

Factors Influencing Comprehension of Informed Consent: Appearance, Time Stress and Voice Presentation

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ABSTRACT

People are commonly asked to sign forms intended to serve as contracts or formalized agreements. Although it is prudent to read these forms carefully before signing, people sometimes do not do so. Failure to read an agreement would presumably be reflected in lack of subsequent comprehension of its content. This experiment examined three factors that might influence comprehension of one type of formal agreement: an informed consent form for research participation. Three factors were examined: (a) appearance, (b) time pressure, and (c) oral presentation. A subsequent comprehension test showed that knowledge of the consent form was greater when: (a) the form appeared more informal as compared to more official-looking, (b) there was less time pressure compared to greater time stress, and (c) the consent form was accompanied by an oral presentation of its contents. The results have implications for the validity of informed consent and other kinds of contract agreements

INTRODUCTION

People are commonly asked to sign forms intended to serve as contracts or formalized agreements between them and someone else. Usually there is some risk involved. Although it is prudent to read these forms carefully before signing, people sometimes do not do so. They then lose an opportunity to become aware of what the particulars of the agreement are before they commit to it by formalizing it with a signature.

One primary factor for people's failure to read agreements is that they require too much effort to read. Howe and Wogalter (1994) reported that people generally perceived most legal forms to be too long, full of legal jargon, and difficult to comprehend.

The present research examined several factors that might influence whether individuals read and understand one type of formal agreement: an informed consent for research participation. The purpose of the informed consent process is to ensure that people are aware of their rights and voluntarily agree to follow the conditions as stated. Recent research (Howe & Wogalter, 1995; Masson & Waldron, 1994; Young, Hooker, & Froeberg, 1990) has shown that certain factors increase consent form comprehension. Such factors include (a) reduced technical jargon, (b) the use common/frequently-used terms with fewer syllables, (c) shorter and less complex sentences, (d) increased print size, and (e) inclusion of examples (Howe & Wogalter, 1994; 1995). The present study

examined three specific factors regarding their influence on peoples' signing and understanding of a consent form: appearance, time stress, and oral presentation. The rationale for each of these are described below.

The look or appearance of the consent form may play a role in whether participants will read the document before signing. With an official looking consent form people may believe that the research is safe as its appearance suggests that some superior, official authority has given approval to the procedures. Related to this notion are studies by Wright, Creighton and Threlfall (1982) and Godfrey, Allender, Laughery and Smith (1983) who found that people are less likely to read warnings and other safety-related material if they believe a product or task is safe.

The amount of time a person has available to read and sign the form may play a role in the level of comprehension attained. In a clinical research study, patients who took a consent form home before signing, recalled more information than patients who signed the form before leaving for home (Morrow, Gootnick, & Schmale 1978). Cohen and Baird (1988) examined environmental factors that affect people's understanding and willingness to purchase insurance from a rental car company. In this report, they stress the importance of taking into account the overall environment in which transactions take place, not just the traditional issues of contract readability and comprehensibility. One environmental factor they mention as influential is time constraint. Also, Young et al. (1990) noted that people need

time to think about the possible consequences before signing a consent form. Although, time stress can increase individuals' rate of performance, performance quality is usually reduced (Bowden, 1985; Locke & Latham, 1990). Recent research (Magurno & Wogalter, 1994; Wogalter, Magurno, Rashid, & Klein, 1997; Wogalter & Rashid, 1997) has shown that time stress reduces compliance to posted warning signs.

Voice presentation together with written information may increase the understanding of the consent form. Wright and Hull (1990) noted that some individuals do not have adequate reading skills and suggested that they could be helped by also receiving the information by voice presentation. Research (Wogalter, Kalsher & Racicot, 1993; Wogalter & Young, 1991) has shown that speech warnings increase compliance behavior over print warnings and that both are better than either alone. In addition, research and theory in human memory and cognition suggests that presenting information in two codes or modalities is better than one (e.g., Paivio, 1971; Penny, 1975, 1989). In a survey by Howe and Wogalter (1994), respondents suggested ways to increase the understandability of legal documents. One of these suggestions was to provide explanations. Such explanations are usually given orally. Given this, and that previous research indicates that multi-modal presentation might help, oral presentation of the consent form, concurrent with reading it, was employed as a variable in the present research.

It was hypothesized that an official-looking consent form would be read by fewer participants than a less official-looking one. By not reading the form, participants in the more official-looking form condition would be less knowledgeable of the potential risks and they would be less likely to refuse to participate in the study. Similar effects were hypothesized for participants under more time stress as compared to less time stress. Lastly, it was hypothesized that oral and print presentation together would increase comprehension and refusals over print presentation alone.

METHOD

Design

There were five between-subject conditions. Four comprised a 2 (Appearance: more formal vs. less formal) X 2 (Time Stress: low vs. high). The fifth condition was identical to the less formal, low stress condition, except the consent form was also presented orally. Thus, the five conditions were: (1) more formal form, low time stress, (2) more formal form, high time stress, (3) less formal form, low time stress, (4) less formal form, high time stress, and (5) less formal form, low time stress plus voice accompaniment.

Participants

One hundred twenty-five undergraduates taking an introductory psychology course at North Carolina State

University participated for research credit. They were assigned randomly to conditions in equal proportions ($n_s = 25$).

Materials

Two consent forms were used. The forms were identical to one of the "conventional legalistic" consent form used in Howe and Wogalter (1995), except they differed somewhat in appearance. One of the two forms looked more formal and official, having the title "STANDARD CONSENT FORM." This title was printed in 36-point bold Times Roman font in all capitalized letters and required two lines of print (the word FORM was on a second line) on a standard 8.5 X 11 inch (21.6 X 27.9 cm) page in a portrait orientation. The other consent form appeared less formal and official, having the title "Consent Form" in 10 point Times Roman font in mixed-case letters, and required part of one line of print.

These two consent forms were intended for an experimental study on people's ability to accurately connect booster (jumper) cables to a car battery. The information content of the form included: a definition of APA, the risk of explosion if the cables were not connected properly, the right to refuse participation while still receiving credit, an alternative card-sorting task that could be done instead, an anonymity statement, the names of the researchers, the minimum age requirement, and a grievance procedure. There was a blank for the participant to sign the form. A tape recording of a male speaker reading the consent form was used in the voice accompaniment condition. A questionnaire was developed based on a test used by Howe and Wogalter (1995). It contained a set of 11 short open-ended comprehension questions on the information content of the consent form.

Procedure

Participants were tested individually. They were told that they would be performing a car battery/jumper cable study and that they needed to sign a consent form to participate. Participants in the low time stress conditions were handed the form and told to take as much time to read the form as necessary. Participants in the high time stress condition were told that the experiment was running longer than expected and that they needed to read and complete the consent form quickly. In the voice accompaniment condition, the materials and procedure were identical to the less formal form, low time stress condition except that when the consent form was given to the participant, a tape recording of a male voice reciting the same information in the consent form was started. After exposure to the consent form phase (and the experimenter noted whether they signed or refused to sign), participants were given a questionnaire that included a surprise test about the content of the consent form and were allowed to take as much time as they wanted to complete it. None of the participants were previously informed that they would be

taking a test on the content of the form. Participants did not actually perform the battery hook-up task for which the consent form was intended. Also, none of them actually performed the optional card-sorting task (even if they requested that option after reading the consent form). Nevertheless, the card-sorting request was recorded as part of the data collected. After completing the comprehension test, participants were debriefed about the nature of the consent form manipulation, thanked, and dismissed.

RESULTS

Each answer on the comprehension test was given a 1 for correct and a 0 for incorrect and then a mean proportion correct was produced for each participant and used in the analyses. The first analysis employed a 2 (Appearance) X 2 (Time Stress) analysis of variance (ANOVA). The ANOVA showed a significant main effect of Appearance, $F(1, 96) = 6.66, p < .05$. Participants who received the official-looking form ($M = .44$) performed less well on the comprehension test than the participants who received the less official-looking form ($M = .53$). The ANOVA also showed a significant main effect of Time Stress, $F(1, 96) = 93.21, p < .0001$. Under high time stress ($M = .32$) participants performed less well on the comprehension test than those under low time stress ($M = .66$). The interaction of Appearance and Time Stress was not significant ($F < 1.0$). A comparison examining the effect of voice (between the less formal consent form with low time stress and voice accompaniment vs. the less formal consent form with low time stress) was significant, $t(48) = 3.62, p < .001$. With voice accompaniment comprehension was significantly higher ($M = .84$) than without voice ($M = .68$).

Only 7 people refused to sign and complete the study; three were in the less official form, low time stress condition; two were in the less official form, low time stress plus voice accompaniment condition; one in the more official form, low time stress condition; and one in the more official form, high time stress condition.

DISCUSSION

All three factors of the factors manipulated in the present study had an effect on comprehension of the consent form. Knowledge of the content of the consent form was higher if: (a) the form appeared more informal as compared to more official-looking, (b) there was less time pressure compared to greater time pressure, and (c) the consent form was accompanied by an oral presentation of its contents.

The appearance of the official looking form possibly served as a cue that the material was going to be difficult to read (perhaps because it resembled other difficult-to-read standard forms that participants had encountered in the past). Also, the official-looking form might have given participants the impression that the study had been approved by some superior official authority that would disallow any procedure

that could result in injury. In other words, the official-looking form might have engendered a greater sense of perceived safety than the less official-looking form. As a consequence, participants might not consider it as important to read the official-looking form as compared to those with the less official form. Previous research shows that people are less likely to read instructions when they perceive the situation to be safe (Godfrey et al. 1983; Wright et al. 1982). During debriefing, in response to the question, "Why did you sign the consent form?" participants in the more official-looking form condition commented that they "did not think there was a risk," "knew it was safe," "thought it was ethical," and that they were "not worried about being harmed." Participants in the less official-looking form condition gave answers such as "needed credit," "thought it was required," "was asked to," and "understood the information."

Reduced comprehension in the time stress condition is a fairly straightforward result. People read the form less carefully when pressured for time. Time stress might disrupt attention, causing them to give less attention to the form—even if they intended to read it carefully. Alternatively, under greater time stress, participants might have been trying to be "good subjects," i.e., to help the experimenters meet their goals (Doob & Kirshenbaum, 1973), and thus were willing to sign the form promptly.

The results showed that combined oral and written information produced greater knowledge than the printed form alone. The voice recording probably "forced" participants to review the entire form—serving to focus attention on the information—and assisting those who would be less apt or motivated to read the form. Also, voice may provide an additional (phonetic) code that is not produced (or as readily) by print presentation alone (e.g., Paivio, 1971; Penny 1975; 1989). The results concur with theory that suggests that multi-modality presentation produces redundant coding that facilitates encoding and retrieval (Paivio, 1971).

While there were no statistically significant differences in refusal rate among conditions, more people terminated their participation under the same kinds of conditions in which comprehension was shown to be better. The fact that so many participants agreed to participate and risk being injured could be interpreted in terms of obedience to authority. The experimenters made a request and the participants complied. This effect is similar to participants who obeyed the researcher in the well-known Milgram (1963) shock studies. That is, even though the participants in that study did not agree with the request, they still complied. In the present study, participants also obeyed the experimenters and signed the consent form without taking much more than a quick glance at the material.

Thus, the present research was able to identify several factors related to reading, understanding, and signing legal documents. The present study also serves to identify

opportunities for research and application. Subsequent research could examine other factors that could facilitate and hinder the usability of legal documents. Several factors described in Howe and Wogalter (1994) have yet to be explored and could be investigated in subsequent research. Some factors are probably more influential than others. Methods used to investigate the adequacy of product warnings can be applied to legal documents. Indeed, in some respects, a contract may be considered a type of "warning" in which serious consequences can be avoided if one understands and complies with its directives. Factors relevant for product warnings (e.g., familiarity, risk perception, explicitness, noticeability, and various physical characteristics) are probably relevant to legal documents. Like warnings, the most relevant sections of the contract should attract attention, and clearly inform people about the reasonably foreseeable consequences of signing the contract. These characteristics should help people focus on and understand the information that they are agreeing to. Concern should also be directed on the situation or context in which the agreement is being considered (e.g., under time pressure). This area might also provide an opportunity for research investigators to serve as expert witnesses in litigated cases (e.g., contract disputes) where one or more parties claim lack of clarity or ambiguity.

Lastly, these results have implications for the usability of legal documents. The factors identified in the present research not only involve the form itself, but also the context in which the agreement is being considered. To ensure that each party has an opportunity to understand the agreement, the legal agreement should be designed so it is easily read (brief, minimal legal jargon, etc.), examined under low time pressure, and ideally be accompanied by supplemental voice presentation.

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