

EMOTIONAL AND PERSUASIVE PERCEPTION OF FONTS¹

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Summary.—The aim of this study was to explore the latent affective and persuasive meaning attributed to text when appearing in two commonly used fonts. Two satirical readings were selected from the New York Times. These readings (one addressing government issues, the other education policy) were each printed in Times New Roman and Arial fonts of the same size and presented in randomized order to 102 university students, who ranked the readings on a number of adjective descriptors. Analysis showed that satirical readings in Times New Roman were perceived as more funny and angry than those in Arial, the combination of emotional perception which is congruent with the definition of satire. This apparent interaction of font type with emotional qualities of text has implications for marketing, advertising, and the persuasive literature.

It is an intuitive maxim in advertising that typefaces have personas and can manipulate word meaning (Spikermann & Ginger, 2003). Studies of typography indicate that typeface (or font) styles have psychological effects on a reader (Poffenberger & Franken, 1923; Tinker & Paterson, 1946; Haskins, 1958; Aaker, 1997; Doyle & Bottomley, 2004). Poffenberger and Franken (1923) suggested that it is in the advertiser's best interest to manipulate the font in such a way that the consumer associates the text with desired qualities. Schiller (1935) postulated that different typefaces would be suitable for specific commodities. More contemporary designers stipulate that the content and purpose of the text implicitly demand a particular format of communication, and that typography is an essential ingredient in that format as it expresses content in parallel to the verbal text (Brumberger, 2003).

The capacity of nontext elements to elicit readers' feelings has been referred to as atmosphere value (Poffenberger & Franken, 1923), feeling tone (Ovink, 1938), congeniality (Zachrisson, 1965), connotative meaning (Rowe, 1982), semantic quality (Bartram, 1982), multimodal features (Walker, Smith, & Livingston, 1986), topographic allusion (Lewis & Walker, 1989), and a created mood (Brumberger, 2003).

There have been a number of studies in which the effect of fonts on readability was examined. Findings consistently showed that Sans Serif fonts are read more easily by adults (e.g., Krulee & Novy, 1986; Sanocki, 1988; Yager, Aquilante, & Plass, 1998) and by children (Wood, Davis, & Scharff, 2005).

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There have been some studies of preferential, attributive, and emotional associations to fonts. Tantillo, Di Lorenzo-Aiss, and Mathisen (1995) examined popular type styles of the Serif and Sans Serif classifications for perceptual affective differences. They presented a meaningless word in six fonts to be scored on opposing adjective pairs, such as beautiful and ugly. Specific fonts, as well as the Serif and Sans Serif classifications, varied on associated adjectives. Bernard, Mills, Peterson, and Storrer (2002) asked 22 readers of 12 different font texts to rate preferences and how much each font was associated with Personality, Youthful & Fun, and Businesslike. Notwithstanding the unreliability of these terms as they may have been defined by each respondent, results showed significant findings for each of the factors. Shaikh, Chaparro, and Fox (2006) cataloged data of over 500 online respondents to text samples (including the alphabet and numbers) as well as pangrams (e.g., "The quick brown fox jumps over the lazy dog") plus numbers. Analysis showed that readers associated certain fonts with specific personality traits. Specifically, Serif fonts were highest on ratings of Formal, Mature, Practical, and Stable, while Sans Serif fonts did not show high or low ratings on any adjectives. These results are important, although their meaning is mitigated by the subjectivity of the personality ratings and the lack of criteria in the instructions to raters. Since the personalities conveyed by typefaces are perceived intuitively instead of methodically by readers (Mackiewicz & Moeller, 2004), it is not surprising that other studies asking respondents to report which traits they intuit in associations with particular font types yielded inconsistent findings (Osgood, Suci, & Tannenbaum, 1957; Bartram, 1982). It is also important to stress that direct opinions and evaluations of fonts do not necessarily reflect the influence of the font when interacting with the meaning of text.

Contextual effects of font type have also been observed. Instead of asking for meaning to be assigned to the font, some studies asked respondents to evaluate the appropriateness of fonts to the text's meanings (Poffenberger & Franken, 1923; Haskins, 1958; Lewis & Walker, 1989). There is evidence that, if the font's appearance is presented as contradictory to the meaning of the writing, it is less appealing (Doyle & Bottomley, 2004) and more slowly read (Lewis & Walker, 1989). Doyle and Bottomley (2004) found that people chose products whose brand names were printed in the most appropriate fonts. If chocolates were in a box with the brand written in an appropriate font, subsequent subjects were more likely to take a chocolate from that box. Aaker (1997) found that brand information used in advertising was consistently associated with human personality traits by consumers. These traits appear to be related to preference. Brown (1958) found that different wrappers affected perception of freshness of bread, suggesting that the latent meaning the wrappers held was more influential in perceiving freshness than

more objective indices. However, none of these studies assessed differences in perceived emotionality or persuasive qualities of the text in response to changed font.

In this study, inferences made about reading material in different fonts were compared to measure the latent effect and persuasive influence of the font on the perception of the message read. To examine effects of fonts on the emotional and persuasion perception of a read message, an emotionally charged reading was chosen. Satire, a mode of communication often found in editorial discourse, is a particular style of communication often interpreted by critics as combining funny and angry emotional facets (Nagel, 1974). Shaikh, *et al.* (2006) reported that people generally associated Serif fonts with high scores on a number of projected traits, while Sans Serif fonts were not associated with any definitive or distinct traits. It was hypothesized that Emotional and Persuasive adjectives would be rated differently, based on their fonts. Because satirical readings were used, it was expected that the ratings of angry and funny, specifically, would be higher for readings in Serif fonts than for those in Sans Serif font.

METHOD

Two readings were selected from a New York Times satirical editorial author (Safire, 1997a, 1997b), reprinted with permission. These readings addressed government issues and education policy respectively. The readings were comparable in length, reading level, and overall tone. Based on unstructured discussions between the research team (the authors and two graduate students) and several people who read the Times editorials in their original print type, a list of emotional and persuasive qualities which were mentioned in the readers' descriptions was developed. Respondents were thus instructed to rate each reading on depressing, funny, angry, cheerful, authoritative, convincing, frivolous, amusing, logical, persuasive, and business-like.

Choice of Fonts

Various fonts (or typefaces) are used in contemporary printed literature. Of the fonts in contemporary use, Sans Serif and Serif are seen as most appropriate for straightforward printed text (Shaikh, *et al.*, 2006). Serif font features cross-strokes (as embellishments) which project from the main stroke of the letter. A popular font designed specifically for print is Times New Roman which is a Serif font. Times New Roman is the primary default for Microsoft Office software. Sans Serif fonts, which are less ornate and lack cross strokes and embellishments, are popular alternatives to Serif fonts. Arial is the most commonly used Sans Serif font.² Among word processing

²Ramsden, A. (2000) *Annabella's HTML Help*. <http://www.geocities.com/annabella.geo/font-face.html>.

users, Times New Roman is set as their default font, followed by Arial (Bernard, Lida, Riley, Hackler, & Janzen, 2002). Although there are inconsistent opinions and data as to which of the two fonts are more popular,³ the two fonts are seen as the ones preferred for straightforward texts. Thus, the fonts chosen for this study were Times New Roman and Arial.

Participants

Participants self-selected into the study from a convenience sample of northern university students ($N=102$). Participants ranged in age from 18 to 69 years, with the mean age of 26.7, and a median age of 25. The sample consisted of 73 women and 28 men; one participant did not identify sex. Forty-one percent of the sample identified themselves as undergraduates, 40% as graduate students, and 19% did not respond to this item. Thirty-four percent self-identified as Caucasian, 20% as Asian, 12% as Latino, 7% as African American, 1% as Native American, and 7% as "other"; 19% did not respond to this item.

Procedure

Three page packets were prepared. Page 1 had items (printed in 11-pt Courier) asking for the respondent's age, sex, academic student status, and race. The next two pages contained instructions to respondents (in 12-pt Courier) to read the paragraph on each of the two pages, and to respond to the Likert choices for the descriptors (printed in 10-pt Courier) following each paragraph.

To avoid an order bias, the government and education readings were presented in randomized order. In addition, half of the study packets contained Reading One in Times New Roman and Reading Two in Arial; the other contained Reading One in Arial and Reading Two in Times New Roman, both in 12-pt font. The resulting four versions were assembled in randomly sequenced packets before they were distributed. In the instructions, participants were simply asked to read the paragraph on each page and then rate it on a number of descriptors using a four-point Likert scale ranging from 1: Not at all to 4: Extremely.

RESULTS

Data were analyzed using an independent sample t test, categorizing effect size according to Cohen's guidelines (1988). The responses to the fonts, regardless of the reading topic, were compared. In testing the perception of satire (as the sum of angry+funny), analysis showed that Times New Roman was significantly more angry and funny than Arial ($t_{100}=3.33$, $p=.001$) with a moderate effect size ($d=.33$, $\eta^2=.10$). See descriptive statistics in Table 1.

³Wilson, R. F. (2001) *HTML E-Mail: text font readability study*. <http://www.wilsonweb.com/wmt6/html-email-fonts.htm>.

TABLE 1
AVERAGE OF ANGRY + FUNNY RATINGS BY FONT AND READING TOPIC

Font	Education			Government		
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>
Times New Roman	50	3.28	0.83	50	3.57	0.96
Arial	51	3.10	1.00	51	3.02	0.93

Exploratory individual *t* tests for ratings of specific ratings, regardless of reading topic, showed only one significant finding: Times New Roman appeared angrier than Arial ($t_{100}=2.15$, $p=.03$), with a small effect size ($d=.21$, $\eta^2=.04$).

As a further exploration of the results, the scores for each passage separately were compared using independent *t* tests. Times New Roman appeared more frivolous than Arial in the education reading ($t_{98}=2.88$, $p=.002$) with a moderate effect size ($d=.58$, $\eta^2=.07$). Arial appeared more cheerful than Times New Roman in the government reading ($t_{99}=2.71$, $p=.004$), with a moderate effect size ($d=.55$, $\eta^2=.07$). Times New Roman appeared more angry than Arial ($t_{90.5}=2.41$, $p=.009$) in the government reading, with a small effect size ($d=.48$, $\eta^2=.05$).

There were no order effects, neither based on which reading was presented first, nor on which font was presented first.

DISCUSSION AND IMPLICATIONS

An interaction effect between the font and topic is evident, based on the differential findings for each of the topics. However, when ratings were collapsed across the topic areas, Times New Roman was perceived as more satirical (angry+funny) than Arial. In analyses of perceptions across topic areas, only angry appeared as a differential perception between the two fonts.

Arguably, our findings can be synthesized with those of Bernard, Mills, Peterson, and Storrer (2002) and Shaikh, *et al.* (2006), within the framework of Elaboration Likelihood Model (Petty & Cacioppo, 1986; Cacioppo, Goldman, & Petty, 1991). The model posits two alternate means of persuasion, a central route and a peripheral route. The central route is content-based and relies on cognitive and logical persuasion, while the peripheral route uses ancillary noncontent cues to affect attitudes. Specifically, incidental cues, unelaborated rule of thumb, or reliance on intuitive judgment, are often tools of the peripheral route to persuasion. While the Elaboration Likelihood Model has been popular in applying cognitive theory to social psychology and consumer studies, it has been used in various research studies to evaluate reaction to persuasion in advertising (Lien, 2001), and it has also been applied to marketing techniques (Davies & Wright, 1994).

The peripheral route may be seen as utilizing subconscious reactions

which influence behaviors, reactions often triggered implicitly by images or word formats.⁴ While the awareness of a peripheral manipulation may lead to negative inferences about the product (Homer, 1995), undetected manipulations can evoke feelings which can affect the quality of the perceived message. As such a shift in font style which elicits changed perception can be interpreted as a form of peripheral route to persuasion.

It is interesting to compare our findings with the detailed analyses of the findings by Bernard, Mills, Peterson, and Storrer (2002) and Shaikh, *et al.* (2006). In the former study, there were no statistically significant differences between the ratings of Times New Roman and Arial fonts in terms of Personality or Youthful & Fun. In the Shaikh, *et al.* data, Sans Serif fonts are not associated with any personality traits, while Serif fonts are associated with such traits as stable, practical, mature, and formal. While the general pattern of the latter associations is consistent with present findings (with one exception when data were analyzed separately by readings), it is stressed that this study actually investigated the effects of fonts on judgments of readings, instead of merely asking raters to associate printed letters, numbers, words, and sentences with specific adjectives in the absence of a meaningful text context.

One may suggest there may be a parallel between the print embellishments of Serif fonts and its emotional attributions by readers. Perhaps, emotions can be conceptualized as secondary elaborations of a concrete textual message, just as the additional lines and curves which adorn the ends of letters can be construed as secondary and parallel messages which go beyond the physical representation of the message.

These findings suggest that the latent meaning of the font style affects the peripheral route to persuasion to alter the meaning and emotions attached to the content of the reading. The ability to alter the convincing qualities of a text surreptitiously, as well as perception of other emotional qualities, has implications for marketing, advertising, and persuasive literature. Present results indicate that differing fonts have specific differential Emotional and Persuasive aspects. It is feasible that the emotional and persuasive salience of fonts may differ in actual reading situations from what might be expected from *a priori* judgments. Furthermore, the differential findings by text suggests that the emotional and persuasive aspects of fonts are not straightforward effects; rather they form one element in the apperception of the reader which then interacts in an idiosyncratic manner with the style and content of the printed passage. This interaction effect is consistent with the model proposed by McCarthy and Mothersbaugh (2002) in which the semantic associations with the appearance of the font interact with the text's semantic content to create combined connotations.

⁴Taflinger, R. F. (1996) *Taking advantage*. <http://www.wsu.edu:8080/~taflinge/advant.html>.

The study design has several limitations. Although there were no evident sex or ethnic differences in the response patterns, the low number of male respondents and the skewness of reported ethnicity was not large enough to allow proper statistical analysis based on sex or ethnicity. In measuring the effects of the fonts, data might have been enhanced had rating adjectives been generated by an independent group of readers of the paragraphs, instead of using intuitive adjectives and descriptors which had been used in previous studies. This study is also limited in that respondents were American, limiting generalizability of results to other populations. In addition, the choice of satirical readings for the study limits the implications of the findings to a specific style of written communication. It would be instructive for researchers to examine these effects in communications other than satirical.

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