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On the adequacy of legal documents: factors that influence informed consent

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People are frequently asked to make commitments by signing contracts, consent forms and other legal documents. Although it is prudent to read these forms carefully, people sometimes do not do so. The present research sought to assess some of the factors related to the usability of legal documents. In study 1, participants reported that they had signed a variety of legal documents that they did not fully read or understand. They also identified characteristics that hinder understanding and offered suggestions for improvement. In study 2, another group of participants rated those characteristics and confirmed the first study's findings. Study 3 measured the effects of three different research participation consent forms: conventional 'legalistic', improved, and one-line (control). Results showed that the improved form significantly enhanced comprehension compared to the conventional form and both were higher than the control. Even though comprehension with the conventional legalistic consent form was poor, all but one person signed it, agreeing to participate in a potentially risky activity. However, given the improved form, participants tended to take advantage of a stated option of doing a less risky activity. Study 4 found that consent form comprehension was greater when: (a) the form appeared to be more informal as compared to more official looking; (b) there was less time pressure compared to greater time pressure; and (c) there was an accompanying oral recitation of the consent form. Implications of these results are discussed.

1. Introduction

People are frequently asked to sign contracts or formalized agreements between them and someone else that are meant to bind them to specific rules. Frequently some risk is involved for one or both parties to the agreement. 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 the particulars of the agreement before they formalize it with a signature. Consequently, people may make commitments that they may not wish to make. However, even if the average person attempts to read the document, would they understand what they are signing? Contracts and other legal documents are often very difficult to read. They are often lengthy, complex, full of legal jargon ('legalese'), and comprised of other characteristics that severely undermine comprehension to anyone other than attorneys and other individuals trained in law.

Several reasons have been offered for why legal documents are written in ways that make them difficult to read. Scott and Suchan (1987) give a particular example

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in the domain of labour and management contract negotiations. They note that in order to draft a contract that is acceptable to both parties, they have to compromise, which often requires the use of vague language and complicated sentences. Scott and Suchan (1987) note that negotiators themselves are probably accustomed to using legalese and they might lack the skills to write a readable agreement. Odum (1992) lists other reasons: lawyers catch the legalese 'bug' in law school; technical language maintains the mysterious 'hocus pocus of the law'; there are numerous examples of poor models that influence writers; lawyers try to account for every possible contingency; and it takes more thought to write clear, discernible prose.

These explanations notwithstanding, there has been some recognition of issues associated with the understandability of contracts and other documents within the legal system itself. However, much of the focus has been on ambiguity of the language used in the document in determining whether a contract is valid. Frequently, ambiguity is decided by the courts based on whether there are two (or more) reasonable alternative interpretations to the terms used (In re Stenardo 1993).

There is a recent and growing movement in the USA and the UK (and probably elsewhere) to promote the use of plain English in legal documents. A similar phenomenon may be true with respect to other languages in other countries. In the USA, state legislatures such as in Texas, Michigan, Maryland and Florida have begun to consider, and in some cases mandate, 'simple-language' rules for legal documents. The State of California has also begun to develop guidelines after a study found that 90% of citizens and lawyers wanted simpler legal language (McDonald 1992). In addition, there has been a recent flicker of interest by the legal profession concerning the use of plain language in legal documents. For example, some law schools are incorporating curricula to train law students how to write more clearly (Gest 1995). Thus, there is an apparent desire by several different groups in finding ways to ensure that people understand the commitments that they are making.

Despite the long-standing perception by the public that legal documents are unreadable, there has been a surprisingly limited amount of empirical research conducted on the factors related to reading, understanding and commitment to legal documents. Most of the existing research has focused on readability. Readability assessments, such as the indices of Flesch (1948, as modified by Gray 1975) or Coleman and Liau (1975), provide measures of predicted grade levels (or percentages) of individuals who are likely to be able to read and understand the material. Readability formulae produce scores given a sample of text (usually at least 100 words) using factors such as sentence length, word length, syllables per word, and word frequency. Most of the focus has been on improving medical consent forms. Gray *et al.* (1978) evaluated 1526 consent forms and found that over 77% of these forms had grade-level scores that were beyond the extreme levels measured by the Flesch readability scale (in the scholarly/academic/graduate school range). Morrow (1980) assessed the readability of 60 informed consent forms used by national-trial cancer groups using readability formulae. On average the consent forms had readability scores only slightly lower than scientific medical journals and considerably higher than many popular press magazines.

More recent research has begun to focus on the understandability of legal documents other than consent forms such as contracts, leases, and loan and insurance forms. For example, Scott and Suchan (1987) examined the extent to

which public-sector union members, officers, and first-line supervisors could understand collective bargaining agreements and found that these agreements required reading comprehension skills of at least a college graduate.

Whereas readability formulae are commonly used to assess comprehensibility in this area of research, these measures have gained a certain notoriety because other research has shown that actual comprehension is not always predicted by readability scores (Black 1981, Duffy and Kabance 1982). Thus, other ways to assess the understandability and to improve comprehension of legal documents are needed in research and application. The most basic and most direct measure of comprehension is to test people's gain in knowledge after being exposed to the material.

Young *et al.* (1990) measured the comprehensibility of two consent forms that differed in reading level. Using a multiple-choice comprehension test, they found that people understood more content when a consent form was written at a lower reading level than at a higher reading level. In another study where the reading level was held constant but the length of the documents was manipulated, Mann (1994) found that an original medical consent form was understood less well than a shortened, less detailed version.

Masson and Waldron (1994) modified four kinds of standard legal contracts: mortgage, property sale agreement, bank loan and lease renewal. The documents were redrafted by removing or replacing redundant archaic words, simplifying sentence structure, and defining or replacing legal terms with simpler terms. Comprehension was assessed using four yes/no questions and asking participants to paraphrase sections of the document. The results showed that redrafted versions produced higher comprehension scores than the original versions.

In summary, research on people's comprehension of legal documents is currently in its early stages. Studies using only readability formulae to assess comprehensibility are limited in interpretability because readability scores may correlate imperfectly with objective comprehension. Studies that have included measures of objective comprehension suggest that legal forms can be improved, and thus further research into the area would seem promising.

The present research is comprised of four studies. The first two were surveys and the latter two were formal experiments. Study 1 assessed the types of legal documents that people report that they have signed, how often they have signed them, the extent to which they carefully read the documents and believed that they understood them. Participants were also asked several open-ended questions including requests to give: (a) the reasons why they signed legal documents without reading them first; (b) the physical characteristics of legal documents that made them less readable; and (c) recommendations to improve the understandability of these documents. In study 2, participants rated the relative importance of the characteristics identified in study 1. The last two studies were experiments in which one type of legal document, a research participation consent form, was used and the conditions under which it was administered and/or the form itself were manipulated. In both experiments, the consent form was given to participants before taking part in what appeared to be a potentially risky activity. The activity was actually safe—but they were not initially made aware of this fact. Several measures were collected including whether they signed the form agreeing to participate and how much information they acquired from the form.

2. Study 1

Study 1 was a survey designed to assess the types of legal document that people are asked to commit to, how frequently these documents are signed, how carefully they are read and how well they are understood. The survey also sought opinions on whether legal documents could be improved, the characteristics that hinder comprehension, and suggested ways in which they could be improved.

2.1. *Method*

2.1.1. *Participants*: Ninety-two individuals were asked to voluntarily complete a survey on legal documents. A total of 65% of the participants were approached while they sat at a food court in a large shopping mall. The remainder were graduate students and staff approached at various locales on the campus of North Carolina State University. Statistical analysis comparing the responses between the two participant groups (shopping mall versus college campus) showed that only about 5% of the potential comparisons were statistically significant, a percentage that is at the level that would be expected if the variation present was attributable to only random/chance occurrences. Moreover, examination of those comparisons that were significant between the samples showed no meaningful differences. Given this and to simplify presentation of the results, all participants were aggregated and analysed as a single group. Respondents were 47 females and 45 males with a mean age of 36.7 years (SD = 15.1 years); 56% had a college degree; 76% were White, 14% African-American, 4% Asian, 3% American Indian, and 3% Other; 89% indicated that English was their first language.

2.1.2. *Materials and procedure*: The survey was designed in part to assess people's exposure to various types of legal documents that require a formal-signature commitment and estimates of the number of times they signed these documents in their lifetime. Fifteen types of documents that people might be expected to sign without employing an attorney were listed (e.g. car rental/lease, bank loan, auto insurance, employment contract, etc.). The survey allowed participants to add any that were not included. In addition, participants were asked two questions regarding the documents that they earlier indicated having signed: (a) 'How carefully did you read the document(s)?' and (b) 'How understandable were the document(s)?' The ratings were made on 9-point Likert-type scales with '1' indicating 'not at all', '5' indicating 'moderately', and '9' indicating 'extremely'.

Participants were also asked: (a) whether they had ever signed a contract or other legal document without reading it; (b) if so, whether they asked a lawyer to read and evaluate it for them; and (c) to provide reasons for not reading legal documents. Next, participants were asked to list physical characteristics that they had noticed in contracts and legal documents. Finally, participants were asked an open-ended question on whether they believed that contracts and other legal documents could be improved, and if so, what specifically would they recommend to improve them.

2.2. *Results*

Table 1 shows for each type of document: (a) the percentages of people having signed a document of that type during their lifetime; (b) the mean number of times each type of document had been signed; (c) how carefully they were read; (d) how well they were understood; and (e) correlations between how carefully the document was

Table 1. Summary data collected in study 1 for various legal documents.

	Percent of participants who signed in lifetime	Mean number of documents signed	Signed and carefully read	Signed and understood	Correlation of carefully read and understood
Employment	68.50	3.17	6.65	7.02	0.64**
Home mortgage	43.95	1.12	7.08	5.67	0.61**
Financial aid/loans	39.10	1.15	6.26	5.97	0.44*
Bank loans	59.34	2.97	6.61	5.66	0.56**
Car rental/lease	51.10	7.77	5.76	5.91	0.60**
Equipment rental	41.30	3.05	4.68	5.97	0.52**
Auto insurance	82.60	4.12	6.25	5.45	0.53**
Home/renters insurance	52.20	1.27	6.31	5.71	0.51**
Health insurance	65.50	2.01	6.41	5.48	0.60**
Business partnership	9.90	0.13	7.78	7.67	0.99**
Credit card application	87.90	5.33	6.18	6.14	0.80**
Warranty	60.00	7.37	5.40	5.72	0.56**
Video rental	75.00	19.35	4.32	6.84	0.56**
House/apartment lease	70.30	2.33	6.87	6.34	0.57**
Income tax return forms	95.20	16.51	6.89	5.65	0.59**

*$p<0.05$; **$p<0.001$.

read and how well it was understood. As the table shows, some of the legal documents least understood appear to be the ones that are signed more often. For example, tax forms were among the least understood documents but were signed more often than any of the other legal documents; likewise, auto insurance policies were signed fairly frequently, but were not well understood.

As table 1 shows all of the legal documents were reportedly read at levels slightly higher than moderately carefully. Also, comprehension was reported to be somewhat above moderately understandable. Furthermore, the last column of this table shows that for every type of legal document surveyed, there was a positive and significant correlation between how carefully they read and how well they understood the document.

A total of 38% of the participants reported having signed contracts and other legal documents without reading them, and only 33% of this group had an attorney act as counsel to read (and interpret) the documents for them. Some of the reasons that participants cited (and the frequency of the reasons cited) for not reading these documents can be seen in table 2. Participants were also asked to list the physical characteristics of legal documents (regardless of whether these features help or hinder their ease of use). These characteristics and the frequency with which they were reported can be seen in table 3.

As a group, 96% felt that contracts and other legal documents could be improved. A compilation of the participants' suggested improvements, and the frequency of mention, can be seen in table 4.

Table 2. Reasons for signing legal documents without first reading them: responses to open-ended questions from study 1 and ratings from study 2.

Study 1		Study 2	
Frequency named		Frequency rating	
		Mean	SD
Lack of time	10	6.50	2.34
Explained by someone	7	6.84	1.73
Too difficult	6	6.69	2.29
Trust	6	6.72	2.17
Not important	4	5.28	2.27
Familiar	3	5.47	2.71

Table 3. Reported physical characteristics: responses to open-ended questions from study 1 and ratings from study 2.

Study 1		Study 2			
Frequency named		Frequency rating		Difficulty rating	
		Mean	SD	Mean	SD
Technical	43	7.75	1.55	7.78	1.64
Long	32	6.78	2.11	7.06	1.85
Fine print	25	7.34	1.30	6.25	2.50
Repetitive	11	5.94	1.97	5.09	1.99
Detailed	8	7.19	1.53	6.16	2.05
Vague	8	4.84	2.37	6.19	2.57
Lack organization	5	3.88	2.00	5.59	2.39
Formal	3	7.56	1.46	7.06	1.74

Although 56% of the sample had a college degree, educational attainment did not have a substantial influence in this study as most items did not differ between individuals who had a college degree and those who did not. However, there were a few exceptions, and these are noted below. Individuals with a college degree more frequently signed house/apartment leases, $\chi^2(1, N = 91) = 5.63$, $p < 0.05$, home/renter's insurance documents, $\chi^2(1, N = 92) = 4.20$, $p < 0.05$, and business partnerships, $\chi^2(1, N = 91) = 4.27$, $p < 0.05$, than individuals without a college degree. There were also differences in the opposite direction: individuals without a degree reported greater carefulness in reading warranties, $F(1,48) = 5.83$, $p < 0.05$, in understanding warranties, $F(1,48) = 9.34$, $p < 0.05$, in understanding auto insurance forms, $F(1,72) = 5.21$, $p < 0.05$, and carefulness in reading home/renter's insurance materials, $F(1,46) = 5.39$, $p < 0.05$, than those with a degree. Thus, it appears that participants with a college degree signed more of some types of legal documents than participants without a college degree, but were less careful about reading some of them.

It should also be noted that age was correlated only with the number of times participants had ever signed income tax returns ($r = 0.70$, $p < 0.01$)—as would be

Table 4. Recommendations to improve understandability: responses to open-ended questions from study 1 and ratings from study 2.

Study 1		Study 2	
Frequency named		Improvement rating	
		Mean	SD
Decrease technical	60	7.81	1.69
Shorten	18	6.22	1.62
Increase print size	10	5.50	2.45
Outline	7	6.38	1.60
Give examples	5	6.66	2.06
Give explanations	4	7.59	1.54
Provide definitions	4	7.22	1.88
Visual aids	1	5.91	2.51

expected, since they are done anually. Age was not correlated with how carefully the other documents were read or how well they were understood.

2.3. *Discussion*

The results suggest that people sign common legal documents (such as tax returns, insurance forms, leases, and loan agreements) that they sometimes do not read or understand. While the proportions for reading and understanding legal documents are higher than anticipated, it should be noted that this participant sample had substantial levels of education (who on the average had completed some college education). Although respondents reported reading legal documents moderately carefully and understanding them moderately well (according to rating-scale anchors), reported comprehension levels were not as high as one would expect given their educational background and the importance of the documents and the legal implications associated with them. A factor that could have influenced the results is that respondents might have felt uncomfortable in admitting that they did not read these important documents carefully or that they did not understand what they had read. Therefore, it is possible that some participants gave inflated responses to the subjective rating questions. However, the fact that the participants were reasonably experienced with the list of legal documents suggests that their responses are likely to have some validity.

Participants reported that legal documents were frequently too technical, too long, and illegible. Virtually all of the participants agreed that these documents could be improved. Many of them provided specific suggestions for improvement that included reducing the technical and legal jargon, shortening the length, and increasing the print size. These comments served as a basis for the next study.

3. Study 2

With the information gained from study 1, a second survey was designed to assess the importance of the factors identified by participants in the first survey. It was expected that the factors receiving the highest ratings in this study would, in general, resemble those that were most frequently mentioned in the previous study.

3.1. *Method*

3.1.1. *Participants*: Thirty-two introductory psychology students at North Carolina State University volunteered to complete the survey.

3.1.2. *Materials and procedure*: The survey was designed based on the items identified by participants in study 1 which asked: (a) the reasons for not reading legal documents; (b) the physical characteristics of legal documents that adversely affect their readability; and (c) recommended improvements for legal documents. In the present study, participants rated the items shown in tables 2–4 on the following dimensions: (a) the extent to which the named characteristic is a reason why a legal document would be signed by people without first reading it; (b) the frequency with which a range of physical characteristics would be found in legal documents; (c) the extent to which these characteristics hindered understanding; and (d) the extent to which each of a set of potential improvements would increase the understandability of legal documents. The ratings were made on a 9-point Likert-type scale with 1 indicating 'not at all' and 9 indicating 'extremely'. The order of the four questions was randomized for each participant. The items listed with each question were randomized once and half of the participants rated them in the opposite order.

3.2. *Results*

The ratings for each question were submitted to one-way repeated measures analyses of variance (ANOVAs). The means and standard deviations can be seen in the rightmost columns of tables 2–4.

The ANOVA on the frequency ratings of the reasons for signing legal contracts without reading them first showed a significant effect, $F(5,31) = 3.13$, $p<0.01$. Reasons associated with the highest ratings were: having had the document explained, having trust in the preparer, being too difficult to understand, and not having enough time. Reasons associated with the lowest ratings were: familiarity with the content, and believing the document to be unimportant (Fisher's Least Significant Difference = 1.09 at $p<0.05$).

The ANOVA on the frequency ratings of legal documents' physical characteristics showed a significant effect, $F(7,31) = 21.59$, $p<0.01$. Physical characteristics with the highest ratings were: being technical, being formal, having fine print, being detailed, and being long. Physical characteristics with the lowest ratings were: being repetitive, being vague, and lacking organization (Fisher's LSD = 0.84, $p<0.05$).

The ANOVA on the difficulty ratings of the physical characteristics showed a significant effect, $F(7,31) = 7.61$, $p<0.001$. Physical characteristics rated as causing the most difficulty were: the technicality, being long, and being formal. Physical characteristics given the lowest difficulty ratings were: having fine print, being vague, being detailed, lacking organization, and being repetitive (Fisher's LSD = 0.88, $p<0.05$).

The ANOVA on the ratings of recommended improvements to legal documents was significant, $F(7,31) = 7.22$, $p<0.001$. Recommendations with the highest ratings were: decrease technicality, give explanations, provide definitions, and give examples. The recommendations with the lowest ratings were: provide an outline, shorten the document, give visual aids, and increase print size (Fisher's LSD = 0.85, $p<0.05$).

3.3. *Discussion*

While the participants' perceptions varied appreciably from those of study 1, there was convergence on the most frequently cited and rated items of both studies. For example, the results show that having the document explained to them was one of the main reasons for not reading the document before signing it. This suggests that making these documents more understandable in the first place — so that they do not need to be explained by another person — would be beneficial. Otherwise one must trust the other person's explanation.

The technical nature of the documents appears to be the number one complaint. Also this concurred with the foremost recommendation: that technical aspects should be minimized. This finding supports the growing attention given by the state legislatures and the news media regarding efforts to decrease 'legalese' to make these documents more understandable.

In studies 1 and 2, citizens' perceptions of legal documents were surveyed. However, one limiting factor of the first two studies is that the surveys assessed only the respondents' reported comprehension of legal documents, not actual comprehension. Sometimes what people report is not consistent with reality. Thus, the next two studies are experiments that in part attempt to verify some of the self-reports of the first two studies by exposing potential research participants to one particular type of legal document, a research participation consent form. A consent form was chosen because of its common use in university settings and because of its similarity to other legal agreements. Participants' responses to the consent forms were measured, including whether they signed it and the knowledge acquired as indicated by a subsequent comprehension test.

4. Study 3

The purpose of the informed consent form or agreement in the context of research is to ensure that participants are aware of their rights and voluntarily agree to take part in the study. It was hypothesized that a consent form conforming to people's suggestions for improvement in the first two studies (improved consent form) would be more likely to be read and understood than a consent form fitting the characteristics of most legal documents (conventional 'legalistic' consent form).

The present study also examined other related issues. A total of 38% of study 1's respondents reported that they had signed legal documents without reading them. Mann (1994) also found that participants frequently signed consent forms without understanding important aspects of the document. Given these findings, the present study also examined whether participants appeared to read the document, how long they spent reading it, whether the participants agreed to participate in a procedure that had a risk of injury by signing the document, or whether they chose to do a safer alternative card-sorting task. It was hypothesized that participants who received the improved consent form would be more likely to read and understand it, and would be more likely to refuse to sign and opt for a less risky activity because they better understood the conditions involved.

4.1. *Method*

4.1.1. *Participants*: Seventy-one undergraduates taking an introductory psychology course at North Carolina State University participated for research credit.

Participants included 33 females and 38 males with a mean age of 19.6 years (SD = 2.6 years). There were 24, 22, and 25 participants in the conventional, improved, and one line (control) conditions, respectively.

4.1.2. *Materials*: Three different consent forms were created for a car battery/booster cable study. The specific activity participants were told that they would be performing was to properly connect two batteries with booster cables as if they were jump-starting a car. The materials and procedure were designed to evoke a belief that there was some potential risk of an injury if the task was not performed properly. Thus, there was a compelling reason to read the consent form.

The control consent form had just one sentence: 'My signature below indicates voluntary participation in this study in which I will be asked to connect two batteries with jumper cables'. The content of the two experimental consent forms was much more extensive and based on American Psychological Association (APA) guidelines. The following specific pieces of information were included in the two experimental forms:

(1) a definition of APA;
(2) the names of the researchers;
(3) the risk of explosion and being burned;
(4) an anonymity statement;
(5) the right to refuse participation;
(6) the right to receive credit;
(7) the minimum age requirement;
(8) a grievance procedure; and
(9) the availability of an alternative card-sorting activity.

Although the two experimental consent forms contained the same information, the contents were presented quite differently in each of the two experimental forms. For example, the conventional consent form described the potential risks as: 'The participant(s) are to understand that if the task is not performed correctly, the participant runs the risk of being burned from a possible explosion' and described the alternative activity as: 'If the participant(s) does not want to participate in the experimental study under the specified conditions, there is the option of participating in a card sorting experiment without penalty or loss of benefit'. The improved consent form described the risks as: 'You should understand that if not done correctly, the battery may explode and you could be burned' and described the alternative activity as: 'If you do not want to participate you may alternatively do a card sorting project for credit'.

The conventional legalistic consent form was based on the attributes of legal documents reported by respondents in the surveys in studies 1 and 2. These features included: small print (10-point Times Roman font), longer length (532 total words in 25 sentences with an average sentence length of 21 words), a formal tone (e.g. written in the third person as opposed to the first person) and use of complex, technical, legalistic terms (e.g. it was titled 'Authorization Form'). Analysis of the conventional consent form's readability using the Flesch index (Long 1987) indicated that it was readable by 3% of US adults (i.e. 17th grade-level education).

The improved consent form was based on the suggestions identified in studies 1 and 2. The features included: larger print (12-point Times Roman font), shorter

length (227 total words in 20 sentences with a mean sentence length of 11 words), more casual tone (e.g. used the first person), and less technical (e.g. titled 'Consent Form'). The Flesch (1948) readability index as modified by Gray (1975) indicated that it was readable by 45% of US adults. This percentage relates to an estimated grade level of 13, which is the reading level expected of persons in the first year of college (i.e. freshmen), most of whom are about 18 years old.

The control consent form had 26 words. Its short length precluded a valid readability score, as readability formulae are highly unreliable with samples of less than 100 words.

The comprehension test, embedded in a set of other questions, consisted of six yes/no questions ('Did the consent form describe what would happen if you do not connect the battery wires correctly?'; 'Were you told that you could refuse to participate?'; 'Were alternative options given if you decided not to participate?'; 'If you had chosen not to participate in this study would you have still received credit in your class?'; 'Was anything mentioned on relating your name to how well you performed?'; and 'Were you informed on what to do if you were dissatisfied with the study?'), and three short-answer questions ('What does APA stand for?'; 'What is the minimum age to participate in this study?'; and 'What are the names of the two researchers conducting this study?'). The information content of the test questions reflected the information present in both of the two longer (experimental) consent forms. After the comprehension test, participants were also asked to evaluate: (a) the understandability of the consent form; (b) how carefully they read it; and (c) how well it explained their rights as participants in a research study. Each of these assessments were rated on a Likert-type scale anchored numerically and verbally from 1 (not at all) to 9 (extremely). The scores on the comprehension test served as an objective measure of knowledge, whereas rated understandability served as a subjective measure of knowledge.

4.1.3. *Procedure*: All participants signed up for individual times on a schedule posted on the designated departmental bulletin board for an experiment called 'Battery Study'. Upon arrival they were told that the study would begin with a consent form. The participants were then given one of the three, randomly assigned, consent forms. The experimenter noted whether the participants appeared to read the form, recorded how long they took to read it, whether they chose to do the optional card-sorting task instead of the battery study, and whether they signed the form. The participants were then asked to complete a demographics questionnaire (e.g. gender and age), followed by the comprehension test and then the subjective ratings. It should be noted that before being given the questionnaire, participants were not informed that the study dealt in part with the consent form. The participants were allowed as much time to complete the questionnaire as they wished. After the questionnaire was completed, the procedure continued with either the battery hook-up or card-sorting task. Participants who chose to participate in the battery study were exposed to two realistic-appearing, but fake, automobile batteries along with a set of jumper cables and two simulated car engines. Exposure to the car battery apparatus did not occur until after the consent form procedure; the consent form and car battery procedures were in two separate rooms. Later, participants were debriefed about the nature of the consent form manipulation, shown how to correctly connect the batteries, thanked for their participation, and then dismissed.

4.2. *Results*

4.2.1. *Reading*: Only two participants did not appear to read any of the documents, both of whom were in the conventional 'legalistic' form condition. However, both of these participants signed the consent form agreeing to participate in the battery study. Differences in the time spent reading the three consent forms were significant, $F(2,68) = 38.28$. $p < 0.001$. As expected the participants in the one-line control condition spent considerably less time reading ($M = 9.04$ s) than the other two full-content experimental consent form conditions, conventional ($M = 66.54$ s) and improved ($M = 53.41$ s). While the two experimental forms appear to differ with regard to reading time, the comparison was not significant ($p > 0.05$).

4.2.2. *Participation*: Virtually all (64 of 71) of the participants agreed to take part in the battery study despite the explicitly-stated option of participating in a safer card-sorting task. Of the seven who refused to participate, five were in the improved consent form condition, one in the conventional consent form condition, and one in the one-line control form condition. A chi square test was conducted on the participation frequencies between the two experimental consent forms. The effect bordered on the conventional significance criterion, χ^2 $(1, n = 46) = 3.48$, $p = 0.06$; people who were given the improved consent form were more likely to refuse to participate than those who were given the conventional consent form.

4.2.3. *Objective comprehension*: Responses to each of the nine questions were given a score of 1 for correct and 0 for incorrect answers on the comprehension test. An overall objective comprehension score for each participant was formed by taking a mean across the nine items. An ANOVA on these scores as a function of consent form condition showed a significant effect, $F(2,68) = 63.05$, $p < 0.001$. Comparisons among the means (Fisher's LSD $= 0.09$ at $p < 0.05$) showed that participants in the improved consent form condition ($M = 0.78$, $n = 22$, SD $= 0.14$) had significantly higher comprehension scores than participants in the conventional consent form condition ($M = 0.57$, $n = 24$, SD $= 0.20$), which in turn was higher than the one-line control form condition ($M = 0.26$, $n = 25$, SD $= 0.14$). When comprehension was evaluated without the control condition, the comparison between the two experimental consent form conditions remained significant, $t(44) = 4.24$, $p < 0.001$. This result confirms the hypothesis that participants given the improved consent form would understand the material better than participants given the conventional consent form.

In addition, each of the nine content items were analysed separately. The improved consent form produced higher comprehension scores than the conventional legalistic consent form for every item. In four of the nine items, the differences were statistically significant (awareness of an available optional task, knowledge that their name would not be connected to their performance, knowing that there was something that they could do if they were dissatisfied with the experiment, and ability to recall the investigators' names). Both experimental conditions produced greater performance than the one-line control condition in all but three paired comparisons.

4.2.4. *Subjective comprehension*: Comparisons were made between the two experimental consent form conditions on the three subjective rating measures:

understandability, carefulness in reading the form, and how well the form explained the participant's rights. The one-line control form was not included in these analyses because participants in this condition had been exposed only to a rudimentary-level of information, and as a consequence, this group's ratings would be made on a different basis than that made by individuals in the other two conditions.

Participants exposed to the improved consent form ($M = 7.05$) reported it to be significantly more understandable than those exposed to the conventional consent form ($M = 5.58$), $t(44) = 2.64$, $p < 0.05$. Participants given the improved consent form ($M = 5.72$) reported reading the consent form more carefully than those who were given the conventional consent form ($M = 3.13$), $t(44) = 5.82$, $p < 0.001$. Also, participants in the improved consent form condition ($M = 7.95$) reported being significantly better informed about their rights than participants in the conventional consent form condition ($M = 7.00$), $t(43) = 2.49$, $p < 0.05$.

4.2.5. *Correlations*: Objective comprehension was positively and significantly correlated to perceived understandability, $r = 0.35$, $p < 0.05$, reported care in reading the document, $r = 0.68$, $p < 0.05$, and perceptions about how well the consent form explained their rights as research participants, $r = 0.31$, $p < 0.05$. In addition, perceived understandability was positively and significantly correlated with reported care in reading the document, $r = 0.35$, $p < 0.05$, and how well the consent form explained their rights, $r = 0.67$, $p < 0.05$. Also, reported care in reading the document was positively and significantly correlated with how well they believed their rights were explained, $r = 0.40$, $p < 0.05$. Reading time did not significantly relate to any of the rating measures.

4.3. *Discussion*

The results show that the form or style of a legal document can influence the knowledge that people acquire from them as well as their impressions about how well the information was communicated to them. Specifically, these results support the suggestions for improving legal forms described in studies 1 and 2, but because the improved form comprised several factors, it is not possible to tell from this experiment which factors were most influential in aiding comprehension. Broadly speaking, however, it appears that consent forms that are shorter, use larger print, are less formal in tone, and use less technical terms, do a better job at communicating the risky nature of the task in which the participants were agreeing to participate.

Consistent with the hypotheses, the results show that the improved consent form produced greater objective comprehension scores than the more legalistic conventional consent form. Moreover, the subjective ratings indicated that the improved consent form was more carefully read and understood and that participants believed it better informed them of their rights. These results help to explain why five of the seven individuals who refused to participate in the battery study were in the improved consent form condition. Participants in the improved consent form condition were better alerted to the risks of the battery task and about the availability of another, safer task, and they more frequently chose the optional task. Nevertheless, the majority of individuals agreed to participate in a potentially risky procedure when they could have chosen the safer card-sorting task.

The finding that the participants in the control form condition comprehended less than the other two conditions is not surprising because this form did not contain most of the elements evaluated in the comprehension test. The participants in the improved and the conventional consent form conditions reached mean levels of 78 and 57% correct in the comprehension test, respectively, whereas baseline knowledge of the control condition in participants reached a mean level of only 26% correct on the test.

Together, these results support the earlier survey's suggestion that people sign and commit to legal agreements that they do not fully read or understand. Additionally, the results show that understanding of one such contractual agreement can be significantly improved.

5. Study 4

The last study examined the influence of a combination of several characteristics that comprise a conventional 'legalistic' consent form and an improved form. The present study examined three specific factors that were suggested in studies 1 and 2 and by earlier research to determine their influence on people's signing and understanding of a consent form. In particular, three factors were manipulated: 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 or official authority has given approval to the procedures. Related to this notion are studies by Wright *et al.* (1982) and Godfrey *et al.* (1983) who found that people are less likely to read warnings or other safety-related material if they believe that the 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 going home (Morrow *et al.* 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 stressed 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 that they mention 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 and Latham 1990). Recent research (Magurno and Wogalter 1994, Wogalter *et al.* 1998) has shown that time stress reduces compliance to posted warning signs.

Oral 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 and Young 1991, Wogalter *et al.* 1993) has shown that orally-presented warnings increase compliance behaviour over printed warnings and that both are better than either alone. In addition, research and theory in human memory and cognition suggests

that presentation in two codes or modalities is better than one (Paivio 1975, Penney 1975, 1989). While the addition of oral presentation was not specifically cited in the list of suggestions provided by participants in studies 1 and 2, it is indirectly related. Participants cited 'having explanations' as one way of improving the understandability of legal documents. Such explanations are sometimes given orally by another person and are often simplified accounts of the printed material. Given that previous research suggests that a multi-modal presentation might help, it was employed as a factor in the present research. However, to control for information content, the material presented orally was identical to the print material.

It was hypothesized that an official-looking form would be read by fewer participants than a less official-looking one. Consequently, it was expected that the more official-looking form, relative to the less official form, would reduce knowledge acquisition as indicated by a subsequent comprehension test and would reduce the number of individuals refusing to participate in the potentially risky activity because they would have less awareness of the availability of an alternative task described in the form. It was also hypothesized that increased time stress would reduce participants' comprehension and also their refusal to participate. Finally, it was hypothesized that oral and print presentation together would improve comprehension and increase participation refusals compared to print presentation alone.

5.1. *Method*

5.1.1. *Participants*: A total of 125 undergraduates taking an introductory psychology course at North Carolina State University participated for research credit. They were assigned randomly to conditions in equal proportions ($n = 25$ in each group).

5.1.2. *Design*: There were five between-subject conditions. Four comprised a 2 (Appearance: formal versus informal) $\times$ 2 (Time stress: low versus high) design. A fifth condition included voice accompaniment under low stress using the informal-appearing form. Thus the five conditions were: (1) formal form, low time stress; (2) formal form, high time stress; (3) informal form, low time stress; (4) informal form, high time stress; and (5) informal form, low time stress plus voice accompaniment. The voice variable was not manipulated as a complete factorial: (1) because only a limited participant pool was available and an additional 75 individuals would be required for its implementation (assuming 25 persons per condition); (2) because of the added cost in terms of time and effort to run the study; and (3) because the co-occurrence of voice manipulation in the high time stress cells would dramatically change the nature of the time stress manipulation by increasing participants' exposure to the consent form materials.

5.1.3. *Materials*: Two consent forms were used. 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 21.6 $\times$ 27.9 cm (8.5 $\times$ 11 in) page in a portrait orientation. The other consent form appeared less formal and less official, having the title 'Consent Form' in 10-point Times Roman font in mixed-case letters, and required less than one line of print. All other aspects of these two forms were identical to the conventional (legalistic) consent form used in

study 3. A tape recording of a male speaker reading the consent form was produced and used in the voice accompaniment condition. The objective comprehension task was similar to the one used in study 3 except that three additional short-answer items were included in the overall comprehension score ('Name the consequences that might occur if the cables are not hooked up correctly'; 'Please describe any optional tasks that were mentioned'; and 'What actions could you take if you were dissatisfied with the study?'). Thus the total number of items scored on the comprehension section of the questionnaire was 12.

5.1.4. *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 reading 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 a tape recording of a voice reciting the same information in the consent form was started. After the consent form phase (and the experimenter noting 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 as much time as they wanted to complete it. Unlike study 3, participants did not actually perform the battery hook-up or card-sorting task. After completing the questionnaire, participants were debriefed about the nature of the consent form manipulation, thanked, and dismissed.

5.2. *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 and used in the analyses. The first analysis employed 2 (Appearance) $\times 2$ (Time stress) ANOVA. The ANOVA showed a significant main effect of Appearance, $F(1,96) = 6.66$, $p < 0.05$. Participants who received the official-looking form ($M = 0.44$) performed less well on the comprehension test than the participants who received the more informal-looking form ($M = 0.53$). The ANOVA also showed a significant main effect of Time stress, $F(1,96) = 93.21$, $p < 0.0001$. Participants under high time stress ($M = 0.32$) performed less well on the comprehension test than the participants under low time stress ($M = 0.66$). The interaction of Appearance and Time stress was not significant ($F < 1.0$). A comparison examining the impact of voice (between the informal, low time stress plus voice accompaniment condition versus the informal, low time stress condition) was significant, $t(48) = 3.62$, $p < 0.001$. With voice accompaniment comprehension was significantly higher ($M = 0.84$) than without voice ($M = 0.68$).

Seven people refused to sign and complete the study. Although there were no statistically significant differences among the conditions ($p > 0.05$), there was a trend in the expected direction. Three persons refused in the informal form, low time stress condition; two in the informal form, low time stress plus voice accompaniment condition; one in the official form, low time stress condition; and one in the official form, high time stress condition.

5.3. *Discussion*

The study showed that all three factors had an effect on comprehension of the informed 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 they had encountered in the past). Also, with the standard form, it might have given participants the impression that the study had been approved by some superior official authority that would not allow them to be hurt. In other words, the official-looking form might have engendered a greater sense of perceived safety than the informal form and, therefore, participants might not consider it necessary to read the entire official-looking form. Previous research shows that people are less likely to read instructions when they perceive the situation to be safe (Wright *et al.* 1982, Godfrey *et al.* 1983). During debriefing, in response to the question, 'Why did you sign the consent form?' participants in the 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 informal form condition gave answers such as 'needed credit', 'thought it was required', 'was asked to', and 'understood the information'.

The reason for the lower scores in the time stress condition is fairly straightforward: people read the form less carefully when pressured for time. This was confirmed by the subsequent rating measures. Time stress might disrupt attention, causing participants to give less attention to the form—even if they intended to read it carefully. Alternatively, under time stress, participants might have been trying to be 'good subjects', i.e. to help the experimenters meet their goals (Doob and Kirshenbaum 1973), and thus were willing to sign the form promptly.

The results showed that oral and written information together produced better knowledge acquisition than the printed form alone. Possibly, the voice recording 'forced' participants to read the entire form—serving to focus attention on the information—and thereby assist those who are less motivated to read the form. Also, voice may provide an additional code that is not produced (or as readily) by print alone (e.g. Paivio 1975, Penney 1975, 1989). Research suggests that multiple presentation modes produces redundant coding that facilitates encoding and retrieval of memory (Paivio 1975).

It is not possible to make strong conclusions about the effects of conditions on refusal rate because only seven participants refused to participate and there were no statistically significant differences among conditions. Nevertheless, the pattern of refusals were suggestive in that they appeared to show meaningful trends. More people refused to participate under the lower time stress conditions and the voice accompaniment conditions. Additional research would be necessary to confirm these trends, perhaps involving a task where refusals are more likely to occur to avoid the present study's apparent floor effect. The finding that so many participants agreed to participate and risk being injured can be interpreted in a number of ways. Three are mentioned here. One is that participants believed that if they did not take part in the main study they would be penalized by not receiving research credit in their introductory psychology courses. However, both consent forms stated that there was an alternative activity available and that they would not be penalized in any way

from receiving credit regardless of their participation. A second possibility is that most participants believed that the battery hook-up task was safe possibly because they discounted the risks based on previous experience or knowledge of no one being injured doing the task and possibly because of an assumption that the university authorities would not allow the activity to be conducted if it did pose a serious risk of injury. A third explanation for the large number of participants agreeing to participate in the risky activity relates to people's obedience with authority figures. 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—frequently, after having given not much more than a quick glance at the material.

One potentially relevant issue, concerning habituation, should be mentioned. Repeated experience with consent forms like that used in this and the preceding experiment could lead to familiarity, which in turn may lead participants to take the consent-form procedure less seriously than if they were less familiar. If this were the case, it might affect the pattern of results. Unlike some universities, North Carolina State University does not require the use of a consent form for most research projects involving human participants because most studies involve cognitive survey-type research. Students are 'warned' in their introductory psychology classes that they have a choice of participating in research for course credit or doing something else of equal educational value (e.g. write a short paper). The university and the department do not have a specific consent form; researchers who do use them (usually when non-student participants are involved), tend to tailor their consent forms to the individual research, with corresponding variations in wording and appearance. Consequently, the present participants are unlikely to have much exposure to consent forms prior to their participation in this or the prior study. Hence, the possibility of habituation affecting the results is not likely to be an issue.

6. General discussion

The present research was able to identify some of the factors that are related to reading, understanding, and signing legal documents. Technicality, i.e. legalese, was the most frequently cited element in legal documents that appears to hinder people's understanding of these materials. Reducing technicality was also the most frequently suggested improvement in study 1 and the highest rated problem in study 2. Additionally, participants in the first two studies cited numerous other characteristics of legal forms that they believe hinder reading and comprehension, including length, fine print, detail, etc. Suggested improvements include: shortening their length, increasing the print size, giving explanations, etc.

In application, these characteristics could serve as a checklist to improve legal documents—to help to remedy problems with existing documents or to provide input into the design of new documents. As a first step towards making them more readable, the present research suggests that reduction of the technical nature of legal documents would constitute a major advance in motivating people to read them and comprehend their content.

The present research also serves to identify opportunities for research and application. Subsequent research could determine other specific factors that facilitate comprehension of legal documents. While studies 3 and 4 examined some of the

factors suggested in studies 1 and 2, there are many other factors that were not investigated and could serve as a basis for future research. Some are probably more influential than others. Moreover, approaches currently used in product warnings can be applied to legal documents. 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. Many of the factors that have been found to be relevant for warnings (e.g. familiarity, risk perception, explicitness, noticeability, and various physical characteristics) are probably relevant to legal documents (Laughery *et al.* 1994). 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 to focus and understand the information that they are agreeing to. Concern should not focus only on the form itself, but also the situation in which the agreement is being considered (e.g. under time stress).

The heightened interest by the legal profession in the area of document understandability is also an opportunity for investigators: (a) to evaluate the people's comprehension of particular documents (e.g. in consulting situations); (b) to explore additional factors that influence understandability of legal documents and people's willingness to sign them without reading them; and (c) to serve as expert witnesses in litigated cases (e.g. contract disputes) where one or more parties claim lack of clarity or ambiguity.

Finally, it should not be assumed that the numerical results from this research estimate the absolute rate at which members of the general population would sign legal documents. Students are less likely to have signed legal forms than older non-student adults, and this lack of experience might affect the pattern of responses. Both the nature of the limited sample and the nature of this population suggest that one should be cautious in generalizing the results to other populations. Moreover, the consent form may not generalize to other kinds of legal documents. It should be noted, however, that participating in a research study and potentially signing a consent form is something this population might actually perform, particularly if they attend a college or university and enroll in an introductory psychology course (as many do). In this respect, it is a realistic, valid task/situation for this population. With some due caution, the authors believe that variables such as formality, repetition, understandable language, etc., and likelihood of signing legal documents have strong effects and that the relationships among these variables will generalize to other populations and legal forms.

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