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Participant Attentiveness to Consent Forms

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ABSTRACT. In the present study, we tested to see if participants were attentive to details in the consent form for a psychological experiment before signing it. Our initial hypothesis was that participants might not read attentively, due to perceiving the information to be mundane. Depending on condition, the code word was placed in an early, middle, or late section of the consent form. This experiment allowed us to analyze whether participants read through the consent form, and if they paid more attention to a specific part of the form than others. We asked participants to read through the consent form and sign at the bottom when they were finished. Following their signed consent, we orally gave instructions on how to complete the filler task. At the conclusion of the study, participants were given a prompt to recall the code word. The results of this preregistered study show that, of the 136 participants, only 20 participants correctly recalled the code word. A χ^2 test of independence revealed that successfully noticing the code word did not depend on the location on the consent form, $\chi^2(2, N = 136) = 0.67$, $p = 0.72$, $\phi = 0.07$. The results of this study show that students did not differentially respond to different parts of the consent form.

Open Data, Open Materials, and Preregistration badges earned for transparent research practices. Data and materials are available at https://osf.io/7wazk/. The preregistration is available at https://aspredicted.org/xyce3.pdf.

Informed consent is a critical component of all research involving human subjects. The American Psychological Association (APA) requires that informed consent procedures use reasonably understandable language in order to ensure fully informed consent from individuals or individuals' caretakers if individuals are incapable of consenting on their own. Consent must be documented in either oral or written form. This dictum is quite clear, but assuring that participants fully understand the contents of a written informed consent document may not be so simple. Some participants may willingly sign and consent to participate in a psychological experiment whether or not they attended to the details of the document and fully understand the document. This calls into question the ethical soundness of such consent procedures.

There is considerable and growing evidence that research participants do not always completely read through consent forms and may be missing key details in the consent process (Perrault & Nazione, 2016). This could be either due to participants not knowing what is expected of them or not knowing what the possible risks are. Flory and Emanuel (2004) conducted a meta-analysis of 30 studies and reviewed effective ways to improve participant understanding of consent forms. They found that education level was associated with the extent of understanding of consent forms. Specifically, those with a higher level of education were likely to understand consent forms more thoroughly. According to Flory and Emanuel (2004), revised consent forms meant to improve participants' understanding of material had a negligible effect on understanding, but those who read at a seventh and eighth-grade level scored significantly lower than those with a higher reading level. Because

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first-year college students are generally past this reading level, there is likely little effect of education on recall responses for these participants. Another study looked into whether participants could recall information about consent forms after signing them (Pedersen, Neighbors, Tidwell, & Lostutter, 2011). By asking participants to directly recall information provided in a consent form, the researchers attempted to determine whether participants thoroughly examined the information in the consent form or not. Results indicated that participants were only able to recall a randomly assigned word about 25% of the time. Participants missed about 33% of the information in the risk section of the consent form, more than 50% were unaware that their data would be anonymous, and 15% of participants did not know about a significant instruction inside the consent form. These studies show that consent forms rarely receive participants' full attention. To improve attention in this area, it is important to identify and understand what causes an individual to be inattentive.

It is also important to understand why individuals decide to consent without being informed, as well as their level of competence. The reasons that many participants admittedly do not understand a document but still sign may include the formal and official style of the document, a feeling of time pressure, and an inadequate style of presentation of the materials included on a consent form document (Wogalter, 1999). Participants may be more likely to read all legal documents including consent forms if the language in them was much less formal. By making documents less intimidating, through informality or by providing oral as well as written instructions, researchers could allow participants to feel more relaxed and fully informed. Participants also may be more likely to read an entire form if there is not a sense of being rushed to read through and sign the document. It is difficult to be certain if a typically functioning individual has given fully informed consent, and it is ethically questionable whether to accept a signed consent form if an individual has an impairment.

One necessary precondition for fully informed consent is that participants be adequately motivated to read and understand the consent form. Without motivation, individuals are unlikely to thoroughly read through any forms. Motivation is often divided into two categories:extrinsic and intrinsic. Extrinsic motivation is anything that an individual finds motivating on an external level such as money, food, or attention. Intrinsic motivation is anything that an individual finds motivating on an internal level such as succeeding or performing well. When individuals are not internally motivated to complete a task, they run the risk of mindlessly performing at a level below their competency, as well as the chance of carelessly responding. Careless responding can be due to the expectation that their responses are unimportant, which may result in having little motivation to respond appropriately (Taylor, Bailey, & Barber, 2015).

Although our focus was on attentiveness in the informed consent process, we reviewed research on general research participant attentiveness, and the evidence suggests inattentiveness should be a major concern for researchers. There are three general methods of screening participants: archival, statistical, and self-report (Desimone, Harms, & Desimone, 2015). The archival category uses pattern recognition such as when a participant responds similarly to every single item. The statistical category looks into inconsistent patterns such as when similar items are answered in dissimilar ways. Self-report involves asking participants about their level of attentiveness for the given task. Being able to identify participants carelessly responding in a study would be beneficial to determining if participant data is fully reliable. Meade and Craig (2011) looked into ways to identify careless response data. Over two studies, five methods were tested to determine whether they could be used to effectively identify careless response data. The results showed that about 12% of college-aged participants responded carelessly during a lengthy survey.

It is necessary to be able to identify careless responses that skew results and cause inconsistencies, in order to draw valid and reproducible conclusions. According to Meade and Craig (2011), there are two patterns of careless response: random and nonrandom responses. With the two patterns, there are five methods of identifying careless responses, which include (a) items to detect careless response inside the study, (b) response consistency indices made in conjuncture with established survey items, (c) multivariate outlier analysis, (d) response time, and (e) self-report (Meade & Craig, 2011). Once participants have been identified as being inattentive or careless with their responses, the question becomes whether they should be filtered out or not. When deciding if participants should be filtered out, it is important to determine whether the data for a whole participant should be filtered out or only certain specific data that deviated significantly from that of the mean (Rios, Guo, Mao,

& Liu, 2016). If the filtering process eliminates all data for a specific participant, it may be explained that the single participant was inattentive. It is important to be able to tell if a participant was inattentive purely during the consent form portion, or during the entire experiment.

Predictions

In research by Pedersen et al. (2011), participants were unable to recall specific information about the consent forms that they had signed. In the present study, we only asked participants to recall a specific word that was labeled as the desired word via specification "Code word: Opera." Although participants in the previous study were shown to not recall information, we believed that participants would accurately read and recall the code word at a higher rate because it was on its own individual line, right above a new section of the form. Therefore, although the bulk of the text might seem mundane and easy to forget, we expected the random code word to catch participants' attention. Thus, our procedure seemed to test a "lower bar" of participant attentiveness by assessing not general attention and memory, but the identification of a quite strange and surprising insertion into the consent form. Our primary prediction was that participants would be unlikely to accurately recall the code word prompt. Our secondary prediction was that participants would be equally inattentive to the code word at the middle of the form and the end of the form.

Method

Participants and Design

Participants were 136[1] undergraduate psychology students attending a small, private, Midwestern university (46 men and 90 women) participating in exchange for partial course credit. This study accounted for 1/12 of the participation credit for their introductory psychology class. The independent variable in this experiment was the location of a code word included in an existing consent form that was randomly assigned into three groups (top, middle, and bottom). There were eight locations, split into three categories. We randomly assigned participants across the three categories, and then within each category they were randomized across specific locations. For participants randomly assigned to the top group, we placed the code word directly above the first and second segments of the form, which contained the purpose, background, and procedure sections. For participants randomly assigned to the middle group, we placed the code word above the third, fourth, fifth, and sixth segments of the form, which contained the risks/discomforts, benefits, costs, and payment sections. For participants randomly assigned to the bottom group, we placed the code word above the seventh and eighth segments of the form, which contained questions and consent sections of the form. The dependent variable was a dichotomous variable representing whether or not the participant correctly reported the code word.

[1]The original goal of this preregistered experiment was to collect data from 100 participants. More participants volunteered than the initial goal for this experiment, prior to the predetermined final collection date.

Materials

We gave participants a pencil and the sheets necessary to complete the attentiveness task. A set of eight copies of the consent form was created with the code word being placed above a different section of the form. The consent forms were identical except for the placement of the code word. Each code word was placed directly above the beginning of the new section. We randomly assigned one of eight copies of the consent form with a code word placed into the form to the participants. We also gave participants a filler task to complete between signing the consent form and being asked to produce the code word. This filler task was unrelated to the present study. Finally, participants were given a question sheet with the code word recall prompt, "what is the code word?"

Procedure

After institutional review board approval (09-09-2015#012) was given, we randomly assigned each participant to a condition using a random number generator. When participants arrived, we gave them a consent form to sign. We then told participants to read through the consent form and sign it when they had finished reading. After participants signed the consent form, we read the instructions of the filler task orally as we gave them materials to complete the filler experiment. Following the completion of the filler task, participants were given a third sheet of paper, which we described as a demographic sheet. This sheet included the prompt "what is the code word?" asking for the consent form code word. After completing this final form, participants were debriefed and given their compensation of course credit. After participants left the experimental session, we recorded whether they had responded correctly or incorrectly to the code word question.

Results

We were interested in assessing if participants were more attentive to details in certain areas of the consent forms than in other areas (see Table 1). Of the 136 participants who completed the experiment, only 20 were able to accurately produce the hidden code word following the filler task. The vast majority of participants did not respond to the prompt asking for a code word; some provided an incorrect guess using words such as *pizza*, *baseball*, and *password*. Code word location and the frequency of correct responses were not significantly associated, $\chi^2(df = 2, N = 136) = 0.67$, $p = .72$, $\phi = 0.07$.

Discussion

The results of this experiment supported our primary hypothesis that participants in a psychology experiment would not thoroughly read through the consent forms given prior to the experiment being conducted. However, the results did not support our secondary hypothesis that there would be a difference in correct response rate depending on the location of the code word. There was no significant difference across groups in attentiveness, which shows a similarity to the results in Pedersen et al. (2011). There was a low rate of correct response and an overall low rate of attentiveness to the consent form. This shows that there is a need for ways to improve this inefficacy.

It is extremely important that those participating in experiments understand what they are giving consent to. Consent is a core element of both ethical treatment of human subjects and APA guidelines. Therefore, it is vital that participants at least understand what they can expect. Psychological study participants are typically attending due to some sort of reimbursement for their time. Because of this, they may not understand what the experiment involves and therefore may not put their best efforts into the study. After reading the consent form, it is possible that they do not understand what is being said due to the bulky formal language that is used in these consent forms, and therefore stop reading and just sign so as to not feel the need for clarification by the experimenter (Waggoner & Sherman, 1996).

By giving consent, participants are essentially saying that they understand and accept responsibility for what is expected of them as well as any distress, harm, or otherwise unexpected outcome that may occur. If participants do not know what they are giving consent to, a number of negative outcomes could occur: participants may not perform the procedures of the experiment correctly, leaving their results invalid or difficult to interpret; participants could endanger themselves due to a health complication involved in the experiment that they remain unaware of; participants could endanger others for their lack of understanding of what is expected of them; and other possibilities not specified. When participants give consent, an experimenter should not be expected to provide a repetition of what they have just given consent to. Because of this, it is assumed that participants are aware of what they have consented to.

There is a need to find effective ways to both allow participants to understand fully what they are consenting to, and keep the integrity of an experiment intact, without introducing demand effects (Orne, 1962). There is only so much a researcher can do to ensure that participants understand what is going on before it begins to skew the validity of the experiment (Mckibben & Silvia, 2016). With the increase in attempts to allow participants to be more attentive, experiments also run the risk of causing a social desirability bias (Clifford & Jerit, 2015). This is due to participants being aware that certain answers are being monitored, and therefore wanting to answer according to what would be viewed as "good" by others.

To accurately provide reliable results, researchers must use screening methods to adequately account for participant carelessness or insufficient effort. It is imperative to have similar, reliable, and valid sample sizes. To deem a study valid, results must be similar among multiple samples regardless of sampling strategies (Ran, Liu, Marchiondo, & Huang, 2015). Online studies have been shown to typically have a higher level of carelessness and insufficient effort responding than paper and pencil studies (Huang, Bowling, Liu, & Li, 2014). This shows that there are certain methods of conducting an experiment that can have an improved level of responding compared to other methods. Although the current study demonstrated the problem with attentiveness in paper and pencil consent forms, research has shown that online studies may suffer even more in attention levels. A way to improve

TABLE 1

Correct vs. Incorrect Responses by Group

	Group 1 (Upper)	Group 2 (Middle)	Group 3 (Lower)
Correct	6 (12.24%)	7 (13.73%)	7 (19.44%)
Incorrect	49 (87.76%)	51 (86.27%)	36 (80.56%)
Total Participants	55	58	43

this may be to screen attentiveness prior to gaining consent, which would ensure that participants understand what they are consenting to.

Limitations

This study provided a code word inside the consent form without any further clarification or acknowledgement of the code word, with the assumption that participants who read through the consent form would recall the code word at the end of the study. It was not directly stated where participants could find the code word, and it might have been confusing for participants to know where they could have found the word. There was also no clear direction to remember the code word, and being a pure recall task rather than a recognition task, some participants might have forgotten what it was during the time of the filler task.

Conclusion

It is concerning that fewer than 15% of the participants were able to recall the code word. Some of the possible routes in the future include: a larger participant pool, equivalent demographic groups, the addition of online participants, and obtaining an international participant pool (Flory & Emmanuel, 2004). Furthermore, it is necessary to provide more information regarding the location of the code word during the prompt. These routes will help with gaining more generalizable data and exploring possible differences related to participant characteristics. Further research should also include more clear information in the prompt as to where the participant could find the code word. Because this was potentially unclear for participants who thoroughly read the consent form, it might have skewed the results slightly.

Participants have been shown to be inattentive during psychological research, especially in the process of gaining consent. This may be due to a lack of motivation or a lack of understanding due to educational levels or the language of the consent form. The consent form signing procedure typically involves a bulk of information in a small area. This can be both intimidating to read through as well as mundane. This study demonstrated how imperative it is for further research to be conducted to aid participants in giving fully informed consent, rather than falling victim to inattentiveness.

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