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Font Personality and B2C E-Commerce Trust

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ABSTRACT
User perceptions of trust in a Business to Consumer (B2C) electronic commerce website could influence its adoption and subsequent use. Prior research has examined various techniques for enhancing user trust in e-commerce websites. This study examines the role of typography and typefaces in influencing user perceptions of trust. Typefaces are viewed as possessing distinct personalities. When used to present text material in a website, those typefaces that are perceived as stable and trustworthy are expected to engender trust in the user. Data was collected from participants in an experimental setting that simulated an online banking website. The results of the study confirm our expectations. We find that serif and sans serif typefaces result in enhanced user trust compared to monospace and script typefaces. E-commerce vendors, particularly those engaging in financial transactions with the consumer need to pay attention to the typography used in their websites.

Keywords
E-commerce, typography, typeface, trust, website design.

INTRODUCTION
"To be trusted is a greater compliment than to be loved." - George MacDonald

The Business to Consumer (B2C) electronic commerce (e-commerce) market is projected to reach $330 billion by 2010 (Forrester Research, 2005). The largest B2C e-commerce product line is travel, with approximately 35% of the market, followed by computer hardware and software at $17 billion, automotive equipment at $16 billion, and apparel at $14 billion (Forrester Research, 2006). An important factor that influences B2C e-commerce adoption is the user’s perception as to whether the online merchant or website can be trusted (Holsapple and Sasidharan, 2005). Though recent technological advances have ensured considerable security and integrity for online transactions, users remain unimpressed with recent surveys indicating that less than one-half of internet users actually trust e-commerce websites. This is particularly so in the case of websites having transactions involving financial data. Concerns regarding the credibility and trustworthiness of online merchants have been pointed out as one of the major factors that could slow the growth of B2C e-commerce. Thus, it is imperative that researchers and practitioners examine ways and means to overcome this “trust gap” and enhance user confidence in e-commerce websites (Fox and Beier, 2006; Princeton Survey Research Associates, 2002, 2005).

E-COMMERCE AND TRUST
In the context of interpersonal relationships, trust has been defined as “the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or confront that other party” (Mayer, Davis and Schoorman, 1995, p 712). Viewed as the “vulnerability” perspective, this conceptualization of trust has subsequently been adapted to suit the e-commerce context (Holsapple and Sasidharan, 2005). The online shopper is viewed as being willing to be exposed to possible injustices in their dealings with the online merchant (Holsapple and Sasidharan, 2005; Kimery and McCord, 2002; Lee and Turban, 2001). Trust in the e-commerce context has also been examined from a “faith in humanity” perspective. “Faith in humanity” is the implicit trust that the shopper has in the honesty, reliability, benevolence, integrity, and competence of the online merchant (Holsapple and Sasidharan, 2005, McKnight, Choudhury and Kacmar 2002). This approach includes the belief that the online merchant would treat shoppers in an equitable and predictable manner, and will not take undue advantage of the shopper in case there are problems in the transaction (Stewart, 2003; Suh and Han, 2003). The shopper believes that the online merchant has the best interests of the customer in mind, and would fulfill all commitments made at the time of the transaction (Gefen, 2000; Gefen, Karahanna and Straub, 2003; Stewart, 2003; Suh and Han, 2003).

McKnight et al. (2002) advocate a multidimensional model of e-commerce trust that includes four constructs: disposition to trust, institution-based trust, trusting beliefs, and trusting intentions. Disposition to trust is the degree to which the shopper has faith in the benevolence, integrity, and competence of others across a wide range of situations. Institution based trust is the belief that the structural conditions needed for the execution of a safe and successful business transaction are available (McKnight et al., 2002). These include the use of security techniques, third-party certification and assurance seals that could
increase user confidence in the online merchant (Kimery and McCord, 2002; Lee and Turban, 2001). Trusting beliefs refer to the confidence that the online shopper has in a specific online merchant; it encompasses beliefs regarding the honesty, reliability, benevolence, integrity, and competence of the online merchant (McKnight et al., 2002). As noted earlier, this conceptualization of trust has been adopted in numerous research studies. Finally, trusting intentions refer to the intention of the online shopper to be involved in trust related behavior with a specific online merchant. This could involve providing confidential personal details and sensitive financial information to the online merchant. Disposition to trust, institution based trust, and trusting beliefs act as antecedents to trusting intentions (McKnight et al., 2002).

Prior research has examined organizational and website design factors that could influence user trust in an e-commerce website. The former includes user perceptions of the size and reputation of the online merchant as well as other demographic variables (Jarvenpaa and Tractinsky, 1999; Jarvenpaa, Tractinsky and Vitale, 2000). The latter include functional features of the e-commerce website such as the usability, usefulness, ease of use, and navigability of the interface (Roy, Dewit and Aubert, 2001). Similarly, incorporating hypertext links from trusted associations and organizations may extend the goodwill possessed by these organizations to the activities of the online merchant (Stewart, 2003). Another recommendation is to provide information to the customer in the form of expert and user generated product feedbacks, as well as information and pricing details of competing products (Urban, Sultan and Qualls, 2000). The creation of online user communities where the user can post their experiences with the online merchant can also serve to enhance user trust. Another approach is to highlight privacy practices as well as dispute mediation and compensation policies (Shneiderman, 2000; Suh and Han, 2003).

From the preceding discussion, it is apparent that the focus of research has been on the functional features of a website rather than on its basic design elements such as color schemes, layout, typography, white space, and images. We believe that these basic design elements could play a role in influencing user trust. This research study examines the role of typography in influencing user perceptions of trust in an e-commerce website. Thus, our substantive research question reads; “Does typography influence user perceptions of trust in a B2C e-commerce website?” We first discuss typeface personality and its possible role in influencing user perceptions of trust. We develop testable hypotheses that are then validated using an experimental study. We conclude with a discussion of the results and its implications.

**TYPOGRAPHY AND PERSONALITY**

Typography refers to the overall appearance of printed matter, including its style, arrangement, and appearance (Merriam-Webster, 2008). It includes the study of typefaces - the term typeface is used to refer to a family of fonts. The most common typefaces are the serif, sans serif, monospace, and script. The fonts belonging to the serif typeface have short lines called “serifs” at the end of letter strokes, such as the base line for letters “r” and “l” and the vertical line at the top right and top left curved segments for the letter “s”. The Times New Roman font used for this manuscript text is a serif typeface; other examples include Cambria, Constantia, and Georgia. In comparison, fonts belonging to the sans serif typefaces are devoid of “serifs”, there are no extensions at the end of letter segments. The Arial font used for the title of this manuscript is a sans serif typeface. Other examples include Verdana and Calibri. Serif and sans serif are variable width typefaces, i.e. the width occupied by a character differs from character to character. In contrast, a monospace typeface is fixed width with all characters occupying the same amount of space. Perhaps the most widely used font from this category is Courier New. Script typefaces have the appearance of cursive writing - these include Monotype Corsiva, Rave Italic, Comic Sans, and Gigi fonts.

Research has indicated that readers perceive typefaces as possessing personality and intention to the extent that they attribute specific human characteristics to typefaces (Bernard, Peterson and Storrer, 2001; Brumberger, 2003; Kostelnick, 1990; Shaikh, Chaparro and Fox, 2006). Broadly, serif and sans serif typefaces are perceived to convey stable, mature, and trustworthy personalities. The Times New Roman font (a serif typeface) is viewed as the favorite font of solicitors due to its ability to convey trustworthiness. In contrast, a monospace typeface is viewed as plain, cold, unimaginative, and unappealing. It has been suggested that the Courier New font (a monospace typeface) be used when leaving a job under unpleasant circumstances (British Broadcasting Corporation, 2001; Lexmark, 2001; Shaikh et al., 2006). A recent Lexmark study associated the Times font (a serif typeface) with Anna Ford who is a respected, trustworthy TV personality in Britain and the Verdana font (a sans serif typeface) with Richard Branson who is viewed as a successful, professional businessman. In contrast, the Courier font (a monospace typeface) was associated with Ian Beale who is a character from a British TV show and often described as a “cheapskate anorak” (British Broadcasting Corporation 2001, Lexmark 2001). Script typefaces are viewed as being casual, youthful, and rebellious (Shaikh et al., 2006).

Prior research has focused on the impact of typefaces in the context of printed text material, however, with the growth of the World Wide Web, it is important to assess its relevance in an online context, particularly its role in creating an overall personality and mood for a website and influencing user perceptions of trust. We expect the impact of typefaces in shaping user perceptions to be far higher in an online context than in an offline, face-to-face, business interaction context. In a face-
to-face business transaction, customer perceptions might be influenced by the typeface used in the business related paperwork. However, its impact would be marginal as the customer can be expected to be influenced far more by the real-life interactions he or she has with the seller. The media richness theory (Daft and Lengel, 1984) points to face-to-face communication being the richest communication medium, thus we expect customer perceptions in a face-to-face business interaction context to be shaped largely by the actual nature of the customer-seller interaction. In addition, such a business transaction might occur in a commercial brick and mortar setting such as an office or a store, the features of which might shape customer perceptions. In contrast, in the online context, given the limited amount of face-to-face interaction with the seller, we expect user perceptions to be influenced largely by the various design aspects of the website, including the typeface used in presenting the text material.

In our daily face-to-face business engagements, we tend to trust people having stable, mature, and trustworthy personalities than those with unruly and rebellious traits. As typefaces are perceived to possess distinct personalities, when used to present text material in a website, those typefaces that convey trustworthiness can be expected to engender trust in the user. We now examine the influence of specific typefaces in influencing user trust in an e-commerce website based on which we develop testable hypotheses.

WEBSITE DESIGN, TYPOGRAPHY, AND TRUST

The design aspects of a website include color schemes, layout, typography, white space, and images. In light of our preceding discussions, we believe that the typeface of the text material could influence user perceptions of trust in the website. Serif typefaces are perceived to convey a stable and trustworthy personality. Sans serif typefaces too posses similar connotations; however, the association is not regarded to be as strong as in the case of serif typefaces. Monospace typefaces are viewed as dull and unimaginative, and script typefaces as youthful and rebellious. Given this, when used to present text material in an e-commerce website, a serif typeface can be expected to engender greater trust in the user than when using a sans serif, monospace, or script typeface. Hence, we have:

P1: User trust in an e-commerce website would be highest when the typeface is serif.

As monospace typefaces convey a cold, unimaginative, and cheap personality, when used to present text material in an e-commerce website, they can be expected to engender less trust in a user than a sans serif typeface. Thus, we have:

P2: User trust in an e-commerce website would be higher when the typeface is sans serif than when it is monospace.

Despite its unappealing features, a monospace typeface is still viewed as possessing a mature and conformist personality, as opposed to a script typeface that has a casual and rebellious personality. In our daily life, particularly in the context of financial dealings, we tend to trust people with mature and formal personalities than those with wild and rebellious streaks. When used to represent text material in an e-commerce website, a monospace typeface can be expected to engender greater trust in the user than when using a script typeface. Thus, we propose:

P3: User trust in an e-commerce website would be higher when the typeface is monospace than when it is script.

In order to validate these propositions, we conducted a study using a simulated online banking website, the details of which are presented in the next section.

RESEARCH METHOD

Our study used a simulated online banking website as the research context due to the importance of trust in such a setting. Internet banking is a fast growing B2C e-commerce activity with about 43% of internet users, totaling 63 million adults, using it on a regular basis (Fox and Beier, 2006). Online banking portals provide an array of services to customers including typical banking activities such as monitoring accounts, transferring funds, advancing loans, and downloading financial information. However, its growth has lagged the growth in the Internet and other e-commerce activities due to the so called “trust gap” (Princeton Survey Research Associates, 2002, 2005).

In order to validate our propositions, we designed four experimental versions of a simulated banking website. The four experimental versions were identical in all respects, including all aspects of web design, other than for the typeface used for presenting text material. The typefaces used were serif, sans serif, monospace, and script. The serif typeface was represented using the Times New Roman font and the sans serif typeface was represented using the Arial font. The Courier New font was used to represent the monospace typeface and the Comic Sans font was used to represent the script typeface. Other website design elements such as color, layout, and content were the same across the four experimental websites.
The participants for the study were employees of a mid-sized organization operating in the manufacturing sector. They were administrative personnel involved in managing the day-to-day office activities in the central office of the organization. The participants were randomly allocated to one of the four experimental conditions. The random assignment of participants to experimental conditions was to ensure that there was control for alternate explanatory variables that could otherwise influence their trust perceptions. Prior to the start of the experiment, we measured the age, gender, experience, perceived technological sophistication, and attitudes towards computers of the participants. Participants were then required to browse the banking website for an hour and examine its features and provisions. To ensure that participants actually read the text material in the website thoroughly, they were informed that they would be evaluated based on their knowledge of the banking schemes and policies detailed on the website. They were provided with an incentive in the form of a gift voucher. Their actual actions (such as links visited, time spent in each webpage) was monitored using tracking software. After an hour, they were provided with a questionnaire that measured their extent of trust in the website. We used a five-item questionnaire, with seven point Likert scale adapted from Moorman, Deshpande, and Zaltman (1993), and Lee and Turban (2001) to measure trust.

**DATA ANALYSIS AND RESULTS**

The total number of participants in the study was fifty-four. After eliminating three participants due to technical issues, data was analyzed for the remaining fifty-one participants. Their average age was thirty-five and they were almost equally distributed between males and females. There were thirteen participants each for the serif, sans serif, and script typeface experimental websites, and twelve for the monospace typeface website. There were no significant differences on any of the measured variables between the participants in the four experimental conditions. The average time spent by participants on the website was 42 minutes and they explored 60% of the web pages.

The mean trust score was highest for participants assigned to the experimental website using the serif typeface (Mean = 6.02, SD = 0.57), closely followed by the participants assigned to the experimental website using the sans serif typeface (Mean = 5.90, SD = 0.71). Participants assigned to the experimental website using the monospace typeface had considerably lower trust scores (Mean = 3.02, SD = 0.86), followed by the script typeface (Mean = 1.76, SD = 0.49). A one-way ANOVA test was conducted and the F-value was found to be significant (p<0.001). We then conducted a t-test for simultaneous comparison of trust scores. There was significant difference for trust scores between the sans serif and monospace typefaces (p<0.05), hence we find support for P2 [User trust in an e-commerce website would be higher when the typeface is sans serif than when it is monospace]. Similarly, there was significant difference for trust scores between the monospace typeface and script typeface (p<0.05), thus we find support for P3 [User trust in an e-commerce website would be higher when the typeface is monospace than when it is script].

The mean trust scores for participants assigned to the experimental website using the serif and sans serif typefaces were significantly higher (p<0.05) when compared to either the monospace typeface or script typeface. Though the mean trust score for the serif typeface was marginally higher than that for the sans serif typeface, the difference was not significant. Hence we find partial support for P1 [User trust in an e-commerce website would be highest when the typeface is serif]. Broadly, our results support our contention that typefaces could influence user perceptions of trust in an e-commerce website.

**DISCUSSION**

An important factor that influences B2C e-commerce adoption is the user’s perception as to whether the online merchant or website can be trusted. Hitherto, research has primarily examined the role of functional features such as the provision of online user communities, third party authentication seals, and interface navigability in influencing user trust. We address the role of typography in engendering user trust in an online merchant.

The results of our study indicate that the typeface used to present text material in an e-commerce website influences user perceptions of trust. In particular, the serif and sans serif typefaces seem to engender maximum trust in users. This highlights the need for B2C e-commerce merchants to pay careful attention to the typeface used in their website. We could not find any significant differences between the serif and sans serif typefaces. Both these typefaces seem to be equally adept at engendering user trust. Monospace typefaces with their dull and unimaginative personalities and script typefaces with their youthful and rebellious connotations should be avoided to the extent possible.

However, it is to be noted that the context of the e-commerce website could influence user perceptions of trust. Our study used a banking website where serif and sans serif typefaces could be expected to maximize user trust. In the case of an e-commerce site selling youth merchandise, it has to be examined whether a youthful, rebellious script typeface would negatively influence user trust to the extent that it did in the case of the banking website. It has been suggested that serif and sans serif typefaces that are perceived as business-like would be more appropriate for an online banking site and script.
typefaces that are perceived as youthful and fun would be more appropriate for an online toy store (Bernard et al., 2001). This study used the most commonly used font to represent the corresponding typeface (Times New Roman for serif, Arial for sans serif, Courier New for monospace, and Comic Sans for script). Future research has to examine whether other fonts within a typeface family will have the same influence as the ones used in this study.

The majority of e-commerce websites currently use the sans serif typeface, and this familiarity could have influenced user perceptions of trust in the experimental website using the sans serif typeface. Our study does not address this issue and it will have to be considered in future research. The sample size for the experiment is small, hence it is important that further research be conducted using a larger sample size in order to confirm the veracity of these results.

A combination of several design elements such as layout, color schemes, typography, white space, and images results in the “net” trust engendered in the user. Hence, future research could also examine the influence of other website design elements such as color combinations, white space usage, and images in influencing user trust. In addition, research on the interaction of these elements with different typefaces would provide additional information for an optimal website design that could maximize user trust. Also, trust being a multi-dimensional construct (McKnight et al., 2002), future research must examine typeface impact on different dimensions of trust.

CONCLUDING REMARKS

The results of this study indicate that typography has an influence on user perceptions of trust in an e-commerce website. Thus, it is important that e-commerce vendors pay special attention to the typeface used in their website. To the extent possible, particularly for websites that need to engage in financial transactions or collect personal information from their users, the dominant typeface used to present text material should be a serif or sans serif font such as Times New Roman or Arial.

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