

The Effect of Intonation on Listening Comprehension¹

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Recently a number of psychologists have suggested that comprehension of discourse and single sentences is not simply a matter of applying linguistic knowledge to the information provided by the message itself. Rather, they have suggested, understanding a message involves applying the comprehender's knowledge of the world to the task of comprehending. Schallert (1976), for example, has shown that subjects given different perspectives of a text (in the form of titles for it) interpreted the text differently. She used passages which could be interpreted in two distinct ways and showed that a passage's title was a major predictor of performance on disambiguating multiple-choice questions about that passage. A second study (Anderson, Reynolds, Schallert, and Goetz, 1976) showed that people from different backgrounds who, therefore, have different systems of knowledge and belief about the world, interpret ambiguous discourse differently. Music education students and physical education students read a passage that could be interpreted as an evening of card playing or as a rehearsal of a woodwind quartet, and another passage that could be given either a prison break or a wrestling interpretation. Performance

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on disambiguating multiple choice tests was remarkably consistent with a subject's background. Apparently the knowledge structures and personal experiences an individual brings to a text provide an interpretive framework for comprehending that text, at least when the text is ambiguous.

The comprehension of internally consistent (unambiguous) discourse can also be influenced. Pichert and Anderson (1977) have shown that the importance, learnability, and memorability of idea units in a passage are strongly influenced by the perspective provided for a reader before he reads a passage. These data, as well as the results of the studies using ambiguous texts, have been discussed in terms of schema theory. Such data have been offered as examples of how schemata, or the knowledge structures a comprehender brings to a message, affect the understanding of the linguistic material explicitly given "in" the message.

An extensive discussion of schema theory has been presented by Rumelhart and Ortony (1977). For our purposes it is sufficient to say that schemata are memory structures that represent the generic concepts underlying objects, situations, events, sequences of events, actions, and sequences of action. A schema consists of a network of interrelations that generally hold among the constituents of the concept in question. Such schemata are abstract in the sense that they contain a "variable", "slot", or "place

holder" for each constituent element in the knowledge structure. Moreover, according to schema theory, schemata are the key units of the comprehension process. Understanding a message involves filling the slots in the appropriate schemata in such a way as to satisfy the constraints of the message and of the schemata.

The purpose of the experiment described in this paper was to determine whether characteristics of the presentation of discourse would influence its comprehension. Chafe (1976) has discussed the role of the packaging of a message in the comprehension of that message. He used the term packaging to refer to phenomena that "have to do primarily with how the message is sent and only secondarily with the message itself, just as the packaging of toothpaste can affect sale in partial independence of the quality of the toothpaste inside" (Chafe, 1976, p.28). One such form of packaging is the way a speaker chooses to place stress on particular words in a sentence. Chafe's paper indicates that stress patterns are used to convey two statuses of words--the status of newness of information within the given-new distinction and the status of which one of a number of given alternatives within the contrastiveness distinction. These two roles of stress would appear to be closely allied to the task of filling the variables of schemata during the act of comprehending. Thus, in terms of schema theory, the question asked herein was whether the pattern of stress used when a message

was presented could influence which details given in the message would be assimilated into schemata used to understand the message. The research involved an ambiguous message. We predicted that the stress pattern used to present this message would bias a subject's interpretation of it.

Methods

Subjects. Twenty students enrolled in experimental psychology at Mount Saint Vincent University participated in the study in order to fulfill a course requirement

Materials. The 152-word passage used (see Anderson, et al., 1976, pp. 10-11) usually is interpreted as a group of friends coming together to play cards; the alternative interpretation is a rehearsal of a woodwind quartet. Words in this passage that seemed to convey one or the other interpretation and that seemed to fit Chafe's descriptions for "newness" or "contrastiveness" were noted by the investigators. The passage then was read twice onto cassette tapes by a female experimenter. During the first reading those words which suggested a card game were stressed; during the second reading words suggesting a musical rehearsal were stressed.

Procedure. Subjects were assigned in an unbiased fashion to one of two groups and were tested in those groups. They heard one of the two tapes, completed an interpolated vocabulary task that required 6 minutes, were allotted 5 minutes to complete a free recall of the passage, and finally com-

pleted a short de-briefing questionnaire. The questionnaire asked subjects (1) to state the theme of the passage in one sentence and (2) to indicate if they had been aware of another interpretation of the passage.

Scoring. Wherever possible, subjects' protocols were categorized on the basis of the thematic sentences. In instances where the themes were unclear, the free recall protocols were examined.

Results and Discussion

In the Anderson et al. study (1976) when the card/music passage used here was read by undergraduate students the interpretations given to the passage could be predicted from the personal histories of the subjects (Anderson, et al., 1976). Moreover, 62% of those subjects did not report that a second interpretation of the passage was possible. In the present study, we predicted that the packaging of this ambiguous discourse would also play an important role in its interpretation.

Table 1 presents the number of subjects who heard either the quartet stress pattern or the card stress pattern and whose thematic sentences and free recall protocols reflected a quartet interpretation, a card interpretation, or some other interpretation. When the quartet stress pattern was used 7 subjects gave a musical rehearsal interpretation, two subjects gave a card interpretation, and 1 subject reported that the message described "a social evening". When the card

Table 1

Number of Subjects Who Gave a Quartet, Card, or Some Other Interpretation to the Message as a Function of the Stress Pattern Heard

Stress Pattern	Primary Interpretation		
	Quartet	Card	Other
Quartet	7	2	1
Card	3	7	0

stress pattern was played there were 7 card interpretations and 3 quartet interpretations. A chi square statistic computed for the quartet and card categories indicated that, as expected, the stress pattern used to present the message biased the subject's interpretation of that message, $\chi^2(1)=4.377, p<.05$.

The subjects were also asked if they were aware of a second interpretation of the passage. Five of the 7 subjects (71%) who interpreted the quartet tape as a musical rehearsal reported that a card interpretation was also possible. Anderson, et al. (1976) noted that the card interpretation predominates when this passage is read by a group of unselected students. In the present study stress patterns determined a subject's primary interpretation of the passage, but when a second interpretation was reported, that interpretation apparently reflected a subject's knowledge structures. Consistent with this interpretation a lower percentage

of subjects reported secondary interpretations when the message was presented using the card stress pattern, i.e., the stress pattern more consistent with the subjects' experiences. Only 3 of the 7 subjects (43%) who interpreted the card tape as an evening of card playing reported another interpretation. One of the subjects suggested that the passage could be viewed as an engagement celebration; the other two offered a "listening to music" interpretation. The latter two perspectives would seem to be more consistent with the personal experiences of an unselected sample of students than a quartet rehearsal would be.

Clearly, stress patterns supplement personal knowledge structures, and together they influence the comprehension of ambiguous discourse. Whether they influence the comprehension of all forms of discourse is an open issue. We have suggested that variations in stress patterns influence the evocation of interpretive schemata which in turn determines comprehension through the matching of information provided by discourse to slots in these abstract knowledge structures. This hypothesis seems to merit further investigation.

References

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