

Recall of Label Content: The Effects of Length and Sequence

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Introduction

Visitor research has revealed several consistent findings related to the physical features of label design. For example, studies have found that visitors are more likely to read short labels (e.g., 50-75 words) than they are longer labels (e.g., Bitgood, et al., 1987; Bitgood & Patterson, 1993; Thompson & Bitgood, 1988; Borun & Miller, 1980). Another aspect of label design is its content. One problem related to content is visitors' ability to recall information. Two questions related to content were examined in this study:

- Does recall of information depend on label length? Is it more difficult to recall items from longer labels?
- Does the sequence of presenting information determine which information will be recalled? Will information be recalled easier if it is presented first?

We could find only one study that addressed the question of information recall related to label length (Borun & Miller, 1980). Borun and Miller asked visitors to read labels that included from one to five topics. They found that as the label length increased, the frequency of reading the whole label decreased. In addition, the scores on a test of cognitive gain also decreased beyond the label containing two topics. Unfortunately, amount read and label length were confounded in this study.

The question remains: If the entire label is read, will retention of information be related to the length of the text? The current study attempted to answer this question by exposing individuals to text samples composed of one and two paragraphs with five chunks of information per paragraph. Of concern was whether people would recall more items from a paragraph when it was presented alone rather than in combination with another paragraph.

A second question addressed in this study was the sequence of presentation. When information is presented in two paragraphs, is the order of presentation important? That is, will information be more difficult to recall if it is contained in the first or the second paragraph of a two-paragraph label?

Method

A total of 34 undergraduate students recruited from introductory psychology classes at Jacksonville State University served as subjects. Subjects were shown samples of label text from an exhibition (Birmingham Museum of Art) on Northwest Coast Native American art on an overhead projector in a classroom.

Subjects were randomly assigned to one of two conditions with both conditions exposed to two samples of exhibit text. In the first condition (P1/P2-3), Paragraph 1 was presented by itself and Paragraph 2 and 3 were presented together. In the second condition (P1-2/P3), Paragraph 1 and 2 were presented together and Paragraph 3 alone. Each paragraph contained between 77 and 79 total words and five sentences with each sentence corresponding to one chunk of information (see Figure 1). Each single paragraph was exposed for 30 seconds and each double paragraph for 60 seconds. Subjects were instructed to read the text and, at the end of the exposure time (30 or 60 seconds), write down all of the information they could recall.

Answers were scored on a three-point scale for completeness of the information chunk. A response was assigned a (+) if it accurately corresponded to one of the information chunks from the passage. A response was assigned a (-) if the response was judged to involve partial recall of an item. Thus, for each paragraph, five points could be awarded. Reliability of scoring was determined by having an independent scorer judge each response and comparing scores assigned to responses. Percentage agreement was calculated by dividing agreements by agreements plus disagreements, and multiplying by 100. Inter-rater agreement was 79.58%, an acceptable level of reliability given the nature of the data.

Results and Discussion

Figure 2 graphs the label recall data for each of the three paragraphs in both conditions. The upper graph represents the average number of items that were completely recalled and the lower graph represents the average number of items that were partially recalled. In condition P1/P2-3, paragraph 1 was presented by itself, while paragraphs 2 and 3 were presented together. In condition P1-2/P3 paragraph 1 and 2 were presented together and paragraph 3 alone.

Label length. Label length was related to information recall for one condition, but not for the other. When paragraph 3 was presented alone (condition P1-2/P3) recall was significantly greater than when paragraph 3 was presented with paragraph 2. Paragraph 1, on the other hand, showed little difference whether it was presented alone or with paragraph 2. There was about equal recall of paragraph 2 whether it was combined with paragraph 1 or 3. Note that paragraph 1 was read either alone or as the first of two paragraphs when it was combined with paragraph 2. Paragraph 3 was read alone or as the second of two paragraphs when it was combined with paragraph 2. Recall of items in paragraph 2 was about the same whether this paragraph was presented as the second paragraph in a passage or the first.

Why was there a clear difference in recall for paragraph 3 when it was presented alone versus with paragraph 2, but there was little difference in recall for paragraph 1 when presented alone versus with paragraph 2? Perhaps it was

because the information in paragraph 3 was easier to recall than paragraph 1. Overall, more complete items were recalled from paragraph 3 than from either paragraph 1 or 2.

Sequence of paragraphs. Recall of information contained in paragraph 2 was about the same whether it was presented as a first paragraph in condition P1/P2-3 or as a second paragraph in condition P1-2/3. Thus, in this study, the sequence of information didn't seem to make a difference with respect to recall.

Significance

At least under one condition (paragraph 3), information was easier to recall when it was presented in a short text label (one paragraph with five information chunks) than in a longer text label (two paragraphs with ten chunks of information). Combined with the common finding that visitors are less likely to read long labels, the current study offers additional rationale for keeping labels short. A follow-up study is currently being conducted to investigate this problem further and to control for confounding variables.

References

- Bitgood, S., Nichols, G., Patterson, D., Pierce, M., & Conroy, P. (1987). Design Exhibit Labels from Experimental Research. In *Current Trends in Audience Research - 1987*. San Francisco, CA: AAM Evaluation and Research committee. Pp. 25-27.
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- Borun, M., & Miller, M. (1980). *What's In a Name? A Study of the Effectiveness of Explanatory Labels in a Science Museum*. Washington, DC: Association of Science-Technology Centers.
- Thompson, D., & Bitgood, S. (1988). The Effects of Sign Length, Letter Size, and Proximity on Reading. In S. Bitgood, Roper, J. T., Jr., & Benefield, A., *Visitor Studies - 1988: Theory, Research, and Practice*. Jacksonville, AL: Center for Social Design. Pp. 101-112.

Figure 1
Label Content Used in the Study

Paragraph 1:

Totem poles have been a part of native life on the Northwest Coast of North America for over two hundred years. Totem poles traditionally represent the ancestry of a family. The figures on totem poles consisted of symbols and illustrations, many of them comparable to our family coat of arms, and others commemorating historical events. They were not pagan gods or demons as is commonly supposed; they were never worshipped. Usually they illustrated myths or tribal traditions.

Paragraph 2:

There is great similarity between two-dimensional and three-dimensional art of the Northwest Coast. The artists are exceptionally good at adapting the form of an object to the shape of whatever surface they are given to work with. The Chilkat blanket is an example of two-dimensional art from the Tlingit tribe. Its figures or events are rarely depicted in a realistic style. Parts of the represented animal are distorted beyond recognition, completely filling the available space.

Paragraph 3:

The tree for a totem pole must be carefully selected. Haida artists traditionally cut the log in half, and hollow out the back to help it dry evenly and reduce cracking. After the log is rounded and smoothed, the figures are drawn onto the wood. Sometimes a chainsaw is used to remove large areas of wood, but axes and chisels are used for most of the work. Finally, the totem pole is left to the elements to weather naturally.

Figure 2
Items Recalled from Each Paragraph

