

본문읽기시간과 선호도 평정에 영향을 미치는 요인들의 상대적 중요도(Ⅲ)

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Relative importance of factors affecting text reading time and preference(Ⅲ)

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Abstracts

This study examined relative importance of these factors by asking people to read the texts that was constituted with square and non-square form letter and rank the preference of texts through conjoint analysis. In the case of reading time, font type was the most important factor, followed by leading, line width, font size, line length, justification, letter width in their order of importance. And in the case of preference decision, font size was the most important factor, followed by font type, leading, line width, letter width, justification, line length. The result will be useful in understanding how to consider human preference in the Hangul typography.

1. Introduction

Letter is a symbolic code system that transmit meaning and events which can be perceived. Letter should be distinguished easily, therefore, written information would be legible when the type of each letter shows a clear differences[1]. Although, rapid popularization of the office automated machine including personal computers made various new typefaces, the effectiveness of communicating information, the inherent role of letter were not fully regarded, because those were developed under the developer's sense of beauty not based on psycholinguistic research results and scientific data[2].

Moreover, the former researches about

legibility and readability of Korean letter focused only on one individual variable with different levels, so didn't review which variable could affect the most considering various factors simultaneously[3]. In other word, though understanding the effect of individual factor on reading, there still remains a question about which variable should be considered the first in the text which is formed with various factors. This study started from the limitation of the study of Yi & Jin[3, 4]. That is, it is hard to make a general conclusion about relative importance among many variables that affect reading only with a result about the preference. Yi, Park, & Jin[5] and Yi, Jin, Park, & Lee[6] examined relative importance of readability factors affecting text reading time and preference in the

square-lettered or non-square lettered text. For square-lettered text, in the case of reading time, leading was the most important factor on reading time, while in the case of preference, letter width was the most important factor. For non-squared text, justification and letter width were the most important factor, respectively. In the study of Yi et al(2000), however, there was not sufficient stimulus set to conduct conjoint analysis, because the stimulus set was only 16. Therefore, in this study, 32 stimulus set was prepared. Moreover, this study compared relative importance by including both squared and non-squared letter, and examined accordingly relative importance of readability factors.

2. Experiment 1

2.1 Method

The purpose of this experiment was to examine relative importance of factors affecting text reading time. In the experiment 1, texts were composed of usual letter width. 104 undergraduate students from Kyungpook National University participated in the experiment. Participants were recruited from 'Introduction of psychology' classes at the Kyungpook National University. There were used seven factors affecting text processing[7]: font type, font size, letter width, leading, line width, line length, justification.

Arriving at the laboratory, explain the purpose of experiment and after presenting 32 kinds of text brunch set, start to read each text one minute with the beginning alarm and stop with the final alarm, and

then, mark at the last word he or she read. The average experiment time was 65 minutes.

2.2 Result and discussion

In the analysis of mean utility for font type, non-square Gothic font(Han font) had more large effect on text reading speed than square fonts and non-square Myungjo font. For font size, 10 point was most effective as compared to 8 point or 12 point.

In the analysis of mean utility for letter width, 95% and 100% level had more large effect on text reading compared to 85% and 90% level. For leading, -20% had more large effect on text reading compared to -10% and 0%. For line width, relative narrow 150% width had more large effect on text reading compared to 200% and 250% width. For line length, short line length(6cm) had more large effect on text reading speed than long line length(12cm). In the justification, importance of 'justified' was more great than 'flush left(by letter)' and 'flush left(by word)'.

Fig 1. represents importance of 7 factors, considered with the difference of level in each factor. As seen in figure 1, font type marking 40.11%, affects the most. Leading, 25.01% and line width, 20.23% are the next and the importance of font size, line length, justification, and letter width was similar such as, 5.03%, 4.21%, 2.98% and 2.44%. These results are clearly different with other studies. leading (26.85%) was most important in Yi et al.(2000) focusing on the reading time with square form letter, and justification (21.10%) had most influence in text composed non-square form letter.

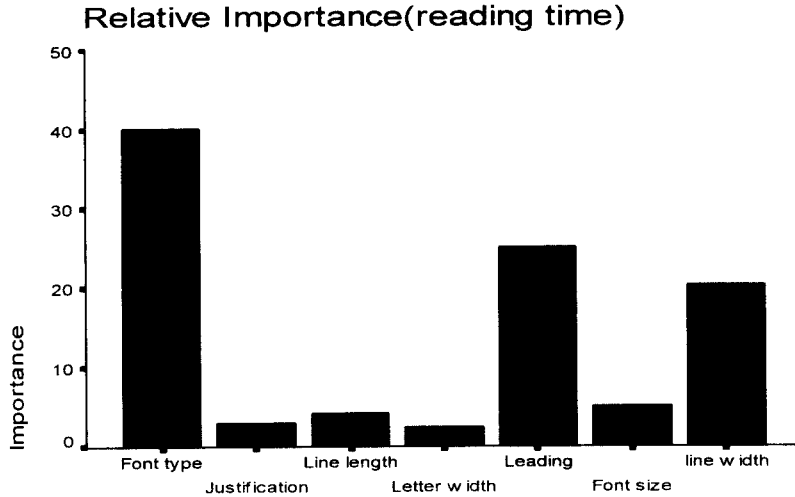


Fig 1. Relative importance of factors affecting text reading time

Moreover letter width(37.7%) was most important in Yi et al.(1998) focusing on the preference and font size had most influence in text with usual letter width(Yi et al., 1999). This suggests that the feature and influence on reading time of factor that is thought to be easily read are different.

Experiment 1 purposed to review the importance of many factor that affect text reading speed. The result was different with previous studies about preference. Therefore, we needed to check out the preference under the same condition and analyze the results. Experiment 2 reviewed the relative importance of the factor that affects text preference.

3. Experiment 2

3.1 Method

103 undergraduate students from Kyungpook National University participated in the experiment for course credit. Each participant rated text preference instead of

reading text.

3.2 Results and Discussion

In the analysis of preference for font type, square-Myungjo font was preferred over other fonts. For font size, 1w point was preferred over 8 point or 10 point. Respondents considered 100% level as more important compared to 85% to 95% level. For leading, 0% was preferred over -10% and -20%. For line width, 250% was most preferred. For line length, short line length was most preferred. In the justification, 'justified' was preferred rather than 'flush left(by letter)' and 'flush left(by word)'.

Relative importance of each factor affecting text preference are presented in Figure 2. As the figure shows, most important factor was font size(34.50%). font type(31.92%), leading (13.67%), line width(11.86%) are the next. The importance of letter width, justification, and line length was similar such as, 5.07%, 1.65%, 1.33%.

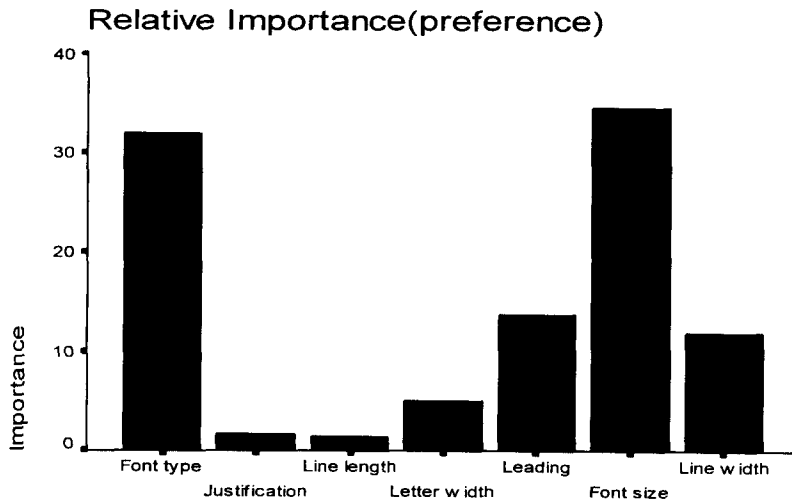


Fig 2. Relative importance of factors affecting text preference

4. General discussion

In the comparison of level for each factor obtained from result of experiment 1 and 2, non-square font was read faster, but myungjo font was preferred. Font size 10 point, leading -20%, letter width 95%

or 100%, short line length and 'justified' were read faster, respectively. However, in the case of preference, leading 0%, font size 12 point, and line width 250% was the most preferred. There was slight difference between reading time and preference.

Comparison among relative importance of each factor obtained from Experiment 1,

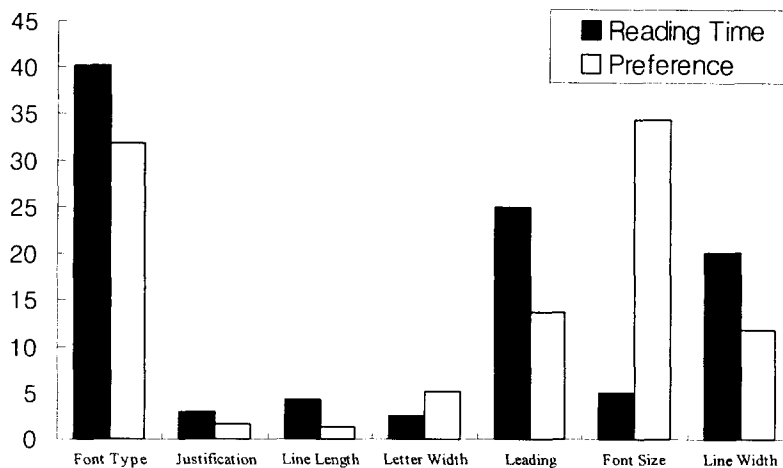


Fig 3. Comparisons among relative importance of factors

and 2 are presented in Figure 3. Relative importance of font type was important in both cases; Reading Time(RT, 40.11%) and Preference Rating(PR, 34.50%). Relative importance of letter width shows 25.01%(RT), 13.67%(PR), and relative importance of line width was 20.23%(RT), 11.86(PR), respectively. That is, relative importance of letter width and line width were more important in the reading time. But relative importance of font size shows 5.03%(RT), 34.50%(PR), respectively. That is, font size was more effective in the preference.

“Relative importance of factors affecting text reading time and preference(II): Focusing on non-square form letter”, *Paper presented at the 2000 International Symposium on Emotion and Human Sensibility Joint Conference*, 2000.

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