to this schema receive slight attention and so are established in memory only weakly. Also, those text propositions that can be linked to the character's goals are elaborated according to the implications of those linkages. Thus, if the reader believes that the doctor told Nancy that she was pregnant, it becomes even more urgent that she talk to her professor at the lecture or party.

The character's goals serve not only to interpret individual actions but also to integrate the different episodes into a coherent whole. The episodes are seen as "a day in the life of Nancy," starting with her waking with morning sickness and pregnancy worries, then

fixing breakfast, then going off to the doctor to confirm her worries, then to a class lecture by her lover, then later to a party where he avoids her. The claim is that this synopsis serves as a structure for guiding recall the next day. It also is consulted to generate "likelihood ratings" for recognition of items consistent or inconsistent with it. The synopsis helps problem subjects retrieve most episodes (except the shopping one) and recall them in the correct order. However, it is not useful for retrieving details irrelevant to Nancy's problem and goals.

Our results on script recall are relevant to the script theory of Schank and Abelson (1977). A script is a memory structure representing a person's generic knowledge of a stereotyped activity like visiting a doctor or attending a lecture. It is presumed that when a text mentions several actions from a script, the reader activates the underlying script and proceeds to fill in its variables according to the details in the text.

In this theory, it would seem that presence of an unusual goal (rather than the normative script goal) might affect memory of the script-based episodes in one of two ways. One possibility is that the goal merely serves to link together the several scripts (and replace their standard "reasons") and is used also to elaborate upon them at recall. However, our results or lower accuracy of cued recall and true statements recognition in the problem condition create problems for this view of how the theme operates.

The more plausible hypothesis is that only selected actions of the underlying script are aroused by the text; they are elaborated and fit into a goal-oriented schema at a level higher than the action scripts. For example, the doctor's remarks to Nancy, while part of a standard "visiting doctor" script, are also a critical part of her goal of finding out whether she is pregnant. Thus, the actions in the text are treated not only as script actions but as potential steps in Nancy's plan to do something about her pregnancy. By spending cognitive effort on filling in the steps in Nancy's higher level plan, the problem subjects appear to have given less attention to rehearsing the lower level script actions. This results in problem subjects' remembering script actions less well than controls, who had no goal plan weaving throughout the separate scripts and who therefore, devoted their full attention to the script actions themselves.

Let us contrast our study with several previous demonstrations of the influence of a prior context upon memory for prose. Consider first studies by Bransford and Johnson (1972) and Dooling and Lachman (1971). Their subjects read a passage that was practically incomprehensible to them unless they had first seen a picture (or been given a title) that showed them the referents for vague terms and for otherwise obscure connections between parts of the text. In contrast, our text was completely understandable

without the motive-and-problem information. It described completely common events and, in certain respects, the control subjects learned it better than the problem subjects.

Consider next a study by Sulin and Dooling (1974) in which subjects read a passage that claimed to be about either a fictional character or a famous historical character (Adolph Hitler). Subjects who read the latter passage were likely to falsely believe later that a fact true about Hitler was in the text when it had not been stated. This study differs from ours in many respects. First, we measured recall distortions and differential memory of text elements, whereas Sulin and Dooling only examined false recognition of a simple fact about Hitler. Second, their context information ("Hitler") activated specific facts about a specific character, whereas ours activated a general interpersonal theme that apparently altered the way subjects interpreted the text, assigned salience to its parts, and distorted its recall. Ours is a study of how motives are connected to text elements and used to knit together different parts of a text. In this respect, it is most similar to a prior study by Pichert and Anderson (1977), in which subjects were asked to read a passage about a house tour from the perspective of a prospective burglar or home buyer. The "burglar perspective" in fact gives the reader a set of goals, namely, to locate an entry, locate the valuables, and so on, and text elements relevant to those goals are salient and well recalled, as Pichert and Anderson found.

In closing, an implication of these studies should be remarked. In understanding story book characters, we seem to use much the same methods we use when we interact with people in real settings, using the same motivational schemata to interpret or explain why

people act as they do. Our ability to identify people's plans or intentions from their actions and instigating circumstances is a social skill we learn and use often in interpersonal affairs. We use those skills when we read a narrative and identify the motives, methods, and madneses of fictional characters. That being so, we may expect all manner of variables influencing "person perception" to have their counterparts in processes dealing with "character understanding" in narratives, and vice versa. Recall will tend to reconstruct the motives, thoughts, and attributions the reader imagined that the characters were experiencing.

REFERENCES

- BRANSFORD, J. D., & JOHNSON, M. K. Contextual prerequisites for understanding: Some investigations of comprehension and recall. *Journal of Verbal Learning and Verbal Behavior*, 1972, **11**, 717-726.
- KINTSCH, W. *The representation of meaning in memory*. Hillsdale, N.J.: Erlbaum, 1974.
- DOOLING, D. J., & LACHMAN, R. Effects of comprehension on retention of prose. *Journal of Experimental Psychology*, 1971, **88**, 216-222.
- ORNSTEIN, R. *On the experience of time*. Baltimore: Penguin Books, 1969.
- PICHERT, J. W., & ANDERSON, R. C. Taking different perspectives on a story. *Journal of Educational Psychology*, 1977, **69**, 309-315.
- SCHANK, R. C., & ABELSON, R. P. *Scripts, plans, goals and understanding*. Hillsdale, N.J.: Erlbaum, 1977.
- SULIN, R. A., & DOOLING, D. J. Intrusion of a thematic idea in retention of prose. *Journal of Experimental Psychology*, 1974, **103**, 255-262.
- THORNDYKE, P. W. Cognitive structures in comprehension and memory of narrative discourse. *Cognitive Psychology*, 1977, **9**, 77-110.

(Accepted for publication March 1, 1979.)