

原 著

Reading a Paragraph: How Japanese College Students Comprehend and Recall an English Paragraph

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Abstract

Reading comprehension has been understood as an interactive process. One can read and comprehend a text by combining two kinds of information: one's background knowledge and what is written in the text. So-called schema theory is a theory of how one's background knowledge works when one is in the process of reading.

Two kinds of schema (any reader's prior background knowledge) are postulated: a content schema and a formal schema. The former, or background knowledge relative to the content domain of the text, is reported by a lot of researchers of first/second language acquisition to have a facilitative effect on reading comprehension. However, how the latter, or background knowledge relative to the formal, rhetorical structures of different types of text, does influence reading comprehension is not well documented.

In this study, even for Japanese college students, who usually have not been taught the formal, rhetorical structures of English texts, a formal schema is shown to play a role in their reading comprehension.

Introduction

It is a kind of established fact that when one reads, all the information needed is *not* available in a text. So-called schema theory tries to stipulate how knowledge relevant with the text but not printed helps the reader comprehend the text. Of the two kinds of schemata, how a content schema (background knowledge of the content area of the

text) influences the reading comprehension is well documented in the literature of second/foreign language learning. How a formal schema (background knowledge of a formal rhetorical structure of the text) influences the reading comprehension, however, seems to need much more research to be verified. This is especially true in the field of second/foreign language learning by Japanese students, who have not had any substantial instruction

on how sentences are organized into a rhetorical structure in a foreign language, especially English, as well as in Japanese.

With such meager knowledge of English rhetorical structures, how differently will Japanese college students comprehend and recall an English paragraph with a well-formed rhetorical structure and one with an ill-formed rhetorical structure? Or, more fundamentally, does the formal schema of English paragraph play any crucial role when Japanese college students with whatever knowledge of Japanese rhetorical structures and meager knowledge of English rhetorical structures comprehend and recall an English paragraph? This study investigates how a well-formed and an ill-formed English paragraph affect what Japanese college students comprehend and recall by analyzing their recall protocols.

Subjects

The subjects of this study were 76 second-year students of Kawasaki University of Medical Welfare and all of them were non-English majors. (Half of them majored in clinical psychology and the other half medical welfare.) No standardized tests had been given to measure their English proficiency, but the marks of their English entrance examination questions and their class work showed their English proficiency level was low intermediate.

They were required to take two English courses (each given 90 minutes every week for a year). For one of the English courses given by the author of this paper, they were supposed to read articles in *Time* or *Newsweek* and to summarize in Japanese an assigned paragraph at the end of every class. For this course, a rough explanation of the rhetorical structures of English paragraphs was given in the first class of the year, but no

systematic teaching was done later on, though the topic sentence of the paragraph they were assigned to summarize was shown to help them summarize it. This shows that their formal schema, or their knowledge of the rhetorical structures of the English text was not much different from that of the average Japanese college student, which is not rich.

Materials

Two paragraphs from a composition textbook titled *Writing English Paragraphs* were used for this study¹⁾. To make a text (Text A) with an unnatural and ill-formed rhetorical structure, the ordering of the original paragraph was scrambled. To make the scrambled paragraph less unnatural, all the inappropriate uses of pronouns caused by the scrambling were corrected. The other paragraph was used as a text as it was in the original form (Text B). (See Appendix.)

In Meyer and Freedle (1984)²⁾, expository English passages are classified into four types of discourse and the effects of each type on their recall protocols were discussed: collection/description, causation, problem/solution, and comparison. The original form of Text A was presented in the textbook as a comparison paragraph. But it was judged to be a collection/description paragraph as defined by Meyer and Freedle, because there were no opposing views found there and each element of the paragraph was related only by their association with the topic of the paragraph. Text B was judged to be a causation paragraph just as classified as such in the original textbook: one effect followed by reasons.

Procedures

All the subjects were told to read Text A (80 words), with an instruction that they were

supposed to write down in Japanese what they remembered reading. They were given one minute to read and one and a half minutes to recall. After that, they read and recalled Text B (131 words), given two minutes each to read and recall. This was done in the last class of the English course.

Scoring

Each of Text A and Text B were analyzed into 18 and 26 idea units, respectively. Two points were given to a correct translation in a recall protocol of each idea unit, one point to a partially correct translation, and none to a wrong translation or no idea units recalled.

Apart from scoring recalled idea units, each recall protocol was analyzed to determine whether it had the same top-level structure as that in the original text. The top-level structure is explicit description of each text structure: "in contrast", for a comparison paragraph, "because" or "as a result" for a causation paragraph, etc^{3,4}). Each protocol of Text A was judged to have the same top-level structure as that in the original text only when it had any description showing the protocol was a collection paragraph. Each protocol of Text B was judged to have the same top-level structure as that in the original text only when it had any description showing the protocol was a causation paragraph.

Results

The results are shown in Table 1. The mean percentage of idea units recalled for Text A was higher than for Text B, though not statistically significant ($t = 0.88$, n. s.). The percentage of the top-level structure identified for Text A, however, was much lower than that for Text B.

Table 1 Scores (n = 76)

	Text A	Text B
Mean Percentage of Idea Units Recalled	22.9%	19.9%
Percentage of the Protocols Containing the Same Top-level Structure as that in the Text	39.4%	92.1%

Discussion

In Meyer and Freedle (1984), a causation and a comparison passages were reported to be recalled better than a collection/description passage by native speakers of English attending a summer program of a graduate school. In Carrell (1984), passages of comparison, causation, and problem/solution are reported to be recalled better than a collection/description passage by foreign students attending intensive English programs⁵). In this study, however, the collection/description paragraph of Text A was recalled better, though not statistically significant, than the causation paragraph of Text B. And, furthermore, Text A was an ill-formed paragraph with a scrambled order.

There can be a few reasons for this anomaly. For one, the well-formed rhetorical structure and its top-level structure did not help them to comprehend and recall Text B very much. This could be a very plausible explanation because of their supposedly meager knowledge of the rhetorical structures of English paragraphs. But, considering the very high percentage of the top-level structure identified in their recall protocols of Text B as compared with that of Text A, this explanation needs to be examined more carefully. This will be discussed later in this section. For another, the vocabulary and syntax of Text B, or readability, was much easier than that of Text A, which could offset the ill-

formedness of Text A. Considering the low intermediate level of the students' English proficiency, the latter seems to be the more probable reason.

The percentage of the recall protocols containing the same top-level structure as that in the original text was, as expected, very much higher for Text B than that for Text A. The extremely low percentage for Text A can be traced to the fact that the original form of Text A, a collection/description paragraph, had the least structured rhetorical organization. With a scrambled order, Text A became a less structured paragraph. Many of the recall protocols for Text A were just a list of sentences linked without any explicit relationship. On the other hand, the percentage of the recall protocols of Text B containing the same top-level structure as that in the original text was very high. This seems to be due to the fact that Text B was a highly organized causation paragraph and its top-level structure was explicitly signaled by the word "reason" used repeatedly in the paragraph.

No studies have shown definitely that the percentage of recall protocols containing the same top-level structure as that in the original text is significantly higher for a causation passage than that for a collection/description passage. However, because a causation passage is highly structured, or "the causation schema surpasses the collection and description schema in organization⁶⁾", its top-level structure should be identified and recalled better than the top-level structure of a collection passage.

What do these almost equal scores of the idea units recalled for both texts and the great difference in the percentage of the protocols containing the same top-level structure identified as that in each text mean? This question leads us to the more essential

question, "What is reading or comprehending a text?" Comprehending a text *is not* decoding letters or letter clusters. Comprehending a text *is not only* understanding the meaning of each proposition juxtaposed arbitrarily. Comprehending a text *should be also* understanding how each proposition is related at the macro-level where groups of sentences and paragraphs are interrelated as well as the micro-level where clauses and sentences are interrelated⁷⁾. In this sense, to know what type of rhetorical structure a paragraph has provides with one a very useful framework along which he or she can build up a total comprehension of the paragraph.

On the other hand, one can recall a text even without comprehending the rhetorical structure of the text. It is plausible that a text without any rhetorical structure, if it is short enough, can be recalled no worse than a well-structured text. In other words, if the memory of human beings were perfect, we could recall everything we read, even if it lacks any rhetorical structure. In reality, it is true that a long text without any rhetorical structure is very hard to recall. It is also true, however, that a short text without any rhetorical structure is not so difficult to recall.

Thus the high percentage of the protocols of Text B containing the same top-level structure as that in the text shows that they were able to comprehend Text B better than Text A in terms of its rhetorical structure because the clear and explicit signaling in Text B guided them to the better understanding of the rhetorical structure of the text. On the other hand, they had no guiding framework for Text A with a scrambled order and no explicit top-level structure. However, because of its simple vocabulary and syntax and, probably its familiar topic, Text A was recalled better than Text B in terms of the sheer number of the idea units recalled.

Conclusion

The Japanese language has its own guiding framework along which its passages are structured: *ki*, *sho*, *ten*, and *ketu*. To comprehend English, which is structured along its own guiding frameworks, however, Japanese students are expected to follow the English frameworks. For the average Japanese college student, who usually has not learned a lot about the rhetorical structures of English passages and/or paragraphs, what does this mean? A voyage without a compass or a voyage with a compass that does not work correctly? This study examined how differently Japanese college students without any substantial knowledge of the rhetorical structures of the English language comprehended and recalled a well-structured English paragraph and an ill-structured English paragraph with a scrambled order. The total number of idea units recalled was higher, though not statistically significantly, for the latter (Text A) than the former (Text B), but the percentage of the recall protocols containing the same top-level structure as that in the original text was higher (statistically significantly) for the former (Text B) than the latter (Text A).

The slightly higher number of idea units recalled for Text A was not because Text A was easier to comprehend than Text B. The higher number could be better explained as a result of the easiness of its vocabulary and syntax and the familiarity of its topic. In other words, Text A was easier recalled than Text B, but Text A was not necessarily easier to comprehend than Text B in the sense of "comprehend" defined as understanding the rhetorical structure of the text as well as the meaning of each proposition.

To conclude, even for Japanese college students, whose knowledge of the rhetorical

structures of English paragraphs is very poor, a well-structured English passage is easier to comprehend than an ill-structured English paragraph. And when a paragraph is simple and easy enough in terms of its vocabulary and syntax, even an ill-structured paragraph can be recalled better than a well-structured (and better comprehended) paragraph. Further research should be made to examine how differently Japanese college students will comprehend and recall a longer and well-structured paragraph and a longer and ill-structured paragraph. Further research is also needed to examine how much degree of instruction on the rhetorical structures of English paragraphs will improve to how much extent reading comprehension by Japanese college students.

Appendix

(Text A)

In the summer, my best friend and I go swimming together. We go skiing in the winter. We play tennis all year around. Since we have so many interests in common, we really enjoy spending time together. We have many of the same interests. For example, we both like music a lot. In fact, we met at a concert five years ago. We also both like to read. We often borrow each other's books and discuss the books we've read.

(Text B)

Most Americans own cars. There are a number of reasons for this. One reason is that public transportation is not good in most American cities. Except in a few large cities, such as New York, it is not practical to get around without a car. Another reason is that both cars and gasoline are inexpensive in the United States, compared to Japan or European nations. Most people can afford to own and drive a car. Finally, Americans enjoy the

independence that goes with owning and driving a car rather than depending on public transportation or another person for a ride. Even if they have a chance to get a ride to

work with another person, many Americans prefer to drive their own car. For all these reasons, most Americans own cars.

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日本人大学生による英文パラグラフ読解について

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要 旨

スキーマ理論は、読解過程において読み手の持つ背景知識がどのように関与しているかを解明しようとするものであり、近年、言語習得（母語及び外国語）の研究分野において活発に議論されている。一般的にスキーマは、内容スキーマ・形式スキーマの二種類に分けられる。本論は、テキストの構成に関する背景知識である形式スキーマが、文レベルの翻訳を中心とした英語読解の訓練しか受けていない平均的な大学生の英文の読解過程において、どのような役割をはたしているかを論じたものである。