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Point of View in Narrative Comprehension, Memory, and Production

JOHN B. BLACK

University of Illinois at Chicago Circle

TERRENCE J. TURNER

Research Branch, North Quay, Queensland

and

GORDON H. BOWER

Stanford University

A preference for a consistent point of view pervades narrative comprehension, memory, and production. Subjects read statements exhibiting a consistent point of view faster than statements exhibiting a change in point of view, and they rated the consistent statements as more comprehensible than change statements. Futhermore, subjects tended to misrecall change statements as consistent statements; and when asked to edit statements to make them more comprehensible, they rewrote change statements to be consistent. Merely making a character the subject of the narrative statement sufficed to establish his as the dominant point of view.

A major issue in studying text comprehension is the nature of coherence in text. What differences are there between a string of sentences that form a connected discourse and a string of unrelated sentences? One difference is that in the text there is a continuity of topic and meaning, a continuity fostered by cohesive relations between successive parts of the text. One important task is to specify these cohesive relations in discourse. Here we propose one kind of cohesive relation and we demonstrate its influence upon text processing. In particular, we propose that people prefer to interpret narrative and descriptive discourses from a consistent perspective or point of view.

Recent theoretical writings on discourse cohesion have appeared in linguistics, psychology, and artificial intelligence. Halliday and Hasan (1976) proposed an extensive classification of kinds of cohesion and discussed the linguistic properties of these. Clark (1977) presented a taxonomy of some inferences people draw in order to establish cohesion in a discourse. Schank and Abelson (1977) discussed knowledge structures that computer programs (and presumably people) must have in order to draw the inferences needed to make an elliptical text cohesive. However, none of these proposals have discussed another form of cohesion, namely, that a text should develop from a consistent point of view.

Scholars of rhetoric have studied point of view as a narrative technique since Henry James stressed its importance (see James, 1934). As they have noted, literary point of view has two aspects:

(1) Who is the narrator?
(2) What is the narrator's relation to the action?

(Brooks & Warren, 1972). The first question concerns such issues as "Is the narrator omniscient or does he possess only limited knowledge?," "Is the narrator reliable or untrust-

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worthy?," etc. The second concerns such issues as "Is the narrator the main character?," "Is the narrator an involved or a detached observer?," etc. These two dimensions can be further subdivided to yield an array of rhetorical techniques (see Booth, 1961; Scholes & Kellogg, 1966; Moffett & McElheney, 1966). In this paper, we focus on the second question: specifically, on whether or not the narrator is located with a given character.

Psychological Assessments

How might one investigate the effect of cohesive relations on readers' processing of text? One method notes how rapidly a target sentence is comprehended as its cohesive relation to prior context sentences is varied. For example, Haviland and Clark (1974) found that people took longer to read two sentences when they had to make a lexical inference to establish the continuity of reference between the two sentences than when no such inference was required. Another method examines memory errors for texts which require readers to make inferences to establish cohesion. It is assumed that if the inferences occur during comprehension, they will become an integral part of the memory representation of the text; therefore, after a period of time, these inferences-while-reading become indistinguishable from actually read information. For example, Thorndyke (1976) found that readers later "remembered" (falsely) that they had read inferences they had needed to fill the causal gaps in stories. We have used comprehension time and memory errors together with two other experimental techniques to demonstrate the effect of point of view on psychological processing.

Linguistic Considerations

In linguistics, point of view is related to deixis (Fillmore, 1974). The term *deixis* (which is Greek for "pointing") refers to the orientational features of language which are relative to the time and place of utterance (Lyons, 1968). The linguistic study of deixis covers verb tense, place adverbs such as *here* and *there*, demonstrative adverbs such as *this* and *that*, verbs of motion such as *come* and *go*, etc. Harris and Brewer (1973) and Brewer and Harris (1974) have shown effects of deixis in psychological processing in that people remembered diectic distinctions better when they occurred in sentences with an appropriate spatio-temporal context than with a neutral context.

These spatial and temporal deictic terms are precisely the language forms that are sensitive to the aspect of point of view of interest to us: the relation of the narrator to the action. These deictic terms can be used to establish a point of view, and once a point of view is established it will determine later deictic terms used. Thus, as Fillmore (1974) points out, when we read

The door to Henry's lunchroom opened and two men *came* in.

we know that the narrator is located inside the lunchroom, but when we read

The door to Henry's lunchroom opened and two men *went* in.

we know that the narrator is located outside the lunchroom. *Come* and *go* provide us with this point of view information. *Come* essentially means "move towards the narrator" and *go* "move away from the narrator." (Their full meanings are more complicated; see Fillmore, 1975). Clark (1974) noted that the motion need not be physical, but could be transitions to (*come*) or from (*go*) a "normal" or "approved" state of being. Thus, one can "*go* out of his mind," but one must "*come* back to his senses."

So far the narrator's relation to the action has been described as a physical location or state. But it also involves the closeness of his or her relationship with the characters in the narrative. Kuno (1976) used the term "empathy" to characterize the narrator's identification with a character. Thus, in a narrative about John (the husband) and Mary (the wife), when we read

John talked to his wife.

we know that the narrator is identifying with John; but when we read

Mary's husband talked to her.

we know that the narrator is identifying with Mary. Kuno proposes a "Surface Structure Empathy Hierarchy" which states that

> It is easiest for the speaker to empathize with the referent of the subject; it is next easiest for him to empathize with the referent of the object...

In the two sentences above, John is the subject of the first so the narrator empathizes with him in that sentence, but Mary is the subject of the second so the narrator empathizes with her in that case.

Hence, we have two factors relating the narrator to the action: (1) the narrator's physical location or state of being, and (2) the narrator's identification or empathy with the characters. But what is the relationship between point of view and narrative coherence? Prescriptive grammar books advise that in order to write well, one should "maintain a consistent point of view as an aid to coherence" (Hodges & Whitten, 1972). In relating character identification to coherence, Kuno (1976) proposes "The Ban on Conflicting Empathy Foci" which states that

> A single sentence cannot contain two or more conflicting foci of the speaker's empathy.

Thus the following statement is ungrammatical

Mary's husband talked to his wife.

because the narrator's empathy is initially with Mary (by saying "Mary's husband"), but then shifts to John (by saying "his wife"). Thus one reason a good narrative is coherent is that it maintains a consistent point of view.

In this paper we extend this "why" explanation of the linguists by providing a "how" explanation (see Clark & Haviland, 1974); that is, we propose a psychological processing model that prefers to process narratives with a consistent point of view. In validating this model we gather a much wider range of empirical observation than the acceptability judgments cited above.

We propose that a salient determinant of the memory representation for narratives is the narrator. Furthermore, we claim that memory represents both the state and the state-transition information in a text relative to the narrator. Two factors determine the narrator's position in the story: (1) the described state, and (2) the character with whom the narrator identifies.

A Metaphorical Model

A metaphor and a few examples will serve to illustrate our proposal. Imagine that the narrator is a cameraman filming a movie and that each sentence in the narrative is like an instruction in a movie script telling him where to set up his camera to film a given event or situation. Thus if the first statement in a narrative is "Terry finished working in the yard," the cameraman sets up the camera out in the yard with Terry. Both of our rules for narrator placement apply in this case (i.e., the state is "in the yard" and the named character identified with is Terry). If the next statement in the narrative is "and he *went* into the house," the filming proceeds smoothly. This statement describes the action or state transition relative to the camera or narrator placement. If, on the other hand, the next statement is "and he *came* into the house," then there is trouble. This describes the action relative to a camera or narrator inside the house, not out in the yard. In our camera metaphor, the switched sentence requires that the camera set be struck, moved inside, and set up again to film the action. This takes time and effort, and interrupts the smooth flow of comprehension. If the interruption is too costly, the critical sentence may be "rewritten" in the memory representation, transforming it to be consistent with the on-going point of view.

This model has several testable consequences. First, if we measure the reading times of

individual statements in a narrative, a statement that switches the point of view should take longer to read than one that maintains the prevailing point of view. This follows since a statement describing an action from a different perspective requires an extra processing step: namely, shifting the narrator's location or, alternatively, re-interpreting the action from the narrator's current perspective. People should also rate statements with a consistent point of view as more comprehensible because these require less work to interpret and represent. Switching viewpoint should affect the listener's memory for the narrative. If the memory representation for a narrative is from a consistent narrative perspective, statements that switch point of view should be transformed during recall into statements that maintain a consistent point of view. Another consequence relates to the hypothesis that people will usually narrate a scenario from a consistent point of view. For example, Linde and Labov (1975) found that when people are asked to describe their apartment, they produced narratives with consistent points of view. Therefore, we felt that if given a chance to edit statements with switches in points of view, people would tend to change the statements to have a consistent point of view.

The experiments reported below test these predictions. They are presented in two sets denoted A and B, each with four parallel experiments. Experiments A1, A2, B1, and B2 deal with comprehension; Experiments A3 and B3 deal with memory; and Experiments A4 and B4 deal with production. Sets A and B differ only in the narrative statements used.

All test sentences used in the experiments first establish a location for the narrator, then describe a movement from that perspective or from a different perspective. The English deictic verbs of motion *come*, *go*, *bring*, and *take* were used to describe the movement. *Come* means motion towards the narrator and *go* motion away from him. We can transform a statement with a consistent point of view into one with a switch in point of view merely by replacing *come* by *go*, or *go* by *come*. For example, for the initial statement

Bill was sitting in the living room
reading the paper

the following is a consistent continuation

when John *came* into the living room,

whereas the following is a change continuation

when John *went* into the living room.

Further, in most American dialects, *bring* and *take* differ only in whether the motion is towards or away from the narrator (see Clark & Garnica, 1974; Lakoff, 1972). To illustrate their use, for the initial statement

Fred was just sitting down by the fire

the following is a consistent continuation

when his faithful dog *brought* him
his slippers,

whereas the following is a change continuation

when his faithful dog *took* him
his slippers.

The experimental materials in Sets A and B differ in how the narrator location was established. In Set A they were compound sentences. The first part of each sentence established the narrator location by mentioning a subject character and by establishing him in a spatial location. The second half described a motion out of or into that location. Hence, the Set A sentences satisfied both criteria for locating a narrator: they have both a location and a character with whom to identify. Thus if the first half of the sentence is

Terry finished working in the yard

the narrator would identify with Terry because he is the subject, and the narrator would be located in the mentioned yard.

We also wanted to test the impact of character identification in isolation. Will merely making a character the subject of a sentence suffice to establish narrator empathy with him, as Kuno (1976) suggests? We designed the Set B material to answer this question. We used sets of three short sentences. The first two sentences introduced a character in the subject position, then the third sentence described a motion from his or someone else's perspective. The second sentence in the triple always introduced the second character, but he appeared as the object instead of the subject. For example, if the first two sentences were

Alan hated to lose at tennis.

Alan played a game of tennis with Liz.

we could have a consistent continuation

After winning, she *came* up and shook his hand,

or we could have a change continuation.

After winning, she *went* up and shook his hand.

Unlike the sentences in Set A, these sentences did not describe movement into or out of a state; instead the movement was described only relative to the subject character. We used two sentences to establish the subject character, because a pilot study indicated that just one sentence was not strong enough to establish the narrator empathy with that character. But since identification with the subject character was the only point-of-view factor operating in these materials, Set B allowed us to test whether specifying a character as the grammatical subject was sufficient to establish a narrative point of view. As with Set A, all of the movements in the last Set B statements were described using the four deictic verbs of motion *come*, *go*, *bring*, and *take*.

Set A Experiments: Point of View Determined by Character and Location Materials

Materials. The materials were 16 compound sentences, each with a "consistent" and "change" version. The first half of each version established the narrator's point of view ("Terry finished working in the yard"), and the second half described a movement (e.g., "then he went inside"). Eight of the 16 sentences used a form of *come* or *go*, and the other eight a form of *bring* or *take*. A given subject would see two "consistent" and "change" sentences, each with *come*, *go*, *bring*, and *take*. The consistent and change sentences were balanced across subjects. All of the subjects saw the sentences in the same random order.

Subjects

All subjects were Stanford undergraduates who were either fulfilling a requirement for their Introductory Psychology course or were receiving payment. The same 24 subjects served in Experiments A1 and B1, another 32 served in Experiments A2 and B2, another 32 served in Experiments A3 and B3, and a final set of 40 subjects served in Experiments A4 and B4.

Experiment A1: Reading Time

Method

Procedure. The compound sentences were presented one half a sentence at a time on 25 × 17 cm cathode ray tube terminals (Hazetine Model 1) connected to a Nova-820 laboratory computer. The subjects were run in groups of one to three at separate computer terminals. Each sat at a table with a terminal screen approximately 45 cm away. They were instructed to read each statement normally and press a button as they finished it. They first saw a fixation point, then pushed the button to make the first half of the compound sentence appear; after reading that half, they pressed the button again to present the second half. After reading the second half, they pressed the

TABLE 1

LAST HALF READING TIME/SYLLABLE (IN MSEC) FOR SENTENCES IN EXPERIMENT A1

Verbs of motion	Type of sentence read	
	Consistent	Change
Come/go	323	387
Bring/take	303	339
Overall	313	363

TABLE 2

COMPREHENSIBILITY RATINGS[a] FOR SENTENCES IN EXPERIMENT A2

Verbs of motion	Type of sentence	
	Consistent	Change
Come/go	6.21	5.48
Bring/take	5.98	4.80
Overall	6.09	5.14

[a] On a 1 to 7 scale where 1 means "incomprehensible" and 7 means "very easy to understand".

button yet again and the fixation point reappeared. They repeated this cycle for 20 sentences. The first four sentences were practice sentences, while the following 16 were the experimental sentences.

Results

As expected, it took longer to read sentences with a change in point of view than with a consistent point of view. Table 1 presents the reading time per syllable for the critical second halves of the compound sentences. We used this measure to control for the differing lengths of the sentence halves. The first row presents the results for the eight *come/go* sentences, the second row for the eight *bring/take* sentences, and the last row presents the average results for all 16 sentences. Overall the consistent sentences took 313 msec/syllable to read and the change sentences 363 msec/syllable to read. The 50 msec/syllable difference is significant both with sentences considered as a fixed effect [$F(1,22)=14$, $p<.01$], and with sentences considered as a random effect [$F'(1,29)=6.41$, $p<.05$]. The consistent point of view sentences were read faster than the change in point of view sentence for both *come/go* and *bring/take* sentences, with no interaction between verb and point of view [$F(1,22)=1.00$, $p>.20$].

EXPERIMENT A2: COMPREHENSIBILITY RATINGS

Method

These 32 subjects were run in groups of one to six. They were each given a booklet containing the 16 *come/go* and *bring/take* sentences and instructed to rate each sentence on a 1 to 7 scale for how "comprehensible or easy to understand" they found the sentence. On this scale one meant "incomprehensible" and seven meant "very easy to understand." They wrote their rating on a blank beside each sentence.

Results

As expected, sentences with a consistent point of view were rated as more comprehensible than those with a change in point of view. Table 2 presents these ratings. The last row of Table 2 shows that the average rating of the consistent sentences was 6.09 (out of 7), while the average for the change sentences was 5.14. This .95 difference is significant with sentences considered either as a fixed effect [$F(1,30)=48$, $p<.001$] or as a random effect [$F'(1,16)=10$, $p<.01$].

The difference in comprehensibility between consistent and change sentences was greater for sentences using *bring* and *take* (1.18) than for sentences using *come* and *go* (.73). This interaction, however, is significant only when sentences are treated as a fixed effect [$F(1,30)=7.71$, $p<.01$]. Considering sentences as a random effect, the statistical significance disappears [$F'(1,14)=0.44$, $p>.20$]. Hence, this interaction is probably an artifact of the particular sentences used here.

EXPERIMENT A3: RECALL

Method

These 32 subjects were run in groups of one to six. They were read the Set A sentences one at a time. After listening to each sentence, they heard a three digit number and wrote down as fast as they could the numbers generated by successively subtracting threes from that number. After 20 sec of this, they were signalled to stop and to write down their recall of the sentence the experimenter had read. This procedure was repeated for all 16 sentences. The subjects' recall protocols were later scored for gist with special attention given to the motion verb in the second half of the recalled sentence.

Results

As expected, the deictic verbs of motion were recalled more accurately when the sentences had a consistent point of view. When the sentences had a change in point of view, subjects tended to eliminate the change in point of view. Table 3 presents the percentages of the critical motion verbs recalled incorrectly. These misrecalls were of two kinds. One verb could be recalled as its partner (e.g., *come* recalled as *go*), turning a change in point of view into a consistent point of view, or vice versa. The second type of misrecall occurred when a deictic verb was recalled as a verb that was neutral with respect to point of view (e.g., *came* recalled as *moved* or *walked*). The percentages in Table 3 are the sum of these two kinds of transformations. Comparing these percentages is a conservative test of our hypothesis because it is biased against it. The bias is conservative because a neutral sentence maintains the prevailing point of view (i.e., is consistent), and so could have been classified as supporting consistency in point of view. We use this comparison biased against our hypothesis to enable a statistical analysis by sentences. If we removed sentences recalled as neutral, there would be missing values in our sentence level analysis.

TABLE 3

PERCENT OF DEICTIC VERBS OF MOTION MISRECALLED IN EXPERIMENT A3

Verbs of motion	Type of sentence read	
	Consistent	Change
Come/go	13%	39%
Bring/take	1%	34%
Overall	7%	37%

As Table 3 shows, many more sentences were misrecalled when they contained a change in point of view (37% overall) than when they had a consistent point of view (7% overall). This 30% difference is significant with sentences considered either as a fixed effect [$F(1,30)=45$, $p<.001$], or as a random effect [$F'(1,23)=14{,}41$, $p<.01$]. This greater misrecall for change in point of view sentences occurred both for sentences containing *come/go* and for sentences containing *bring/take*, with no interaction [$F(1,30)=2.3$, $p>.10$].

EXPERIMENT A4: EDITING

Method

Forty subjects were run in groups of one to six. They were given a booklet containing the 16 *come/go* and *bring/take* sentences and instructed to rewrite each sentence to "make it sound better, make it easier to read." They could rewrite the entire sentence in a space provided or cross out and replace parts of the sentence. These rewritten sentences were later scored for whether the motion in the second half was described from a consistent point of view, a changed point of view, or a neutral point of view.

Results

As expected, the point of view in a sentence was more likely to be rewritten when it was a

TABLE 4

PERCENT OF CRITICAL VERBS OF MOTION REWRITTEN IN EXPERIMENT A4

Verbs of motion	Type of sentence	
	Consistent	Change
Come/go	4%	64%
Bring/take	7%	68%
Overall	6%	66%

change in point of view than a consistent point of view. Table 4 presents the percentages of the rewritten sentences that transformed the point of view. For reasons mentioned in Experiment A3, the "Consistent" column contains the percentages of the consistent point of view sentences that were rewritten into either change in point of view sentences or neutral sentences, and the "Change" column contains the percentages of the change in point of view sentences that were rewritten into either consistent point of view sentences or neutral sentences.

Table 4 shows that sentences with a change in point of view were rewritten more often (66% overall) than those with a consistent point of view (6% overall). This 60% difference is significant with sentences considered either as a fixed effect [$F(1,38)=243$, $p<.001$] or as a random effect [$F'(1,22)=65$, $p<.001$]. This greater rewriting for change in point of view sentences occurred both for sentences containing *come/go* and for sentences containing *bring/take* [$F(1,38)=.10$, $p>.20$].

Set B Experiments: Point of View Determined by Character Alone

Materials. The materials consisted of 16 groups of three sentences, each with two versions, one exemplifying a consistent point of view, the other a change in point of view. The first two sentences of each group established a narrator point of view by having the same character as subject for both sentences. The first sentence always stated something about him or her (e.g., "Alan hated to lose at tennis."), and the second always described him or her interacting with another person in the object position (e.g., "Alan played a game of tennis with Liz."). The critical third sentence then described a movement by one of the characters using some form of *come, go, bring,* or *take* (e.g., "After winning, she *came* up and shook his hand."). Eight of the 16 sentence groups used a form of *come* or *go*, and eight a form of *bring* or *take*. A given subject would see two consistent and two change sentence groups each with *come, go, bring,* and *take*, for a total of 16. The consistent and change sentences were balanced across subjects. The character in the subject position of the first two sentences was also balanced across subjects. All of the subjects saw the sentences in the same random order.

EXPERIMENT B1: READING TIME

Method

Procedure. The same 24 subjects used in Experiment A1 also read the Set B sentences one at a time, displayed on the cathode ray tube as in Experiment A1. They were instructed to read each statement normally and press a button as they finished each one. They first read the 20 sentences for Experiment A1; then they were told that they were entering a new phase of the experiment where they would read groups of three sentences instead of compound sentences with two parts.

Starting with a fixation point on the screen, the subject pushed the button successively to present and read the first, second, and crucial third sentence of a group, with the final button press redisplaying the fixation point. Subjects repeated this cycle for 20 groups of sentences. The first four groups were practice sentences and the remaining 16 were experimental sentences.

Results

As expected, it took longer to read sentences with a change in point of view than with a

TABLE 5

LAST SENTENCE IN GROUP READING TIME/SYLLABLE (IN MSEC) FOR SENTENCES IN EXPERIMENT B1

Verbs of motion	Type of sentence read	
	Consistent	Change
Come/go	273	324
Bring/take	271	271
Overall	272	297

consistent point of view. Table 5 presents the reading for time/syllable for the critical third sentence. Overall the sentences with a consistent point of view took 272 msec/syllable, and those with a change in point of view took 297 msec/syllable to read. This 25 msec/syllable difference is significant with sentence groups considered either as a fixed effect [$F(1,22)=22$, $p<.001$] or as a random effect [$F'(1,12)=5.03$, $p<.05$].

However, there was no difference in the reading time for the change and consistent sentence groups (271 msec/syllable in both cases) using *bring* and *take*, but a large difference using *come* and *go* (273 msec/syllable for consistent and 324 msec/syllable for change). We have no explanation for this interaction.

EXPERIMENT B2: COMPREHENSIBILITY RATINGS

Method

The same 32 subjects as in Experiment A2 were run in groups of one to six. After they rated the 16 sentences for Experiment A2, they received a booklet containing the 16 groups of three related sentences in Set B. They were instructed to rate each sentence group on a one to seven scale depending on how "comprehensible or easy to understand" they found the sentence groups, with one denoting "incomprehensible" and seven denoting "very easy to understand." They wrote their ratings on a line beside each sentence group in the booklet.

TABLE 6

COMPREHENSIBILITY RATINGS[a] FOR SENTENCE GROUPS IN EXPERIMENT B2

Verbs of motion	Type of sentence group	
	Consistent	Change
Come/go	5.86	5.63
Bring/take	5.95	5.95
Overall	5.91	5.79

[a] On a 1 to 7 scale where 1 means "incomprehensible" and 7 means "very easy to understand".

Results

Contrary to expectations, there were no significant differences in the comprehensibility ratings. As Table 6 shows, consistent point of view sentence groups were rated slightly better (5.91) than the change in point of view sentence groups (5.79), but this difference was far from significant [$F(1,30)=1.65$, $p>.20$]. The difference seems squashed by a ceiling on the comprehensibility scale.

EXPERIMENT B3: RECALL

Method

Procedure. The 32 subjects used in Experiment A3 were run in groups of one to six. They heard and then recalled the 16 sentences in Experiment A3. They then heard the groups of three related sentences one group at a time. After each group, they heard a three-digit number and wrote down as fast as they could the numbers generated by subtracting threes from that number. After 20 sec they were told to stop and to write down the sentence group the experimenter had read. This recall procedure was repeated for all 16 of the sentence groups. The subjects' recall were later scored for gist with special attention given to the motion verb in the last sentence of each group.

Results

As expected, the deictic verb of motion in the last sentence of each sentence group was

TABLE 7

PERCENT OF CRITICAL VERBS OF MOTION MISRECALLED IN EXPERIMENT B3

Verbs of motion	Type of sentence read	
	Consistent	Change
Come/go	18%	34%
Bring/take	12%	22%
Overall	15%	28%

TABLE 8

PERCENT OF CRITICAL VERBS OF MOTION REWRITTEN IN EXPERIMENT B4

Verbs of motion	Type of sentence	
	Consistent	Change
Come/go	21%	34%
Bring/take	24%	29%
Overall	23%	32%

recalled better when it reflected a continuous rather than a change in point of view. For changed groups, recall tended to eliminate the change in point of view. Table 7 presents the percent ages of the critical motion verbs recalled incorrectly, as in Experiment A3.

Table 7 shows that more verbs were misrecalled when they indicated a change in point of view (28% overall) than a consistent point of view (15% overall). This 13% difference is significant with sentence groups considered either as a fixed effect [$F(1,30)=13$, $p<.01$] or as a random effect [$F'(1,32)=13$, $p<.01$]. This greater misrecall for change in point of view occurred both for sentence groups containing *come/go* and for sentence groups containing *bring/take* [$F(1,30)=1.25$, $p>.20$].

EXPERIMENT B4: EDITING

Method

The 40 subjects used in Experiment A4 were run in groups of one to six. After editing the sentences in Experiment A4, subjects received a booklet containing the 16 *come/go* and *bring/take* sentence groups of Set B. They were asked to edit each sentence group, rewriting any sentence to "make it sound better, make it easier to read." They could rewrite a sentence completely in a space provided or cross out and replace parts of any of the sentences. The rewritten sentences were later scored for whether the motion in the third sentence in each group was described from a consistent point of view, a changed point of view, or a neutral point of view.

Results

As expected, the motion verbs were more likely to be rewritten so as to transform the point of view when they indicated a change in point of view than when they indicated a consistent point of view. Table 8 presents the percentages of the sentence groups rewritten to transform the point of view, interpreted as in Table 4 of Experiment A4.

Table 8 shows that more motion verbs were rewritten when they contained a change in point of view (32% overall) than when they had a consistent point of view (23% overall). This 9% difference is significant either with sentence groups considered as a fixed effect [$F(1,38)=10.5$, $p<.01$] or as a random effect [$F'(1,36)=7.11$, $p<.05$]. This greater rewriting for change in point of view sentence groups occurred both for *come/go* and for *bring/take* groups [$F(1,38)=2.26$, $p>.10$].

CONCLUSION

The experiments in Sets A and B confirm expectations of a processing advantage for narratives written from a consistent point of view. In the four experiments of Set A, sentences with a consistent point of view were read faster, rated as more comprehensible, and were recalled more accurately than sentences with a change in point of view. When asked to

rewrite sentences to make them more comprehensible, subjects would rewrite change sentences to be consistent. Similarly, in recalling, subjects were especially prone to transform a switched-viewpoint sentence into a consistent one. Thus when a narrative establishes a narrator location or point of view by describing a state and using character identification, that point of view affects narrative comprehension, memory, and production.

The four experiments of Set B also favor the hypothesized preference for a consistent point of view, but more weakly. the sentence groups of Set B used only character identification to establish the point of view. Specifically, the narrator was located with one character by putting him or her in the subject location of the first two sentences. This sufficed to cause subjects to recall the sentence groups with a continuous point of view even when the sentences originally had a change in point of view, and to rewrite change sentences to be continuous. Indicating viewpoint via character identification was sufficient to affect memory and production, but the comprehension and reading time results were more equivocal. Specifically, comprehension and reading time showed an effect of viewpoint for *come/go* but not for *bring/take*.

We feel that our results answer the question posed by Abelson (1975), "Does a story understander need a point of view?," with a resounding reply of "Yes." More specifically, a point of view seems an inherent feature of any sequence of sentences, and a text will seem more coherent if it maintains a consistent point of view.

REFERENCES

ABELSON, R. P. Does a story understander need a point of view? In R. Schank & B. L. Nash-Webber (Eds.), *Theoretical issues in natural language processing*. Washington, DC: Association for Computational Linguistics, 1975.

BOOTH, W. C. *The rhetoric of fiction*. Chicago: University of Chicago Press, 1961.

BREWER, W. F., & HARRIS, R. J. Memory for deictic elements in sentences. *Journal of Verbal Learning and Verbal Behavior*, 1974, **13**, 321–327.

BROOKS, C., & WARREN, R. P. *Modern rhetoric*. New York: Harcourt Brace Jovanovich, 1972.

CLARK, E. V. Normal states and evaluative viewpoints. *Language*, 1974, **50**, 316–332.

CLARK, E. V., & GARNICA, O. K. Is he coming or going? On the acquisition of deictic verbs. *Journal of Verbal Learning and Verbal Behavior*, 1974, **13**, 559–572.

CLARK, H. H. Inferences in comprehension. In D. LaBerge & S. J. Samuels (Eds.), *Perception and comprehension*. Hillsdale, NJ: Lawrence Erlbaum Associates, 1977.

CLARK, H. H., & HAVILAND, S. E. Psychological processes as linguistic explanation. In D. Cohen (Ed.), *Explaining linguistic phenomenon*. Washington, DC: Hemisphere Publishing, 1974.

FILLMORE, C. J. Pragmatics and the description of discourse. In C. Fillmore, G. Lakoff, & R. Lakoff (Eds.), *Berkeley studies in syntax and semantics* (Vol. I). Berkeley, CA: Department of Linguistics and Institute of Human Learning, University of California, Berkeley, CA, 1974.

FILLMORE, C. J. *Santa Cruz lectures on deixis*. Bloomington, IN: Indiana University Linguistics Club, 1975.

HALLIDAY, M. A. K., & HASAN, R. *Cohesion in English*. London: Longman, 1976.

HARRIS, R. J., & BREWER, W. F. Deixis in memory for verb tense. *Journal of Verbal Learning and Verbal Behavior*, 1973, **12**, 590–597.

HAVILAND, S. E., & CLARK, H. H. What's new? Acquiring new information as a process in comprehension. *Journal of Verbal Learning and Verbal Behavior*, 1974, **13**, 512–521.

HODGES, J. C., & WHITTEN, M. E. *Harbrace college handbook*. New York: Harcourt Brace Jovanovich, 1972.

JAMES, H. *The art of the novel: Critical prefaces*. New York: Charles Scribner's Sons, 1934.

KUNO, S. Subject, theme, and the speaker's empathy—A reexamination of relativization phenomena. In C. N. Li (Ed.), *Subject and topic*. New York: Academic Press, 1976.

LAKOFF, G. Linguistics and natural logic. In D. Davidson & G. Harman (Eds.), *Semantics of natural language*. Boston: Reidel, 1972.

LINDE, C. & LABOV, W. Spatial networks as a site for the study of language and thought. *Language*, 1975, **51**, 924–939.

LYONS, J. *Introduction to theoretical linguistics*. London: Cambridge University Press, 1968.

MOFFET, J., & MCELHENY, K. R. (Eds.). *Points of view: An anthology of short stories*. New York: The New American Library, 1966.

SCHANK, R. C., & ABELSON, R. P. *Scripts, plans, goals and understanding*. Hillsdale, NJ: Lawrence Erlbaum Associates, 1977.

SCHOLES, R., & KELLOGG, R. *The nature of narrative*. London: Oxford University Press, 1966.

THORNDYKE, P. W. The role of inferences in discourse comprehension. *Journal of Verbal Learning and Verbal Behavior*, 1976, **15**, 436–446.

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