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Too Long and Too Boring: The Effects of Survey Length and Interest on Careless Responding

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TOO LONG AND TOO BORING: THE EFFECTS OF SURVEY LENGTH AND INTEREST ON CARELESS RESPONDING

A thesis submitted in partial fulfillments of the requirements for the degree of
Master of Science

By

CHEYNA KATHERINE BROWER
B.A., Auburn University, 2016

2018
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I HEREBY RECOMMEND THAT THE THESIS PREPARED UNDER MY SUPERVISION BY Cheyna Katherine Brower ENTITLED Too Long and Too Boring: The Effects of Survey Length and Interest on Careless Responding BE ACCEPTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF Master of Science.

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ABSTRACT


Careless responding (CR), also called insufficient effort responding (IER), occurs when survey participants respond to items without regard to item content. The presence of careless responding threatens the validity of inferences made from self-report data (Huang et al., 2012; Huang et al., 2015). This study examines the effects of two proposed causes of careless responding (Mead & Craig, 2012): questionnaire length and participant disinterest. Specifically, I hypothesized that (a) questionnaire length is positively related to careless responding, (b) participant interest is negatively related to careless responding, and (c) questionnaire length has a weaker relationship with careless responding among participants who are interested in the questionnaire content than among participants who are uninterested in the questionnaire content. Analyses using a sample of 316 undergraduate students, who were randomly assigned to either a long survey or short survey condition, provided partial support for the three hypotheses tested. I found significant mean differences ($d = 0.29$ to $0.42$) in careless responding that indicated a lower prevalence of careless responding in the short survey condition than the long survey condition. I found significant negative correlations ($r = -0.12$ to $-0.21$)
indicating that interest has a negative relationship with careless responding.

Additionally, interest moderated the relationship between questionnaire length and careless responding such that participants with low interest in the long survey condition display significantly more careless responding as measured by the infrequency scale than those in the short survey condition. These findings have important theoretical and practical implications for researchers and practitioners that use self-report surveys.
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I. INTRODUCTION

The presence of careless responding (CR) threatens the validity of inferences made from self-report data (Huang, Curran, Keeney, Poposki, & DeShon, 2012; Huang, Liu, & Bowling, 2015; McGrath, Mitchell, & Hough, 2010). For example, careless responding can in some cases attenuate (Huang et al., 2012) and in other cases inflate (Huang et al., 2015) observed relationships between variables. It is therefore important to understand the causes of careless responding because such insights could lead to methods that researchers could use to discourage careless responding.

Meade and Craig (2012) suggested that participant disinterest and questionnaire length are possible causes of careless responding, although little research has tested this assertion (cf. Gibson & Bowling, 2017; Maniaci & Rogge, 2014). Accordingly, the current study invokes ego depletion theory (Baumeister, Bratslavsky, Muraven, & Tice, 1998; Baumeister & Vohs, 2007; Hagger, Wood, Stiff, & Chatzisarantis, 2010; Muraven, Tice, & Baumeister, 1998) as a basis for hypothesizing that (a) questionnaire length is positively related to careless responding, (b) participant interest is negatively related to careless responding, and (c) questionnaire length has a weaker relationship with careless responding among participants who are interested in the questionnaire content than among participants who are uninterested in the questionnaire content. In the following subsection, I will discuss the definition, prevalence, detection methods, and causes of careless responding.
Defining Careless Responding

Data quality can affect the validity of inferences made by researchers and therefore shape current knowledge, influence decisions, and direct future research. There are many threats to data quality. The current study will address data that do not accurately represent a respondent’s true level on the construct of interest. Generally, responses that do not accurately represent a respondent’s true score fit into two categories: content responsive faking and content nonresponsivity (McGrath et al., 2010; Nichols, Greene, & Schmolck, 1989). Content responsive faking is intentional, effortful and influenced by item content, but is inaccurate because the respondent wishes to portray himself or herself inaccurately (e.g., applicants faking on a personality test in order to appear qualified for a job). The focus of the current study is on content nonresponsivity, that is, responses made by subjects with “low or little motivation to comply with survey instructions, correctly interpret item content, and provide accurate responses” (Huang et al., 2012, p. 100). This type of response bias has various labels including “random responding” (Beach, 1989; Pinsoneault, 2007; Thompson, 1975), “content independent responding” (Evans & Dinning, 1983), “inconsistent responding” (Bruehl, et al., 1998; McGrath et al., 2010), “inattentive responding” (Meade & Craig, 2012), “insufficient effort responding” (Huang et al., 2012), and “careless responding” (Meade & Craig, 2012). In the current study, I will use the term careless responding.

Prevalence of Careless Responding
Careless responding is a low base-rate behavior. However, careless responding is not a trivial problem. Berry et al. (1992) found that as many as 60% of undergraduate students admitted to responding carelessly to one or more survey items and 7% admitted to responding carelessly to “many” or “most” of the items. Kurtz and Parish (2001) found careless responding prevalence to be 10.6% among college students completing a personality survey for course credit, a population that is perhaps the most common source of psychological data (Gordon, Slade, & Schmitt, 1986). Similarly, Meade and Craig (2012) identified 10% to 12% of college students as responding carelessly to a personality survey. Meade and Poppalardo (2013) found that 23% of respondents were careless at some point during a survey whereas 8% of respondents were careless throughout the entirety of the survey. Therefore, evidence has suggested that the modal rate of careless responders is near 8% to 12% (Curran, 2016; Curran, Kotrba, & Denison, 2010; DeRight & Jorgensen, 2015; Maniaci & Rogge, 2014; Meade & Craig, 2012).

Although careless responding is a low base rate behavior, it negatively impacts data quality. Careless responding can reduce scale reliability (Huang et al., 2012), attenuate relationships between substantive variables (Huang et al., 2012), or in some cases inflate relationships between substantive variables (Huang et al., 2015), thus increasing the chances of making either Type I or Type II errors (Clark, Gironda, & Young, 2003; Huang et al., 2015). Huang et al. (2015) demonstrated that spurious
relationships among otherwise uncorrelated measures can occur with as few as 5% of participants responding carelessly. Thus, even modest levels of careless responding can threaten the validity of inferences made based on self-report data. To ensure more accurate results, researchers should therefore either (a) identify and remove data from careless responders or (b) prevent careless responding.

**Careless Responding Detection Methods**

Researchers have used several methods to detect careless responding. There are two general approaches to detecting careless responding. The first is to insert items designed to detect careless responding into the survey before administration (e.g., bogus items; Beach, 1989). The second approach is to examine post-hoc statistics calculated from the study sample (e.g., Mahalanobis $D$; Mahalanobis, 1936). The following subsections describe common methods of assessing careless responding.

**Inconsistency indices.** This family of techniques for detecting careless responding assumes that careful participants will maintain a consistent level of the construct(s) being measured over the course of the survey and will therefore respond consistently. In other words, these indices assess the extent to which respondents contradict themselves. Inconsistency indices can be computed using either item synonyms or antonyms. Synonyms use pairs of similar items whereas antonyms use pairs of dissimilar items. Item synonym and antonym pairs can be created by using either a semantic or psychometric approach. Researchers create semantic pairs based solely on
linguistics (e.g., happy/sad). Psychometric pairs are those that are paired empirically based on strength of correlation among items. Thus, there are four types of inconsistency indices: (a) semantic synonyms, (b) semantic antonyms, (c) psychometric synonyms, and (d) psychometric antonyms (Curran, 2016; DeSimone, Harms, & DeSimone, 2015).

Researchers determine semantic synonyms and semantic antonyms a priori based on the items’ content and linguistic characteristics. Typically, researchers create such pairs in the absence of data (Curran, 2016). Like all inconsistency items, semantic synonyms and antonyms are based on the assumption that participants who are careful will respond to similar items in a consistent manner throughout the survey. Thus, items within semantic synonym pairs should correlate positively with each other whereas items within semantic antonym pairs should correlate negatively with each other.

Psychometric synonyms and antonyms, on the other hand, use empirically derived pairs. Researchers determine psychometric pairs through post-hoc analyses of item correlations. Researchers determine psychometric synonym item pairs based on large positive correlations, whereas psychometric antonyms are determined by discovering item pairs with large negative correlations. Because there is no standard value, items are paired based on the largest correlations found in the data (Curran, 2016). Meade and Craig (2012), for instance, paired items that correlated stronger than -.60.

In sum, all inconsistency items measure the degree of consistency in responses that each respondent provides based on the assumption that careful responders should
provide consistent responses to items with similar content. This family of techniques also includes a within-person reliability statistic that can be compared at the sample level (Curran, 2016).

**Infrequency indices.** Another method is to insert infrequency items into a questionnaire. Also referred to as bogus items (Beach, 1989; Curran, 2016; Meade & Craig, 2012), infrequency items are items to which all careful respondents are likely to give the same response (Beach 1989; Curran, 2016; Green & Veres, 1990; Huang et al., 2012; Meade & Craig, 2012). For example, all careful participants should respond “Strongly disagree” or “Disagree” to the item “I can run two miles in two minutes” (Huang et al., 2015) because it is an impossible feat. By adding these items before data collection, researchers can observe item responses to make data quality decisions. These indices are built on the underlying assumption that there is one “correct” response or a small range of responses and several incorrect responses.

**Longstring.** A lengthy series of invariant responses (i.e., the same response selected repeatedly by a respondent) might indicate careless responding (DeSimone, Harms, & DeSimone 2015). The longstring technique assumes that it is unlikely that a careful respondent will select the same response option for several consecutive items. This assumption is less tenable if most or all items in a questionnaire are scored in the same direction or if the consecutive items assess the same construct. DeSimone et al. (2015) recommended longstring analyses when surveys are multidimensional or have a
mixture of positively and negatively scored items.

**Mahalanobis Distance.** Mahalanobis distance, or Mahalanobis $D$, is an extension of simple outlier analysis (Curran, 2016; Mahalanobis, 1936). This technique relies on the assumption that differences between careless and careful responders manifests in the presence of outliers. Mahalanobis $D$ extends simple outlier analysis by considering more than one variable, making it a multivariate outlier technique. When used to detect careless responding (Maniaci & Rogge, 2014; Meade & Craig, 2012), Mahalanobis $D$ can identify multivariate outliers by measuring the distance of a certain point from a data distribution. In other words, Mahalanobis $D$ will identify responses that are inconsistent for a participant based on that participant’s other responses. This can inform researchers that an individual respondent is on the outskirts of the multivariate distribution formed from responses to all items (Curran, 2016).

**Response Time.** Response time measures the length of time each respondent takes to respond to a questionnaire. This family of techniques relies on the assumption that careless responders will take less time than thoughtful responders due to the absence of cognitive processing (Huang et al., 2012). Researchers have used three techniques to measure response time: (a) total time (i.e., raw number of minutes to complete the questionnaire; DeSimone et al., 2015), (b) page time (Huang et al., 2012), and (c) time per question (DeSimone et al., 2015). Huang et al. (2012) suggested page time to be most effective, particularly when using a cutoff score determined by multiplying 2-
seconds per question by the number of questions per page. Brower and Bowling (2017) empirically examined the effectiveness of total survey time versus page time for detecting carelessness when responding to personality items and found that a 2-seconds per question cutoff is most effective and converges well with other careless responding indices. Further, Bowling and colleagues (2018) provided evidence for the construct validity of page time as a measure of careless responding. Accordingly, I will use this approach in the current study.

Convergence of careless responding. There are several more techniques used to detect careless responding. Although there are many techniques available to researchers, not all techniques measure the same constructs or detect the same careless responders (Meade & Craig, 2012). Moreover, different methods of detecting careless responding sometimes correlate positively, negatively, or not at all with each other (Huang et. al., 2012; Meade & Craig, 2012). Thus, Curran (2016) recommended researchers use a multiple hurdles approach, which suggests that the most effective use of these methods is to use them together to detect distinct types of careless responding.

However, there is evidence supporting the convergence of several careless responding techniques. Huang et al. (2012) found that page time, psychometric antonyms, individual reliability, and longstring (reverse scored) indices were all correlated positively with each other, such that those who scored high on one of the
indices tended to score high on the others. Additionally, Bowling et al. (2016) found converging evidence for page time, infrequency index, inconsistency index, longstring, and Mahalanobis $D$.

Regardless of the technique used to detect careless responding, careless responding negatively affects data quality. Thus, in addition to detecting and removing careless responses from data, researchers should make efforts to understand the causes of careless responding to develop prevention methods. The following section discusses the advantages of preventing careless responding and the potential causes of careless responding.

**Causes of Careless Responding**

Although methods exist to detect careless responding, preventing careless responding would allow researchers to increase power by retaining data that might otherwise be removed during the cleaning process. Finding the causes of careless responding might allow researchers to build techniques to prevent carelessness in the first place, helping to maximize the useable data collected from participants. This section addresses several potential causes of careless responding.

Traditionally, researchers have treated careless responding as primarily a methodological nuisance (Huang et al., 2012; Meade & Craig, 2012). Recently, however, researchers have examined careless responding as a substantive variable (Bowling et al., 2016; Meade & Poppalardo, 2013). In other words, the latter researchers have examined
the relationship with careless responding and other substantive variables (e.g., personality traits).

Meade and Craig (2012) identified four possible causes of careless responding: (a) lack of respondent interest, (b) excessive survey length, (c) lack of researcher-participant social contact, and (d) environmental distraction. The current study addresses respondent interest and survey length as causes of careless responding through the framework of ego depletion theory (Baumeister, Bratslavsky, Muraven, & Tice, 1998; Baumeister & Vohs, 2007; Hagger, Wood, Stiff, & Chatzisarantis, 2010; Muraven, Tice, & Baumeister, 1998). The following subsections use an ego depletion perspective as a basis for understanding the relationship among respondent interest, survey length, and careless responding.

**Ego depletion theory.** Ego depletion theory asserted that acts of volition draw from a limited resource pool (Baumeister et al., 1998). Baumeister et al. (1998) asserted that decreased performance following self-regulation was due to the total depletion of a common resource. In the following subsections, I will briefly discuss the original model and two extensions of the model—the strength model and the process model.

**Original model.** Baumeister et al. (1998) tested three mutually exclusive hypotheses to explain the decrease in performance on a self-control task observed following an initial act of self-control. The first hypothesis characterized self-regulation
as a skill. Because skills are developed over long periods of time, Baumeister et al. argued that the capacity to self-regulate should remain constant over a short period of time. The second hypothesis characterized self-regulation as a knowledge structure. If self-regulation were a knowledge structure, Baumeister et al. argued that the capacity to self-regulate should increase over a short period of time because an initial act of self-regulation would prime the schema, thus facilitating subsequent acts of self-regulation. The third hypothesis characterized self-regulation as a resource akin to strength or energy. Baumeister et al. (1998) argued that the capacity to self-regulate should decrease after an initial act of self-regulation because exertion of energy to self-regulate depletes one’s pool of self-control resources. Respectively, the three hypotheses predicted no change, an increase, and a decrease in one’s ability to self-regulate following an initial act of self-regulation.

Evidence overwhelmingly supported the third hypothesis—suggesting that self-regulation is akin to a limited energy or strength. Baumeister et al. (1998) argued that decreased performance following self-regulation is the result of the total depletion of a common resource. According to this model, participants would exercise self-control until the self-regulatory resource was fully depleted and any subsequent act of self-control would be impossible.

Strength model: Muscle analogy. Contrary to the argument made by Baumeister et al. (1998), Maurven and Baumeister (2000) asserted that a person’s common resource
does not need to be fully depleted to lead to diminished performance on later acts of self-control. Instead, the authors argued that self-regulation is akin to a muscle. Similar to the way in which a muscle draws on a limited resource to exert force over a period of time, self-regulation requires strength and energy to perform. Similarly, as muscles fatigue during an extended period of exertion, self-control can be depleted when demanded over time. This extension of ego depletion theory has three important implications: (a) people conserve their resources for subsequent acts of self-control, (b) the self-regulation resource can be strengthened, and (c) the self-regulation resource can be replenished. I will discuss each of these implications of the strength model in the remainder of this subsection.

Conservation refers to the assertion that acts of self-regulation only partially deplete resources and that reduced performance on subsequent tasks requiring self-control occurs because people are unable or unwilling to draw further from their resource pool. Just as people will avoid exhausting all of their energy by exerting muscles to the point of failure, people are generally motivated to conserve their self-regulatory resource for subsequent tasks. Conserving energy is adaptive and allows for people to budget this resource pool for use in subsequent situations that require self-control. Thus, conservation allows for efficient use of a limited self-regulatory resource.

Regular training can increase the strength and endurance of self-regulation, similar to muscular training (Gailliot, Plant, Butz, & Baumeister, 2007; Muraven
Baumeister, & Tice, 1999; Oaten & Cheng, 2006a, 2006b, 2007). This effect has been demonstrated across several domains. For example, Muraven, Baumeister, and Tice (1999) demonstrated improvement of self-regulation strength over long periods of time through repeated physical exercise. Oaten and Cheng (2006a, 2006b, 2007) demonstrated improved self-control from regular academic study, regular physical exercise, and financial monitoring.

The muscle model of ego depletion also implies that the self-regulation resource needs to be replenished before a person can effectively perform tasks requiring self-control. This requires self-regulation resources to be replenishable. Researchers have restored this global resource through various methods such as rest (Tyler & Burns, 2008) or experiencing positive affect (Tice, Baumeister, Shmueli, & Muraven, 2007).

The strength model of ego depletion has accumulated considerable empirical support within the ego depletion literature. Gaillot, Baumeister, and colleagues (2007) tested whether the resource model was simply a metaphor. The authors found that exerting self-control decreases blood glucose levels, which in turn produced decreased performance on subsequent self-control tasks. Additionally, Gaillot et al. found that adding glucose to the bloodstream counteracts the effects of ego depletion. Together, these results suggest that the resource model explaining the effects of ego depletion are more than just a metaphor; it is the result of a physiological process.

Hagger et al. (2010) used meta-analysis to summarize the ego depletion literature.
Their results supported the strength model of ego depletion. Specifically, they observed a significant effect of ego depletion on subsequent self-regulation task performance ($d = .62$). The authors found significant effect sizes for ego depletion on effort, perceived difficulty, negative affect, subjective fatigue, and blood glucose levels. The effect size was moderated by the duration of the depleting task, whether the task was presented by the same or different experimenters, intertask interim period, the dependent task complexity, and the use of choice and volition in dependent tasks. Additionally, Hagger et al. found that motivational incentives, training on self-control tasks, and glucose supplementation promoted better self-control in ego-depleted samples.

**Process model.** In contrast with the strength model, Inzlicht and Schmeichel (2012) asserted that instead of self-regulation depleting a resource, engaging in an initial task of self-regulation sets in motion two interdependent and simultaneous processes that lead to decreased performance on a subsequent task of self-regulation. Specifically, the two processes initiated by self-regulation are (a) a shift in motivational orientation, and (b) a shift in attentional focus. In following paragraphs, I will discuss the two processes proposed by Inzlicht and Schmeichel (2012).

The first process proposed by Inzlicht and Schmeichel (2012) is a shift in motivational orientation. Inzlicht and Schmeichel (2012) asserted that the decrease in performance observed in subsequent tasks of self-regulation are the results of participants feeling justified in slacking off on a given task after having exerted effort during an initial
act of self-regulation. This “self-licensing” (Witt Huberts, Evers, & De Ridder, 2012) suggests that failures of self-control in subsequent acts of self-regulation might not reflect a depletion of resources, but instead reflect motivational deficit or a self-justified indulgence. Inzlicht and Schmeichel argued that an initial act of self-regulation shifts a person’s motivational orientation from suppression and inhibition of desires to approaching and gratifying desires. That is, after an initial act of self-regulation, people shift from being motivated to practice self-control to being motivated to indulge desires and therefore not practice self-control.

The second process proposed by Inzlicht and Schmeichel (2012) is an attentional shift away from cues of self-control and toward cues signaling the possibility of reward. This model would suggest that failure to exercise self-control on a subsequent task is due to a person’s failure to notice when self-control is actually needed. Inzlicht and Schmeichel (2012) assert that decreased performance might not be caused by the depletion of resources, but instead changes in attention such that people fail to recognize when self-control is required. Inzlicht and Schmeichel (2012) argued that together, these two simultaneous and interdependent processes can address both the criticisms of the strength model of ego depletion as well as the demonstrated effects of ego depletion. The process model has gained limited support (Inzlicht et al., 2014). For example, researchers have found that exercising self-control can increase self-reported approach motivation (Schmeichel et al., 2010) and emotional reactivity (Wiesner & Lindner,
However, there is little research on the model. For this reason, the current study is built upon the strength model of ego depletion. The following subsection will discuss the relationship between questionnaire length and careless responding explained by ego depletion theory.

**Questionnaire length.** Psychological researchers often use lengthy self-report surveys (see Clark, Gironda, & Young, 2003). For example, the MMPI-2 Restructured Form (Clark, Gironda, & Young, 2003), the Strong Interest Inventory (Hansen, 2010), and the Revised NEO Personality Inventory (Costa & McCrae, 2008) contain 338, 291, and 240 items respectively. Furthermore, researchers often use several scales in one survey. Even if these scales are short, the total number of items in a survey can be quite large which requires participants to respond to hundreds of items even though the survey does not include any lengthy scales.

Although Meade and Craig (2012) proposed survey length as a possible cause of careless responding, little research has examined this relationship (cf. Galesic & Bosnjak, 2009; Gibson & Bowling, 2017; Herzog & Bachman, 1981). Herzog and Bachman (1981) found that respondents were more likely to display “straight-line” responses in later parts of longer surveys. Gibson and Bowling (2017) found that respondents were more likely to respond carelessly to a longer questionnaire than a shorter questionnaire. Researchers have found that respondents are more likely to self-report responding carelessly toward the middle or end of long survey measures than at the beginning (Baer
et al., 1997; Berry et al., 1992). Similarly, Galesic and Bosnjak (2009) found that responses to questions positioned later in a questionnaire were faster, shorter, and more uniform than responses to questions positioned near the beginning of a survey. As a whole, these findings suggest a link between questionnaire length and careless responding. This relationship can be explained by ego depletion theory.

There are several features of a task that draw upon one’s self-control resources: A task might deplete resources to the extent that it involves (a) directing attention, (b) engaging in cognitive processing, (c) making decisions, (d) inhibition of impulses, (e) control of thoughts, (f) control of emotions, or (g) managing social behavior (see Baumeister & Vohs, 2007; Hagger et al., 2010). As I will argue in the following paragraph, the task of completing self-report questionnaires potentially involves many of these features (see Gibson & Bowling, 2017). Furthermore, the addition of each item results in greater exposure to ego depleting features—thus depleting the resources needed to carefully respond to subsequent items.

Lengthy questionnaires can draw upon one’s self-control resources in several ways. Specifically, long questionnaires might require one to (a) direct his or her attention for an extended period of time, (b) engage in cognitive processing to understand the item (see Krosnick, 1991; Tourangeau, 1984), (c) make many consecutive decisions to provide responses (Vohs, Baumeister, Schmeichel, Twenge, Nelson, & Tice, 2014), (d) inhibit the impulse to stop responding, and (e) control his or her thoughts to focus on the
questionnaire. Furthermore, Hagger et al. (2010) demonstrated that longer tasks lead to a larger depletion effect than do shorter tasks. Gibson and Bowling (2017) argued that because responding to a questionnaire involves many, if not all, of these features, longer questionnaires will increase careless responding. Similarly, I posit that longer questionnaires deplete the self-control resource more than shorter surveys and will therefore increase careless responding.

*Hypothesis 1:* Participants assigned to a longer survey condition will display higher levels of careless responding than will participants assigned to a shorter survey condition.

**Respondent interest.** Interest is a content-specific motivational characteristic or feeling that causes one’s attention to focus on an object, event, or process (Schiefele, 1991; Silvia, 2006). It is a positive emotion that is associated with increased approach motivation (Fredrickson, 1998; Izard, 1977; Silvia, 2008; Tomkins, 1962), effort (Sansone, Thoman, & Smith, 2010), engagement (Harackiewicz, Smith, & Priniski, 2016; Schiefele, 2001), attention and persistence (Ainley, Hidi, & Berndorff, 2002; Berlyne, 1966; Csikszentmihalyi, 1978; Fredrickson, 2001; Hidi, 2000; Schiefele, Krapp, & Winteler, 1992). Being in a state of interest means that enjoyment, cognitive functioning, and perceived value combine such that attention feels effortless (Ainley, 2006; Dewey, 1913; Hidi 2006).

Researchers have differentiated between two forms of interest: individual and
situational interest. *Individual interest* is a stable, enduring quality that resides within the individual. It involves both a deep personal interest in and an eagerness to engage with the domain, activity, or content over time (Hidi & Renninger, 2006; Renninger, 1992, 2009; Schiefele, 1991, 2001, 2009). Further, the experience of individual interest reflects a developed preference to enjoy and value a particular subject or activity across situations (Harackiewicz, Smith, & Priniski, 2016). For example, a person might have an individual interest in soccer that she or he pursues over time by joining a local recreational team or following a professional team.

On the other hand, *situational interest* results from and is encouraged by environmental qualities (Hidi & Baird, 1986; Hidi & Renninger, 2006; Krapp, 2002; Schiefele, 2009). The experience of situational interest combines enjoyment, cognitive function, and perceived value that reflects features of the situation. For example, a person’s interest in soccer might be piqued by the World Cup, but he or she might not watch another soccer match until the next World Cup four years later. Although individual interest can be activated and sustained within a context, it is not dependent on context in the way that situational interest is. In the current study, all subsequent references to interest refer to individual interest.

Researchers have proposed interest as a motivational force that might influence careless responding (Herzog & Bachman, 1981; Maniaci & Rogge, 2014; Meade & Craig, 2012). Extant research, however, has given little attention to the relationship
between interest and careless responding. Although the existing literature has not addressed the relationship between interest and careless responding, there is reason to expect the two to be related. As I describe below, my explanation draws from research suggesting that interest has a resource replenishment function (O’Keefe & Linnenbrink-Garcia, 2014; Sansone, Thoman, & Smith, 2010; Thoman, Smith, & Silvia, 2011).

Thoman, Smith, and Silvia (2011) found that interest plays a role in optimizing self-regulation resources. Through three separate studies, Thoman et al. (2011) found that interest replenishes resources more than does positive affect. They posited that interest might counteract ego depletion directly by energizing self-regulatory resources or create physiological energy, similar to the way positive affect replenishes depleted resources (Thoman et al., 2011). Across all three studies, interest replenished resources more so than positive affect. Thus, interest might replenish resources that can be used for any subsequent task, regardless of whether that task is interesting or not.

Across two studies, O’Keefe and Linnenbrink-Garcia (2014) demonstrated that high levels of individual interest were associated with the most optimal performance and use of self-regulatory resources. Results suggested that the costs of initiating and sustaining self-regulation might be offset or buffered against when a person has a strong affective interest or ascribes personal significance to a task (O’Keefe & Linnenbrink-Garcia, 2014). Thus, high levels of individual interest might afford a person more resources with which to self-regulate.
Consistent with Hagger et al. (2010), interest might determine how people allocate their resources. Specifically, people will sustain effort on tasks in which they are interested, but will withdraw effort on tasks they find uninteresting. Additionally, people who have partially depleted their resources might be more willing to dedicate more resources towards a task they find interesting than a task they find uninteresting. Furthermore, effort expended on interesting tasks may not feel like effort at all (Hidi, 2006). Thus, people interested in a task might not have to use self-control to inhibit the impulse to quit a depleting task. As a result, a given task might be more depleting for uninterested people than for interested people.

Based on evidence from Thoman et al. (2011) and O’Keefe and Linnenbrink-Garcia (2014), I posit that interest will be related negatively to careless responding due to the replenishing function of interest on self-regulatory resources. Although long questionnaires deplete resources, I argue that interest will replenish or buffer against state depletion, allowing participants to respond carefully throughout a lengthy questionnaire. Additionally, interest might influence resource allocation such that partially depleted people are more likely to allocate their limited resources towards a task they find interesting. Thus, even if long questionnaires are substantially depleting, interest will influence the relationship between questionnaire length and careless responding so that questionnaire length has a weaker effect on careless responding among participants who are interested in the questionnaire content than among participants who are uninterested
in the questionnaire content.

Hypothesis 2: Interest is negatively related to careless responding.

Hypothesis 3: Participant interest moderates the effects of questionnaire length on careless responding. Specifically, the effects of questionnaire length will be weaker among participants who are high in interest than among participants who are low in interest.
II. METHOD

Participants

Undergraduate students enrolled in a psychology course at a Midwestern university (N = 316) participated in this online study. Participants received course credit for their participation. I conducted a power analysis using G*Power (Erdfelder, Faul, & Buchner, 1996) to determine the number of participants needed to detect significant results for a small to moderate interaction effect (i.e., $f = 0.2$) with the power for these analyses set to .80. This analysis showed that I need a minimum of 300 participants. The initial sample size was 374, however the final sample size was 316. The mean age of participants was 19.12 years. Of the 316 participants, 79.17% percent of the sample identified as Caucasian, 12.30% African-American, and 2.20% Hispanic.

Design

To test the hypotheses, I used a between-subjects design. I randomly assigned participants to one of two conditions: (a) a long survey condition or (b) a short survey condition (see Tables 1 and 2). Other studies have used a similar between person manipulation of questionnaire length (e.g., Galesic, & Bosnjak, 2009; Gibson & Bowling, 2017; Herzog & Bachman, 1981). In the following subsections, I will describe the two conditions.

Manipulation

Survey Length Manipulation. There were three sections in the survey. I will
refer to the three sections according to each section’s purpose as *filler items*, *measures of careless responding*, and *measure of interest*. The *filler items* section consisted of 450 items randomly selected from a pool of 979 items from the International Personality Item Pool (IPIP; Goldberg, 1999; see Appendix A). The *measures of careless responding* section had a total of 75 items (see Appendix B). Of those items, 50 were from the IPIP (Goldberg, 1999), 12 were inconsistency items (Maniaci & Rogge, 2014), 9 were infrequency items (Huang et al., 2015; Meade & Craig, 2012; Maniaci & Rogge, 2014), and 4 were state depletion items (Ciarocco et al., 2015). The 50 IPIP items in this section were not used to assess careless responding; instead they provided a medium in which to embed the careless responding items. All the items in this section appeared in the same order for each participant. The *measures of interest* section consisted of a measure of interest that I developed in a pilot study and 4 demographic items (see Appendix C for *measures of interest* section and Appendix D for pilot study). I will discuss the items and their corresponding measures in a later section.

I randomly assigned participants to complete one of two conditions: a long survey or a short survey condition. In the long condition, participants completed the survey sections in the following order: *filler items, measures of careless responding, measure of interest* (see Table 1). This condition was long because participants will answer filler 450 items before they completed the *measures of careless responding* section.
Participants in the short condition completed the survey sections in the following order: measures of careless responding, filler items, measure of interest (see Table 1). This condition was short because participants’ careless responding was measured in the measures of careless responding section before they answered the filler items section.

Measures

Survey Measures. I used items from four measures in the different sections of the survey. I used IPIP personality items (Goldberg, 1999), state depletion items (Ciarocco et al., 2015), and two interest measures developed in a pilot study (see Appendix D and Appendix E). I discuss each measure in detail in the following subsections, including how these measures were used and in which survey section.

Personality measure. I used items from the IPIP (Goldberg, 1999) as filler items. Participants rated each item on a seven-point scale from 1 (“Strongly disagree”) to 7 (“Strongly agree”). An example personality item is “I seldom notice details.” Although I measured personality, the focus of this study does not include personality. The purpose these items served in this study was to act as filler-items to manipulate questionnaire length. Personality items were included in the filler items section (see Appendix A). In addition, I used personality items in the measures of careless responding section of the survey (see Appendix B). These items were included in the measures of careless responding section because they provide a medium in which to embed the careless responding items. No personality items were used more than once in the survey.
**State depletion measure.** I measured state depletion, or the subjective experience of ego depletion, using the State Self-control Capacity Scale (SSCS; Ciarocco et al., 2015; $\alpha = .82$). I used the following four items from this scale: (a) “I feel drained,” (b) “I can’t absorb any more information,” (c) “I want to give up,” and (d) “I feel like my willpower is gone.” Participants rated each item on a seven-point scale from 1 (“Strongly disagree”) to 7 (“Strongly agree”). I scored items such that a high score reflects more depletion. The state depletion measure was used at the end of the measures of interest section to measure depletion near the end of the survey (see Appendix C).

**Interest measures.** I measured participant interest at two points during the survey. First, I measured interest at the beginning of the survey using 15 items that I created for this purpose (see Appendix E; $\alpha = .88$). These items measured general interest in the topics of the survey (i.e., psychology, personality, and surveys). An example item from the first interest scale is “I find psychology interesting.” Second, I measured interest after the instruction manipulation check in the measures of interest section using an 8-item scale I developed in a pilot study (see Appendix D; $\alpha = .89$). The items measured individual interest in the specific survey content through the assessment of interest in survey content over time, perceived value, and perceived enjoyment. An example item from the second interest scale is “The questions included in this questionnaire were interesting.” The second interest measure was used in the measure
of interest section (see Appendix C). For both interest scales, participants rated each item on a seven-point scale from 1 ("Strongly disagree") to 7 ("Strongly agree"). I scored items such that a higher score reflects high interest in the survey content.

**Careless responding indices.** I assessed careless responding using multiple indices. Research has provided evidence for the validity of several careless responding indices (see Huang et al., 2012; Maniaci & Rogge, 2014; Meade & Craig, 2012). However, evidence does not support a single index as superior. Therefore, I assessed careless responding using items from five methodologically distinct indices: (a) an inconsistency scale, (b) an infrequency scale, (c) longstring, (d) Mahalanobis $D$, and (e) page time. I also computed an overall careless responding index by summing participants’ scores on the five individual indices. The inclusion of multiple careless responding indices allowed me to examine the convergent validity of each index.

**Inconsistency scale.** Inconsistency items measure the degree of consistency in responses that each respondent provides based on the assumption that careful responders should provide consistent responses to items with parallel content. An example pair of inconsistency items is “I am a very energetic person” and “I have a lot of energy.” I distributed six pairs of inconsistency items from the Attentive Responding Scale (ARS-18; Maniaci & Rogge, 2014) scale throughout the measures of careless responding section of the survey (see Appendix B). Participants rated each item using a 7-point scale ranging from 1 ("Strongly disagree") to 7 ("Strongly agree"). The item content within
each pair was almost identical. I separated members of a pair as much as possible within the *measures of careless responding* section of the survey with an average of 35 items separating each pair. I scored the items by summing the absolute difference between paired items such that higher scores indicate more inconsistent responses (see Maniaci & Rogge, 2014). I included the inconsistency items used in the current study in Appendix F.

**Infrequency scale.** Infrequency items are items in which all careful respondents are likely to give the same response (Beach, 1989). For example, careful respondents should “*Disagree*” with the Maniaci and Rogge (2014) infrequency item “*I love going to the DMV (Department of Motor Vehicles).*” I interpreted responses that depart from the expected response as evidence of careless responding. I used eight infrequency items from the 18-item Attentive Responding Scale (ARS-18; Maniaci & Rogge, 2014), one item from Huang et. al. (2015), one item from Meade and Craig (2012), and one item from Fervaha and Remington (2013) (see Appendix G). The eleven items covered a diverse range of content while still resembling IPIP items to ensure that scores will not be biased if a participant holds a single atypical attitude. I dispersed nine of the eleven items throughout the *measures of careless responding* section of the survey and two of the items in the *measure of interest* section (see Appendices B & C). Participants rated each item on a 7-point scale ranging from 1 (“*Strongly disagree*”) to 7 (“*Strongly agree*”).

I recoded correct responses to “0” to represent “low careless responding” and
incorrect responses to “1” to represent “high careless responding.” I used the same method as Meade and Craig (2012) to score the infrequency items. That is, each item only had two correct responses that I coded as low careless responding. For example, in the sample item above, “Strongly disagree” and “Disagree” were coded as responses reflecting low careless responding (i.e. recoded as “0”). All other responses were coded as responses reflecting high careless responding (i.e. recoded as “1”).

**Longstring.** I used a two-step process to create a longstring index (Curran, 2016; Huang et al. 2012; Meade & Craig, 2012). First, I used an R function (Barnes, 2015) to compute the maximum number of identical responses to consecutive items within each page of the *measures of careless responding* section. Thus, each participant received a score for each of the five pages, with 15 being the possible maximum score. Second, I computed an average of these five scores. This average score served as the longstring index.

**Mahalanobis distance.** Mahalanobis $D$ is a multivariate outlier technique that has been used by researchers to detect careless responding (Curran, 2016; DeSimone, Harms, Desimone, 2015; Meade & Craig, 2012). To use Mahalanobis $D$, I recoded each personality item such that a high score on an item reflects a higher score on that trait. Then, I created a covariance matrix for each of the five factors of personality from the personality items in the *measures of careless responding* section. From the covariance matrices, I calculated Mahalanobis $D$ for each of the five factors and centered the score.
To create an overall $D$ score, I took the mean across the five factor scores for each participant. Because responses identical to the sample mean response values had a Mahalanobis $D$ value equal to zero, I suspected high values of $D$ to indicate more extreme deviation from the sample means across the survey items. Thus, I assumed respondents with high values of $D$ to have responded carelessly.

**Page time.** I used page time as a behavioral outcome measure that assessed the amount of time each participant spent to complete a page. Participants must engage in cognitive processing when completing self-report measures (Krosnick, 1991; Tourangeau, 1984) which requires time. Because of this, I interpreted unusually fast response times as evidence of careless responding.

Throughout the *filler items* section of the survey, I included 15 survey items on each of the survey pages in Qualtrics. In the *measures of careless responding* section, all pages had 15 survey items per page. In the *measure of interest* section, all pages had one survey item per page except for the last two pages, which had the SSCCS scale and demographic items respectively. I used Qualtrics to time the number of seconds each participant spent on the each of the survey pages. Based on previous research with IPIP items (Bowling et al., 2016; Bowling et al., 2018; Brower & Bowling, 2017; Huang et al., 2012), I used two seconds per item as the cutoff for calculating the total page time cutoff-score. Therefore, I suspected any participant who completed a page with 15 items faster than 30 seconds to have responded carelessly on that page. I recoded each participant’s
page time to either a 1 (i.e., careless response) or 0 (i.e., careful response), separately for each of the pages in the measures of careless responding section. Next, I summed the recoded values for each participant across the five pages with 15 items in the measures of careless responding section. Thus, participants received page time scores ranging from 0 to 5. Larger values corresponded to a higher likelihood of careless responding.

**Overall careless responding index.** Because each of the careless responding indices previously mentioned capture different aspects of careless responding, I computed an overall careless responding index similar to Bowling et al. (2016). To do this, I standardized each of the five individual indices (i.e., inconsistency scale, infrequency scale, longstring index, Mahalanobis $D$, and page time) by computing a $z$ score for each index, then I summed these standardized values. Larger values corresponded to a higher likelihood of careless responding.

**Instruction manipulation check.** One challenge in this study is to ensure that otherwise careless responders responded carefully to the self-reported interest items. To ensure that participants responded carefully to the interest measure in the measure of interest section, I included an instruction manipulation check (IMC) and incentive. After participants completed the measures of careless responding section of the survey, they were presented with a graphic displaying a twenty-dollar bill. Below the graphic, I explained that the next portion of the survey is most important and the last section of the
survey (see Appendix H). Additionally, I notified participants that if they responded carefully to the remaining items then they would be entered into a drawing for a twenty-dollar Amazon gift card.

I used one item to assess whether the participants comprehended the incentive message (see Appendix I). The item stem stated “What will happen if you provide accurate and thoughtful responses for the remainder of the questionnaire?” Response options included (a) “You will receive two (2) extra credits,” (b) “You will be entered into a random drawing for a $20 Amazon gift card,” and (c) “You will be entered into a random drawing for a $20 cash prize.” Note that there was only one correct answer—“You will be entered into a random drawing for a $20 Amazon gift card.” If participants responded to the item incorrectly once, they were redirected to the incentive message and were allowed to respond to the item again. If participants responded incorrectly to the item a second time, their response were considered careless.

Demographics. Participants reported their age, ethnicity, year in school, and major. Due to an oversight, participants did not report their gender. Data collected from this participant pool are typically about 60% female and 40% male. Demographic items are shown in Appendix C.

Procedure

Participants were recruited through an online university research recruitment website, SONA. Each participant completed the questionnaire online through Qualtrics
at a time and in an environment of her or his choosing. Before participants completed the survey, they read a cover letter describing the study and stating that they have a maximum of 90 minutes to complete the survey and that they could not exit and return to the survey. Participants were only allowed 90 minutes to complete the online survey and were not allowed to exit and return to the survey so that they would not have the opportunity to take a break to ensure that participants were sufficiently depleted. Qualtrics randomly assigned participants to either the long survey condition or the short survey condition. After participants completed the survey, they encountered a debriefing message that thanks them for their participation and ensures they received participation credit towards their course grade.
III. RESULTS

Preliminary Analyses

Data cleaning. I examined the data for missing values and outliers. I removed cases that did not have data for the measures of careless responding section or the measures of interest section. Twenty-four cases were deleted because participants exited the survey during the measures of careless responding section. Furthermore, data from 19 more participants were deleted because they exited the survey during the measures of interest section. I treated missing values on the infrequency and inconsistency scales as missing data. Because most participants do not engage in careless responding (see Meade & Craig, 2012), I only removed one outlier due to an extreme score on the average longstrings index (i.e., score of 14.6 out of 15) that significantly changed the relationship among the longstring index and other indices. Additionally, 14 participants were removed because they failed the second instruction manipulation check (see Instruction Manipulation Check section). The final sample size was 316 participants.

I examined the data for skewness and kurtosis. All of the careless responding indices measured demonstrated significant positive skew. I used transformations for the careless responding indices; however, the transformations did not bring the skewness levels within an acceptable range (see Tabachnick & Fidell, 2007). Furthermore, the transformed and untransformed data yielded the same pattern of results. Thus, in the following sections I use the untransformed data to discuss the results.
Convergent validity of CR indices. I reported the descriptive statistics and correlations of the CR indices in Table 2. Of the 10 correlations between careless responding indices, seven were significantly positive. In general, Table 2 reflects the relationships among the careless responding indices. The correlations demonstrated convergence among the page time, average longstring, and the infrequency indices in addition to convergence among average longstring, page time, and Mahalanobis $D$. The non-significant correlations among inconsistency and the other indices demonstrates the distinct nature of inconsistency from the other indices.

Instruction manipulation check. Fifty-seven (17.16%) participants failed the first instruction manipulation check. Of those participants, 14 (4.17%) participants failed the second instruction manipulation check and one participant did not respond to the item. Participants who failed the second instruction manipulation check are considered careless during the measures interest section, thus their data following the instruction manipulation check cannot be trusted to accurately represent their true scores on items. Accordingly, these cases were not used for any analyses. Of the remaining cases, 42 (13.24%) of participants failed the first instruction manipulation check but passed the second instruction manipulation check. There was no significant difference between the long survey condition and short survey condition in regards to the instruction manipulation check, $t(314) = -0.33, p = .74$.

Check for initial group differences. Participants in both conditions were similar
on conscientiousness, extroversion, openness, and age. However, there was a significant
difference in agreeableness in the short ($M = 60.35, SD = 9.18$) and the long ($M = 57.79,$
$SD = 8.95$) conditions; $t(310) = 2.50, p < .05, d = .28$. There was also a significant
difference in emotional stability in the short ($M = 34.78, SD = 10.20$) and the long ($M = 38.51,$
$SD = 10.58$) conditions; $t(310) = -3.17, p < .01, d = .36$. Additionally, there was a
significant difference on scores on the first interest scale between the short ($M = 80.16,$
$SD = 10.75$) and long ($M = 77.63, SD = 11.49$) conditions; $t(314) = 2.03, p < .05, d = .23$.
I observed no initial differences among participants who completed the online survey
during the week versus the weekend or at different times of the day.

Tests of Study Hypotheses

**Hypothesis 1: The main effect of questionnaire length.** Hypothesis 1 stated
that participants assigned to a short questionnaire condition will display lower levels of
careless responding than will participants assigned to a long questionnaire condition. I
conducted a $t$-test for each careless responding index to test the mean differences between
the short and long survey conditions. I found a significant mean difference for
questionnaire length for four of the six CR indices where participants in the long survey
condition were more careless than participants in the short survey condition with medium
effect sizes ranging from $d = 0.29$ to $0.42$ (see Table 3). I also found a significant mean
difference for the inconsistency ($t = 1.99, p < .05, d = .23$), where participants in the short
condition ($M = 8.27, SD = 2.87$) demonstrated more inconsistency than participants in
the long condition (M = 7.63, SD = 2.83). This might be explained by participant in the long survey condition being more likely to respond in a repetitive manner (e.g., longstring). Thus, Hypothesis 1 was partially supported.

**Hypothesis 2: Relationship of interest and careless responding.** Hypothesis 2 stated that interest would be negatively related to careless responding. To test this hypothesis, I computed Pearson correlation coefficients between the interest scales and each CR index (see Table 4). Infrequency (r = -.21, p < .01), page time (r = -.12, p < .05), and the overall careless responding index (r = -.13, p < .05) were all significantly related to the first interest scale. Infrequency (r = -.14, p < .01), longstring (r = -.12, p < .05), and the overall index were all significantly related to the second interest scale (r = -.15, p < .01). Additionally, when controlling for questionnaire length, participant interest is a significant predictor of the infrequency index (β = -.14, p < .01), the longstring index (β = -.14, p < .05), and the overall index (β = -.15, p < .01, see Table 6). Thus, Hypothesis 2 was partially supported.

**Hypothesis 3: Questionnaire length and interest interaction.** Hypothesis 3 stated that the effects of questionnaire length will be weaker among participants who are high in interest than among participants who are low in interest. For each careless responding index, I conducted moderated regression analysis to detect a moderation effect. On the first step, I added the survey condition and participant interest (as measured by Interest Scale 1) to test the effect of questionnaire length and participant
interest on careless responding. On the second step, I added the interaction between survey condition and participant interest to test for moderation. I found no significant interaction terms (see Table 5). Additionally, I conducted a parallel analysis for the second interest scale. On the first step, I added the survey condition and participant interest (as measured by Interest Scale 2) to test the effect of questionnaire length and participant interest on careless responding. On the second, I added the interaction between survey condition and participant interest to test for moderation. I found a significant interaction term for the infrequency index ($\beta = -.01, p < .05, \Delta R^2 = .02$, see Table 6 and Figure 1). Figure 1 displays the interaction through a line graph where participants who scored lower on interest in the long survey condition display significantly more careless responding as measured by the infrequency scale than those in the short survey condition. Thus, I found limited support for Hypothesis 3.
IV. DISCUSSION

The purpose of this study was to examine the relationships among questionnaire length, participant interest, and careless responding. Results from this study suggested two key findings. First, participants may be more likely to respond carelessly when responding to longer questionnaires and when they were uninterested in the questionnaire content. Second, results from this study provide limited evidence that the relationship between questionnaire length and careless responding is moderated by interest such that the effect questionnaire length is stronger for participants who are less interested in questionnaire content than those who are more interested in questionnaire content.

Theoretical Implications

Three issues are addressed by this study. First, this study provided insight into some potential causes of careless responding. Although researchers have proposed causes of careless responding (Bowling et al., 2016; Meade & Craig, 2012; Meade & Poppalardo, 2013), there is little research or consensus on the causes of careless responding. This study provided additional evidence of questionnaire length as a cause of careless responding (see also Galesic & Bosnjak, 2009; Gibson & Bowling, 2016; Herzog & Bachman, 1981).

Second, this study provided insight on careless responding as a construct. Researchers have not yet reached a consensus on two important specifications of careless responding as a construct: (a) the stability of careless responding over time within
persons, and (b) whether careless responding is specific to a certain context or is global. Because questionnaire length influences careless responding, results from this study suggests that careless responding is at least in part context specific. Additionally, this study suggests that a person’s propensity to respond carelessly might be as malleable as a person’s interests.

Third, this study addressed the measurement of careless responding. In the careless responding literature, there are many indices and variations of indices available to researchers and practitioners. However, researchers have not yet reached a consensus on the best way to measure careless responding. The current suggestion is the use of the multiple hurdles method of measuring careless responding (Curran, 2016). That is, researchers should utilize multiple careless responding indices to capture different types of careless responding. However, researchers have not come to a consensus regarding which careless responding indices should be used together or even which methods are most effective. The results from this study demonstrated that there is generally moderate convergence of infrequency, longstring, Mahalanobis $D$, and page time. However, the inconsistency index appeared to measure a distinct type of careless responding that does not correlate with the other indices.

**Practical Implications**

This study has several important practical implications. First, results from this study suggest that researchers and organizations should limit the use of lengthy surveys
and choose shorter surveys when possible to avoid careless responding. Second, participants are more likely to respond carefully when interested in survey content, therefore researchers and organizations might use interest-enhancing techniques, such as highlighting participants’ perceived value and enjoyment of the survey, to avoid careless responding. Finally, interest may be more important for longer surveys than shorter surveys, thus if a researcher or organization must use long surveys, interest-enhancing techniques might be more beneficial for long surveys than for short surveys.

Additionally, the effect of interest on careless responding might suggest that systematically removing careless participants might cause the final sample to be unrepresentative of the population. That is, because participants interested in questionnaire content are more likely to respond carefully than uninterested participants, especially on longer surveys. Thus, uninterested participants are more likely to be screened out during data cleaning processes that include careless responding indices. Thus, results from the questionnaire will more heavily represent interested participants.

**Future Research**

The results of this study suggest two main areas of future research that should be explored. First, researcher should determine the maximum and ideal length of a survey to minimize careless responding. Although this study demonstrated that careless responding is more likely for longer questionnaires rather than shorter questionnaires, the two questionnaires used in this study differed by 450 items. Future research should strive
to discover if there is a particular questionnaire length at which more participants are likely to respond carelessly. Also, researchers should determine which factors of questionnaire length affect careless responding (e.g., length, expected time spent on the survey vs. actual time spent, homogeneity vs. heterogeneity of items).

Second, researchers should further examine the role of interest in data quality, specifically careless responding. This study provided correlational support for the effect of interest on careless responding. Researchers should employ experimental design to determine if interest has a causal effect on careless responding. For example, researchers could randomly assign participants to complete an interesting survey (e.g., a survey that gives participants immediate feedback about their personality and which celebrities share that personality profile) and an uninteresting survey (e.g., a survey that asks participants about their proficiency in or knowledge of menial work-related tasks) to measure the effect of interest in survey content on careless responding. However, in doing this type of research, researchers risk confounding questionnaire interest with questionnaire content. Further, researchers should develop and evaluate the effectiveness of interest enhancing techniques for surveys to reduce careless responding. For example, researchers should evaluate whether emphasizing perceived value or enjoyment can increase interest and decrease careless responding on surveys.

Additionally, researchers should look beyond a student sample to assess the effects of questionnaire length, the effects of participant interest, and the interaction
between questionnaire length and interest on careless responding on a working sample. Student samples are of particular interest to careless responding researchers because of their prevalence in psychological research and the external motivation used to compel students to participate in surveys (e.g., course credit); however, other populations might feel compelled to take surveys even though they have no personal interest in the survey itself. For example, employees might feel compelled to participate in surveys employed by their company, however, they might not be interested in the survey content itself. If employees feel compelled to participate in surveys through external rewards or incentives, it might motivate respondents to be more careful (see Gibson & Bowling, 2017). However, incentives might undermine the motivational component of interest thus discouraging otherwise motivated participants from responding carefully (Deci, Koestner, & Ryan, 1999). Thus, future research should explore whether the relationships among questionnaire length, participant interest, and careless responding are present in a work sample.

**Conclusions**

The current study examined the relationships between questionnaire length, participant interest, and careless responding. Results from this study provided (a) consistent support that questionnaire length can predict careless responding, (b) partial support that participant interest in questionnaire content can predict careless responding, and (c) limited support that the relationship between questionnaire length and careless
responding might be moderated by interest such that the effects of questionnaire length were weaker among participants who are interested than among participants who are uninterested. This study furthered the literature on careless responding by providing support for questionnaire length as a cause of careless responding and by providing initial evidence that interest might be a potential cause of careless responding. Based on the results of this study, researchers and practitioners should be cautious of using long questionnaires when it is not necessary and should reduce the number of items administered when possible. Additionally, those who use questionnaires should be aware of the potential effects caused by participant interest in questionnaire content. In conclusion, researchers should be aware of the effects of questionnaire length and interest on careless responding.


DeRight, J., & Jorgensen, R. S. (2015). I just want my research credit: Frequency of


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Understanding individual variability in choices, efforts, and persistence over time.


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Vohs, K. D., Baumeister, R. F., Schmeichel, B. J., Twenge, J. M., Nelson, N. M., & Tice, 56


Table 1

*Short versus Long Condition Survey Layout by Page*

<table>
<thead>
<tr>
<th>Page Number</th>
<th>Content</th>
<th>Page Number</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Consent form</td>
<td>1</td>
<td>Consent form</td>
</tr>
<tr>
<td>2</td>
<td>Interest Scale 1</td>
<td>2</td>
<td>Interest Scale 1</td>
</tr>
<tr>
<td>3-7</td>
<td>Measures of careless responding section (^a)</td>
<td>3-34</td>
<td>Filler items section (^b)</td>
</tr>
<tr>
<td>8-39</td>
<td>Filler items section (^b)</td>
<td>35-39</td>
<td>Measures of careless responding section (^a)</td>
</tr>
<tr>
<td>40</td>
<td>Instruction manipulation check instructions</td>
<td>40</td>
<td>Instruction manipulation check instructions</td>
</tr>
<tr>
<td>41</td>
<td>Instruction manipulation check item</td>
<td>41</td>
<td>Instruction manipulation check item</td>
</tr>
<tr>
<td>42-43</td>
<td>Interest measures section</td>
<td>42-43</td>
<td>Interest measures section</td>
</tr>
<tr>
<td>44</td>
<td>Raffle information and link to raffle entry</td>
<td>44</td>
<td>Raffle information and link to raffle entry</td>
</tr>
</tbody>
</table>

\(^a\)Item order is consistent across all conditions. \(^b\)Items presented and order in which items presented are randomized.
Table 2

*Descriptive Statistics and Correlations for Observed Variables*

<table>
<thead>
<tr>
<th>Variable</th>
<th>M</th>
<th>SD</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Inconsistency</td>
<td>7.96</td>
<td>2.86</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Infrequency</td>
<td>1.52</td>
<td>1.79</td>
<td>-0.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Page time</td>
<td>0.15</td>
<td>0.72</td>
<td>-0.12**</td>
<td>0.55**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. LS Avg</td>
<td>2.61</td>
<td>0.94</td>
<td>-0.05</td>
<td>0.23**</td>
<td>0.13*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. D</td>
<td>0.00</td>
<td>0.73</td>
<td>0.33**</td>
<td>0.16*</td>
<td>0.34**</td>
<td>-0.01</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Overall CR</td>
<td>0.00</td>
<td>2.84</td>
<td>0.51**</td>
<td>0.65**</td>
<td>0.71**</td>
<td>0.35**</td>
<td>0.67**</td>
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</tr>
<tr>
<td>7. SSCCS</td>
<td>13.83</td>
<td>5.60</td>
<td>0.06</td>
<td>0.08</td>
<td>-0.02</td>
<td>0.12*</td>
<td>0.08</td>
<td>0.82</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Interest Scale 1</td>
<td>76.86</td>
<td>11.18</td>
<td>-0.02</td>
<td>-0.21**</td>
<td>-0.12*</td>
<td>-0.05</td>
<td>0.03</td>
<td>-0.12*</td>
<td>-0.19**</td>
<td>0.88</td>
</tr>
<tr>
<td>9. Interest Scale 2</td>
<td>38.50</td>
<td>8.45</td>
<td>-0.01</td>
<td>-0.14**</td>
<td>-0.07</td>
<td>-0.13*</td>
<td>-0.08</td>
<td>-0.13*</td>
<td>-0.37**</td>
<td>0.45**</td>
</tr>
<tr>
<td>10. IMC1</td>
<td>0.13</td>
<td>0.34</td>
<td>0.07</td>
<td>0.06</td>
<td>-0.03</td>
<td>0.01</td>
<td>0.02</td>
<td>0.02</td>
<td>0.05</td>
<td>0.00</td>
</tr>
<tr>
<td>11. Age</td>
<td>19.12</td>
<td>3.25</td>
<td>-0.12*</td>
<td>0.00</td>
<td>-0.03</td>
<td>0.01</td>
<td>0.02</td>
<td>0.02</td>
<td>0.05</td>
<td>0.00</td>
</tr>
</tbody>
</table>

*Note.* $N = 316$. *p < .05.**p < .01, two-tailed significance. SSCCS = State Self-Control Capacity Scale. LS Avg = Average longstring. D = Mahalanobis Distance. IMC1 = Instruction Manipulation Check, item 1. Standardized Cronbach’s alpha is reported on the diagonal in bold.
Table 3

Summary of t-tests Examining Mean Differences Between Conditions for CR Indices

<table>
<thead>
<tr>
<th>Variable</th>
<th>Short Condition (n = 158)</th>
<th>Long Condition (n = 153)</th>
<th>t</th>
<th>d</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inconsistency</td>
<td>8.27</td>
<td>7.63</td>
<td>1.99*</td>
<td>0.23</td>
</tr>
<tr>
<td>Infrequency</td>
<td>1.22</td>
<td>1.77</td>
<td>-2.87**</td>
<td>0.32</td>
</tr>
<tr>
<td>Page Time</td>
<td>0.01</td>
<td>0.26</td>
<td>-3.33**</td>
<td>0.38</td>
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<tr>
<td>Longstring</td>
<td>2.44</td>
<td>2.71</td>
<td>-3.78**</td>
<td>0.42</td>
</tr>
<tr>
<td>Mahalanobis D</td>
<td>0.02</td>
<td>-0.02</td>
<td>0.53</td>
<td>0.06</td>
</tr>
<tr>
<td>Overall Index</td>
<td>-0.41</td>
<td>0.41</td>
<td>-2.56**</td>
<td>0.29</td>
</tr>
</tbody>
</table>

Note: N = 311. Five observations were not used due to missing data. *p < .05. **p < .01.
Table 4

**Pearson Correlations Between Interest and Careless Responding Indices**

<table>
<thead>
<tr>
<th>Careless Responding Index</th>
<th>Interest Scale 1</th>
<th>Interest Scale 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Inconsistency</td>
<td>-.01</td>
<td>.01</td>
</tr>
<tr>
<td>2. Infrequency</td>
<td>-.21**</td>
<td>-.14*</td>
</tr>
<tr>
<td>3. Page Time</td>
<td>-.12*</td>
<td>-.07</td>
</tr>
<tr>
<td>4. Longstring Average</td>
<td>-.05</td>
<td>-.13*</td>
</tr>
<tr>
<td>5. Mahalanobis Distance</td>
<td>.03</td>
<td>-.08</td>
</tr>
<tr>
<td>6. Overall Index</td>
<td>-.13*</td>
<td>-.15**</td>
</tr>
<tr>
<td>7. Interest Scale 1</td>
<td></td>
<td>.45**</td>
</tr>
</tbody>
</table>

*Note: N = 316. *p < .05. **p < .01.*
<table>
<thead>
<tr>
<th>Criterion Variable</th>
<th>Ordered Predictors</th>
<th>β</th>
<th>β</th>
<th>ΔR²</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inconsistency</strong></td>
<td>1. Questionnaire Length (A)</td>
<td>-.12*</td>
<td>-.41</td>
<td>.01</td>
</tr>
<tr>
<td></td>
<td>Participant Interest (B)</td>
<td>-.03</td>
<td>-.07</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. A x B</td>
<td>-.00</td>
<td>.01</td>
<td></td>
</tr>
<tr>
<td><strong>Infrequency</strong></td>
<td>1. Questionnaire Length (A)</td>
<td>.14*</td>
<td>.64</td>
<td>.06**</td>
</tr>
<tr>
<td></td>
<td>Participant Interest (B)</td>
<td>-.20**</td>
<td>-.12</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. A x B</td>
<td>-.01</td>
<td>.01</td>
<td></td>
</tr>
<tr>
<td><strong>Page Time</strong></td>
<td>1. Questionnaire Length (A)</td>
<td>.17**</td>
<td>.69</td>
<td>.05**</td>
</tr>
<tr>
<td></td>
<td>Participant Interest (B)</td>
<td>-.11</td>
<td>-.03</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. A x B</td>
<td>-.01</td>
<td>.00</td>
<td></td>
</tr>
<tr>
<td><strong>Longstring</strong></td>
<td>1. Questionnaire Length (A)</td>
<td>.20**</td>
<td>.13</td>
<td>.04**</td>
</tr>
<tr>
<td></td>
<td>Participant Interest (B)</td>
<td>-.04</td>
<td>-.05</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. A x B</td>
<td>.00</td>
<td>.00</td>
<td></td>
</tr>
<tr>
<td><strong>Mahalanobis D</strong></td>
<td>1. Questionnaire Length (A)</td>
<td>.03</td>
<td>-.09</td>
<td>.00</td>
</tr>
<tr>
<td></td>
<td>Participant Interest (B)</td>
<td>-.03</td>
<td>.02</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. A x B</td>
<td>.00</td>
<td>.00</td>
<td></td>
</tr>
<tr>
<td><strong>Overall Index</strong></td>
<td>1. Questionnaire Length (A)</td>
<td>.13*</td>
<td>.34</td>
<td>.03**</td>
</tr>
<tr>
<td></td>
<td>Participant Interest (B)</td>
<td>-.12*</td>
<td>-.09</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. A x B</td>
<td>-.00</td>
<td>.01</td>
<td></td>
</tr>
</tbody>
</table>

*Note: N = 311. Five observations were not used due to missing data. *p < .05. **p < .01. Participant interest was measured by Interest Scale 1.*
Table 6

Regression Analyses of Questionnaire Length and Interest Predicting CR Indices

<table>
<thead>
<tr>
<th>Criterion Variable</th>
<th>Ordered Predictors</th>
<th>β</th>
<th>β</th>
<th>ΔR²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inconsistency</td>
<td>1. Questionnaire Length (A)</td>
<td>-.11*</td>
<td>-.09</td>
<td>.01</td>
</tr>
<tr>
<td></td>
<td>Participant Interest (B)</td>
<td>-.01</td>
<td>-.00</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. A x B</td>
<td>-.00</td>
<td>-.00</td>
<td>.00</td>
</tr>
<tr>
<td>Infrequency</td>
<td>1. Questionnaire Length (A)</td>
<td>.16*</td>
<td>.73**</td>
<td>.04**</td>
</tr>
<tr>
<td></td>
<td>Participant Interest (B)</td>
<td>-.14**</td>
<td>-.02</td>
<td>.02*</td>
</tr>
<tr>
<td></td>
<td>2. A x B</td>
<td>-.01*</td>
<td>.02*</td>
<td></td>
</tr>
<tr>
<td>Page Time</td>
<td>1. Questionnaire Length (A)</td>
<td>.19**</td>
<td>.53*</td>
<td>.04**</td>
</tr>
<tr>
<td></td>
<td>Participant Interest (B)</td>
<td>-.08</td>
<td>-.01</td>
<td>.01</td>
</tr>
<tr>
<td></td>
<td>2. A x B</td>
<td>-.01</td>
<td>-.01</td>
<td></td>
</tr>
<tr>
<td>Longstring</td>
<td>1. Questionnaire Length (A)</td>
<td>.21**</td>
<td>.16</td>
<td>.06**</td>
</tr>
<tr>
<td></td>
<td>Participant Interest (B)</td>
<td>-.14*</td>
<td>-.15*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. A x B</td>
<td>.00</td>
<td>.00</td>
<td></td>
</tr>
<tr>
<td>Mahalanobis D</td>
<td>1. Questionnaire Length (A)</td>
<td>-.03</td>
<td>-.46</td>
<td>.01</td>
</tr>
<tr>
<td></td>
<td>Participant Interest (B)</td>
<td>-.07</td>
<td>-.15*</td>
<td>.00</td>
</tr>
<tr>
<td></td>
<td>2. A x B</td>
<td>.01</td>
<td>.01</td>
<td></td>
</tr>
<tr>
<td>Overall Index</td>
<td>1. Questionnaire Length (A)</td>
<td>.14**</td>
<td>.30</td>
<td>.04**</td>
</tr>
<tr>
<td></td>
<td>Participant Interest (B)</td>
<td>-.15**</td>
<td>-.12</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. A x B</td>
<td>-.00</td>
<td>-.00</td>
<td>.00</td>
</tr>
</tbody>
</table>

*Note: N = 311. Five observations were not used due to missing data. *p < .05. **p < .01. Participant interest was measured by Interest Scale 2.
Figure 1. Illustration of the interaction between survey length and participant interest for the infrequency index. $N = 311$. Participants that were more interested in the survey showed similar levels of CR for the short and long survey conditions, whereas participants that were less interested were more careless in the long survey condition than the short survey condition.
<table>
<thead>
<tr>
<th>Item Stem</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>I abuse people's confidences.</td>
<td>IPIP</td>
</tr>
<tr>
<td>I accept apologies easily.</td>
<td>IPIP</td>
</tr>
<tr>
<td>I accept challenging tasks.</td>
<td>IPIP</td>
</tr>
<tr>
<td>I accept little from others.</td>
<td>IPIP</td>
</tr>
<tr>
<td>I accept others' weaknesses.</td>
<td>IPIP</td>
</tr>
<tr>
<td>I accept people as they are.</td>
<td>IPIP</td>
</tr>
<tr>
<td>I accept the consequences of my actions.</td>
<td>IPIP</td>
</tr>
<tr>
<td>I accept the first thing that comes along.</td>
<td>IPIP</td>
</tr>
<tr>
<td>I accept what others say.</td>
<td>IPIP</td>
</tr>
<tr>
<td>I do things in a logical order.</td>
<td>IPIP</td>
</tr>
<tr>
<td>I accomplish my work on time.</td>
<td>IPIP</td>
</tr>
<tr>
<td>I acknowledge others' accomplishments.</td>
<td>IPIP</td>
</tr>
<tr>
<td>I enjoy offering directions to tourists.</td>
<td>IPIP</td>
</tr>
<tr>
<td>I act according to my conscience.</td>
<td>IPIP</td>
</tr>
<tr>
<td>I act according to my own feelings.</td>
<td>IPIP</td>
</tr>
<tr>
<td>I act as a leader.</td>
<td>IPIP</td>
</tr>
<tr>
<td>I act as I please.</td>
<td>IPIP</td>
</tr>
<tr>
<td>I act as if I'm somebody else and completely identify myself with the part.</td>
<td>IPIP</td>
</tr>
<tr>
<td>I act at the expense of others.</td>
<td>IPIP</td>
</tr>
<tr>
<td>I act before thinking through the consequences.</td>
<td>IPIP</td>
</tr>
<tr>
<td>I act contrary to reason.</td>
<td>IPIP</td>
</tr>
<tr>
<td>I act impulsively when something is bothering me.</td>
<td>IPIP</td>
</tr>
<tr>
<td>I act like different people in different situations.</td>
<td>IPIP</td>
</tr>
<tr>
<td>I act like people older than me.</td>
<td>IPIP</td>
</tr>
<tr>
<td>I try to avoid complex people.</td>
<td>IPIP</td>
</tr>
<tr>
<td>I act or feel in a way that does not fit me.</td>
<td>IPIP</td>
</tr>
<tr>
<td>I act out my frustrations on others.</td>
<td>IPIP</td>
</tr>
<tr>
<td>I act properly in most situations.</td>
<td>IPIP</td>
</tr>
<tr>
<td>I act quickly without thinking.</td>
<td>IPIP</td>
</tr>
<tr>
<td>I act spontaneously without thinking about the consequences.</td>
<td>IPIP</td>
</tr>
<tr>
<td>I act with hesitation.</td>
<td>IPIP</td>
</tr>
</tbody>
</table>
I act without consulting others.
I act without planning.
I act without ulterior motives.
I actually get cold when I think of something cold.
I adjust easily.
I admire a really clever scam.
I admit mistakes.
I admit when I am wrong.
I agree to anything.
I allow others to make a fresh start.
I always admit it when I make a mistake.
I always know what I am doing.
I always know why I do things.
I am a bad loser.
I am a brave person.
I am a firm believer in thinking things through.
I am a goal-oriented person.
I am a good judge of character.
I am a good listener.
I am a good loser.
I am a hard worker.
I am a highly disciplined person.
I am a naturally good dancer.
I am a person whose moods go up and down easily.
I am a physical coward.
I am a shy person.
I am a spiritual person.
I am a true life-long learner.
I listen to my heart rather than my brain.
I am a workaholic, with little time for fun or pleasure.
I am able to come up with new and different ideas.
I am able to cooperate with others.
I am able to describe my feelings easily.
I am able to disregard rules.
I am able to do most things well enough.
I am able to find out things about myself.
I am able to fit into any situation.
I am able to see the best in a situation.
I am afraid of being left alone.
I am afraid of heights.
I am afraid of large dogs.
I am afraid of losing control of my anger.
I am afraid of more things than others are.
I am afraid to reach out for love.
I am always aware of how I am presenting myself.
I am always busy with something interesting.
I am always in the same mood.
I am always joking.
I am always on time.
I am always ready to start afresh.
I am always worried about something.
I am an extraordinary person.
I am an extremely grateful person.
I am an extremely loyal person.
I am an original thinker.
I am annoyed by others' mistakes.
I am apprehensive about new encounters.
I am basically a decent person.
I am bothered by frequent aches and pains.
I am capable of working alone.
I am careful to avoid making mistakes.
I am committed to principles of justice and equality.
I am considered attractive by others.
I am considered tall.
I am considered to be a wise person.
I am considered to be kind of eccentric.
I am considered well-off financially.
I am constantly reflecting about myself.
I am content with my life.
I take things seriously.
I am deeply moved by others' misfortunes.
I am dependent on others for things that I should be able to do myself.
I am described as grumpy.
I am devoted to religion.
I am eager to soothe hurt feelings.
I am easily annoyed.
I am easily calmed down by others.
I am easily confused.
I am easily deterred.
I am easily discouraged in difficult situations.
I am easily distracted when I'm trying to focus my attention.
I am easily excited.
I am easily frightened.
I would always wear a helmet if I rode a bike.
I am easily impressed.
I am easily influenced.
I would not be a good comedian.
I am easily moved to tears.
I am easily offended.
I am easily put out.
I am easily talked into doing silly things.
I am easy to fool.
I am easy to persuade.
I would be afraid to give a speech in public.
I am embarrassed by praise.
I am embarrassed to have people see my home.
I think most other people are better than me.
I am excited by many different activities.
I am faithful to old friends.
I am filled with doubts about things.
I am full of ideas.
I am good at analyzing problems.
I am good at getting people to do what I want.
I am good at helping people work well together.
I am good at making impromptu speeches.
I am good at many things.
I am good at saving money.
I am good at sensing what others are feeling.
I am good at taking advice.
I am guided by my intuitions.
I am guided by my moods.
I am guided by superstitions.
I am happy doing mindless work.
I am happy with my life.
I am hard to convince.
I would not enjoy a job that involves a lot of social interaction.
I am hard to reason with.
I am hard to satisfy.
I throw things across the room when angry.
I am humble about the good things that have happened to me.
I am in awe of simple things in life that others might have taken for granted.
I am in good physical condition.
I am inclined to forgive others.
I am indifferent to the feelings of others.
I am inexplicably happy some of the time.
I tire out quickly.
I am interested in money to the point of being able to do risky jobs.
I tolerate a lot from others.
I am interested in people.
I am interested in science.
I sometimes forget what I'm trying to do.
I am less capable than most people.
I am likely to show off if I get the chance.
I am looking for a job.
I am mainly interested in money.
I am more capable than most others.
I am motivated strongly to do some things by the good prospect of obtaining money.
I am moved to action by the possibility of social advancement, even if this involves not playing fair.
I am never at a loss for words.

I am never bored.

I skip difficult words while reading.

I am nice to people I should be angry at.

I am nice to store clerks.

I am no danger to society.

I seldom notice details.

I am not affected by either praise or criticism.

I am not afraid of providing criticism.

I am not all that curious about the world.

I am not always honest with myself.

I am not always what I appear to be.

I am not an extraordinary person.

I am not as strict as I should be.

I am not bothered by crazy thoughts.

I see little need for romance in my life.

I see other people as my competitors.

I find that it doesn't take much to make me happy.

I am not concerned with making a good impression.

I am not confident that my way of doing things will work out for the best.

I am not considered to have new and different ideas.

I resist authority.

I often feel physically fit and mentally alert.

I never stop talking.

I make well-considered decisions.

I make decisions slowly.

I am not easily fooled by others.

I am not easily frustrated.

I am not easily made to feel jealous.

I am not easily stirred.

I like to apologize after an argument.

I am not fun to be with.

I am not good at deceiving other people.

I am not good at figuring out what really matters.

I am not good at getting people to like me.
I am not good at hiding my intentions from others.
I am not good at planning group activities.
I am not good at sports.
I am not good at taking charge of a group.
I am not good at telling jokes.
I like to be around children.
I am not in the mood for anything.
I have ideas that are very strange.
I like hearing views that differ from my own.
I like to do frightening things.
I am not interested in speculating about things.
I let my attention wander off.
I am not known for my sense of humor.
I am not likely to notice small visual details.
I am not picky about food.
I keep myself well-groomed.
I am not sure where my life is going.
I am not very good at getting things done.
I am not willing to let things rest.
I am often afraid of new or unexpected situations.
I am often aware how the color and lighting of a room affects my mood.
I am often bored while working.
I am often fidgety.
I need reassurance.
I am often late to work.
I am often mistaken for being younger than my age.
I am often puzzled by sensations in my body.
I am often rushed.
I am often sensitive to the smoothness or roughness of objects that I touch.
I am often so assertive or sociable that I surprise myself.
I need things to be arranged in a particular order.
I am often worried by things that I said or did.
I am on good terms with nearly everyone.
I am one of the most curious and inquiring persons I know.
I am only kind to others if they have been kind to me.
I am open about my feelings.
I am open about myself to others.
I am open to arguments.
I am open to change.
I am open to ideas.
I am open to new experiences.
I am out for my own personal gain.
I am passionate about anything I'm involved in.
I am passionate about bettering the world's condition.
I am patient with people who annoy me.
I am physically out of shape.
I am plain in appearance.
I prefer friends who are excitingly unpredictable.
I am poorly informed.
I am preoccupied with myself.
I am prone to addiction.
I am proud that I am an ordinary person.
I am put off by people who touch or hug when speaking to me.
I am put off by unexpected events.
I am quick to admit making a mistake.
I am quick to correct others.
I am quick to judge others.
I am quick to understand things.
I think that it is important to forgive people who have hurt me.
I prefer to play it safe and avoid danger.
I am rarely aware of how an artist might be using light and color to convey mood when I look at paintings.
I make problems bigger than they are.
I am rarely aware of the texture of things that I hold.
I am rarely consulted for advice by others.
I am rarely scared by loud noises.
I am ready to act on the spot.
I am ready to do battle for a cause.
I quickly notice when something is wrong.
I am resigned to my fate.
I am satisfied with my life.
I am seldom aware of the sounds of the birds in the neighborhood.
I am seldom bothered by the apparent suffering of strangers.
I am seldom concerned about the possibility of failing when trying something new.
I am sensitive to the needs of others.
I am skilled in handling social situations.
I am so good at controlling others that it sometimes scares me.
I am sometimes full of thoughts, ideas, and images in my mind.
I am strongly influenced by the good moods of others.
I was known for challenging my teachers in school.
I am swayed by my emotions.
I am taken advantage of by others.
I am first to act.
I am the last to laugh at a joke.
I am the life of the party.
I am the most important person in someone else's life.
I am thrilled when I learn something new.
I am told by friends that they do not really know who I am.
I am told that I am a strong but fair leader.
I am told that I am down to earth.
I am totally consumed by one or more interests or hobbies.
I am true to my own values.
I am true to myself in all circumstances.
I am trusted to keep secrets.
I am unable to deal with the problems in my work.
I am unable to do some of the things I would like to do because of my health.
I am unable to do things properly.
I am unable to speak up for myself.
I am unaffected by other people's happiness.
I am unaffected by the suffering of others.
I am unaware of what's happening.
I am under constant pressure.
I am uniquely qualified to make important contributions.
I am unpredictable--people never know what I am going to say.
I am unsure about questions concerning politics, religion, or morality.
I am untouched by other people's feelings.
I am unwilling to accept apologies.
I am unwilling to change appointments.
I am upset by the misfortune of strangers.
I am usually a patient person.
I am usually active and full of energy.
I am usually aware of the emotions that are portrayed in various types of art.
I am usually aware of the way that I'm feeling.
I am usually in an average sort of mood, not too high and not too low.
I am usually pretty good at keeping track of several things that are happening around me.
I am usually unaware of how the setting is used to convey the mood of the characters in movies.
I am valued by my friends for my good judgment.
I am valued by others for my objectivity.
I am very aware of my surroundings.
I am very sensitive and easily hurt.
I am very shy in social situations.
I am well-informed.
I am who I am because of my faith.
I am willing to admit when I make a mistake.
I am willing to explain things twice.
I am willing to make compromises.
I am willing to make personal sacrifices in order to help people I care about.
I am willing to take a stand.
I am willing to take risks to establish a relationship.
I am willing to talk about myself.
I am without talent.
I amuse myself easily.
I apologize a lot.
I appreciate all forms of art.
I would love to perform in front of a crowd.
I appreciate people who wait on me.
I appreciate the viewpoints of others.
I approach others in a positive manner.
I arrive on time.
As a child, I did a lot of things to get people's approval.
I ask for lots of advice from others.
I ask questions that nobody else does.
I ask too many questions.
I often can't remember what I did yesterday.
I automatically take charge.
I avoid activities that are physically dangerous.
I avoid appearing superior to others.
I often ignore my feelings.
I avoid calling attention to my weaknesses.
I avoid company.
I avoid dangerous situations.
I avoid dealing with awkward situations.
I avoid dealing with uncomfortable emotions.
I avoid demonstrating my skills for fear of being embarrassed.
I avoid doing things behind another person's back.
I avoid eye contact.
I avoid going to unknown places.
I avoid imposing my will on others.
I avoid interfering in the lives of others.
I avoid responsibilities.
I avoid small talk.
I avoid throwing things away for fear that I might need them later.
I awaken with a sense of excitement about the day's possibilities.
I back out at the last moment.
I barge in on conversations.
I base my goals in life on inspiration, rather than logic.
I become aggressive when I feel hurt.
I become easily frightened.
I become frustrated and angry with people when they don't live up to my expectations.
I become restless if I'm not accomplishing something.
I begin to answer before the other person finishes the question.
I begin to panic when there is danger.
I behave in a way that is acceptable to society.
I behave in unusual and strange ways.
I behave properly.
I believe in a logical answer for everything.
I believe in a supernatural source of peace and love.
I believe in the goodness of human nature.
I believe in the importance of tradition.
I believe in the power of fate.
I believe in things that have no scientific explanation.
I believe in universal harmony.
I find it difficult to consider as valid opinions that differ from my own.
I believe that all events can be explained scientifically.
I believe that appearances are important.
I believe that by working hard a person can achieve anything.
I believe that cheating is wrong because it is unfair to others.
I believe that children need firm discipline.
I believe that crying helps me feel better.
I believe that each person has a purpose in life.
I believe that emotions give direction to life.
I believe that events in my life are determined only by me.
I believe that everyone should have a say.
I believe that everyone's rights are equally important.
I believe that everything will work out in the end.
I believe that honesty is the basis for trust.
I enjoy cartoons.
I believe that important decisions should be based on logical reasoning.
I believe that it is best to forgive and forget.
I believe that kids need tough love.
I believe that laws should be strictly enforced.
I believe that leaders should let everyone have a say in what the group does.
I believe that life is more of a playground than a battlefield.
I believe that medical tests are often inaccurate.
I believe that most people dislike helping other people.
I believe that most people tell the truth.
I believe that most people would lie to get ahead.
I believe that most questions have one right answer.
I believe that my success depends on ability rather than luck.
I believe that others are drawn to me because I am humble.
I believe that our human nature brings us together to work for common goals.
I believe that parents coddle their children too much.
I believe that people are either good or bad.
I believe that people seldom tell you the whole story.
I believe that planning ahead makes things turn out better.
I believe that privacy is very important.
I believe that some people are born lucky.
I believe that the end justifies the means.
I believe that the poor deserve our sympathy.
I believe that the world is controlled by a few powerful people.
I believe that there are many sides to most issues.
I believe that there are universal truths.
I believe that there is never an excuse for lying.
I believe that unfortunate events occur because of bad luck.
I blend into the crowd.
I blurt out whatever comes into my mind.
I borrow money that I won't pay back.
I boss people around.
I bottle up my feelings.
I burst into tears.
I hug my close friends.
I buy more than I need.
I call for action while others talk.
I call my friends when they are sick.
I can accept a lot from others.
I can accept criticism without getting upset.
I can always say "enough is enough."
I can be confused about the emotions I'm feeling.
I can be relied upon by others.
I can be stirred up easily.
I can be trusted to keep my promises.
I can become tearful thinking of the goodness of others.  
I can bend to the will of others.  
I can change course, if necessary.  
I can clearly picture in my mind what I want to happen in my future.  
I can control my emotions.  
I can control the outcome of events.  
I can create any impression that I want.  
I can easily link facts together.  
I can easily push myself forward.  
I can express love to someone else.  
I can face my fears.  
I can feel close to someone, even in moments of silence.  
I can find something of interest in any situation.  
I can find the positive in what seems negative to others.  
I can get along with most people.  
I can get anxious, depressed, or irritable for no reason.  
I can get out of difficult situations.  
I can hardly wait to see what life has in store for me in the years ahead.  
I can improvise.  
I can keep a secret.  
I can laugh at myself.  
I can make anyone believe anything I want them to.  
I can make myself work on a difficult task even when I don't feel like trying.  
I can never find anything.  
I can never keep a secret.  
I can perform a wide variety of tasks.  
I can play many roles convincingly.  
I can predict the outcome of events.  
I can read books written in Chinese.  
I can read people like a book.  
I can recall many events before the age of three.  
I can say things beautifully.  
I can see different points of view.  
I can see special connections between seemingly unrelated objects or events.  
I can see the funny side of a painful situation.
I can sense how things will turn out.
I can sense the presence of strange persons or forces.
I look after my health by eating well.
I can slow myself down when I want to.
I can spend hours doing nothing.
I can spot faulty reasoning.
I can stand a great deal of stress.
I can stand criticism.
I can stay focused on tasks, even when I'm happy and excited about an upcoming event.
I can stay on a diet.
I can switch gears easily.
I can tackle anything.
I make an issue out of everything.
I can take my mind off my problems.
I can take strong measures.
I can take the viewpoint of others.
I can talk my way out of anything.
I can think of a snappy reply.
I can usually bring my attention back to whatever I was doing after being interrupted.
I can work under pressure.
I tell the truth.
I fear for the worst.
I like to act on a whim.
I am not easily amused.
I rarely get irritated.
I have a vivid imagination.
I turn plans into actions.
I will not probe too deeply into a subject.
I have difficulty starting tasks.
I obstruct others' plans.
I often eat too much.
I value cooperation over competition.
I misjudge situations.
I work hard.
I rush into things.
I am hard to get to know.
I believe that too much tax money goes to support artists.
I seldom get mad.
I try to follow the rules.
I avoid mistakes.
I break rules.
I am often down in the dumps.
I distrust people.
I listen to my conscience.
I am not bothered by disorder.
I look at the bright side of life.
I feel sympathy for those who are worse off than myself.
I cheat to get ahead.
I am not bothered by difficult social situations.
I believe that I am better than others.
I get angry easily.
I try to lead others.
I can't make up my mind.
I don't understand things.
I use flattery to get ahead.
I love to daydream.
I never do anything reckless.
I seldom toot my own horn.
I rarely complain.
I use others for my own ends.
I love to read challenging material.
I love to eat.
I try to always be open and honest about my feelings.
I misrepresent the facts.
I love flowers.
I don't understand people who get emotional.
I keep in the background.
I lose my temper.
I like a leisurely lifestyle.
I demand quality.
I do not like poetry.
I make people feel welcome.
I love order and regularity.
I believe that people are basically moral.
I do not like art.
I love to help others.
I seldom joke around.
I am attached to conventional ways.
I have little to contribute.
I would never go hang gliding or bungee jumping.
I do not enjoy going to art museums.
I seldom get lost in thought.
I prefer variety to routine.
I love a good fight.
I am passionate about causes.
I enjoy examining myself and my life.
I dislike talking about myself.
I try not to think about the needy.
I yell at people.
I have difficulty understanding abstract ideas.
I experience very few emotional highs and lows.
I don't know why I do some of the things I do.
I am interested in many things.
I prefer to stick with things I know.
I am not highly motivated to succeed.
I break my promises.
I do just enough work to get by.
I get irritated easily.
I hate to seem pushy.
I believe in human goodness.
I seek quiet.
I leave my belongings around.
I dislike myself.
I am not interested in theoretical discussions.
I pay my bills on time.
I have frequent mood swings.
I am always on the go.
I am sure of my ground.
I dislike being the center of attention.
I avoid crowds.
I do a lot in my spare time.
I seldom get emotional.
I become overwhelmed by events.
I tend to vote for conservative political candidates.
I never splurge.
I don't like being ridiculed or humiliated.
I am able to stand up for myself.
I stumble over my words.
I believe that criminals should receive help rather than punishment.
I rarely notice my emotional reactions.
I don't like crowded events.
I easily resist temptations.
I come up with good solutions.
I suffer from others' sorrows.
I have a good word for everyone.
I try to understand myself.
I enjoy being part of a loud crowd.
I adapt easily to new situations.
I am easy to satisfy.
I keep my promises.
I try to cheat others.
I get back at others.
I like to take my time.
I suspect hidden motives in others.
I seek to influence others.
I love life.
I am often in a bad mood.
I avoid philosophical discussions.
I leave a mess in my room.
I am not easily disturbed by events.
I am afraid that I will do the wrong thing.
I like to tidy up.
I am comfortable in unfamiliar situations.
I start tasks right away.
I tend to vote for liberal political candidates.
I act wild and crazy.
I remain calm under pressure.
I go straight for the goal.
I have a lot of fun.
I dislike changes.
I enjoy wild flights of fantasy.
I get overwhelmed by emotions.
I warm up quickly to others.
I get caught up in my problems.
I look down on others.
I trust what people say.
I consider myself an average person.
I never spend more than I can afford.
I have a sharp tongue.
I readily overcome setbacks.
I cheer people up.
I experience my emotions intensely.
I know how to cope.
I stick to the rules.
I look forward to my time off.
I love excitement.
I react quickly.
I need to understand my motives.
I love surprise parties.
I trust others.
I feel comfortable around people.
I avoid contact with others.
I put little time and effort into my work.
I am not easily affected by my emotions.
I love large parties.
I am wary of others.
I express childlike joy.
I do the opposite of what is asked.
I find it difficult to get down to work.
I anticipate the needs of others.
I postpone decisions.
I like to get lost in thought.
I laugh my way through life.
I like to visit new places.
I feel others' emotions.
I react slowly.
I would never cheat on my taxes.
I go on binges.
I choose my words with care.
I am afraid of many things.
I think highly of myself.
I am always busy.
I rarely overindulge.
I prefer to be alone.
I am a creature of habit.
I do not like concerts.
I am able to control my cravings.
I don't see the consequences of things.
I tend to dislike soft-hearted people.
I radiate joy.
I put people under pressure.
I seek adventure.
I often feel blue.
I let things proceed at their own pace.
I like order.
I can't stand confrontations.
I neglect to thank others for their help.
I enjoy the beauty of nature.
I believe that there is no absolute right or wrong.
I excel in what I do.
I indulge in my fantasies.
I believe that others have good intentions.
I am not easily annoyed.
I enjoy thinking about things.
I feel comfortable with myself.
I stick to my chosen path.
I jump into things without thinking.
I believe in an eye for an eye.
I take control of things.
I waste my time.
I can handle a lot of information.
I pretend to be concerned for others.
I want to be left alone.
I worry about things.
I do not enjoy watching dance performances.
I do things according to a plan.
I believe in one true religion.
I like to take it easy.
I am concerned about others.
I contradict others.
I seldom daydream.
I like to stand during the national anthem.
I think that all will be well.
I have a rich vocabulary.
I turn my back on others.
I boast about my virtues.
I can’t stand weak people.
I believe that we should be tough on crime.
I am not embarrassed easily.
I can handle complex problems.
I take advantage of others.
I only feel comfortable with friends.
I find it difficult to approach others.
I keep my cool.
I panic easily.
I hold a grudge.
I am always prepared.
I am easily intimidated.
I feel that my life lacks direction.
I insult people.
I like to begin new things.
I am very pleased with myself.
I get stressed out easily.
I am calm even in tense situations.
I am not interested in other people's problems.
I do crazy things.
I see beauty in things that others might not notice.
I am not easily bothered by things.
I avoid difficult reading material.
I don't like to draw attention to myself.
I dislike new foods.
I get to work at once.
I make people pay for crossing me.
I believe people should fend for themselves.
I wait for others to lead the way.
I amuse my friends.
I sympathize with the homeless.
I involve others in what I am doing.
I take offense easily.
I love action.
I have a high opinion of myself.
I have difficulty imagining things
I know how to do well on tests.
I dislike loud music.
I feel desperate.
I act comfortably with others.
I don't worry about things that have already happened.
I do things in a half-way manner.
I am not bothered by messy people. I know how to get around the rules. I make myself the center of attention. I do things I later regret. I believe in the importance of art. I can manage many things at the same time. I set high standards for myself and others. I believe that people are essentially evil. I don't like the idea of change. I make order out of chaos. I have a low opinion of myself. I hold back my opinions. I laugh aloud. I seek danger. I don't commit myself to things. I make people feel uncomfortable. I make rash decisions. I carry out my plans. I can talk others into doing things. I know the answers to many questions. I often forget to put things back in their proper place. I need a push to get started. I make friends easily. I believe that we coddle criminals too much. I have little to say. I enjoy being reckless. I plunge into tasks with all my heart. I am afraid to draw attention to myself. I try to surpass others' accomplishments. I act without thinking. I like to solve complex problems. I keep others at a distance. I often make last-minute plans. I often feel uncomfortable around others. I want everything to be "just right."
I start conversations.
I sympathize with others' feelings.
I underestimate myself.
I have excellent ideas.
I use difficult words.
I follow a schedule.
I take time out for others.
I don't mind being the center of attention.
I think of others first.
I have noticed that my friends have often betrayed me.
I like having secrets.
I see that nobody gets left out.
I have noticed that friends or family become frustrated with my mood swings.
I hear sounds from nearby as if they come from far away.
I attract attention from the opposite sex.
I get along well with others.
I have a strong personality.
I come up with new ways to do things.
I am not in touch with my feelings.
I accomplish a lot of work.
I read all the time.
I believe that I am important.
I never remember my dreams.
I work on improving myself.
I am not a detail-oriented person.
I neglect my duties.
I am looking forward to things that are coming in the future.
I spend a lot of my free time helping others.
I hardly ever finish things on time.
I believe it is always better to be safe than sorry.
I sing out loud to myself when I am alone.
I don't care much about how society tells me to behave.
I am rarely a patient person.
I cope poorly with stress.
I habitually blow my chances.
I often have disorganized thoughts.
I can’t hold back my tongue when criticized.
I stick to my point of view.
I like to plan ahead.
I am told that I am too blunt.
I need others to help run my life.
I notice my emotions.
I tease people.
I give up easily.
I think about what is good in my life when I feel down.
I would not enjoy fast dancing.
I often forget what day it is.
I frequently question the intentions of others.
I use my looks to get what I want.
I enjoy being part of a group.
I am a flamboyant person.
I act like people younger than me.
I engage in discussions.
I know that I can live my life in any way I want to.
I generally focus on the negative side of things.
I feel that people must earn my trust.
I sometimes think the TV is talking directly to me.
I think that people who are stupid enough to get ripped off usually deserve it.
I keep people waiting.
I speak up in protest when I hear someone say mean things.
I buy clothes without trying them on first.
I am sluggish much of the time.
I say what I think and feel even if I know other people will disagree.
I am nervous or tense most of the time.
I do not often talk about things that I have achieved.
I am often irritated with others.
I can take a joke.
I am just an ordinary person.
I show faith in people.
I find that I am able to pursue one goal for a long time.
I usually expect bad things to happen.  
I find it hard to tell others' thoughts by their looks.  
I behave as if others are just as important as me.  
I have occasionally disliked someone.  
I put a new perspective on things.  
I am often so restless that it is impossible for me to sit still.  
I have been called a cheapskate.  
I refuse to be sidetracked.  
I push myself very hard to succeed.  
I hate parting with old things.  
I enjoy spending money on things that are not practical.  
I just let things happen.  
I have strong emotional reactions to everyday hassles.  
I don't desire things that others have.  
I try to please everyone.  
I get upset easily.  
I go out of my way to cheer up people who appear down.  
I am often afraid.  
I do not learn from my experiences.  
I am fascinated by numbers.  
I like to follow a regular schedule.  
I would rather give than take.  
I am polite to strangers.  
I get suspicious when someone treats me nicely.  
I go out of my way to meet people.  
I do things out of habit.  
I love to be complimented.  
I seek support.  
I feel that life is full of many wonderful surprises.  
I have leadership abilities.  
I was considered a troublemaker in school.  
I can sense when danger or harm is coming.  
I avoid being a bother to anyone.  
I have a soft heart.  
I love to look my best.
I acquire skills quickly.
I use swear words.
I prefer thrilling activities to staying home to watch TV.
I rarely look for a deeper meaning in things.
I appreciate good manners.
I am hard to understand.
I am continually losing things.
I have trouble changing my behavior to suit the situation.
I would hate to be considered odd or strange.
I try to have fun in all kinds of situations.
I know my strengths.
I wonder if the people I know can really be trusted.
I think that most people in authority are incompetent or corrupt.
I do things for a reason.
I am pretty trusting of others’ motives.
I am interested in my personal growth.
I grumble about things.
I describe lots of irrelevant details when telling a story.
I often do nice things for people.
I have no trouble controlling my anger.
I get upset when I can’t pursue my current interests.
I have a conventional lifestyle.
I like to stand out in a crowd.
I quit tasks as soon as I get bored.
I am easily hurt.
I easily lose my train of thought.
I am rarely aware of the natural beauty of the environment.
I count on others too much.
I hate surprises.
I would enjoy cliff diving from great heights.
I think quickly.
I don’t try to get even.
I make lists of things to do.
I express myself easily.
I frequently forget to do things.
I don’t like to draw attention to myself.
I take charge.
I know how to captivate people.
I feel at ease with people.
I make people feel at ease.
I inquire about other's well-being.
I know how to comfort others.
I love children.
I make a mess of things.
I make plans and stick to them.
I change my mood a lot.
I feel threatened easily.
I carry the conversation to a higher level.
I catch on to things quickly.
I avoid reading challenging material.
I feel that I’m unable to deal with things.
I am willing to try anything once.
I like music.
I do not like going to art museums.
I don’t like the idea of change.
I believe laws should be strictly enforced.
I take no time for others.
I complete tasks successfully.
I handle tasks smoothly.
I say inappropriate things.
I know how to get things done.
I get others to do my duties.
I do more than what's expected.
I rarely lose my composure.
I would describe my experiences as somewhat dull.
I retreat from others.
I enjoy hearing new ideas.
I get excited by new ideas.
I respect others.
I cut others to pieces.
I don't see things through. 

I finish what I start. 

I follow through with my plans. 

I mess things up. 

I leave things unfinished. 

I complete my duties as soon as possible. 

I am never too busy to help a friend. 

I prefer making things myself instead of buying them.

Note. IPIP = International Personality Item Pool (Goldberg, 1999). The specific items and the order of the filler items was randomized for each respondent via Qualtrics.
### Appendix B

*Items in the Measures of Careless Responding Section*

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Item Stem</th>
<th>Item Source</th>
<th>Construct Assessed by Item</th>
<th>Page Number in Short Survey Condition</th>
<th>Page Number in Long Survey Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td><em>I leave my belongings around.</em> (R)</td>
<td>IPIP</td>
<td>Conscientiousness</td>
<td>2</td>
<td>33</td>
</tr>
<tr>
<td>2.</td>
<td><em>I am an active person.</em></td>
<td>Maniaci &amp; Rogge (2014)</td>
<td>Inconsistency</td>
<td>2</td>
<td>33</td>
</tr>
<tr>
<td>3.</td>
<td><em>I sympathize with others' feelings.</em></td>
<td>IPIP</td>
<td>Agreeableness</td>
<td>2</td>
<td>33</td>
</tr>
<tr>
<td>4.</td>
<td><em>I have excellent ideas.</em></td>
<td>IPIP</td>
<td>Openness</td>
<td>2</td>
<td>33</td>
</tr>
<tr>
<td>5.</td>
<td><em>I am full of ideas.</em></td>
<td>IPIP</td>
<td>Openness</td>
<td>2</td>
<td>33</td>
</tr>
<tr>
<td>7.</td>
<td><em>I pay attention to details.</em></td>
<td>IPIP</td>
<td>Conscientiousness</td>
<td>2</td>
<td>33</td>
</tr>
<tr>
<td>8.</td>
<td><em>I would rather be hated than loved.</em></td>
<td>Maniaci &amp; Rogge (2014)</td>
<td>Infrequency</td>
<td>2</td>
<td>33</td>
</tr>
<tr>
<td>9.</td>
<td><em>I feel little concern for others.</em> (R)</td>
<td>IPIP</td>
<td>Agreeableness</td>
<td>2</td>
<td>33</td>
</tr>
<tr>
<td>10.</td>
<td><em>I start conversations.</em></td>
<td>IPIP</td>
<td>Extroversion</td>
<td>2</td>
<td>33</td>
</tr>
<tr>
<td>11.</td>
<td><em>I am not really interested in others.</em></td>
<td>IPIP</td>
<td>Agreeableness</td>
<td>2</td>
<td>33</td>
</tr>
<tr>
<td>12.</td>
<td><em>I enjoy relaxing in my free time.</em></td>
<td>Maniaci &amp; Rogge (2014)</td>
<td>Inconsistency</td>
<td>2</td>
<td>33</td>
</tr>
</tbody>
</table>
13. *I am exacting in my work.*

14. *I have a vivid imagination.*

15. *I am relaxed most of the time.*

16. *I look forward to my time off.*

17. *I use difficult words.*

18. *I am a very energetic person.*

19. *I often forget to put things back in their proper place.* (R)

20. *I am always prepared.*

21. *I am interested in people.*

22. *I keep in the background.* (R)

23. *It frustrates me when people keep me waiting.*

24. *I don’t like being ridiculed or humiliated.*

25. *I like order.*

26. *I am not interested in other people’s problems.* (R)

27. *I am quiet around*
<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>28.</td>
<td>I have difficulty understanding abstract ideas.</td>
<td>IPIP</td>
<td>Openness</td>
<td>3</td>
<td>34</td>
</tr>
<tr>
<td>29.</td>
<td>I spend most of my time worrying.</td>
<td>Maniaci &amp; Rogge (2014)</td>
<td>Inconsistency</td>
<td>3</td>
<td>34</td>
</tr>
<tr>
<td>30.</td>
<td>I often feel blue. (R)</td>
<td>IPIP</td>
<td>Emotional Stability</td>
<td>3</td>
<td>34</td>
</tr>
<tr>
<td>31.</td>
<td>I get upset easily. (R)</td>
<td>IPIP</td>
<td>Emotional Stability</td>
<td>4</td>
<td>35</td>
</tr>
<tr>
<td>32.</td>
<td>I sleep less than one hour per night.</td>
<td>Meade &amp; Craig (2012)</td>
<td>Infrequency</td>
<td>4</td>
<td>35</td>
</tr>
<tr>
<td>33.</td>
<td>I follow a schedule.</td>
<td>IPIP</td>
<td>Conscientiousness</td>
<td>4</td>
<td>35</td>
</tr>
<tr>
<td>34.</td>
<td>I am quick to understand things.</td>
<td>IPIP</td>
<td>Openness</td>
<td>4</td>
<td>35</td>
</tr>
<tr>
<td>35.</td>
<td>I have an active lifestyle.</td>
<td>Maniaci &amp; Rogge (2014)</td>
<td>Inconsistency</td>
<td>4</td>
<td>35</td>
</tr>
<tr>
<td>36.</td>
<td>I have little to say. (R)</td>
<td>IPIP</td>
<td>Extroversion</td>
<td>4</td>
<td>35</td>
</tr>
<tr>
<td>37.</td>
<td>I feel comfortable around people.</td>
<td>IPIP</td>
<td>Extroversion</td>
<td>4</td>
<td>35</td>
</tr>
<tr>
<td>38.</td>
<td>I am the life of the party.</td>
<td>IPIP</td>
<td>Extroversion</td>
<td>4</td>
<td>35</td>
</tr>
<tr>
<td>39.</td>
<td>I change my mood a lot. (R)</td>
<td>IPIP</td>
<td>Emotional Stability</td>
<td>4</td>
<td>35</td>
</tr>
<tr>
<td>40.</td>
<td>I would be happy if I won the lottery.</td>
<td>Maniaci &amp; Rogge (2014)</td>
<td>Infrequency</td>
<td>4</td>
<td>35</td>
</tr>
<tr>
<td>41.</td>
<td>I like to spend time with my friends.</td>
<td>Maniaci &amp; Rogge (2014)</td>
<td>Inconsistency</td>
<td>4</td>
<td>35</td>
</tr>
<tr>
<td>42.</td>
<td>I don’t like to draw attention to myself. (R)</td>
<td>IPIP</td>
<td>Extroversion</td>
<td>4</td>
<td>35</td>
</tr>
<tr>
<td>43.</td>
<td>I don't mind being the center of attention.</td>
<td>IPIP</td>
<td>Extroversion</td>
<td>4</td>
<td>35</td>
</tr>
<tr>
<td>44.</td>
<td>I take time out for others.</td>
<td>IPIP</td>
<td>Agreeableness</td>
<td>4</td>
<td>35</td>
</tr>
<tr>
<td>45.</td>
<td>I worry about things. (R)</td>
<td>IPIP</td>
<td>Emotional Stability</td>
<td>4</td>
<td>35</td>
</tr>
<tr>
<td>46.</td>
<td>In my time off I like to relax.</td>
<td>Maniaci &amp; Rogge (2014)</td>
<td>Inconsistency</td>
<td>5</td>
<td>36</td>
</tr>
<tr>
<td>47.</td>
<td>I talk to a lot of different people at parties</td>
<td>IPIP</td>
<td>Extroversion</td>
<td>5</td>
<td>36</td>
</tr>
<tr>
<td>48.</td>
<td>It feels good to be appreciated.</td>
<td>Maniaci &amp; Rogge (2014)</td>
<td>Infrequency</td>
<td>5</td>
<td>36</td>
</tr>
<tr>
<td>49.</td>
<td>I feel others' emotions.</td>
<td>IPIP</td>
<td>Agreeableness</td>
<td>5</td>
<td>36</td>
</tr>
<tr>
<td>50.</td>
<td>I seldom feel blue.</td>
<td>IPIP</td>
<td>Emotional Stability</td>
<td>5</td>
<td>36</td>
</tr>
<tr>
<td>51.</td>
<td>I make a mess of things. (R)</td>
<td>IPIP</td>
<td>Conscientiousness</td>
<td>5</td>
<td>36</td>
</tr>
<tr>
<td>52.</td>
<td>I have a lot of energy.</td>
<td>Maniaci &amp; Rogge (2014)</td>
<td>Inconsistency</td>
<td>5</td>
<td>36</td>
</tr>
<tr>
<td>53.</td>
<td>I have a soft heart.</td>
<td>IPIP</td>
<td>Agreeableness</td>
<td>5</td>
<td>36</td>
</tr>
<tr>
<td>54.</td>
<td>I have a rich vocabulary.</td>
<td>IPIP</td>
<td>Openness</td>
<td>5</td>
<td>36</td>
</tr>
<tr>
<td>55.</td>
<td>I get irritated easily. (R)</td>
<td>IPIP</td>
<td>Emotional Stability</td>
<td>5</td>
<td>36</td>
</tr>
<tr>
<td>56.</td>
<td>I have felt tired or sleepy in my lifetime.</td>
<td>Fervaha and Remington (2013)</td>
<td>Infrequency</td>
<td>5</td>
<td>36</td>
</tr>
<tr>
<td>57.</td>
<td>I insult people. (R)</td>
<td>IPIP</td>
<td>Agreeableness</td>
<td>5</td>
<td>36</td>
</tr>
<tr>
<td>58.</td>
<td>I make people feel at ease.</td>
<td>IPIP</td>
<td>Agreeableness</td>
<td>5</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td>Statement</td>
<td>Scale</td>
<td>Description</td>
<td>Value</td>
<td>Ref.</td>
</tr>
<tr>
<td>---</td>
<td>--------------------------------------------------------------------------</td>
<td>--------</td>
<td>------------------------</td>
<td>-------</td>
<td>------------</td>
</tr>
<tr>
<td>59.</td>
<td><em>I am not interested in abstract ideas.</em></td>
<td>IPIP</td>
<td>Openness</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>60.</td>
<td><em>I don’t talk a lot.</em></td>
<td>IPIP</td>
<td>Extroversion</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>61.</td>
<td><em>I get chores done right away.</em></td>
<td>IPIP</td>
<td>Conscientiousness</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>62.</td>
<td><em>It’s annoying when people are late.</em></td>
<td>Maniaci &amp; Rogge (2014)</td>
<td>Inconsistency</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>63.</td>
<td><em>I shirk my duties.</em></td>
<td>IPIP</td>
<td>Conscientiousness</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>64.</td>
<td><em>I love going to the DMV (Department of Motor Vehicles).</em></td>
<td>Maniaci &amp; Rogge (2014)</td>
<td>Infrequency</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>65.</td>
<td><em>I have frequent mood swings.</em></td>
<td>IPIP</td>
<td>Emotional Stability</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>66.</td>
<td><em>I get stressed out easily.</em></td>
<td>IPIP</td>
<td>Emotional Stability</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>67.</td>
<td><em>I do not have a good imagination.</em></td>
<td>IPIP</td>
<td>Openness</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>68.</td>
<td><em>I worry about a lot of things.</em></td>
<td>Maniaci &amp; Rogge (2014)</td>
<td>Inconsistency</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>69.</td>
<td><em>I spend time reflecting on things.</em></td>
<td>IPIP</td>
<td>Openness</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>70.</td>
<td><em>I am easily disturbed.</em></td>
<td>IPIP</td>
<td>Emotional Stability</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>71.</td>
<td><em>I can teleport across time and space.</em></td>
<td>Huang et al. (2015)</td>
<td>Infrequency</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>72.</td>
<td><em>I show my gratitude.</em></td>
<td>IPIP</td>
<td>Agreeableness</td>
<td>6</td>
<td>98</td>
</tr>
</tbody>
</table>
73.  *I continue until everything is perfect.*  
IPIP  Conscientiousness  6  37

74.  *I am a very private person.*  
IPIP  Extraversion  6  37

75.  *I love to think up new ways of doing things.*  
IPIP  Openness  6  37

*Note.* (R) = Reverse-scored item. IPIP = International Personality Item Pool (Goldberg, 1999). Items appeared in the same order as above in the questionnaire.
### Appendix C

**Items in the Measure of Interest Section**

<table>
<thead>
<tr>
<th>Item #</th>
<th>Item Stem</th>
<th>Item Source</th>
<th>Construct Assessed by Item</th>
<th>Page Number on Qualtrics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>The questions included in this questionnaire were interesting.</td>
<td>Brower &amp; Bowling</td>
<td>Interest</td>
<td>41</td>
</tr>
<tr>
<td>2.</td>
<td>This survey was a waste of my time.</td>
<td>Brower &amp; Bowling</td>
<td>Interest</td>
<td>41</td>
</tr>
<tr>
<td>3.</td>
<td>I enjoyed participating in the study.</td>
<td>Brower &amp; Bowling</td>
<td>Interest</td>
<td>41</td>
</tr>
<tr>
<td>4.</td>
<td>I am fascinated by the types of topic covered in this questionnaire.</td>
<td>Brower &amp; Bowling</td>
<td>Interest</td>
<td>41</td>
</tr>
<tr>
<td>5.</td>
<td>I am enrolled in a psychology class currently.</td>
<td>Meade &amp; Craig (2012)</td>
<td>Infrequency</td>
<td>41</td>
</tr>
<tr>
<td>6.</td>
<td>I would be interested in participating in another study like this one, even if it didn't provide me with participation credits.</td>
<td>Brower &amp; Bowling</td>
<td>Interest</td>
<td>41</td>
</tr>
<tr>
<td>7.</td>
<td>I disliked participating in this study.</td>
<td>Brower &amp; Bowling</td>
<td>Interest</td>
<td>41</td>
</tr>
<tr>
<td>8.</td>
<td>I am interested in reading material that covers the topics included in this questionnaire.</td>
<td>Brower &amp; Bowling</td>
<td>Interest</td>
<td>41</td>
</tr>
<tr>
<td>9.</td>
<td>This study was a good use of my time.</td>
<td>Brower &amp; Bowling</td>
<td>Interest</td>
<td>41</td>
</tr>
<tr>
<td>10.</td>
<td>I am completing this questionnaire on an electronic device (e.g. a</td>
<td>Maniaci &amp; Rogge</td>
<td>Infrequency</td>
<td>41</td>
</tr>
<tr>
<td></td>
<td>101</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
11. *computer, tablet, or phone*.
   I feel drained.  
   Ciarocco et al. (2004)
   State Depletion 42

12. *I can’t absorb any more information.*
   I want to give up.  
   Ciarocco et al. (2004)
   State Depletion 42

13. I feel like my willpower is gone.
    What is your age?  
    Ciarocco et al. (2004)
    Depletion Demographic 43

14. Which of the following best describes your ethnicity?
    What is your academic class standing?  
    Ciarocco et al. (2004)
    Demographic 43

15. Please indicate your major.  
    Being a Psychology major would be interesting.  
    Ciarocco et al. (2004)
    Demographic 43

16. I am interested in earning a Ph.D. in psychology or in another social science.  
    Interest 43
**Appendix D**

Pilot Study

I wrote the following items to be included in the Pilot Study for the development of a scale that measures interest in a personality survey. I included items that measured specific interest in the survey, interest in the topic of the survey, interest in the survey or topic over time, perceived value, and perceived enjoyment to capture individual interest as conceptualized by the interest literature (Harackiewicz, Smith, & Priniski, 2016; Hidi & Renninger, 2006; Renninger, 1992, 2009; Schiefele, 1991, 2001, 2009).

The following items were administered to 123 undergraduate students that were enrolled in an introductory Psychology course at a suburban Midwestern university. The items were included at the end of a survey nearly identical to the one described in the main study. Participants reported a mean age of 20.36 (SD = 3.18) with the maximum age of 42. Of the 123 participants, 74.8% reported being White (non-Hispanic), 12.2% reported being Black, 1.6% reported being East Asian or Asian American, 2.4% reported being South Asian or Indian American, 1.6% reported being Native American, and 7.3% reported being “other” (e.g. “multi-racial”).

<table>
<thead>
<tr>
<th>Item #</th>
<th>Item Stem</th>
<th>Construct Assessed by Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td><em>The questions included in this questionnaire were interesting.</em></td>
<td>Interest in survey</td>
</tr>
<tr>
<td>2.</td>
<td><em>The questions included in this questionnaire were boring.</em></td>
<td>Interest in survey (reversed)</td>
</tr>
<tr>
<td></td>
<td>Statement</td>
<td>Category</td>
</tr>
<tr>
<td>---</td>
<td>---------------------------------------------------------------------------</td>
<td>---------------------------</td>
</tr>
<tr>
<td>3.</td>
<td>I am fascinated by the types of topic covered in this questionnaire.</td>
<td>Individual interest</td>
</tr>
<tr>
<td>4.</td>
<td>The questions included in this questionnaire were uninteresting.</td>
<td>Individual interest</td>
</tr>
<tr>
<td>5.</td>
<td>I would be interested in participating in another study like this one, even if it didn't provide me with participation credits.</td>
<td>Individual interest</td>
</tr>
<tr>
<td>6.</td>
<td>I am interested in taking a course that covers the topics included in this.</td>
<td>Individual interest</td>
</tr>
<tr>
<td>7.</td>
<td>I am interested in reading material that covers the topics included in this questionnaire.</td>
<td>Individual interest</td>
</tr>
<tr>
<td>8.</td>
<td>Being a psychology major would be interesting.</td>
<td>Individual interest</td>
</tr>
<tr>
<td>9.</td>
<td>I am interested in volunteering as a research assistant for a psychology professor.</td>
<td>Individual interest</td>
</tr>
<tr>
<td>10.</td>
<td>I am interested in earning a Ph.D. in psychology or another social science.</td>
<td>Individual interest</td>
</tr>
<tr>
<td>11.</td>
<td>I enjoyed participating in this study.</td>
<td>Perceived enjoyment</td>
</tr>
<tr>
<td>12.</td>
<td>I disliked participating in this study.</td>
<td>Perceived enjoyment</td>
</tr>
<tr>
<td>13.</td>
<td>This study was a good use of my time.</td>
<td>Perceived value</td>
</tr>
<tr>
<td>14.</td>
<td>This survey was a waste of my time.</td>
<td>Perceived value</td>
</tr>
<tr>
<td>15.</td>
<td>I would be interested in reading about the results of this study.</td>
<td>Individual interest</td>
</tr>
<tr>
<td>16.</td>
<td>This survey was useful for me.</td>
<td>Perceived value</td>
</tr>
<tr>
<td>17.</td>
<td>This survey was worthless to me.</td>
<td>Perceived value</td>
</tr>
<tr>
<td>18.</td>
<td>I see the value in this survey.</td>
<td>Perceived value</td>
</tr>
<tr>
<td>19.</td>
<td>There is nothing of value to be gained from this survey.</td>
<td>Perceived value</td>
</tr>
<tr>
<td>20.</td>
<td>I enjoy being a research participant.</td>
<td>Perceived enjoyment</td>
</tr>
<tr>
<td>21.</td>
<td>I dislike being a research participant.</td>
<td>Perceived enjoyment</td>
</tr>
</tbody>
</table>
Following data collection, I removed participants that did not correctly respond to the instruction manipulation check after two attempts. I used SPSS to conduct a reliability analysis and removed items with low inter-item correlations and if doing so would increase the Cronbach’s alpha of the scale. This resulted in an 8-item scale (α = .89), as shown below.

### Items included in final interest scale

<table>
<thead>
<tr>
<th>Item #</th>
<th>Item Stem</th>
<th>Construct Assessed by Item</th>
<th>Corrected Item-Total Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td><em>The questions included in this questionnaire were interesting.</em></td>
<td>Interest in survey</td>
<td>.652</td>
</tr>
<tr>
<td>2.</td>
<td><em>This survey was a waste of my time.</em></td>
<td>Perceived value (reversed)</td>
<td>.703</td>
</tr>
<tr>
<td>3.</td>
<td><em>I enjoyed participating in the study.</em></td>
<td>Perceived enjoyment</td>
<td>.787</td>
</tr>
<tr>
<td>4.</td>
<td><em>I am fascinated by the types of topic covered in this questionnaire.</em></td>
<td>Individual interest</td>
<td>.722</td>
</tr>
<tr>
<td>5.</td>
<td><em>I would be interested in participating in another study like this one, even if it didn't provide me with participation credits.</em></td>
<td>Individual interest</td>
<td>.644</td>
</tr>
<tr>
<td>6.</td>
<td><em>I disliked participating in this study.</em></td>
<td>Perceived enjoyment (reversed)</td>
<td>.801</td>
</tr>
<tr>
<td>7.</td>
<td><em>I am interested in reading material that covers the topics included in this questionnaire.</em></td>
<td>Individual interest</td>
<td>.502</td>
</tr>
<tr>
<td>8.</td>
<td><em>This study was a good use of my time.</em></td>
<td>Perceived value</td>
<td>.589</td>
</tr>
</tbody>
</table>
### Appendix E

**Items in Interest Scale 1**

<table>
<thead>
<tr>
<th>Item #</th>
<th>Item Stem</th>
<th>Item Source</th>
<th>Construct Assessed by</th>
<th>Page Number on Qualtrics</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td><em>I find psychology interesting.</em></td>
<td>Brower &amp; Bowling</td>
<td>Interest</td>
<td>1</td>
</tr>
<tr>
<td>2.</td>
<td><em>I am interested in personality testing.</em></td>
<td>Brower &amp; Bowling</td>
<td>Interest</td>
<td>1</td>
</tr>
<tr>
<td>3.</td>
<td><em>I think understanding personality is important.</em></td>
<td>Brower &amp; Bowling</td>
<td>Interest</td>
<td>1</td>
</tr>
<tr>
<td>4.</td>
<td><em>I think you can learn a lot about personality by filling out personality surveys.</em></td>
<td>Brower &amp; Bowling</td>
<td>Interest</td>
<td>1</td>
</tr>
<tr>
<td>5.</td>
<td><em>I think understanding personality is useless.</em></td>
<td>Brower &amp; Bowling</td>
<td>Interest</td>
<td>1</td>
</tr>
<tr>
<td>6.</td>
<td><em>Surveys are fun to fill out.</em></td>
<td>Rogelberg et al., 2001</td>
<td>Interest</td>
<td>1</td>
</tr>
<tr>
<td>7.</td>
<td><em>Completing a survey is a waste of time.</em></td>
<td>Rogelberg et al., 2001</td>
<td>Interest</td>
<td>1</td>
</tr>
<tr>
<td>8.</td>
<td><em>I hate filling surveys out.</em></td>
<td>Rogelberg et al., 2001</td>
<td>Interest</td>
<td>1</td>
</tr>
<tr>
<td>9.</td>
<td><em>A lot can be learned from information gathered from surveys.</em></td>
<td>Rogelberg et al., 2001</td>
<td>Interest</td>
<td>1</td>
</tr>
<tr>
<td>10.</td>
<td><em>I do not like filling out surveys.</em></td>
<td>Rogelberg et al., 2001</td>
<td>Interest</td>
<td>1</td>
</tr>
<tr>
<td>11.</td>
<td><em>Nothing good comes from completing a survey.</em></td>
<td>Rogelberg et al., 2001</td>
<td>Interest</td>
<td>1</td>
</tr>
<tr>
<td>12.</td>
<td><em>I can’t absorb any more information.</em></td>
<td>Rogelberg et al., 2001</td>
<td>Interest</td>
<td>1</td>
</tr>
<tr>
<td>13.</td>
<td><em>I enjoy filling out surveys.</em></td>
<td>Rogelberg et al., 2001</td>
<td>Interest</td>
<td>1</td>
</tr>
<tr>
<td>14.</td>
<td><em>Surveys are exciting to fill out.</em></td>
<td>Rogelberg et al., 2001</td>
<td>Interest</td>
<td>1</td>
</tr>
<tr>
<td>15.</td>
<td><em>Surveys are useful ways to gather information.</em></td>
<td>Rogelberg et al., 2001</td>
<td>Interest</td>
<td>1</td>
</tr>
</tbody>
</table>

*Note.* Items appeared in the same order as above in the questionnaire.
Appendix F

Inconsistency Items

<table>
<thead>
<tr>
<th>Item</th>
<th>Item Stem</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>1a</td>
<td>I am an active person.</td>
<td>Maniaci &amp; Rogge (2014)</td>
</tr>
<tr>
<td>1b</td>
<td>I have an active lifestyle.</td>
<td>Maniaci &amp; Rogge (2014)</td>
</tr>
<tr>
<td>2a</td>
<td>I enjoy the company of my friends.</td>
<td>Maniaci &amp; Rogge (2014)</td>
</tr>
<tr>
<td>2b</td>
<td>I like to spend time with my friends.</td>
<td>Maniaci &amp; Rogge (2014)</td>
</tr>
<tr>
<td>3a</td>
<td>I enjoy relaxing in my free time.</td>
<td>Maniaci &amp; Rogge (2014)</td>
</tr>
<tr>
<td>3b</td>
<td>In my time off I like to relax.</td>
<td>Maniaci &amp; Rogge (2014)</td>
</tr>
<tr>
<td>4a</td>
<td>I am a very energetic person.</td>
<td>Maniaci &amp; Rogge (2014)</td>
</tr>
<tr>
<td>4b</td>
<td>I have a lot of energy.</td>
<td>Maniaci &amp; Rogge (2014)</td>
</tr>
<tr>
<td>5a</td>
<td>It frustrates me when people keep me waiting.</td>
<td>Maniaci &amp; Rogge (2014)</td>
</tr>
<tr>
<td>5b</td>
<td>It’s annoying when people are late.</td>
<td>Maniaci &amp; Rogge (2014)</td>
</tr>
<tr>
<td>6a</td>
<td>I spend most of my time worrying.</td>
<td>Maniaci &amp; Rogge (2014)</td>
</tr>
<tr>
<td>6b</td>
<td>I worry about a lot of things.</td>
<td>Maniaci &amp; Rogge (2014)</td>
</tr>
</tbody>
</table>
### Appendix G

#### Infrequency Items

<table>
<thead>
<tr>
<th>Item Stem</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  I would rather be hated than loved.</td>
<td>Maniaci &amp; Rogge (2014)</td>
</tr>
<tr>
<td>2  I look forward to my time off.</td>
<td>Maniaci &amp; Rogge (2014)</td>
</tr>
<tr>
<td>3  I don’t like being ridiculed or humiliated.</td>
<td>Maniaci &amp; Rogge (2014)</td>
</tr>
<tr>
<td>4  I sleep less than one hour per night.</td>
<td>Meade &amp; Craig (2012)</td>
</tr>
<tr>
<td>5  I would be happy if I won the lottery.</td>
<td>Maniaci &amp; Rogge (2014)</td>
</tr>
<tr>
<td>6  It feels good to be appreciated.</td>
<td>Maniaci &amp; Rogge (2014)</td>
</tr>
<tr>
<td>7  I have felt tired or sleepy in my lifetime.</td>
<td>Fervaha &amp; Remington (2013)</td>
</tr>
<tr>
<td>8  I love going to the DMV (Department of Motor Vehicles).</td>
<td>Maniaci &amp; Rogge (2014)</td>
</tr>
<tr>
<td>9  I can teleport across time and space.</td>
<td>Huang et al. (2015)</td>
</tr>
<tr>
<td>10 I am enrolled in a psychology class currently.</td>
<td>Meade &amp; Craig (2012)</td>
</tr>
<tr>
<td>11 I am completing this questionnaire on an electronic device (e.g. a computer, tablet, or phone).</td>
<td>Maniaci &amp; Rogge (2014)</td>
</tr>
</tbody>
</table>
Appendix H

Instruction Manipulation Check Graphic

ATTENTION!

Congratulations—you’ve almost completed this questionnaire! There are only 16 questions remaining!

Because this last section is the most important part of the questionnaire, I will use advanced statistical techniques to assess the accuracy and thoughtfulness of your responses. If I find that you have provided accurate and thoughtful responses, then you will be entered into a random raffle for a chance to win a $20 Amazon gift card.
Appendix I

Instruction Manipulation Check Item

<table>
<thead>
<tr>
<th>Item Stem</th>
<th>Item Response Options</th>
<th>Result of Option Chosen</th>
</tr>
</thead>
<tbody>
<tr>
<td>What will happen if you provide accurate and thoughtful responses for the remainder of the questionnaire?</td>
<td>You will receive two (2) extra credits.</td>
<td>Redirected to IMC</td>
</tr>
<tr>
<td></td>
<td>You will be entered into a random drawing for a $20 Amazon gift card.</td>
<td>Directed to measure of interest section</td>
</tr>
<tr>
<td></td>
<td>You will be entered into a random drawing for a $20 cash prize.</td>
<td>Redirected to IMC</td>
</tr>
</tbody>
</table>

Note. IMC = Instruction Manipulation Check