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Investigating the self in self-report

Samantha L. Boddy
James Madison University

Investigating the Self in Self-Report

Samantha L Boddy

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FACULTY COMMITTEE:

Committee Chair: Deborah L. Bandalos

Committee Members/ Readers:

Kethera Fogler

John Hathcoat

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Abstract

Self-report items are ubiquitous in social sciences and services and medical centers. However, there is some concern of whether people are able to accurately report about themselves. One well-known source of concern is social desirability bias (SDB) or socially desirable responding (SDR), which involves people providing overly-positive responses about themselves that better align with social norms than might their actual attitudes or behaviors. However, several researchers (e.g., Brenner & DeLamater, 2016; Hadaway et al., 1998) suggest that a person's identity in the area of interest may bias their responding. Specifically, that people interpret and respond to items in terms of the standards of their important identities, effectively, their ideal selves.

The present study investigated whether having participants in the experimental condition respond to items first in terms of their ideal selves may then enable them to respond more accurately about their actual selves. Five different self-report scales were used along with indirect measures and measures of identity importance (each of which corresponded to the topic measured by the self-report scales). Participants in the experimental condition responded to each item twice, in terms of their ideal then actual selves. Participants in the control condition responded to all items once, as in traditional survey response formats. Ideal and actual self responses were compared to responses from the control condition. Results indicate that the ideal self might influence responding but does not seem to be the sole basis (i.e., people may not necessarily self-report in terms of their ideal selves).

Chapter 1: Introduction

Self-report items are ubiquitous throughout social sciences and social services and are also common in medical centers and clinics. Broadly, these items are used to index attitudes, beliefs, and social perceptions, as well as behaviors, traits, and experiences. In many cases, self-report items are used when directly observing the construct is not feasible, may cost more time or money, and/or requires an amount of time, effort, or commitment from participants that decreases the participation rate. Examples include measuring attitudes, extroversion, eating habits, or average exercise frequency in a month. Additionally, there are some research areas in which random assignment and experimental manipulation may be unethical (e.g., smoking, abuse) or impossible (e.g., religious belief, attachment in childhood). Administering self-report items is relatively easy and low-cost and reduces the issues of feasibility and ethics that can be associated with laboratory experiments. However, the accuracy of self-report measures is sometimes criticized due to concerns of whether people can correctly and truthfully report on themselves.

From a measurement perspective, one well-known source of self-report inaccuracy is social desirability bias (SDB) or socially desirable responding (SDR), in that respondents present themselves in an overly positive, socially favorable light (Paulhus, 2002). Such biased responding can distort the relationship between variables such as by (1) causing a spurious relationship between X and Y by correlating with each, (2) hiding an extant relationship between X and Y, such that without removing SDB they appear unrelated, and (3) moderating the X-Y relationship such that the X-Y relationship differs depending on the level of SDB (Ganster et al., 1983).

Sometimes social desirability is a temporary bias known as a response set that is elicited by situational factors. Here, SDR is attributed to the sensitivity of questions. Sensitive questions include those that inquire about discrepancy from social norms, provoke concerns about the consequences of responding honestly, or intrude into private matters that some people feel should not be the subject of research (Tourangeau & Yan, 2007). Responses to sensitive questions, if not omitted, are often more biased than non-sensitive questions. Socially desirable responding can also exist as a response style for some individuals, biasing their responses across items and surveys regardless of their sensitivity. That is, some people may be dispositionally inclined towards presenting themselves in an overly positive, socially desirable manner. Rather than conceiving this as people deliberately lying, Paulhus (2002) advances that consistent, exceedingly positive self-presentation may sometimes be more of a personality characteristic.

Crowne and Marlowe (1964) attribute socially desirable responding to the need for social approval and acceptance. Indeed, SDR tends to be reduced when respondents answer questions either on paper or online, rather than via interview, especially when anonymity and confidentiality are ensured (e.g., Durmaz et al., 2020). Interestingly, however, socially desirable responding is still found when questions are answered privately, anonymously, and confidentially. One explanation for this is that SDR has two factors, as has been found by Paulhus (2002) and other researchers. One factor – *impression management* – reflects response distortions of which respondents were likely aware (i.e., they knew their responses were false). Ensuring privacy and anonymity can diminish impression management. The other factor – *self-deceptive enhancement* –

concerns overly positive self-reports that respondents genuinely believe, and therefore cannot be mitigated by having participants respond anonymously.

Brenner and DeLamater (2016) offer a new way of understanding self-report bias that is rooted in Identity Theory and Self-Discrepancy Theory. At a basic level, Brenner and DeLamater suggest that self-report bias results from people subconsciously reinterpreting self-report items to be about identity, or "the kind of person" that one is (Brenner, 2017, p. 560). It can be challenging for a person to regularly embody the person they desire to be, and may be at their best, including engaging in certain behaviors, maintaining particular beliefs or attitudes, or sustaining a given outlook or disposition. Survey items may offer respondents a low-cost opportunity to express this ideal version of themselves. The ideal self represents the type of person one thinks it's important to be, including the associated attributes and behaviors, within a given identity (e.g., parent, student, citizen, etc.). For example, a survey question about frequency of attendance to religious services may be reinterpreted as asking about one's identity as a religious person rather than their behavior. As such, respondents might report the frequency that best aligns with their religious identity regardless of their actual attendance (Hadaway et al., 1998). Otherwise stated, they might report their ideal self associated with their religious identity (Brenner, 2017).

If people are able to express their ideal selves via responding to self-report items, might they then, subsequently, be able to provide responses that better reflect how they actually are (i.e., their actual selves)? That is, if people respond in terms of their ideal selves first, they may then be more willing or able to provide more accurate responses. The present study is aimed at investigating this possibility.

Chapter 2: Review of the Literature

Self-report items are questions or statements to which people respond with information about themselves (e.g., attitudes, perceptions, and behaviors). These items are ubiquitous in many areas of the social sciences, including sociology, education, economics, political science, and numerous branches of psychology. Self-report items are also used in social-service and medical settings, inquiring about a person's health behaviors (e.g., exercise, drug use, eating habits, sleep patterns), possible symptoms, and other experiences.

Self-report items are often selected for their ease of use and ethicality. That is, it is often easier, faster, and less expensive to ask people about themselves than to gather observational or other forms of data. Additionally, there are some areas in which experimental measurement with random assignment may be unethical (e.g., smoking, abuse), or impossible (e.g., religious belief, attitudes, attachment in childhood). In these cases, self-report measurement often is, or is part of, the alternative form of measurement. However, the accuracy of self-report measures is sometimes criticized due to concerns of whether people can correctly and truthfully report on themselves (e.g., Buchanan, 2016; Christian et al., 2020; Darrow et al., 2002; Gomes et al. 2019; Navarro-Gonzalez et al., 2016; Schwarz, 1999; Williams et al., 2016).

From a measurement perspective, one popular and well-known concern is social desirability (SD; social desirability bias, SDB; or socially desirable responding, SDR). Early conceptualizations of SDR involved responses made in a manner that was culturally acceptable and sanctioned (Crowne & Marlowe, 1960; Damarin & Messick, 1965). More recently, Paulhus (2002) also explicated that, for any measure of SDR,

sufficient evidence should be provided to demonstrate that high scores indicate deviations from reality (i.e., that socially desirable responses on the measure are untrue). Here, SDR is presentation of oneself in an *overly* positive, favorable light (Paulhus, 2002). Social desirability is understood to have at least two dimensions – impression management and self-deceptive enhancement – which differ in terms of respondent belief or awareness (e.g.,Damarin & Messick, 1965; Paulhus, 2002; Sackeim & Gur, 1978; Wiggins, 1964)[1]. Impression management is thought to be conscious and intentional self-idealization. Conversely, self-deceptive enhancement refers to overly positive self-reports that respondents genuinely believe.

Crowne and Marlowe (1964) attribute SDR to the need for social approval and acceptance. Indeed, SDR seems to be greater when the questions are asked via in-person or phone interviews (i.e., in the presence of others). Conversely, having respondents answer questions either on paper or online tends to reduce SDR, especially when anonymity and confidentiality are ensured (e.g., Durmaz et al., 2020). However, these strategies do not necessarily eliminate socially desirable responding, as SDR is still found when questions are answered privately, anonymously, and confidentially (Gnambs & Kaspar, 2017; Hancock & Flowers, 2001; Lelkes et al., 2012).

Social desirability can be understood as either a response set or a response style (Paulhus, 2002). As a response set, socially desirable responding is short-lived and temporary. Individuals may generally provide honest responses but due to situational factors (e.g., sensitive questions) may respond to certain surveys or particular items in a

[1] The factors have been given a variety of names. Here, I will use the nomenclature from Paulhus (1984).

socially desirable way (e.g., Arnold & Feldman, 1981; Tourangeau & Yan, 2007). As a response style, SDR is more pervasive, biasing responses across items and surveys.

Whether a response set or style, social desirability can cause systematic error, distorting the relationships among variables. Ganster et al. (1983) laid out three models reflecting three different ways in which SDR can affect the relationship between variables:

- The spurious model, in which SDR causes a spurious relationship between unrelated variables such that they appear related. For example, weekly alcohol consumption and attitudes on abortion may be unrelated but are each related to socially desirable responding. Without including SDR in the model, the variance that alcohol consumption and abortion attitudes each share with SDR would mistakenly appear to be shared with each other and the variables would thus seem related. One can test this model by partialling out SDR and examining whether the partial correlation between the variables is near zero.
- The suppression model, wherein SDR suppresses or masks the extant relationship between two variables such that they erroneously appear unrelated. For example, certain attitudes may predict voting behavior, but SDR on the attitude measure and/or the voting behavior measure can mask their relationship.
- The moderator model, where SDR moderates the relationship between the independent and dependent variables such that the IV-DV relationship differs across levels of SDR. For example, X and Y show a moderate relationship. The X-SDR correlation is negligible so neither the spuriousness nor suppression model can account for the finding. Further inspection finds an interaction between

X and SDR such that for those who score high on SDR there is a strong positive X-Y relationship, for those who score low on SDR there is a somewhat negative X-Y relationship, and for those with mid-level scores of SDR the X-Y relationship is moderate and positive.

While having people respond to surveys independently and ensuring anonymity and confidentiality tends to reduce SDR, these strategies do not necessarily eliminate socially desirable responding, as SDR is still found when questions are answered privately, anonymously, and confidentially (Gnambs & Kaspar, 2017; Hancock & Flowers, 2001; Lelkes et al., 2012). This suggests that factors other than the need for approval may be eliciting biased self-reports.

Identity as a Source of Measurement Bias

Brenner and DeLamater (2016) suggest a new way of understanding self-report bias such as SDB based on Identity Theory and Self-Discrepancy Theory. At a basic level, Brenner and DeLamater suggest that self-report bias results from people reinterpreting self-report items to be about identity, or "the kind of person" that one is (Brenner, 2017, p. 560). For example, survey questions about religious service attendance may be reinterpreted as asking about one's identity as a religious person rather than about their behavior (Hadaway et al., 1998). A person might value piety and consider themselves to be a "good Christian," but, for various reasons, may only attend religious services once a month. However, when responding to a survey item about religious service attendance, this person might report that they attend "at least once a week," which better reflects their religious identity. Survey items, then, offer respondents an opportunity to express an important identity.

A person has as many identities as there are domains or areas in their life (e.g., child, friend, associate, soccer player, religious person; Brenner & DeLamater, 2016; McConnell, 2011). In some theories, important identities reflect an ideal version of oneself (e.g., Brenner et al., 2014; Brenner & DeLamater, 2016). Within a given identity (e.g., parent, student, citizen, etc.), the ideal self effectively represents the qualities, attributes, and behaviors that one values; the type of person one thinks it is important to be, aspires to be, or wishes they were. For example, a person may believe that, as a parent, it is important that they be firm and consistent (attributes) and enforce the rules and consequences they have established for their child (behavior). Their ideal parent-self would consistently enforce the rules across situations and carry out firm consequences whenever the rules are broken.

The ideal self is thought to serve as one evaluation guide or standard (Higgins, 1987; Stets & Burke, 2000) to which the actual self is compared. The actual self is made up of the attributes and behaviors that an individual believes they possess and display on a regular basis. For example, in contrast to the parent's ideal self, their actual self may only enforce the rules about half of the time and carry out consequences sporadically. In addition to the ideal and actual selves, there is also an ought self that represents who, what, and how the person believes they should be (Higgins, 1987). The ought self reflects the duties and obligations that have been internalized from external sources such as important others, social groups, and overall cultural norms and values. However, social norms and values can be internalized and become reflected in one's ideal self (Brenner & DeLamater, 2016). Because of this overlap between the ideal and ought selves, and for simplicity's sake, the current work will focus on the ideal and actual selves.

In the following paragraphs I will first discuss relevant theories of identity. In doing so I will point out connections with social desirability, and how responding in a socially desirable manner and responding in terms of an important identity – specifically, one's ideal self – might yield the same results. The broad distinction between the two ways of responding seems to be in their underlying reasons for self-report bias. SDB researchers take the perspective that people are "faking good" (whether through deliberate attempts to deceive or because they genuinely believe their overly positive self-descriptions). In contrast, identity perspectives consider self-report bias to stem from the broader processes of how people think about, understand, and see themselves.

Theories of Identity

There are a variety of theoretical perspectives on identity. Brenner and DeLamater (2016) focus on Identity Theory and Self-Discrepancy Theory when examining the effects of identity on self-reports. I believe it is useful to include three additional theoretical perspectives that complement Identity and Self-Discrepancy theories: self-schemata, self-enhancement, and self-verification. Many of the qualities in the five theories overlap with and have implications for each other. Here I will introduce and discuss self-schemata, self-enhancement, self-verification, and identity theory. This discussion will include implications for self-report and ties to social desirability, where applicable.

Self-Schemata

Self-schemata theory (Markus, 1977) concerns the cognitive structure of self-knowledge and processing of self-relevant information. There are a variety of theories on the structure and organization of self-knowledge (e.g., Kihlstrom et al., 1988; Leary &

Tangney, 2011; McConnell, 2011; Showers & Zeigler-Hill, 2011). Like general cognitive-representation theories, the various self-knowledge theories are unlikely to be mutually exclusive (e.g., Anderson, 2015; Kihlstrom et al., 1988). This may be a lead reason why self-schemata theory blends concepts of schemas and associative networks. I will thus focus on self-schemata theory due to its theory integration, evidentiary support, and ready ties to Identity Theory (e.g., Brenner & DeLamater, 2016; Stryker & Serpe, 1994).

Self-schemata theory advances that self-knowledge is stored in network structures called schemata or schemas. In general, schemas are cognitive structures that represent knowledge categories. They contain generalized knowledge of a particular domain (e.g., family, school, politics, a geographical region, etc.) such as common attributes of the category and the relationships among them (Taylor & Croker, 1981). Knowledge structures of self-relevant domains are called self-schemata; each self-schema makes up the person's identity in that domain (Markus, 1977). Attributes associated with one domain can also be associated with another domain such that self-schemas can overlap greatly or be highly distinct (Linville, 1985, 1987).

The content of the self-schema informs what the person attends to (i.e., schema-relevant/consistent information), how information is processed, whether and how the information is remembered, as well as how the person will behave (Oyserman et al., 2011). Information that is consistent with that in the activated self-schema (i.e., schema-consistent information) is better attended to, is more quickly and deeply processed, and is better remembered than schema-inconsistent information (Markus et al., 1982; Markus, 1983). Activated schemas also guide memory inferences such that gaps or lapses in

memory can be inferentially filled by knowledge connected with the schema (i.e., common traits, attributes, behaviors associated with the domain; Anderson, 2015). For example, people may have a schema for kitchen that likely includes the most expected kitchen items (e.g., a fridge, oven, pots and pans, toaster, cutting board, plates, etc.). If a person with this kitchen schema were briefly shown a kitchen and then asked about its contents, they would likely remember the things they expected to be in the kitchen – the kitchen schema-consistent information (e.g., pots and pans, toaster, cutting board). Further, the person may also report having seen items that are commonly associated with kitchens but were not actually present in the kitchen they observed. The kitchen they were shown may have included a bowling ball, twin bell alarm clock, roller-skates, or any other object not typically associated with kitchens and thus unlikely to be in a person's kitchen schema. These schema-irrelevant items could be ignored and thus not recalled. However, schema-irrelevant items can be surprising to people and are in turn more salient, which can improve their memory for the object (Niepel et al., 1994). Broadly, self-schemata seem to function similarly to general schema (e.g., Gillihan & Farah, 2005; Greenwald & Banaji, 1989) where, broadly, people are resistant to information that opposes or is inconsistent with their self-schema (Markus, 1977; Markus et al., 1982)[2]. In terms of self-report, if a survey includes items for which the respondent does not have self-relevant information readily retrievable, their self-schema could guide inferences about how they might feel or act.

The prevailing social circumstances and the individual's motivational state influence which self-schema are most active or accessible; salient, schema-relevant

[2] Research is still needed on the effect of surprising self-schema-irrelevant stimuli on memory.

stimuli in the environment can automatically make self-schemata more active as well (Markus, 1983). For example, a parent would likely be schematic for parenting (i.e., have a *parent* self-schema). Parenting-related stimuli activate the parent self-schema, for example, their child entering the room. When the parent-schema is activated, the stored information of that schema becomes more readily available, including knowledge and beliefs (e.g., their parenting philosophy, beliefs about discipline), attributes (e.g., fair, strict, warm, patient), and behaviors (e.g., making eye-contact with their child, hugging). Activated schema direct attention to schema-relevant information, influence how information is processed and interpreted, and whether information will be incorporated into the schema (Markus, 1977; Kihlstrom et al., 1988). For example, an activated parent self-schema might direct the individual's attention to their child's behavior. If the parent self-schema includes *strict* as an attribute, the individual may be more likely to interpret their child's actions as misbehavior.

A self-schema informs, if not determines, what a person is able to report about themself in the given domain. As such, the processes that influence self-schemata may in turn influence how and what people self-report. Self-enhancement and self-verification are two main motivated processes that influence self-schemata (Guenther et al., 2016); more specifically, how self-schemata are formed and maintained (e.g., what is included and excluded from the schema) and how they function (e.g., the information that is sought out, attended to, and maintained). As I discuss next, self-enhancement and self-verification can bias the contents and organization of self-schema, and peoples' self-reports in turn, to be overly positive and self-confirming.

Self-Enhancement and Self-Verification

Self-enhancement and self-verification are motivated processes that inform the formation, maintenance, and thus functioning of the self-schemata that make up a person's identities. Self-enhancement is the process and outcome of constructing as positive a self-image as possible (Krueger, 1998, 2007); self-verification (in terms of self-verification theory, Swann, 1983, 1987, 1996) is the process of eliciting feedback that affirms one's view of themself. People are motivated chiefly by self-enhancement and self-verification, such that self-enhancement can motivate them to establish positive self-views and self-verification then works to confirm their enhanced self-views (Diener & Diener, 1995; Sedikides & Strube, 1997). This is true in collectivistic cultures as well, though may be expressed using different strategies which can involve others (e.g., Gómez et al., 2009; Sedikides et al., 2003; Seih et al., 2013). Additionally, self-enhancement may also be willfully suppressed in favor of modesty and other self-presentational concerns (e.g., Brown, 2003; Kurman, 2003). However, people with negative self-conceptions do not seem to be motivated to self-enhance, but primarily to verify their current, negative self-views (Swann & Buhrmester, 2012). I discuss these ideas further in the self-verification section.

Self-Enhancement. Self-enhancement represents the need for self-views that are as positive and favorable as possible, given the constraints of reality (Alicke et al., 2013). Self-enhancement biases identity formation by selectively seeking out, attending to, and processing positive self-relevant information, as well as shielding oneself from negative feedback (Krueger, 1998). In one demonstration of this, Krueger (1998) gave participants 18 trait-descriptive adjectives. Participants were to give four ratings for each adjective:

(1) how personally descriptive it was, (2) how descriptive it was of the average other, (3) the personal desirability of the trait to the person, and (4) the social desirability of the trait. Krueger found that for most traits, the average personal desirability rating of a trait was higher among those who rated the trait as self-descriptive compared to those who did not consider the trait as self-descriptive.

In terms of the parent example, the parent would tend to seek out information that suggests they are a good parent (e.g., telling others about how they handled a situation with their child that is most likely to elicit positive feedback). For instance, the strict parent might selectively recount to a friend an instance in which they addressed their child's misbehavior in a manner that elicited more appropriate behavior from the child. The friend may respond to the story with ambiguous or mixed feedback, but the parent would be motivated to interpret the feedback as being generally positive. Self-enhancement would bias the parent to selectively attend to the words and expressions that could be interpreted as positive feedback and interpret them as such.

Under the self-enhancement motivation, perceived positive feedback is selectively remembered and embellished, becoming more positive each time it is recalled. Negative feedback is reinterpreted as less damning, or may simply be forgotten or ignored (i.e., not encoded into memory at all; Krueger, 1998). Following the parenting example, when the parent reflects on the interaction with their friend, they may selectively remember the most positive elements of their friend's feedback and remember it as being more positive than it was (e.g., remembering their friend smiling more broadly than they did or sounding more impressed than they were). If the friend's feedback was more overtly negative, for instance, "in my opinion, that's way too harsh," the parent may remember it

as ambivalent, (e.g., “that would be way too harsh for my kids”), forget the negative feedback, or fail to remember it at all. Self-enhancement thus biases people to see themselves more positively than they actually are.

In terms of self-reports, self-enhancement may be related to the aspect of social desirability termed self-deceptive enhancement (SDE) which reflects overly positive self-reports that respondents genuinely believe (Paulhus, 1984, 2002). This seems quite similar to self-enhancement. Both are thought to occur predominantly outside of conscious awareness (e.g., Krueger, 1998; Paulhus, 2002). Theorists in both areas have argued that the behavior is characterized by a departure from reality and that measures should have evidence supporting this reality departure (i.e., that high scores on the measure necessarily reflect untruth rather than exceptional dispositions and behaviors; Krueger, 1998; Paulhus, 2002). The two constructs may differ in magnitude or scope of enhancement. Self-deceptive enhancement may reflect a greater magnitude of self enhancement. People may engage in a fair to moderate amount of self-enhancement such that if we conceptualized self-enhancement as a continuum starting at 0 (no self-enhancement), they would fall at or near the center of the continuum and would likely score low on the SDE scale. However, some people may engage in extensive self-enhancement, falling towards the upper end of the continuum and would likely score high of the SDE scale. Alternatively, self-enhancement and SDE may differ in scope, where SDE reflects enhancement in a wider range of areas. For example, some people may have a relatively narrow scope of areas in which they self-enhance, only self-enhancing in areas that are particularly important to them or those in which they feel particularly efficacious (Markus, 1983). Such individuals would score low on the SDE scale.

However, other people may feel broadly efficacious and overly confident in most of their identities and score high on SDE. Regardless, because the general self-enhancement motive biases self-beliefs, it can, in turn, bias self-reports such that the accuracy of a person's self-report of the attribute of interest is questionable. That is, the information people report about themselves may reflect the self-enhancement processes that guide how people see and understand themselves, rather than their true level of the attribute of interest.

Self-Verification. After self-enhancement, self-verification is considered the next most influential need-motivated process in forming and maintaining the self-schema that make up an identity (Guenther et al., 2016). Self-verification represents the need for coherent, stable self-conception, or view of oneself in a particular identity (e.g., parent; Swann, 1983), especially identities that are central to one's self-conception (e.g., English et al., 2008). Here, a coherent self-conception reflects a broad sense of order among one's identities with self-relevant feedback assimilated into and thus affirming one's self-view (i.e., how they see themselves; English et al., 2008). This does not necessarily mean that different identities within a person must be wholly consistent with each other (e.g., Linville, 1985). A person may have an athlete identity and a parent identity. Their athlete self-schema may include *ruthless*, whereas their parent self-schema includes *gentle* and *patient*. This person would seek feedback that affirms their view of themself as a ruthless athlete when the athlete self-schema is active and seek feedback that affirms their view of themselves as a gentle and patient parent when the parent self-schema is active.

Similar to self-enhancing information, people give more attention and credence to verifying information over non-verifying information (e.g., Swann & Read, 1981a,

1981b). For example, Seih and colleagues (2013) compared reactions to feedback that was either positive or negative and verifying or nonverifying. In the first study, researchers recruited participants online who were either Indian or American (n = 216, 50% Indian), and had them complete a measure of self-perceived sociability. Participants were then presented with three scenarios, each in which two other people (i.e., two acquaintances, two friends, or two potential employers) reviewed the participants initial sociability responses and wrote brief evaluations; one evaluation was moderately positive (e.g., "I'd say this person probably feels comfortable and at ease around other people"), the other moderately negative (e.g., "I get the feeling that this person doesn't seem real socially confident"). Participants read the evaluations and rated how accurately they described them on an 11-point scale. There was a significant interaction between self-view and evaluation, such that those with more negative self-views, who saw themselves as less sociable, rated the negative evaluations as more accurate; the opposite was true for those with positive self-views, who saw themselves as more sociable. There was also a significant three-way interaction with culture such that the interaction was stronger for Americans ($p < .001$, $\eta^2 = .63$) than Indians ($p < .001$, $\eta^2 = .13$). Additionally, there was a significant interaction between culture and evaluation ($p = .03$, $\eta^2 = .03$) such that Indian participants rated positive evaluations as more accurate even if non-verifying ($p < .001$, $\eta^2 = .10$), but Americans did not ($p = .25$, $\eta^2 < .01$). Seih and colleagues (2013) also conducted a second, similar experiment with Americans and Taiwanese individuals and found the same significant two-way interaction between self-view and evaluation, supporting self-verification strivings. However, this second study did not find differences in the interaction between cultures (i.e., the self-view × evaluation was the same across

Taiwanese and American participants). The second study also found a significant interaction between culture and evaluation ($p < .001$, $\eta^2 = .10$) such that American participants rated positive evaluations as more accurate ($p < .001$, $\eta^2 = .45$), than Taiwanese participants rated them ($p < .001$, $\eta^2 = .22$).

As was discussed in the self-schema section, identity-congruent information (i.e., information that is consistent with that in the activated self-schema) is quickly and efficiently processed and engenders enhanced recognition and recall (e.g., Markus & Smith, 1981; Markus & Sentis, 1982). Further, identity-incongruent information (i.e., information that differs from that in the active self-schema; Markus & Wurf, 1987) is rejected. In the face of non-confirming feedback, self-verification, like self-enhancement, can bias attention, interpretation, and memory in such a way as to lead the individual to believe that feedback was more confirming than it was.

Research has demonstrated that, for negative self-conceptions, self-verification tends to be a stronger motivator than self-enhancement; (Swann & Buhrmester, 2012). That is, an individual with a negative self-view will seek feedback that confirms their negative self-beliefs rather than seeking positive feedback that would enhance their self-belief. This may occur because positive feedback would be identity incongruent. However, while some people see themselves as entirely negative (i.e., their self-conceptions are negative in all their identities), it is also possible to have negative self-conceptions only in specific identities. For example, a person may believe that they are a lousy sibling and child, an incompetent employee, and a failure as a parent. This person would then seek negative feedback in these domains, which would confirm their identities in these roles. A different person might see themselves as a lousy sibling and

child, but a competent employee, and a generally good parent who struggles with patience. This person would seek negative but confirming feedback in their roles as a sibling and child, but seek positive, self-enhancing feedback as an employee and parent. This difference could manifest in self-report responding such that the first individual shows little to no overly positive bias in their self-report, and the latter individual shows enhancement bias only in those areas for which their self-beliefs are positive.

The need for self-verification is likely due to the critical role of self-views in guiding action and making sense of experience (Swann, 2008). How one sees oneself – in terms of their activated self-schema or identity – informs how they approach and behave in situations and make sense of their experience (e.g., Markus & Wurf, 1987; Oyserman et al., 2011). For example, two co-workers may each have a significant fear of public speaking, but one of them has *brave* as central or core part of their identity. When their boss asks if either of them would be willing to give a speech addressing a large crowd, the person who sees themself as brave will be more likely to give the speech while the other will be more likely to try to avoid it. When the "brave" individual relays the news of their upcoming speech to other people who know of their phobia, the others will likely express how dauntless the person is for agreeing to give the speech, thus verifying this aspect of the person's identity.

Self-verification thus motivates people to seek and elicit feedback that confirms their understanding of themselves. Given that people across cultures seem to hold overly positive self-views (Diener & Diener, 1995), the identities people seek to verify are likely to be positive. Going back to the strict parent example, a person might selectively recount to a friend an instance in which being strict with their child facilitated desirable

subsequent behavior from their child. The friend may respond to the story with ambiguous or mixed feedback. For instance, they may respond with wide eyes, saying, "That's a firm approach; you're a really stern parent." The friend may not have necessarily intended to compliment the parent, but the parent may take it as one, interpreting their friend's wide eyes as amazement. Thus, the feedback would be interpreted as verifying their positive self-view. Self-verification may map to the Impression Management factor in social desirability. I will explicate this later in the Identity Theory section.

Again, the processes of identity construction and maintenance are driven by self-enhancement, such that most people's self-views are largely more positive than is likely warranted. These overly positive self-views are also reinforced by self-verification, where people seek affirmation of their self-views from others. Self-enhancement and self-verification motives often work together, engendering identities comprised of overly positive self-schema that reflect the qualities and behaviors that individuals believe about themselves. Because self-schemata inform, if not determine, what people are able to report about themselves, people may present themselves as who they believe they are (i.e., the identity they self-verify) rather than providing an accurate portrayal of themselves. If this is the case, people with positive self-views present a version of themselves in self-report items that is more positive than they likely are.

Identity Theory

Identity Theory is a sociological theory that conceives of identities as social roles that are incorporated into the self, along with their associated meanings, norms, and

expectations (Stets & Burke, 2000)[3]. Here, the cognitive representation of identities includes an identity standard, which is effectively a prototype, or most common example of the identity (Stets & Burke, 2000; Brenner et al., 2014). Identity theory advances that identities are arranged hierarchically within two qualities: the prominence and salience of each identity (Stets & Burke, 2000; Brenner et al., 2014). Prominence refers to the importance of the identity to the person and is akin to the psychological centrality of identity (Stryker & Serpe, 1994). Psychological centrality refers to those identities that one feels make up the core of who they are, playing a major role in who they are as a person (Rosenberg, 1979). For example, someone may have an architect identity and a baker identity. To this person, baking is their passion and their identity as a baker is much more important to them and is thus more psychologically central than their identity as an architect. Identity prominence reflects subjective value, as well as internalized cultural values and social norms. The more important the identity is to a person, the higher its placement in the prominence hierarchy. The higher the placement, the more that identity reflects the individual's aspirational or ideal self (McCall & Simmons, 1978). For example, the person who has the parent identity and the athlete identity might place more value on the parent identity, placing the parent identity higher in the prominence hierarchy than the athlete identity.

Salience is the likelihood that a given situation will be perceived as relevant to enacting the identity, or the probability the identity will be enacted in the situation. In broad terms, enacting an identity means engaging in the thoughts and behaviors associated with the identity. Prominence causally precedes salience, meaning that

[3] While this conceptualization of identity is narrower than the one that I discussed previously, it is not necessarily at odds.

identities are first more or less important to individuals before they are more or less likely to be enacted (Brenner et al., 2014). While greater salience is likely to accompany higher prominence, this is not necessarily so. That is, highly prominent identities are not necessarily very likely to be enacted. This is because the actual self is constrained by costs, such as time, money, energy, as well as other relevant expenditures (e.g., Burke, 1980; Brenner, 2017). Going back to the parenting example, the parent may idealize consistency, but responding to work emails may distract them from consistently making sure their child turns off the TV after 7:30.

Identity Theory advances that people self-verify by enacting behavior that is consistent with their identity standard. On one hand, this is in contrast with the previously discussed view of self-verification, in that Identity Theory does not require interpersonal feedback for self-verification. However, self-verification may involve both processes (i.e., independent and interpersonal), especially when considering the biases in identity-incongruent feedback. That is, if self-verification were to rely exclusively on feedback from others to affirm one's identity it would make little sense that we would see the biases in attention, interpretation and recall such that the individual perceives their identity as being verified even when it is not. As such, Brenner and DeLamater (2016) theorize that self-report items offer an avenue to enact and thus verify one's identity, and that doing so does not incur the resource expenditure typically associated with identity enactment. Going back to the parent whose identity standard includes consistency, but who finds it difficult to be consistent, the parent might over report their level of consistency when responding to a survey about parenting styles. For example, the parent most often may be too tired or distracted to consistently enforce rules but still respond

with *Strongly Agree* to an item such as "I consistently enforce the rules established for my children."

To some extent, this process of self-verification seems analogous to impression management (IM), one of the two factors commonly believed to make up social desirability (Paulhus, 2002). According to Paulhus, impression management involves the presentation of an overly positive image, including presentation of behaviors "that are so public and blatant they are not subject to self-deception" (p. 55). Interestingly, Paulhus as well as other researchers have argued that impression management may be more of a personality characteristic than a deliberate lie. That is, the tendency to regularly present a particular positive image of oneself may be an aspect of one's personality. However, it may also be an avenue for self-verification. That is, impression management may to some degree reflect the expression of one's identity, specifically their ideal self. The questions asked in impression management scales may align with certain people's ideal selves (e.g., an example item on the IM subscale is, "I always pick up my litter on the street"). If a question asked about an attitude or behavior that is not part of one's identity, particularly not an important identity, one would not use it to self-verify. Thus, some people may respond to self-report questions as a means of self-verifying, which also expresses itself as impression management. People who have difficulty enacting their important identities may be more likely to engage in such impression management (Markus & Wurf, 1987). Difficulties may arise when people attempt to engage in an identity-relevant behavior but fail or fall short, such as someone who sees themselves as a cook but has a tendency to ruin recipes. It may also be difficult to enact identities if one is pressed for money, time,

or energy. For example, one may see themself as a runner, but lately has not made time for running in the mornings and feels too tired during the day.

Responding to self-report items in terms of one's identity – specifically, one's ideal self – not only affords the respondent a low-cost opportunity to enact their identity and self-verify, but also affords them the option to avoid negative affect. Researchers in Self-Discrepancy theory have proposed that awareness of discrepancies between the actual and ideal self can elicit negative affect, including feelings of dejection, anxiety, and depression (Higgins, 1987). The strength of this negative affect corresponds to the magnitude of the discrepancy. Responding honestly to self-report items may highlight a discrepancy between one's ideal and actual selves and engender feelings of sadness or anxiety. To avoid such feelings, respondents may instead respond in terms of their ideal selves, thus circumventing the discrepancy and verifying the identity in question.

Brenner and DeLamater (2016) argue that respondents may attempt to avoid negative affect by reinterpreting questions as inquiries about identity, or the kind of person one believes themself to be in the relevant domain. Thus, the responses people provide in surveys and questionnaires may reflect their important identities (i.e., ideal selves), which may not be consistent with their actual thoughts, feelings, and behaviors (Brenner, 2017).

To investigate their claim, Brenner and DeLamater (2016) compared the accuracy of two forms of self-reports, validating each against a more objective measure. The research design was within-subjects, so all participants completed both forms of self-report. Participants were students at a large midwestern university; researchers told

participants that they were interested in the general on-campus activities in which students engaged, though the actual behavior of interest was exercising.

One form of self-report was in-situ SMS text message reports. Each participant was instructed to send a text update whenever they began an activity (e.g., exercising at the university gym) during a five-day period. This in situ reporting was theorized to attenuate, if not circumvent the self-reflection that is intrinsic to conventional self-reporting. Conventional self-report questions that ask about frequency and extent of behavior elicit self-reflective responding and the opportunity to reinterpret the question. For example, a question like, "how many times this week did you exercise in the gym?" may be reinterpreted as asking, "how many times would a person like you have exercised in the gym this week?" Conversely, in situ reporting involves respondents reporting only when they are beginning the activity. This transforms self-reporting one's behavior from reflective to active and attenuates reflection on whether one's answer signifies their identity.

The other form of self-report was a more traditional, reflective report of the number of times the student exercised in the university gym, reported in a survey at the end of the week. At the end of the survey, participants also responded to questions of identity importance. To measure the importance of exercise identity, students reported how important "exercise, working out, or playing sports" was to them on a scale from 0 (*not at all important*) to 10 (*extremely important*; p. 341). Researchers hypothesized that identity prominence (i.e., those for whom regular exercise was part of their ideal self) would be a strong predictor of overreporting in participants, as measured by the discrepancy between student self-reports and actual gym activity.

Researchers validated student reports of exercising against the university gym records, which included the names, student IDs, date, and time that each student entered the gym. To reduce the likelihood of outdoor exercising and increase the likelihood that exercise would take place at the university gym, the study was conducted in February when temperatures ranged from -11°F to 23°F; few participants reported exercising outside.

Brenner and DeLamater (2016) found that the in-situ reports were more accurate (i.e., effectively equivalent to gym records) than the reflective self-reports. Further, identity prominence was a strong predictor of overreporting among non-exercisers. That is, on a traditional self-report survey, participants for whom exercising was part of their ideal self were more likely to overreport how much they exercised, compared to participants for whom exercising was not part of their ideal self. This overreporting of exercise was hypothesized to serve as an expression of participants' ideal selves without incurring the associated time and energy costs. Further, by overreporting, participants were able to avoid the negative affect of not behaving in line with their ideal selves.

These results suggest that real time in-situ reporting, as opposed to retrospective reporting, may remove some of the bias that results from respondents' identities, specifically their reactive responding in terms of their ideal selves, as they report their current behavior. Though in-situ methodology such as SMS text messaging may not always be a feasible option, there may be other ways to attenuate, if not circumvent, the identity bias. Brenner and DeLamater (2016) suggest that proffering respondents the chance to "claim the [prominent] identity," (i.e., express their ideal self) in survey items

may facilitate more accurate responding to subsequent items about their actual self (p. 349).

This suggestion was supported in a study by Brenner (2017), who used cognitive interviews to investigate how participants interpret and respond to self-report questions about religious service attendance (aside from weddings and funerals) overall as well as within the past week. Cognitive interviews are commonly used to investigate different steps of the response process (Sudman et al., 1996). In Brenner (2017), participants first responded to interview questions about religious service attendance, then completed a self-report survey on a different topic, and then were asked specific follow-up questions (*cognitive probes*) regarding their responses about religious service attendance. All participants selected to participate had self-identified as being religious. Brenner found that both aspirational and normative religious identities (i.e., ideal and ought religious selves) prompted inflated initial reports of religious service attendance in nearly 48% of participants. That is, respondents' initial reports of how frequently they attended religious services were higher than what they reported in response to cognitive probes. Participants frequently cited reasons such as over-sleeping, transportation issues, or schedule conflicts for not attending church, though they often assured the interviewer that they wanted to go more and planned to go more, expressing such sentiments as "[i]f I had my way, it would be every week" (p. 554). Brenner interpreted this as evidence that participants' initial reports were more driven by their ideal and ought religious selves than their actual selves. However, in response to the cognitive probes, participants were able to give more accurate accounts of their behavior (i.e., their actual self) even in the face of the actual-

ideal discrepancy. This suggests that after expressing their ideal selves, participants may have been able to report their actual selves more accurately.

The proposed research extends the studies by Brenner and DeLamater (2016) and Brenner (2017) by seeking to investigate whether the opportunity to first express one's ideal self within a traditional self-report survey engenders more accurate responding about one's actual self. In the proposed study, respondents will have the opportunity to express both their actual and ideal selves (i.e., important identities; the kind of person they believe themself to be), with the latter serving as a method of self-verification. I hypothesize that expression of the ideal self could, in a sense, "free them up" to answer more honestly about their actual selves.

Alternatively, reporting both identities could highlight respondents' self-discrepancies and elicit negative affect. Respondents may try to avoid this negative affect by providing the same responses for their ideal and actual selves, thus bringing the two identities into alignment. However, if allowing respondents to first express their ideal selves results in more accurate actual self responses (as inferred by an indirect measure), then allowing for expression of both selves may be a simple way to increase self-report accuracy.

Through the proposed study I aim to investigate the effect of participants' reporting their ideal selves prior to reporting their actual selves. Specifically, I seek to answer four research questions:

1. Does responding first in terms of one's ideal self elicit different subsequent responses in terms of their actual self?
    a. Do ideal-self responses statistically differ from actual-self responses?

   b. Are ideal-self responses similar to responses obtained using a traditional survey format in which respondents are not asked about their ideal and actual selves?
   c. Do actual-self responses differ from responses using traditional survey response format?

2. Might actual-self responses be more accurate than responses obtained using a traditional survey format?
3. Are ideal-self responses and control responses on a given topic equally related the importance of that topic to one's identity?
4. Are ideal-self responses and control responses equally related to self-deceptive enhancement and impression management (the two factors of social desirability).

In the following section (*Methods*) I will first provide an overview of study procedures, including an outline of the survey administration. Then I will describe the experimental manipulation followed by the descriptions of the measures. I will then provide information on data collection and the sample from which the data were collected. Finally, I will provide the data analysis outline.

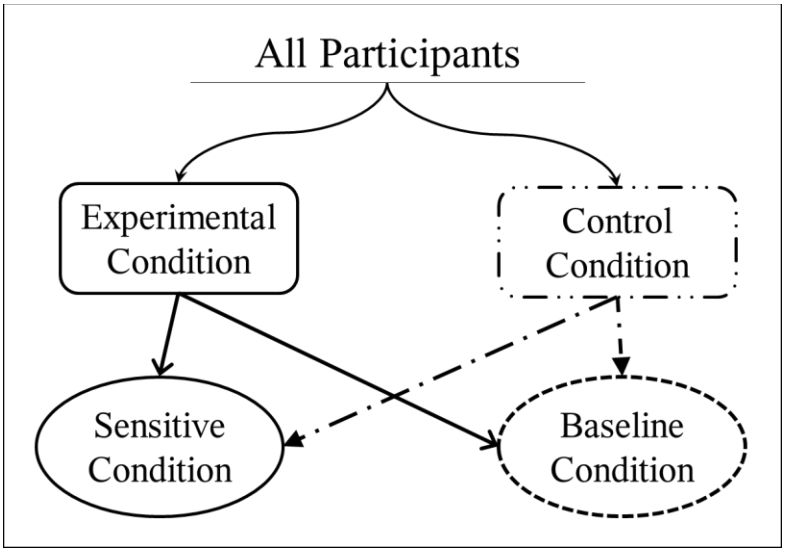
Chapter 3: Methods

Procedures

Participants accessed the Qualtrics survey that was comprised of 14 measures: five self-report scales, five indirect measures (each corresponding to one of the self-report scales), a measure of identity importance, a social desirability scale, and five demographic questions. The measures are described below in the *Measures* section. Participants were randomly assigned into two conditions (experimental and control) and administered the self-report scales. All participants were administered all items, the only difference being that the items in the experimental condition included the manipulation (described below in *manipulation* section). Participants were then randomly assigned into two different conditions (baseline and sensitive) for the indirect measures (the Unmatched Count Technique, described in *Measures* section). See Figure 1 for a random-assignments schematic.

Figure 1

Schematic of Participant Assignment to Two Sets of Conditions



Note: The experimental and control conditions pertain to the five experimental scales. The baseline and sensitive conditions are the conditions for the indirect measures.

The sequence of administration for the survey scales and randomization is outlined below.

1. Survey information and informed consent.
2. Random assignment to either the experimental or control condition
    a. Overall instructions for the five scales
    b. The five experimental scales (presented in random order)
3. Random assignment to either the baseline or sensitive condition for the UCT
    a. Overall UCT instructions for the following five sets
    b. The five UCT sets in the order of[4]:
        i. Conspiracy mentality
        ii. Gender determinism
        iii. Immigration
        iv. Exercise/physical activity
        v. Healthy eating
4. Identity importance measure
5. Measure of SDB
6. Five demographic questions
7. Textbox to express questions, comments, or concerns

[4] The format of the survey did not allow for random ordering of the UCT sets. The statements within each set were randomly ordered.

Manipulation

The experimental manipulation involved participants first answering the question in terms of their ideal self, then in terms of their actual self. All participants were administered all of the items. The only difference was that participants in the experimental group responded to each item dually, first in terms of their ideal selves and then in terms of their actual selves. Participants in the experimental condition were given a set of instructions preceding the five scales that informed them of the dual responding (see Appendix A). The instructions for each scale reiterated the dual response instruction (Appendix B). Both experimental and control items are listed in Appendix B.

Measures

Experimental Measures

There are five scales that were chosen as the experimental measures: The Conspiracy Mentality Questionnaire, the Gender Determinism Scale, the Negative Attitudes Towards Immigrants Scale, the Healthy Eating Assessment, and the Godin-Shepard Physical Activity Questionnaire. These scales were chosen for three main reasons. The first and second reasons concern the scales addressing topics that are of social value, relevance, and interest. These qualities were important so as to create a greater likelihood (1) of asking about things that are important to participants' identities and thus their ideal selves, and/or (2) of observing socially desirable responding. Some participants may publicly endorse favorable views and behaviors (SDR) or see themselves as people who hold certain beliefs or attitudes (their ideal selves). However, their actual selves may not hold these views or enact the behaviors.

The third reason these scales were selected was due to the relative brevity of each (i.e., one scale has 12 items, the other four scales have six items or fewer). Since participants will be answering 14 measures (five of which participants in the experimental condition respond to twice), having few items per measure will hopefully reduce respondent strain and fatigue and increases chances of participants answering more thoughtfully and finishing the survey. The total number of responses requested of participants was 108 in the experimental condition and 78 in the control condition.

Conspiracy Mentality Questionnaire. This five-item scale was developed to assess peoples' general tendency to believe conspiracy theories (Bruder et al., 2013). Items consist of broad statements about the world through the lens of conspiracy-oriented views (e.g., "I think that events which superficially seem to lack a connection are the result of secret activities."). Participants report how likely they think that each item is true on an 11-point scale from 0% (*certainly not*) to 100% (*certain*). Items were presented to participants in random order. Internal consistency in Bruder et al. (2013) was alpha = .84; from the current study, alpha was = .82.

Gender Determinism Scale. The Gender Determinism Scale is a four-item scale developed to measure the extent to which a person believes that one's gender dictates individual characteristics (i.e., actions, behaviors, and attributes; Tinsley et al., 2015). Responses are provided on a Likert scale from 1 (*strongly don't believe*) to 5 (*strongly believe*). Internal consistency of the items in Tinsley et al., (2015) was alpha = .84. In the current study, items were randomly ordered for each participant. Internal consistency was alpha = .86.

The Godin-Shephard Leisure-Time Physical Activity Questionnaire. This three-item scale was developed to assess physical fitness (Godin, 2011). Participants report the number of times in an average 7-day period that they do each of three levels of exercise (strenuous, moderate, mild) for more than 15 minutes. Each category level includes a brief description (i.e., "heart beats rapidly", "not exhausting", and "minimal effort", respectively) along with several examples of that level of exercise. Items were presented to all participants in the same order (minimal, moderate, strenuous).

Healthy Eating Assessment (HEA). The HEA was adapted by the Government of Northwest Territories (GWNT; 2017) from an 8-item scale (Starting the Conversation, STC; Paxton et al., 2011) developed to serve as a brief dietary assessment in non-dietician primary care and health-promoting settings. The HEA consists of 10 items, and the scale was modified from three categories (0-2) of the STC to five categories (1-5). Participants are instructed to average what they ate or drank over the past few weeks and select an answer for each question. Category labels are specific to the item. Six of the ten HEA items were used in the current study. The six items were chosen based on having more common associations with health, (e.g., "How would you rate your overall habits of eating healthy foods?" "How many times a day did you eat fast/fried food/packaged snacks high in fat/salt/sugar?"), and thus potentially being subject to identity bias or SDR because of a desire to appear or view themselves as healthy. Items were randomly presented to participants. Internal consistency from this study was alpha = .74.

Negative Attitudes Towards Immigrants Scale (NATIS). This 12-item measure was developed to assess attitudes towards immigrants (Varela et al., 2013). Items assess primarily negative attitudes (e.g., "Immigrants are a burden on American taxpayers" and

"Immigrants are not as smart as Americans"). Responses are recorded on a five-point scale from 1 (*completely disagree*) to 5 (*completely agree*). Internal consistency from the original study was alpha = .86; from the current study alpha was = .93.

The Unmatched Count Technique (UCT)

The Unmatched Count Technique (UCT) is an indirect measure that compares the differences in base rates of responses across two conditions (Brown-Iannuzzi et al., 2019; Dalton et al., 1994; Raghavarao & Federer, 1979). Participants are randomly assigned to two conditions, the baseline and sensitive conditions. The *baseline* condition includes four innocuous statements (e.g., "I own or would like to own a pet" "The U.S. education system could be improved"), one of which should have responses with relatively low frequency in the general population (e.g., "I go to church at least every Sunday" "I brush my teeth after every meal"). The *sensitive* condition includes the four statements from the baseline condition as well as one additional statement that is sensitive or controversial, reflecting the topic of interest (e.g., "Overall, I think immigrants do more harm than good").

For each set, participants report an integer reflecting how many of the four or five statements they endorse or that applies to them. Participants do not indicate which of the statements they endorse. The average number of statements endorsed in the baseline condition is compared to that of the sensitive condition. Because the two conditions only differ in the inclusion of the sensitive statement, and participants are randomly assigned to each condition, the difference between the averages in each condition is used to estimate and infer the prevalence of the behavior or attitude in the general population.

That is, the UCT is a group level variable and does not allow for inferences of endorsement at the individual level.

In the current study, I include five UCT sets, one set for each topic area addressed by the experimental scales (see Appendix C). That is, in each of the sets in the sensitive condition, the sensitive statement was relevant to one of the topics in the experimental scales (e.g., one sensitive statement is "I rarely exercise" which corresponds to physical activity as measured by the Godin-Shephard Leisure-Time Physical Activity Questionnaire).

Identity Importance

Following Brenner and DeLamater (2016), I included items aimed at assessing identity importance. Each item maps to the topics assessed by one of the experimental scales (see Appendix D). There are seven items that ask about the importance of different topics to one's identity from 0 (*not at all important*) to 10 (*extremely important*). Topics consist of gender equality, gender norms, pro-immigrant attitudes, anti-immigrant attitudes, healthy eating, exercising, and non-conspiracy mentality (there are thus two items that meant to correspond to the Gender Determinism scale and two items to the NATIS).

Balanced Inventory of Desirable Responding (BIDR – 16)

The BIDR-16 is a 16-item scale (Hart et al., 2015) shortened from the original 40-item Balanced Inventory of Desirable Responding (Paulhus, 1991), developed to measure the two factors of socially desirable responding. The measure includes eight items to measure the impression management factor (8 items, e.g., "I never cover up my mistakes") and eight items to measure the self-deceptive enhancement factor (8 items,

e.g., “I am a completely rational person”). Responses are recorded on a Likert scale from 1 (*not true*) to 7 (*very true*). Scores are computed by summing responses across items[5]; higher scores indicate greater SDR. Average internal consistency reported by Hart et al. (2015) was alpha = .69 (average alphas for subscales SDE = .68, IM = .71). Internal consistency from the current study was alpha = .73 (SDE alpha = .65; IM alpha = .68). The items for the BIDR-16 can be found in Appendix E.

Data Collection & Participants

Data were collected via the Psychology Participant Pool and via bulk email to students. Participants accessed the survey via Qualtrics. An a priori power analysis using effect sizes .25 returned needed sample sizes of approximately 181 and 348 for the *t*- and *z*-tests, respectively. A total of 442 individuals completed the survey, of which 359 were obtained through the psychology participant pool and 83 were obtained through student bulk email. Missing data, random responding, and outliers were considered by topic. The specific sample sizes for a scale are reported per analyses. If a participant completed an identity importance item but not the corresponding scale, their data was excluded from the analyses for that scale. Data from those who spent a concerningly short length of time on the page for a given scale were filtered from analyses for that scale. Data were filtered from analyses if respondents spent less than 15 seconds on the Gender Determinism scale (both groups), less than 20 seconds on the Conspiracy Mentality scale (both) and HEA (both), and less than 20 or 25 seconds on the NATIS (control and experimental, respectively). These amounts of time were selected because they were the lowest

[5] Paulhus (1994) recommended dichotomous scoring of the BIDR, adding points to the higher values (i.e., 6 or 7), such that high response values become more extreme. The present study used continuous scoring, in line with Hart et al. (2015) and Stöber et al., (2002) who found that continuous scoring engendered greater reliability than dichotomous.

reasonable number of seconds that resulted in the smallest loss of participants and kept the group sizes approximately equal. Outliers on the self-report scales were identified using Mahalanobis Distance ($p < .05$), calculated by condition and scale. Responses with Malahalanobis values greater than or equal to the critical value were inspected. Those that were found to be unreasonable (i.e., scale responses that contradicted one another) were excluded from the analyses for that scale. For the Conspiracy Mentality scale, Gender Determinism scale, and NATIS, there were 2, 3, and 8 such cases, respectively, for the experimental group and 0, 2, and 2 such cases, respectively, for the control group. There were no concerning outliers for the Healthy Eating Assessment. Approximately half of the responses to the Godin Physical Activity scale were outside a reasonable range (i.e., values greater than or equal to 20). Upon inspection, it was not clear whether this was due careless, random responding or if respondents misunderstood what they were to report (i.e., number of *times* they were physically active vs number of *minutes*). The validity of responses to the scale was thus called into question and the data were omitted from analyses. The corresponding identity importance item and UCT item were also omitted as they were no longer relevant.

For analyses involving the BIDR-16, cases were filtered by time spent on the scale, including only those who took at least 60 seconds (n = 381). This amount was chosen because it was the smallest time that kept the group means on SDE and IM comparable. A lower time resulted in larger differences between the control and experimental group means on the subscales. A significant difference between the groups could confound any subsequent group differences involving the BIDR-16 subscales.

The mean age for the sample was 19.8 (SD = 2.5); four participants did not respond. Twenty-four participants reported that they were Hispanic/Latinx, 415 reported that they were not Hispanic/Latinx, three participants did not respond. The sample was 86.8% white and 76.5% cis-gendered female. The highest level of education for 88.7% of the sample was "currently in a bachelor's degree program." Tables displaying specific frequencies of the demographics can be found in Appendix F.

Data Analysis Outline

Data analysis followed four phases. All analyses were conducted for each of the five self-report scales (or their corresponding UCT and identity importance items, where applicable). For brevity, I will refer to ideal-self responses from the experimental group as ideal-self or IS responses. I will refer to actual-self responses from the experimental group as actual-self or AS responses. I will refer to responses from the control group as control responses.

Phase one consisted of two parts (A and B) which included descriptive statistics and preliminary analyses. In part A, I examined descriptive statistics for both conditions for each of the five scales. For the experimental condition I include descriptive statistics for both ideal and actual selves. In part B I examined whether the experimental and control groups differed in the measures of identity importance and social desirability. I compared the groups on identity importance because it is theorized to, in part, drive overreporting; significantly different ratings of identity importance between the experimental and control group could confound other response differences between the groups. I compared the groups on social desirability because later analyses compare the relationships of self-report scale responses with identity importance and social

desirability, respectively, between groups; significantly different scores of social desirability between the experimental and control groups would confound differences between identity importance and SDR with group differences. I compared experimental and control groups on their scores of identity importance using a one-way analysis of variance (ANOVA). I compared the conditions on the two subscales of the BIDR-16 using a split-plot ANOVA with condition as the between subjects factor and subscale and the between subjects factor.

Phases two through four were aimed at answering the previously laid out research questions. The analyses are mapped to the research questions in Table 1.

Table 1

Analyses Mapped to the Relevant Research Questions

No.	RQ	Analysis
1a	Are there statistically significant differences between ideal-self responses and actual-self responses?	Paired samples t-tests comparing mean IS and AS responses for the experimental group.
1b	Are there statistically significant differences between ideal-self responses and responses using traditional survey response format from the control group?	Independent samples t-tests comparing IS (experimental group) and control responses.
1c	Are there statistically significant differences between actual-self responses from the experimental group and responses using traditional survey response format?	Independent samples t-tests comparing AS (experimental group) and control responses.
2	Are responses from the experimental condition more accurate than those from the control condition?	Differences in prevalence between the experimental and control conditions will be tested using the *z* statistic for the difference between two proportions.
3	Are ideal-self responses and control responses on a given topic equally related the importance of that topic to one's identity?	Pearson correlation between identity importance item and responses (ideal self and control). Comparison of correlations between groups using a *z*-test following an *r* to *z* transformation.
4	Are ideal-self responses and control responses equally related to self-deceptive enhancement and impression management (the two factors of social desirability).	Pearson correlations between responses (ideal self and control) and SDE and IM. Comparison of correlations using a *z*-test following an *r* to *z* transformation.

The second phase was meant to answer the first research question (1a, 1b, and 1c). That is, I examined whether responding first in terms of one's ideal self elicited different subsequent responses in terms of their actual self. I did this in three steps. First,

I compared the means of IS and AS for each scale using paired samples t-tests. Next, I compared AS means and control means for each scale using independent samples t-tests. If responding first in terms of one's ideal self frees them to respond more accurately about their actual self, then such actual self responses may be statistically different from both ideal self responses and control responses. Lastly, I compared IS means and control means for each scale using independent samples t-tests. If people automatically respond to self-report items in terms of their ideal selves, then ideal self responses should be similar to responses from the control group.

The third phase concerned the second research question, inferring accuracy. Specifically, I scored the UCT, estimating prevalence overall (i.e., difference between baseline and sensitive across all participants) and the prevalence within each condition (i.e., experimental and control). Responses to the UCT are thought to be less subject to SDR, but responses may still be subject to identity bias such that the prevalence in the experimental condition could be different from prevalence in the control condition. This difference should exist to the extent that (1) the true engagement of attitudes and behaviors is similar across conditions, (2) participants in the control condition (i.e., those who were not exposed to the initial experimental manipulation) respond to UCT items in terms of their ideal self, as they are theorized to respond to traditional self-report items, and (3) for participants from the experimental condition, the distinction between one's actual and ideal self remains cognitively active and, given that they have expressed their relevant ideal selves just prior, they respond more accurately to the UCT. Given that participants were randomly assigned to the conditions (refer to Figure 1 above), the first stipulation is likely to hold – there is no reason to suspect systematic differences in actual

attitudinal or behavioral engagement between the experimental and control conditions, nor between the baseline and sensitive conditions. Differences in prevalence between the experimental and control conditions were tested using the *z* statistic for the difference between two proportions. This was the only analysis that could be conducted given that the UCT is a between subjects, group level variable.

Phase four related to identity importance and social desirability and their respective relationships with responses on the experimental scales. Identity importance should be related to IS responses. To the extent that people in the control condition respond to survey items in terms of their ideal-self, identity importance should be equally related to control responses. I investigated whether identity importance was related to the respective responses using Pearson's bivariate correlation for each scale. I then transformed the coefficients using an *r* to *z* transformation and compared them using a *z*-test statistic.

To the extent that impression management and/or self-deceptive enhancement bias responses, scores on the respective BIDR-16 subscales should be related to responses (control and ideal). I investigated this by computing the Pearson correlations for scores (ideal and control) with the impression management and self-deceptive enhancement subscales.

Chapter 4: Results

Phase One.

Descriptive Statistics.

Table 2 displays descriptive statistics for each scale per group. For the experimental group, descriptive statistics are displayed for both the ideal and actual self responses.

Table 2

Descriptive Statistics for Each Response Set per Scale.

Response	*n*	*M*	*SD*	Min	Max	Skew	Kurt
Conspiracy Mentality							
Exp – Ideal	211	28.0	10.6	0	50	-0.45	-0.11
Exp – Actual		33.9	7.4	4	50	-0.32	0.41
Control	212	32.7	7.7	6	50	-0.76	0.96
Gender Determinism							
Exp - Ideal	217	7.8	3.9	4	20	0.96	0.34
Exp - Actual		9.1	3.8	4	20	0.45	-0.35
Control	202	8.1	3.2	4	17	0.52	-0.39
Healthy Eating Assessment							
Exp - Ideal	213	24.2	3.0	15	30	-0.46	0.03
Exp - Actual		18.3	3.3	10	30	0.18	0.12
Control	214	19.7	3.4	8	28	-0.19	0.04
Negative Attitudes Towards Immigrants							
Exp - Ideal	201	20.9	7.7	12	47	0.99	0.45
Exp - Actual		23.7	8.7	12	49	0.69	-0.18
Control	214	22.2	8.8	12	58	1.18	1.51

Note. Higher scores indicate greater conspiracy mentality, belief in gender determinacy, healthier eating, and more negative attitudes towards immigrants, on the respective scales.

Comparing Conditions on Identity Importance.

Table 3 displays the descriptive statistics for each of the six identity importance items.

Table 3

Descriptive Statistics for Identity Importance Items

Group	*M*	*SD*	Min	Median	Max	Skew	Kurt
			"Trusting established news sources"				
Experimental	5.6	2.6	0	6	10	-0.32	-0.56
Control	6.1	2.4	0	6	10	-0.40	-0.222
			"Advocating for gender equality"				
Experimental	7.6	2.5	0	8	10	-1.14	0.78
Control	7.8	2.5	0	9	10	-1.10	0.36
			"Maintaining and advocating for gender norms"				
Experimental	4.6	3.4	0	5	10	0.08	-1.26
Control	4.6	3.3	0	5	10	0.17	-1.14
			"Eating healthy"				
Experimental	8.1	2.0	1	8	10	-1.11	1.20
Control	8.2	1.9	0	9	10	-1.29	1.97
			"Being welcoming of immigrants"				
Experimental	7.4	2.4	0	8	10	-0.83	0.20
Control	7.5	2.3	0	8	10	-0.81	0.16
			"Protecting American culture from contamination from other cultures"				
Experimental	2.5	2.8	0	2	10	1.07	0.23
Control	2.7	3.0	0	2	10	0.93	-0.25

For each of the six identity importance items, a one-way analysis of variance (ANOVA) was used to compare scores from experimental and control groups. Normality was violated for each of the six identity importance questions (see Table 4). Due to the large sample size and equal group sizes, the results are likely robust to the violation (Havlicek & Peterson, 1974). All other assumptions were met. No significant differences were found between the conditions for any of the identity importance questions.

Table 4

Test of Normality of Identity Importance Per Group

Group	Shapiro-Wilk *W*	*df*	*p*
"Trusting established news sources"			
Exp	.960	211	< .001
Control	.957	212	< .001
"Advocating for gender equality"			
Exp	.855	216	< .001
Control	.828	202	< .001
"Maintaining and advocating for gender norms"			
Exp	.918	216	< .001
Control	.924	202	< .001
"Eating healthy"			
Exp	.866	213	< .001
Control	.847	213	< .001
"Being welcoming of immigrants"			
Exp	.899	201	< .001
Control	.895	214	< .001
"Protecting American culture from contamination from other cultures"			
Exp	.828	201	< .001
Control	.836	214	< .001

Comparing Conditions on Social Desirability.

A 2 × 2 split-plot ANOVA was performed on BIDR-16 scores as a function of condition and subscale. The within-subjects variable was subscale, with two levels, self-deceptive enhancement (SDE) and impression management (IM). The assumptions of homogeneity of variance and homogeneity of covariance were met, Box's $M = 1.55$, $F(3, 26060048.62) = 0.51$, $p = .674$. All other assumptions were met. The only significant effect was the main effect of BIDR-16 subscale [$F(1,379) = 83.03$, $p < .001$, $\eta^2 = .18$]. Scores on IM ($M = 33.1$, $SD = 7.4$) were significantly higher than scores on SDE ($M = 29.2$, $SD = 6.9$).

Phase Two.

Comparing Ideal and Actual Self Responses.

For each of the four scales I performed a paired samples *t*-test on the difference between ideal-self responses and actual-self responses from the experimental group. Normality was violated for each scale (Table 5). Given the sample size and the approximately equal sample sizes the results are likely robust to the violation (Havlicek & Peterson, 1974).

Table 5

Test of Normality of Response Sets Per Group

Scale		Shapiro-Wilk *W*	*df*	*p*
CM	Exp - Ideal	0.979	211	.003
	Exp - Actual	0.986	211	.042
	Control	0.965	212	< .001
GD	Exp - Ideal	0.874	217	< .001
	Exp - Actual	0.948	217	< .001
	Control	0.937	202	< .001
HEA	Exp - Ideal	0.973	213	< .001
	Exp - Actual	0.986	213	.040
	Control	0.988	214	.064
NAT	Exp - Ideal	0.903	201	< .001
	Exp - Actual	0.938	201	< .001
	Control	0.899	214	< .001

There was a statistically significant difference between ideal- and actual-self responses for each scale (see Table 6). Differences on the CM scale, GD scale, and NATIS had medium effect sizes; differences on the HEA scale showed a large effect size.

Table 6

Differences Between Ideal and Actual Self Response for the Four Scales.

Scale	*n*	Ideal Self *M(SD)*	Actual Self *M(SD)*	*t*	*df*	*p*	*d*
CM	211	28.0(10.6)	33.9(7.4)	-9.51	210	< .001	-0.65
GD	217	7.8(3.9)	9.1(3.8)	-7.64	216	< .001	-0.52
HEA	213	24.2(3.0)	18.3(3.3)	25.58	212	< .001	1.75
NATIS	201	20.9(7.7)	23.7(8.7)	-8.34	200	< .001	-0.59

Note. Differences in *n*s are due to missing data and outlier removal.

Comparing Ideal Self and Control Responses.

Then, for each of the four scales, I performed an independent samples *t*-test comparing the experimental group's ideal-self responses with the control group's responses. Normality was violated for both groups on each scale except for the control group on the Healthy Eating Assessment (see Table 5 above). Due to the sample size and the approximately equal group sizes, the *t*-test is likely robust to this violation (Havlicek & Peterson, 1974). The homogeneity of variance assumption was violated for the Conspiracy Mentality scale and the Gender Determinism scale. For these scales, the Brown-Forsythe Robust Equality of Means test was used (statistics reflected in the table). All other assumptions were met. Table 7 shows the results of the inferential test for each scale.

Table 7

Differences Between Ideal Self and Control Responses for the Four Scales.

	Ideal Self		Control					
Scale	*n*	*M(SD)*	*n*	*M(SD)*	*t*	*df*	*p*	*d*
CM[a]	211	28.0(10.7)	212	32.7(7.7)	-5.22	381.95	< .001	-0.50
GD[a]	217	7.8(3.9)	202	8.1(3.2)	-0.64	410.6	.525	-
HEA	213	24.1(3.1)	214	19.7(3.4)	14.28	430	< .001	1.37
NATIS	201	21.0(7.7)	214	22.2(8.8)	-1.49	420	.137	-

[a]Test statistics, degrees of freedom, and probability values reflect those from the Brown-Forsythe Robust Tests of Equality of Means. Test statistics are square-roots of the Brown-Forsythe statistics, which is an *F*-value.

Ideal-self responses were significantly different from control responses on the Conspiracy Mentality scale, with a medium effect size, and the Healthy Eating Assessment, with a large effect size. Ideal-self and control responses were not significantly different on the Gender Determinism scale nor on the Negative Attitudes Towards Immigrants Scale.

Comparing Actual Self and Control Responses.

For each scale, I then compared actual-self responses of the experimental group with the control group's responses using independent samples *t*-tests. Normality was violated for both groups for each scale except for the control group on the Healthy Eating Assessment (see Table 5 above). The homogeneity of variance assumption was violated for the Gender Determinism scale. For this scale, the Brown-Forsythe Robust Equality of Means test was used (statistics reflected in the table). All other assumptions were met. Table 8 shows the results of the *t*-test for each scale.

Table 8

Differences Between Actual Self and Control Responses for the Four Scales.

	Actual Self		Control					
Scale	*n*	*M(SD)*	*n*	*M(SD)*	*t*	*df*	*p*	*d*
CM	211	33.9(7.4)	212	32.7(7.7)	1.53	422	.126	-
GD[a]	217	9.1(3.8)	202	8.1(3.2)	3.06	413.2	.002	0.23
HEA	213	18.3(3.3)	214	19.7(3.4)	4.12	425	< .001	-0.40
NATIS	201	23.7(8.7)	214	22.2(8.8)	1.70	413	.091	-

[a]Test statistics, degrees of freedom, and probability values reflect those from the Brown-Forsythe Robust Tests of Equality of Means. Test statistics are square-roots of the Brown-Forsythe statistics, which is an *F*-value.

Actual-self responses were significantly different from control responses on the Gender Determinism scale and the Healthy Eating Assessment scale. Effects sizes were small in both cases. Actual self and control responses were not significantly different on the Conspiracy Mentality Scale nor on the Negative Attitudes Towards Immigrants Scale.

Taken all together, the mean of ideal self responses on the Conspiracy Mentality scale was significantly lower than the mean for control responses; the means of actual self and control responses did not significantly differ. Responses to the Gender Determinism scale followed the hypothesized pattern such that the actual self mean was significantly higher than the mean for control responses, but the means for ideal self and control responses did not differ. For the Healthy Eating Assessment, the mean for ideal self responses was significantly lower than the mean for control responses which was in turn significantly lower than the mean of actual self responses. For the Negative

Attitudes Towards Immigrants Scale, neither the ideal nor the actual self responses differed from control responses.

Phase Three.

Overall UCT Prevalence.

For each UCT item, the mean for the baseline condition was subtracted from the mean of the sensitive condition (across the entire sample). I also compared the baseline and sensitive conditions for each scale using Pearson's chi-squared test of independence, which was significant for all but the UCT corresponding to the Negative Attitudes Towards Immigrants Scale. Table 9 shows the descriptive statistics for the baseline and sensitive groups per scale, as well as the chi-square and *p*-values.

Table 9

UCT Descriptives and Inferential Statistics per Scale.

		n	*M*(*SD*)	Min	Max	χ^2	*p*
CM	Sensitive	216	3.4(0.7)	2	5	25.73	< .001
	Baseline	216	3.1(0.6)	1	4		
GD	Sensitive	213	3.4(0.7)	1	5	119.26	< .001
	Baseline	209	2.9(0.5)	1	4		
HEA	Sensitive	221	3.2(0.6)	1	5	27.84	< .001
	Baseline	214	3.0(0.4)	2	4		
NATIS	Sensitive	220	2.5(0.7)	1	5	6.65	.248
	Baseline	215	2.4(0.7)	1	4		

Comparing UCT Prevalence Between Conditions.

The prevalence estimates were also compared between experimental and control groups for each scale. I analyzed whether there was a significant difference between the

prevalence estimates for the two conditions using the *z* statistic for the difference between two proportions. Proportions were the respective prevalence estimates for the experimental and control groups, computed as the difference between the means of the sensitive and baseline conditions for each scale. Table 10 displays the proportions (prevalence estimates) and comparisons for the experimental and control groups. There was no significant difference in prevalence between the experimental and control conditions for any of the four scales.

Table 10

Prevalence Comparisons Between Experimental and Control.

					95% CI	
Scale	Experimental	Control	*z*	*p*	LB	UB
CM	0.32	0.28	0.78	.218	-0.05	0.12
GD	0.57	0.57	-0.01	.503	-0.09	0.09
HEA	0.21	0.21	0.13	.450	-0.07	0.08
NATIS	0.15	0.12	0.96	.168	-0.03	0.09

Phase Four.

Relationships of Scores with Identity Importance, SDE, and IM.

Identity importance should be related to ideal self scores. If participants in the control group respond in terms of their ideal selves, control scores should also be related to identity importance. I examined the Pearson bivariate correlations of each group of scores (ideal and control) with identity importance.

To assess the extent to which SDR might bias responding, correlations were computed between self-report scores (ideal or control) and each of the BIDR-16 subscales (SDE and IM). The respective correlations with SDE and IM were compared

between ideal and control. Table 11 displays the correlations between self-report scores (ideal self or control) and Identity Importance, Self-Deceptive Enhancement, and Impression Management.

Table 11

Correlations of Scores with Identity Importance, SDE, and IM.

	Ideal			Control		
	r	*p*	*n*	*r*	*p*	*n*
			Conspiracy Mentality			
Identity Importance	-.07	.297	211	-.10	.153	212
SDE	-.11	.134	182	-.05	.501	189
IM	.06	.409	182	-.06	.413	189
			Gender Determinism			
Identity Importance 1	-.43***	< .001	216	-.28***	< .001	202
Identity Importance 2	.05	.498	217	.06	.377	202
SDE	.14	.061	187	.18*	.014	181
IM	.18*	.012	187	.03	.728	181
			Healthy Eating Assessment			
Identity Importance	.33***	< .001	213	.52***	< .001	213
SDE	-.04	.607	186	.18*	.012	188
IM	-.12	.117	186	.02	.787	188
			Negative Attitudes Towards Immigrants			
Identity Importance 1	-.68***	< .001	201	-.71***	< .001	214
Identity Importance 2	.48***	< .001	201	.61***	< .001	214
SDE	.16*	.036	175	.11	.136	189
IM	.23**	.002	175	.02	.817	189

*$p < .05$, **$p < .01$, ***$p < .001$

Comparing Correlations with Identity Importance Between Groups. I then examined the similarity of the correlations between the score groups by transforming the coefficients using an *r* to *z* transformation and comparing them using a *z*-test. For Conspiracy Mentality scores, the negative correlation with identity importance was significantly smaller for ideal self scores (experimental group; $r = -.07$, $p = .297$, $n = 211$) than for control group scores ($r = -.10$, $p = .153$, $n = 212$), $Z = -8.26$, $p < .001$. However, the correlations with identity importance are negligible for both ideal and control scores.

The negative correlation with the first gender identity importance item was significantly larger for ideal self scores (experimental group; $r = -.43$, $p < .001$, $n = 216$) than for control group scores ($r = -.28$, $p < .001$, $n = 202$), $Z = -1.75$, $p = .040$. The positive correlation with the second gender identity importance item did not significantly differ between groups, $Z = -0.16$, $p = .435$. Correlations with the second gender identity importance item are negligible for both ideal and control scores.

The positive correlation with the healthy eating identity importance item was significantly smaller for ideal self scores (experimental group; $r = .33$, $p < .001$, $n = 213$) than for control group scores ($r = .52$, $p < .001$, $n = 213$), $Z = -2.44$, $p = .007$. The negative correlation with the first immigration identity importance item was not significantly different between groups, $Z = 0.51$, $p = .305$. The positive correlation with the second immigration identity importance item was significantly smaller for ideal self scores (experimental group; $r = .33$, $p < .001$, $n = 213$) than for control group scores ($r = .52$, $p < .001$, $n = 213$), $Z = -1.78$, $p = .038$.

Comparing Correlations with SDE and IM Between Groups. I compared the correlations between ideal and control by transforming the coefficients using an *r* to *z*

transformation and comparing them using a *z*-test. There were no significant differences between ideal and control for the correlation between Conspiracy Mentality scores and SDE (Z = -0.61, p = .272) or IM (Z = 1.17, p = .122), nor between the Gender Determinacy scores and SDE (Z = -0.44, p = .33) or IM (Z = 1.51, p = .065).

For scores on the Healthy Eating Assessment, there was a significant difference between the correlations of SDE and ideal scores (r = -.04, p = .607, n = 186) and of SDE and control (r = .18, p = .012, n = 186), Z = -2.13, p = .017. Scores on the HEA did not significantly differ in their relationship with IM, Z = -1.30, p = .097.

Scores on the Negative Attitudes Towards Immigrants Scale did not significantly differ across groups in their relationship with SDE, Z = 0.48, p = .315. The relationship between ideal scores and IM was significantly larger (r = .23, p = .002, n = 175) than the relationship between control scores and IM (r = .02, p = .817, n = 189), Z = 2.03, p = .021.

Chapter 5: Discussion

The present research was based on findings from Brenner (2014, 2017) and Brenner and DeLamater (2016) who theorized that people respond to survey items in terms of their ideal selves. The purpose of the present research was to investigate whether having participants respond first in terms of their ideal selves engendered differences in subsequent responding in terms of their actual selves. Specifically, this study aimed to answer four research questions. Below I summarize the results corresponding to each research question. Specifically, I identify the results that aligned with the theory, those that did not, and their implications. I then discuss some pertinent limitations and possible directions for future research.

Summary of Findings

Research Question One

This research question concerned whether ideal and actual self responses were significantly different from each other (1a) and from responses using traditional survey format (i.e., control group responses; 1b and 1c). If people respond to self report items in terms of their ideal selves, then the experimental group's ideal self responses should *not* significantly differ from the control group's responses. If having respondents first respond in terms of their ideal self frees them to then respond more accurately about their actual self, actual self responses (experimental group) *should* significantly differ from the control group's responses, assuming respondents in the control group reinterpret questions in terms of identity and respond in terms of their ideal selves.

The results from the present study returned statistically significant differences with moderate to large effect sizes between ideal and actual self responses from the

experimental group. However, whether there was a statistically significant difference between control and either ideal or actual responses depended on the scale.

Specifically, the pattern of differences on the Gender Determinism scale matched what was expected (i.e., ideal and control were not significantly different, actual and control were). The pattern of differences on each of the other four scales was more varied. Such results could be due to the nature of the construct, that is, whether the construct is an attitude or behavior. Past research measured exercise (Brenner & DeLamter, 2016) and church attendance (Brenner, 2017). The current study included attitude measures, which can differ from measures of behavior in the response process (e.g., Sudman et al.,1996). The difference in response processes may engender differences in how identity influences their responses. The salience of the construct may be influential. That is, participants may generally attend more to certain behaviors or attitudes than others. For example, people give some degree of attention to selecting what to eat every day. Conversely, undergraduate students may less frequently attend to their attitudes on immigrants. Importance of the construct to participant's identities may also be a source of influence. Constructs with greater identity importance may be more likely to show significant deviations of actual self responses from control responses. Indeed, compared to the highest possible score of identity importance (i.e., 10), the means were high for the healthy eating identity importance item (M = 8.1, SD = 2.0) and the first gender identity importance item (M = 7.7, SD = 2.5)[6], and actual self means for both differed significantly from control means in the expected direction. The first immigration

[6] These means and standard deviations reflect identity importance across groups, as the groups did not significantly differ on identity importance.

identity importance item also has a high importance mean (M = 7.5, SD = 2.4), but the control mean did not significantly differ from actual or ideal self means.

Results may also be attributable to an anchoring effect of one's ideal self. That is, people may interpret survey items to ask about the kind of person one is, but rather than responding in terms of their ideal selves, their ideal selves may anchor survey responses. Anchoring refers to initial information biasing one's subsequent judgements (Bazerman & Moore, 2012). For participants in the control group, their ideal selves may have provided a starting point for a response, but students may then adjust their response to better reflect how they believe themselves to be (i.e., their actual selves) such that their responses tended to fall between their ideal and actual selves. Indeed, the means for the control group were between the means for the ideal and actual self responses for all four scales (see Table 12).

Table 12

Means and Standard Deviations per Scale for Each Responses Set

Scale	Ideal *M(SD)*	Control *M(SD)*	Actual *M(SD)*
CM	28.0(10.7)***	32.7(7.7)	33.9(7.4)
GD	7.8(3.9)	8.1(3.2)	9.1(3.8)**
HEA	24.1(3.1)***	19.7(3.4)	18.3(3.3)***
NATIS	21.0(7.7)	22.2(8.8)	23.7(8.7)

Note. Asterisks denote significant difference from control.

*p < .05, **p < .01, ***p < .001

If control responses were anchored by one's ideal self, we might expect control means to fall somewhere between ideal and actual self means. Depending on the construct, control means could fall closer to either the ideal or actual self mean or fall

more evenly in the center. The greater the disparity between ideal and actual selves, the more likely that control responses significantly differ from both ideal and actual self responses. This is seen in with the Healthy Eating Assessment; the control mean differs significantly from both ideal and actual self means. However, the mean difference between ideal and control is larger than that between actual and control. Because food selection is likely to be rather salient in one's everyday life, the adjustment towards actual and away from ideal may be easier. This may especially be the case with undergraduate students for whom unhealthy eating is the norm perhaps even part of the "college experience."

Research Question Two.

This research question concerned whether actual self responses from the experimental group were more accurate than those of the control group. Additionally, this research question concerned whether cognitively distinguishing between one's ideal and actual self engendered greater accuracy when responding to subsequent items. To answer this question, I employed an indirect measure called the Unmatched Count Technique (UTC), a group-level measure used to infer the prevalence of a construct.

When comparing the baseline and sensitive conditions across all participants, there were statistically significant differences for the conspiracy, gender, and healthy eating UCT sets, but not for the UCT set corresponding to the Negative Attitudes Towards Immigrants Scale. This indicates that the prevalence estimates for conspiracy, gender, and healthy eating are unlikely due to chance.

When examining baseline-sensitive differences (prevalence values) between experimental and control groups, none were significant. There are at least two ways to

interpret this. One interpretation is that the UCT is a technique to circumvent socially desirable responding and thus reflect a relatively unbiased prevalence estimate[7] to which one can compare self-report scale means and glean the degree of dishonest responding (i.e., greater difference between UCT prevalence and self-report scale mean)[8]. Thus, prevalence estimates for the experimental and control groups should be similar because neither are affected by SDR. However, to the extent that the UCT can circumvent SDB but not any form of identity bias, there should be a difference between the experimental and control conditions if the experimental manipulation engenders greater accuracy. That is, if people's responses to the UCT are still affected by their important identities, the experimental condition, having previously expressed their relevant ideal selves, should have a UCT prevalence that significantly differs from that of the control group, if the experimental manipulation engenders greater accuracy. The other interpretation is thus that the experimental manipulation does not engender greater accuracy. However, due to limited comparisons, conclusions about the efficacy of the experimental manipulation on bolstering accuracy is equivocal. Additional research is needed using a measure of accuracy that affords comparisons between the accuracy estimate and the corresponding self-report scales. Specifically, to the extent that responding first in terms of one's ideal self frees participants to respond more honestly about their actual self, the accuracy estimate for the experimental group should be similar to and thus reflect their self-report scale mean but the control group's accuracy estimate should be less similar to their self-report scale mean.

[7] Here I use unbiased to mean free of social desirability bias; I am not referring to the property of an estimate in the measurement sense.
[8] This difference is not literal because the two measures have different scales.

Research Question Three.

This research question concerned whether scores (control or ideal) on a given topic were related to the importance of that topic to one's identity, and whether this relationship was similar between the control and ideal self groups. Results indicate that this too, at least in part, depended on the scale and the identity importance item.

Identity importance should be related to IS responses. Scores were significantly related to identity importance in all but two cases – the conspiracy identity importance item and the second of the gender identity importance items. These two identity importance items may have failed to reflect the intended construct and thus may not reflect the importance of the construct to respondents' identity. I will discuss this matter further in the limitations section.

If people in the control condition respond to survey items in terms of their ideal self, identity importance should be equally related to control responses. Four of the relationships with identity importance were significantly different between groups, suggesting differences in the influence of identity on responding. Interestingly, the correlation with identity importance was *stronger* for the control group for all but the first gender identity importance item. For that item, the correlation with ideal self scores was stronger than that with control scores. This may have to do with the sample being 76.5% female. That is, in their ideal-self expressions women may be more strongly opposed to the determinacy of gender than in their actual-self expressions.

For the conspiracy mentality, healthy eating, and both immigration identity importance items, the correlation with control scores was stronger than that with ideal self scores. This could be an artifact of participants responding to identity importance

items after responding to the scale items. Those in the experimental condition may have attempted to reduce any negative affect associated with the highlighted discrepancy between their ideal and actual selves by reporting lower identity importance. Their identity importance reports were not so low as to elicit a significant difference between the groups, however; recall there were no significant differences between means for any of the identity importance items. The mean identity importance ratings for the conspiracy, first gender determinism, the healthy eating, and the first and second immigration items for the experimental group (M = 5.6, 7.60, 8.03, 7.34, 2.46, respectively) were slightly lower than those for the control group (M = 6.1, 7.83, 8.15, 7.55, 2.71, respectively).

In sum it appears that identity importance is related to responding, often more strongly for the control responses than for ideal-self responses. This may reflect the influence of respondents' ideal selves on their responding.

Research Question Four.

This research question concerned the extent to which scores (ideal and control) were each related to impression management and self-deceptive enhancement. There were only three significant correlations with SDE and two with IM. No correlations were significant for both groups for either subscale. The inconsistent correlations with the BIDR-16 subscales taken with the more consistent and stronger correlations with identity importance suggest that the influence of identity and SDR are unlikely to be the same phenomenon. Further, it may be that identity is influential in responding across a wider range of people and/or topics than is social desirability.

Summary of Limitations and Future Directions.

The current study had several pertinent limitations. To begin, the UCT is a group-level variable, only affording inferences of prevalence based on differences between groups. As such it did not afford comparisons that would more definitively inform whether the experimental manipulation improved self-report accuracy. The UCT does not enable estimations of the accuracy of individual responses. Future research should employ objective behavioral measures, the implicit association test, or other techniques that might better reveal the effects on self-report accuracy after first expressing one's ideal self.

Additionally, at least two of the identity importance items seemingly failed to reflect the importance of the identity intended to be measured by each of the items. The identity aspect item that corresponded to the CM scale was, "trusting established news sources" (M = 5.8, SD = 2.5). This item may not sufficiently capture or reflect one's identity pertaining to endorsing or denouncing conspiracy theories. Indeed, its correlations with CM responses, though in the desired direction, were negligible and not statistically significant (for ideal and control, r = -.10, p = .153; for actual, r = -.05, p = .470). The wording of the second identity importance item meant to correspond to the Gender Determinism scale may have been misinterpreted by participants. The item was meant to assess the importance of maintaining gender norms and roles. The first item inquired about the importance of advocating for gender equality to one's identity. As such, the first and second items should be negatively correlated but they were not (experimental, r = .18, p = .007; control, r = .17, p = .016). Additionally, correlations of the second gender identity importance item with responses on the Gender Determinism

scale are negligible (ideal $r = .05$, $p = .498$; actual $r = -.01$, $p = .855$; control $r = .06$, $p = .377$). Because of the above outlined issues with the conspiracy and second gender identity importance items, their lack of significant relationship with responses on the corresponding scales makes sense. Further research is needed to more clearly investigate the link between identity importance and self-report bias of attitudes and behaviors. This research should include more stringent, theory informed development of the identity importance items.

Further research is needed to untangle the extent to which a person's ideal self anchors their responses. It could be that, at least for some constructs, peoples' ideal selves anchor their responses, and people adjust their subsequent responses to better reflect how they believe that they actually think and act. However, adjustments from anchors in general can be insufficient, and judgments are often more biased toward the anchor than reflective of the accurate value (Tversky & Kahneman, 1974). This may explain why the control responses were between ideal and actual self responses. For example, questions about gender determinism may activate one's identity as a feminist. This identity standard might include the belief that gender has little to no determination in one's abilities, the equivalent of a 1 on the scale. However, the respondent may actually feel that gender is somewhat deterministic, about a 4 on the scale. In the experimental condition, explicitly responding in terms of ideal and actual selves may help this person distinguish between their two responses, responding with a 1 for their ideal self and a 4 for their actual self. If this person were in the control group, however, their identity as a feminist may anchor them towards the *strongly do not believe* end of the scale, but their actual feelings cause them to adjust their response such that they provide a 2 on the scale.

Thus, their answer in the control condition would be between their ideal and actual self responses were they in the experimental condition.

Future research might also include measures of participants' self-views in the area of interest in order to inspect the difference in response biases between participants with positive and negative self-views. Since people with positive self-views in an area are more likely to self-enhance in that area, such individuals may provide responses that are more biased towards their ideal selves. Conversely, those with less positive or more negative self-views in an area may provide responses that show little bias towards their ideal selves.

Finally, not all self-knowledge is available to conscious awareness (e.g., Bargh, 2017). People are not always aware of their behaviors, reasons for doing things, or attitudes due to behavioral automaticity, misattribution, memory errors, heuristics, or other non-conscious influences (e.g., Nisbett & Wilson, 1977; Kahneman, 2011). Additionally, self-knowledge may be inherently biased if subject to motivated processes such as self-enhancement and self-verification. For these reasons, it is of upmost importance to investigate ways to effectively reduce self-report bias and bolster reliable and accurate responding.

Appendix A

General Instructions for the Experimental Condition

People often subconsciously respond to questions about themselves in terms of their ideal self. One's ideal self reflects how they may be at their best, how they wish they were, or how they desire to be. For most people their ideal self is different from their actual self (how they *actually* are in terms of their every-day thoughts, feelings, and actions).

For the next five sets of items, you will be asked to respond to each item in two different ways. First, respond to the item in terms of your ideal self.
Then respond to that same item in terms of your actual self.

Example:
For a given item with a scale from 1 to 5, I might respond with a "2" in terms of my ideal self, and a "4" in terms of my actual self.

The instructions for each item set will specify whether to respond as your ideal or actual self and indicate places for you to do so.

Appendix B

Experimental Self-Report Scales

Conspiracy Mentality Questionnaire

Figure B1

Experimental Instructions and Example Response Scale

For each of the statements below, please use the rating scales provided to indicate how likely it is in your opinion that the statement is true. First respond in terms of your ideal self, then respond in terms of your actual self. Remember that there are no "objectively" right or wrong answers and that we are interested in your personal opinion.

	0% certainly not	10% extremely unlikely	20% very unlikely	30% unlikely	40% somewhat unlikely	50% undecided	60% somewhat likely	70% likely	80% very likely	90% extremely likely	100% certain
Ideal Self	○	○	○	○	○	○	○	○	○	○	○
Actual Self	○	○	○	○	○	○	○	○	○	○	○

Figure B2

Control Instructions and Example Response Scale

For each of the statements below, please use the rating scales provided to indicate how likely it is in your opinion that the statement is true. Remember that there are no "objectively" right or wrong answers and that we are interested in your personal opinion.

0% certainly not	10% extremely unlikely	20% very unlikely	30% unlikely	40% somewhat unlikely	50% undecided	60% somewhat likely	70% likely	80% very likely	90% extremely likely	100% certain
○	○	○	○	○	○	○	○	○	○	○

1. I think that many very important things happen in the world, which the public is never informed about.
2. I think that politicians usually do not tell us the true motives for their decisions.
3. I think that government agencies closely monitor all citizens.
4. I think that events which superficially seem to lack a connection are often the result of secret activities.
5. I think that there are secret organizations that greatly influence political decisions.

Gender Determinism Scale

Figure B3

Experimental Instructions and Example Response Scale

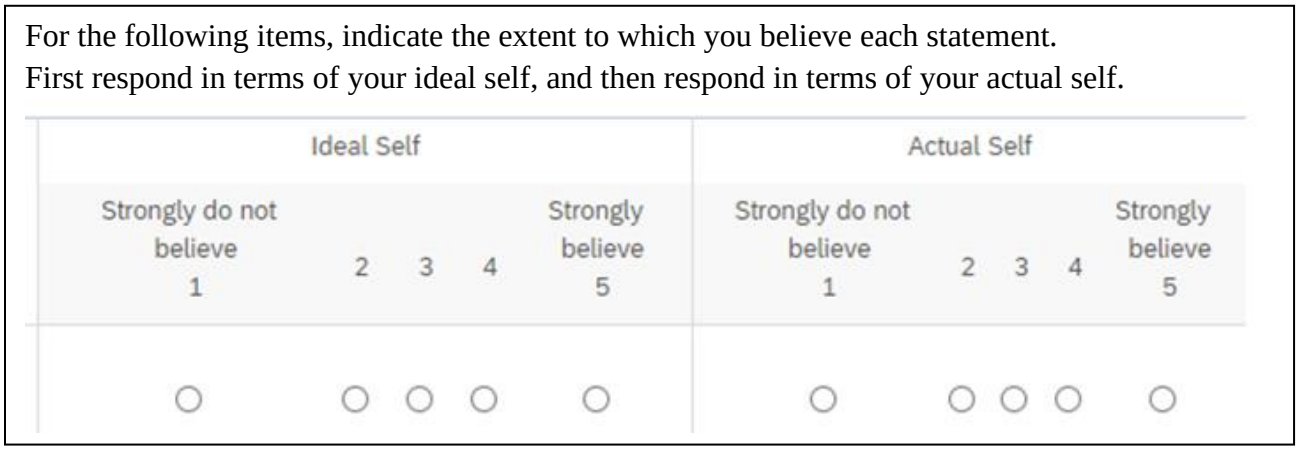
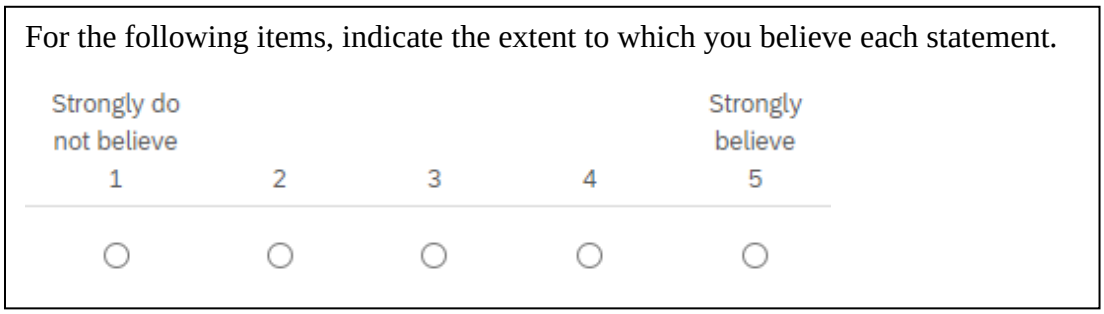


Figure B4

Control Instructions and Example Response Scale



1. A person's gender is something basic about them that determines how they will act.
2. Gender basically determines and individuals behaviors.
3. There is not much people can do to really change how they will act because of their gender.
4. Gender basically determines an individual's attributes.

Godin Leisure Time Activity Scale[9]

Figure B5

Experimental Instructions and Example Response Scale

During a typical 7-Day period (a week), indicate the number of times, on average, you do the following kinds of exercise for more than 15 minutes during your free time by writing the number in the box to the right. First, respond in terms of your ideal self. Then respond in terms of how you actually are.

Ideal Self	Actual Self

Figure B6

Control Instructions and Example Response Scale

During a typical 7-Day period (a week), indicate the number of times, on average, you do the following kinds of exercise for more than 15 minutes during your free time by writing the number in the box to the right.

Items:

- Strenuous exercise (heart beats rapidly; e.g., running, jogging, hockey, football, soccer, squash, basketball, cross country skiing, judo, roller skating, vigorous swimming, vigorous long distance bicycling).
- Moderate exercise (not exhausting; e.g., fast walking, baseball, tennis, easy bicycling, volleyball, badminton, easy swimming, alpine skiing, popular and folk dancing).
- Mild/light exercise (minimal effort; e.g., gentle yoga, archery, fishing from river bank, bowling, horseshoes, golf, snow-mobiling, easy walking).

[9] The set of textboxes appeared to the right of each form of exercise.

Healthy Eating Assessment[10]

Figure B7

Experimental Instructions and Example Response Scales

For the next set of items, average what you ate or drank over the past few weeks and select the most appropriate answer for each item. First respond in terms of your ideal self, and then respond in terms of your actual self.
Question 1:

Ideal Self					Actual Self				
Poor	Fair	Good	Very Good	Excellent	Poor	Fair	Good	Very Good	Excellent
○	○	○	○	○	○	○	○	○	○

Questions 2-6:

Ideal Self					Actual Self				
less than 1	1	2-3	4-5	6 or more	less than 1	1	2-3	4-5	6 or more
○	○	○	○	○	○	○	○	○	○

Figure B8

Control Instructions and Example Response Scales

For the next set of items, average what you ate or drank over the past few weeks and select the most appropriate answer for each item.
Question 1:

Poor	Fair	Good	Very Good	Excellent
○	○	○	○	○

Questions 2-6:

less than 1	1	2-3	4-5	6 or more
○	○	○	○	○

[10] For questions 2-4 and 6, the scale labels were more specific to the question, specifying either times or servings.

Items:

1. How would you rate your overall habits of eating healthy foods?
2. How many times a day did you eat fast/fried foods or packaged snacks high in fat/salt/sugar? **R**
3. How many servings (1 serving = ½ cup) of fresh, frozen, or dried fruit did you eat each day?
4. How many servings of fresh, frozen or dried vegetables did you eat each day?
5. How many regular soda, sweet tea, juice, energy/sport drinks, sweetened-coffee, or other sugar sweetened beverages did you drink each day? **R**
6. How many times a day did you eat regular (not low-fat) snack chips or crackers? **R**

Negative Attitudes Towards Immigrants

Figure B9

Experimental Instructions and Example Response Scales

For the following items, indicate the extent to which you agree with each statement. First respond in terms of your ideal self, and then respond in terms of your actual self.

Ideal Self					Actual Self				
Completely disagree	Disagree	Neutral	Agree	Completely agree	Completely disagree	Disagree	Neutral	Agree	Completely agree
○	○	○	○	○	○	○	○	○	○

Figure B10

Control Instructions and Example Response Scales

For the following items, indicate the extent to which you agree with each statement.

Completely disagree	Disagree	Neutral	Agree	Completely agree
○	○	○	○	○

Items:

1. Immigrants should be given the same rights as native citizens.
2. Immigrants do not have valid reasons for leaving their native country.
3. Immigrants in large groups are dangerous.
4. Immigrants bring the problems of their native country to America.
5. Immigrants are a burden on American tax payers.
6. Allowing people to immigrate to the United States is a bad idea.
7. Immigrants never want to return to their native/home country.
8. Immigrants' culture(s) dilutes American culture.
9. Immigrants are a threat to national security.
10. Immigrants are not as smart as Americans.
11. Immigrants get preferential treatment compared with citizens.
12. There are too many immigrants in the United States.

Appendix C

Unmatched Count Technique

Instructions:

You will now be shown five sets of statements. For each set, count the number of statements that apply to you or that you agree with. DO NOT report the specific items. Instead, report the NUMBER of statements with which you agree in the textbox below the set.

Figure C1

Sensitive UCT - Conspiracy

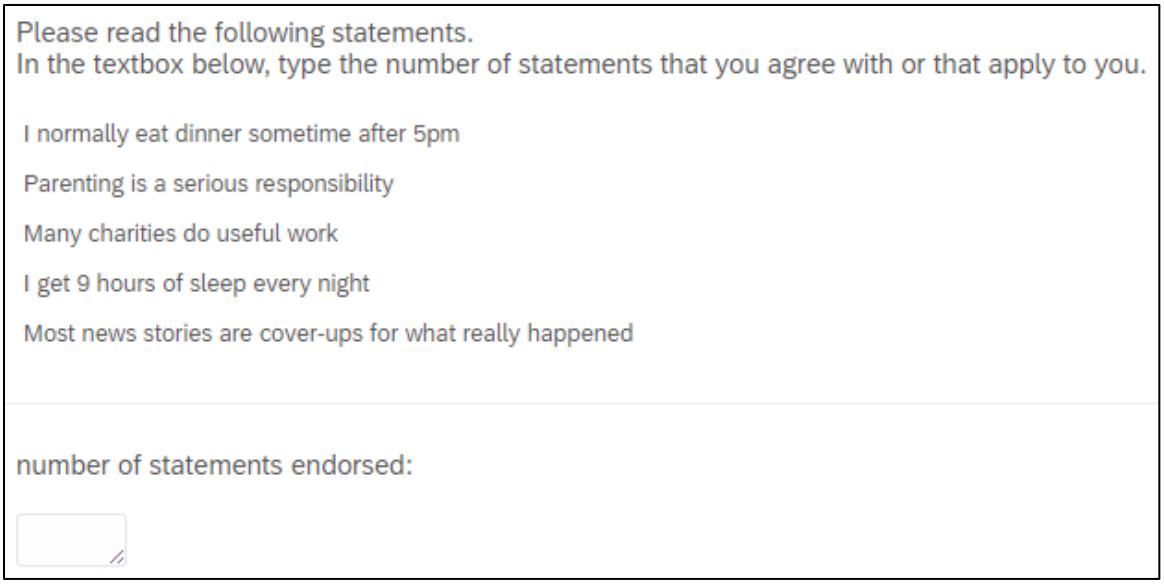


Figure C2

Baseline UCT - Conspiracy

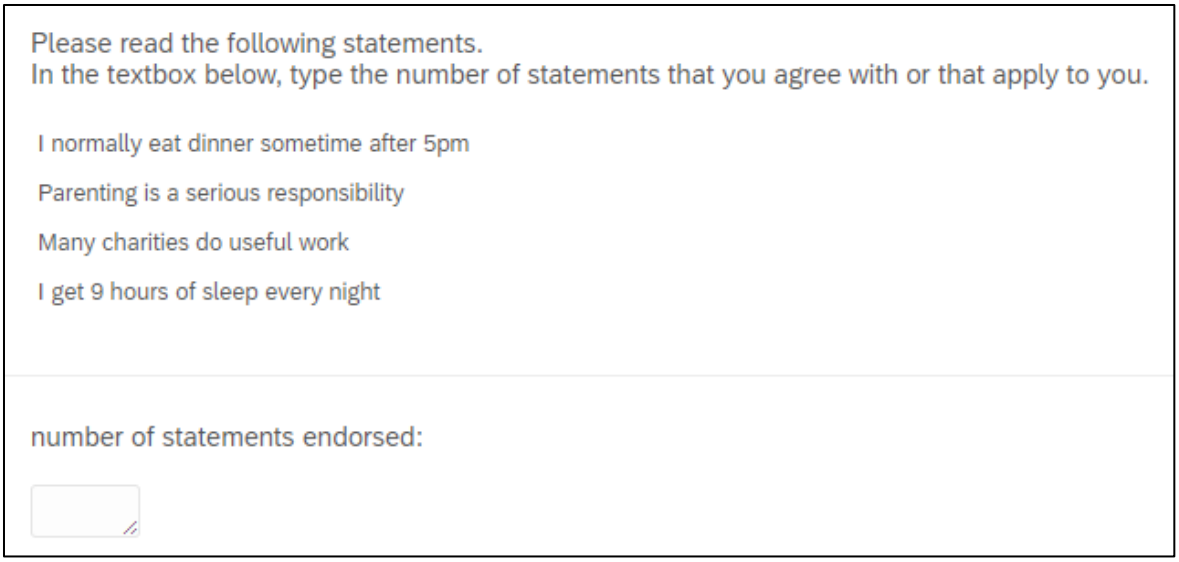


Figure C3

Sensitive UCT - Gender

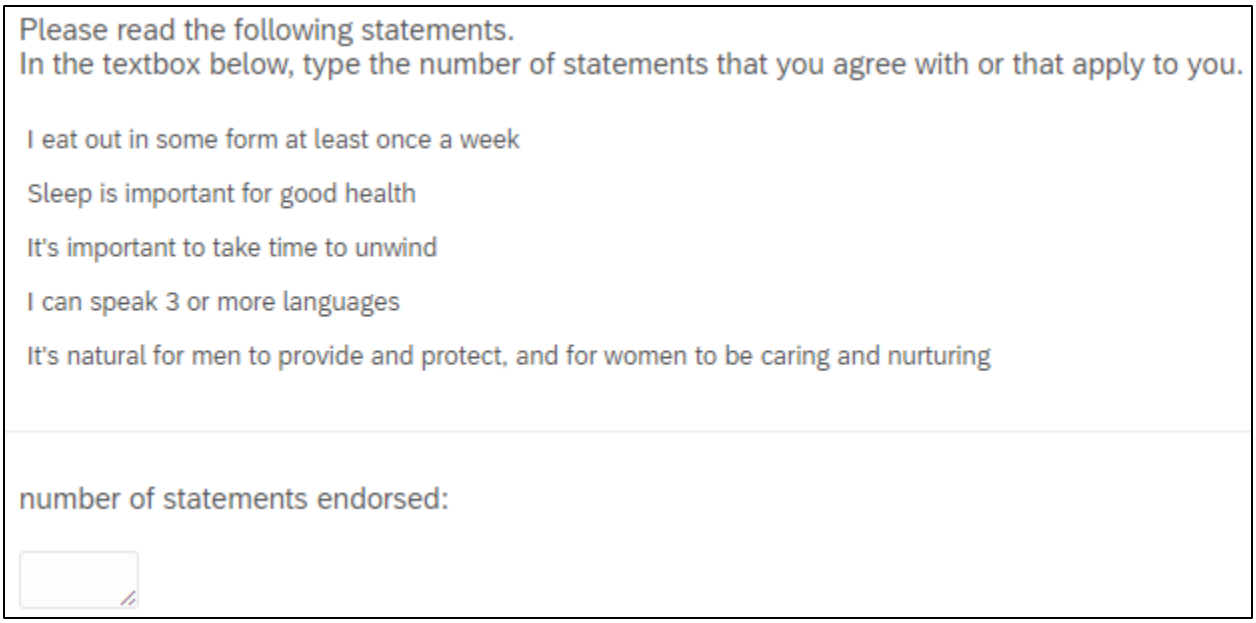


Figure C4

Baseline UCT - Gender

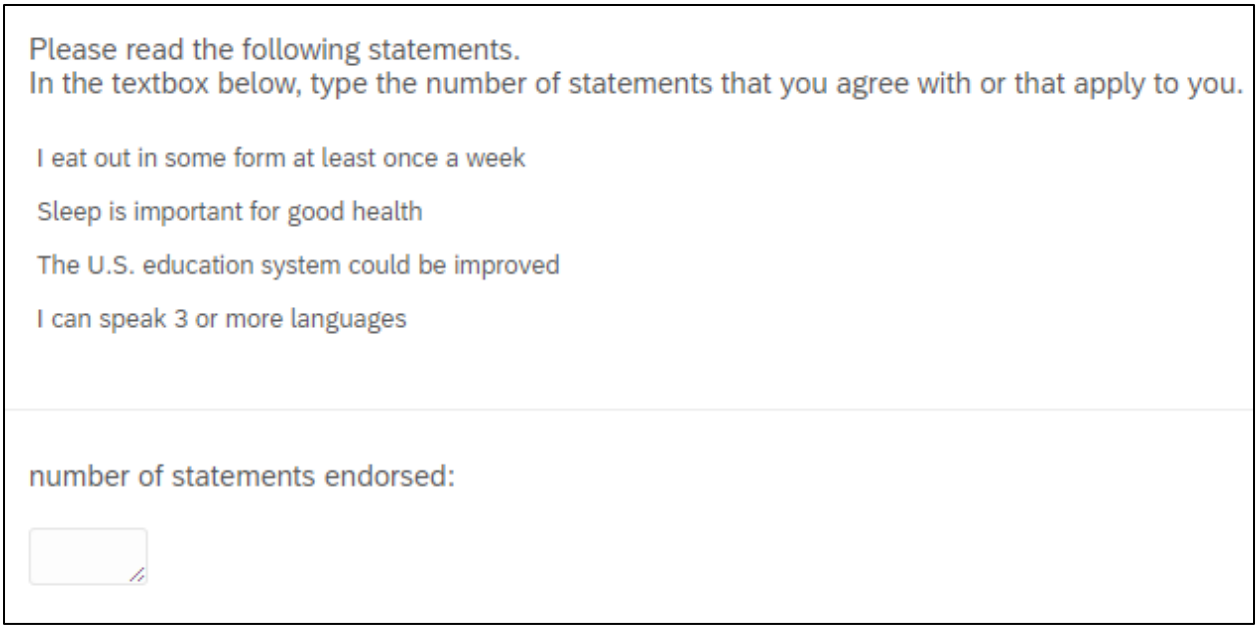


Figure C5

Sensitive UCT - Exercise

Figure C6

Baseline UCT - Exercise

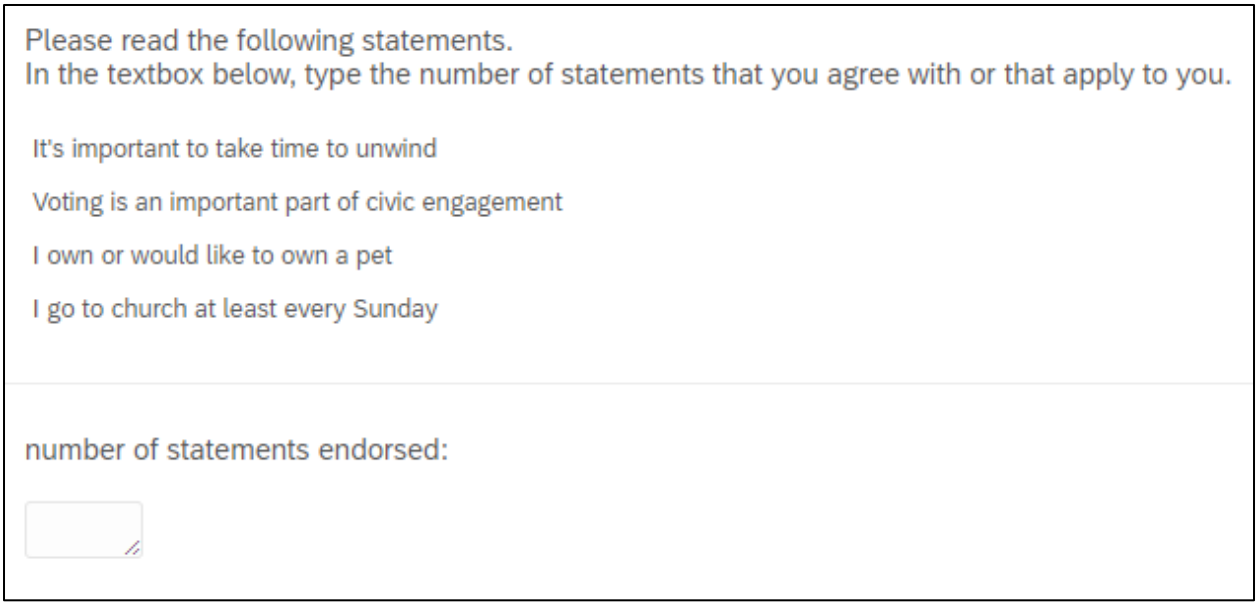


Figure C7

Sensitive UCT – Healthy Eating

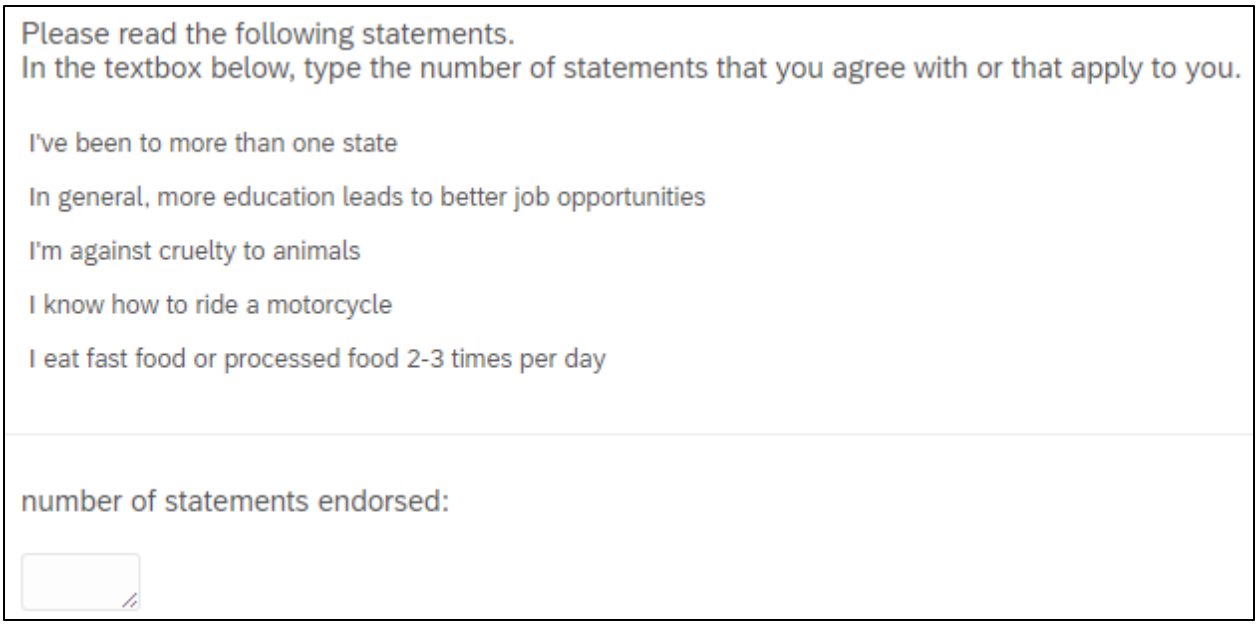


Figure C8

Baseline UCT - Healthy Eating

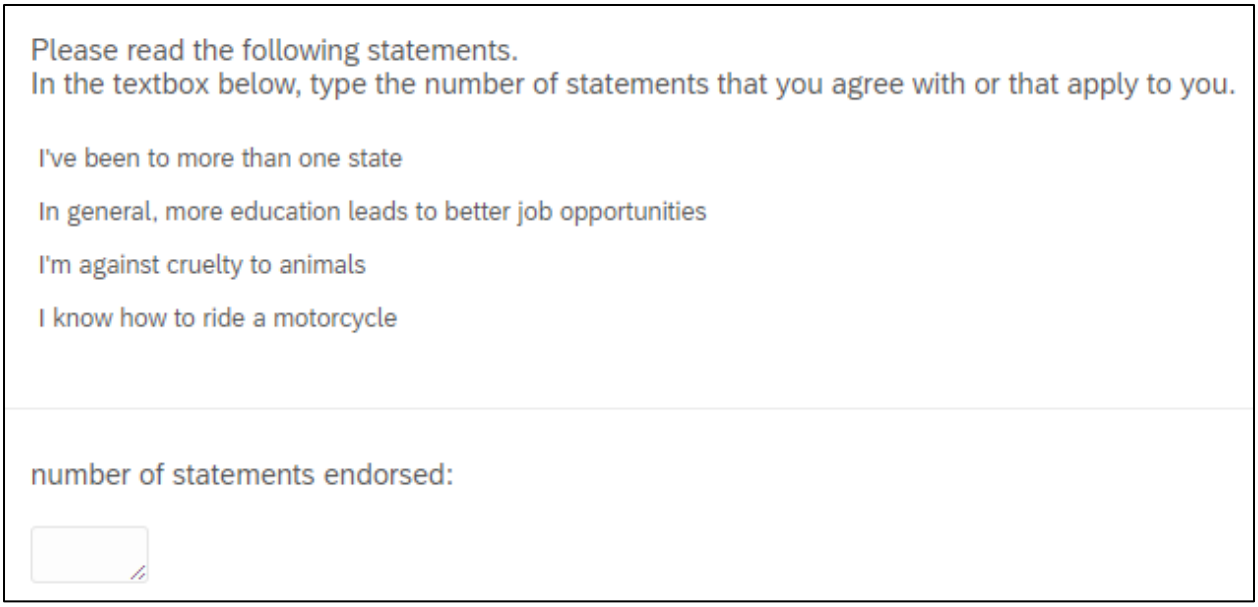


Figure C9

Sensitive UCT – Immigration

Figure C10

Baseline UCT - Immigration

Please read the following statements.
In the textbox below, type the number of statements that you agree with or that apply to you.

I shower at least every other day

I tend to be more irritable in hotter weather

Eating fast food is generally not good for your health

I brush my teeth after every meal

number of statements endorsed:

Appendix D

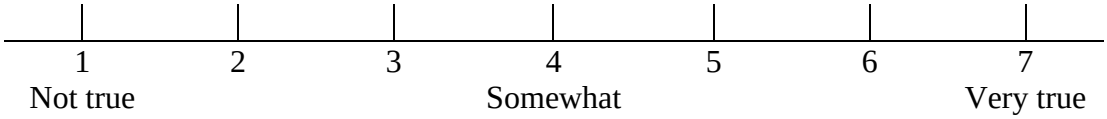
Identity Importance Items

Each of us is involved in different roles and activities. How important to you is...

	Not at all important										Extremely important
	0	1	2	3	4	5	6	7	8	9	10
advocating for gender equality	○	○	○	○	○	○	○	○	○	○	○
maintaining and advocating for gender norms	○	○	○	○	○	○	○	○	○	○	○
being welcoming of immigrants	○	○	○	○	○	○	○	○	○	○	○
protecting American culture from contamination from other cultures	○	○	○	○	○	○	○	○	○	○	○
eating healthy	○	○	○	○	○	○	○	○	○	○	○
being active (such as through working out, sports, dancing, etc.)	○	○	○	○	○	○	○	○	○	○	○
trusting established news outlets	○	○	○	○	○	○	○	○	○	○	○

Appendix E

Balanced Inventory of Desirable Responding, 16-item



Self-Deceptive Enhancement (SDE)-8

1	R	I have not always been honest with myself.
2		I always know why I like things.
3	R	It's hard for me to shut off a disturbing thought.
4		I never regret my decisions.
5	R	I sometimes lose out on things because I can't make up my mind soon enough.
6		I am a completely rational person.
7		I am very confident of my judgments.
8	R	I have sometimes doubted my ability as a lover.

Impression Management (IM)-8

9	R	I sometimes tell lies if I have to.
10		I never cover up my mistakes.
11	R	There have been occasions when I have taken advantage of someone.
12	R	I sometimes try to get even rather than forgive and forget.
13	R	I have said something bad about a friend behind his/her back.
14		When I hear people talking privately, I avoid listening.
15		I never take things that don't belong to me.
16		I don’t gossip about other people’s business.

Appendix F

Demographics

Table F1

Frequencies for Race

Race	N
American Indian or Alaska Native	4
Asian	37
Black or African American	32
Native Hawaiian or other Pacific Islander	6
White	384
Other[a]	10
Missing	4

Note: This item was "select all that apply" so the total exceeds the n of the total sample.

[a] Of respondents who selected *Other*, test responses are as follows: Hispanic (*n* = 1), Irish (*n* = 1), Middle Eastern (*n* = 3), Russian (*n* = 1), and Prefer not to answer (*n* = 1).

Table F2

Frequencies for Gender Identification

Gender Identity	N
Girl/Woman	338
Transgender Girl/Woman	0
Boy/Man	94
Transgender Boy/Man	1
Gender fluid or non-binary	7
Other	1
Missing	1

Table F3

Highest Levels of Education in the Sample

Education Status	N	%
Currently in a Bachelor's degree program	392	88.7
Bachelor's degree	0	0
Currently in a graduate degree or certificate program	38	8.6
Graduate degree or certificate	9	2
Missing	3	.7
Total	442	100

References

Alicke, M. D., Zell, E., & Guenther, C. L. (2013). Social self-analysis: Constructing, protecting, and enhancing the self. In J.M. Olson & M.P. Zanna (Eds.), *Advances in Experimental Social Psychology* (vol. 48, pp. 173–234). Academic Press.

Anderson, J. R. (2015). *Cognitive Psychology and Its Implications* (8th ed.). Worth Publishers.

Arnold, H.J., & Feldman, D. C. (1981). Social desirability response bias in self-report choice situations. *Academy of Management Journal 24*(2), 377-385. https://doi.org/10.2307/255848

Bargh, J. (2017). *Before you know it: The unconscious reasons we do what we do*. Atria Publishing Group.

Bazerman, M. H. & Moore, D. A. (2012). *Judgement in Managerial Decision Making* (8th ed.). Wiley.

Brenner, P. S. (2017). Narratives of response error from cognitive interviews of survey questions about normative behavior. *Sociological Methods & Research, 46*(3), 540-564. https://doi.org/10.1177/0049124115605331

Brenner, P. S. & DeLamater, J. (2016). Lies, damned lies, and survey self-reports? Identity as a causes of measurement bias. *Social Psychology Quarterly, 79*(4), 333-354. https://doi.org/10.1177/0190272516628298

Brenner, P. S., Serpe, R. T., & Stryker, S. (2014). The causal ordering of prominence and salience in identity theory: An empirical examination. *Social Psychology Quarterly, 77*(3), 231–52. https://doi.org/10.1177/0190272513518337

Brown, J. D. (2003). The self-enhancement motive in collectivistic cultures. The rumors of my death have been greatly exaggerated. *Journal of Cross-Cultural Psychology, 34*(5), 603-605. https://doi.org/10.1177/0022022103256482

Brown-Iannuzzi, J. L., Najle, M. B., & Gervais, W. M. (2019). The illusion of political tolerance: social desirability and self-reported voting preferences. *Social Psychological and Personality Science 10*(3), 364-373. https://doi.org/10.1177/1948550618760147

Bruder, M., Haffke, P., Neave, N., Nouripanah, N., & Imhoff, R. (2013). Measuring individual differences in generic beliefs in conspiracy theories across cultures: Conspiracy Mentality Questionnaire. *Frontiers in Psychology, 4*, Article 225. https://dx.doi.org/10.3389/fpsyg.2013.00225

Bruder, M., Haffke, P., Neave, N., Nouripanah, N., & Imhoff, R. (2013). Conspiracy Mentality Questionnaire [Database record]. APA PsycTests. https://doi.org/10.1037/t31566-000

Buchanan, T. (2016). Self-Report measures of executive function problems correlate with personality, not performance-based executive function measures, in nonclinical samples. *Psychological Assessment, 28*(4), 372-385. http://dx.doi.org/10.1037/pas0000192

Burke, P. J. (1980). The self: Measurement implications from a symbolic interactionist perspective. *Social Psychology Quarterly, 43*(1), 18-29. https://doi.org/10.2307/3033745

Christian, D. D., Stuckey, A. G., Boykin, A. A., & Adams, J. J. (2020). Predicting college enrollment of graduating high school seniors: How accurate is self-report?

Professional School Counseling, *23*(1), 1-10. https://doi.org/10.1177/2156759X20903512

Crowne, D. P. & Marlowe, D. (1960). A new scale of social desirability independent of psychology. *Journal of Consulting Psychology*, *24*(4), 349-354. https://doi.org/10.1037/h0047358

Dalton, D. R., Wimbush, J. C., & Daily, C. M. (1994). Using the unmatched count technique (UCT) to estimate base r. *Personnel Psychology*, *47*(4), 817–828. https://doi.org/10.1111/j.1744-6570.1994.tb01578.x

Darrow, A.A., Johnson, C. M., Miller, A. M., & Williamson, P. (2002). Can students accurately assess themselves? Predictive validity of student self-reports. *Update: Applications of Research in Music Education*, *20*(2), 8-11. https://doi.org/10.1177/875512330202000203

Diener, E., & Diener, M. (1995). Cross-cultural correlates of life satisfaction and self-esteem. *Journal of Personality and Social Psychology*, *68*(4), 653–663. https://doi.org/10.1037/0022-3514.68.4.653

Dodou, D., & de Winter, J. C. (2014). Social desirability is the same in offline, online, and paper surveys: A meta-analysis. *Computers in Human Behavior*, *36*, 487–495. https://doi.org/10.1016/j.chb.2014.04.005

Durmaz, A., Dursun, İ., & Kabadayi, E. T. (2020). Mitigating the Effects of Social Desirability Bias in Self-Report Surveys: Classical and New Techniques. In M. Baran, & J. Jones (Ed.), *Applied Social Science Approaches to Mixed Methods Research* (pp. 146-185). IGI Global. http://doi:10.4018/978-1-7998-1025-4.ch007

English, T., Chen, S., & Swann, W. B., Jr. (2008). A cross-cultural analysis of self-verification motives. In R. M. Sorrentino & S. Yamaguchi (Eds.), *Handbook of Motivation and Cognition Across Cultures* (pp. 119-142). Academic Press. https://doi.org/10.1016/B978-0-12-373694-9.X0001-3

Ganster, D. C., Hennessey, H. W., Luthans, F. (1983). Social desirability response effects: Three alternative models. *Academy of Management Journal, 26*(2), 321-331. https://doi.org/10.2307/255979

Gnambs, T. & Kaspar, K. (2017). Socially desirable responding in web-based questionnaires: A Meta-Analytic review of the candor hypothesis. *Assessment,24*(6), 746-762. https://doi.org/10.1177/1073191115624547

Godin, G. (2011). The Godin-Shephard leisure-time physical activity questionnaire. *Health & Fitness Journal of Canada*, *4*(1), 18-22. https://doi.org/10.14288/hfjc.v4i1.82

Gomes, H. S., Farrington, D. P., Maia, Â., & Krohn, M. D. (2019). Measurement bias in self-reports of offending: A systematic review of experiments. *Journal of Experimental Criminology*, *15*(1), 313-339. https://doi.org/10.1007/s11292-019-09379-w

Gómez, A., Seyle, D. C., Huici, C., & Swann, W. B. Jr. (2009). Can self-verification strivings fully transcend the self–other barrier? Seeking verification of ingroup identities. *Journal of Personality and Social Psychology*, *97*(6), 1021-1044. https://doi.org/10.1037/a0016358

Government of Northwest Territories (2017). *Healthy Eating Assessment* [Self-assessment brochure]. https://www.hss.gov.nt.ca/sites/hss/files/resources/healthy-eating-assessment.pdf

Greenwald, A. G., & Banaji, M. R. (1989). The self as a memory system: Powerful, but ordinary. *Journal of Personality and Social Psychology, 57*(1), 41–54. https://doi.org/10.1037/0022-3514.57.1.41

Guenther, C., Wilton, E., & Fernandes, R. (2016). Identity. In Zeigler-Hill, V. and Shackelford, Todd K. (Ed.), *Encyclopedia of Personality and Individual Differences (*1-10). Springer International Publishing.

Hadaway, C. K., Marler, P. L., & Chaves, M. (1998). Overreporting church attendance in America: Evidence that demands the same verdict. *American Sociological Review, 63*(1), 122–130. https://doi.org/10.2307/2657484

Hancock, D. R., & Flowers, C. P. (2001). Comparing social desirability responding on World Wide Web-paper administered surveys. *Educational Technology Research and Development, 49*(1), 5–13. https://doi.org/10.1007/BF02504503

Hart, C. M., Ritchie, T. D., Hepper, E. G., & Gebauer, J. E. (2015). The balanced inventory of desirable responding short form (bidr-16). *SAGE Open, 5*(4), 1-9. https://doi.org/10.1177/2158244015621113

Havlicek, L. L., & Peterson, N. L. (1974). Robustness of the *t* test: A guide for researchers on effect of violations of assumptions, *Psychological Reports, 34*, 1094-1114. https://doi.org/10.2466/pr0.1974.34.3c.1095

Higgins, E. T. (1987). Self-discrepancy: A theory relating self and affect. *Psychological Review, 94*(3), 319–340. https://doi.org/10.1037/0033-295X.94.3.319

Kahneman, D. (2011). *Thinking, fast and slow*. Farrar, Straus, and Giroux.

Kihlstrom, J. F., Cantor, N., Albright, J. S., Chew, B. R., Klein, S. B., & Niedenthal, P. M. (1988). Information processing and the study of the self. In L. Berkowitz (Ed.), *Advances in experimental social psychology, Vol. 21. Social psychological studies of the self: Perspectives and programs* (p. 145–178). Academic Press.

Krueger, J. (1998). Enhancement bias in descriptions of self and others. *Personality & Social Psychology Bulletin*, *24*(5), 505-516. https://doi.org/10.1177/0146167298245006

Kurman, J. (2003). Why is self-enhancement low in certain collectivist cultures? An investigation of two competing explanations. *Journal of Cross-Cultural Psychology*, *34*(5), 496–510. https://doi.org/10.1177/0022022103256474

Leary & Tangney, (2011). The self as an organizing construct in the behavioral and social sciences. In M. R. Leary & J. P. Tangney (Eds.) *Handbook of Self and Identity* (2nd ed., pp. 1-18), Guilford Publications.

Lelkes, Y., Krosnick, J. A., Marx, D. M., Judd, C. M., & Park, B. (2012). Complete anonymity compromises the accuracy of self-reports. *Journal of Experimental Social Psychology*, *48*(6), 1291-1299. https://doi.org/10.1016/j.jesp.2012.07.002

Linville, P. W. (1985). Self-complexity and affective extremity: Don't put all of your eggs in one cognitive basket. *Social Cognition*, *3*(1), 94–120. https://doi.org/10.1521/soco.1985.3.1.94

Linville, P. W. (1987). Self-Complexity: A cognitive buffer against stress-related illness and depression. *Journal of Personality and Social Psychology*, *52*(4), 663-676. https://doi.org/10.1037/0022-3514.52.4.663

Markus, H. (1977). Self-schemata and processing information about the self. *Journal of Personality and Social Psychology, 35*(2), 63–78. https://doi.org/10.1037/0022-3514.35.2.63

Markus, H. (1983). Self-Knowledge: An expanded view. *Journal of Personality, 51*(3), 543-565. https://doi.org/10.1111/j.1467-6494.1983.tb00344.x

Markus, H., Crane, M., Bernstein, S., & Siladi, M. (1982). Self-schemas and gender. *Journal of Personality and Social Psychology, 42*(1), 38–50. https://doi.org/10.1037/0022-3514.42.1.38

Markus, H., & Sentis, K. (1982). The self in social information processing. In J. Suls (Ed.), *Social Psychological Perspectives on the Self* (pp.41-70). L. Erlbaum Associates.

Markus, H., & Smith, J. (1981). The influence of self-schemata on the perception of others. In N Cantor & J. Kihlstrom (Eds.), *Personality, Cognition, and Social Interaction* (pp. 233-262). L. Erlbaum Associates.

Markus, H., & Wurf, E. (1987). The dynamic self-concept: A social psychological perspective. *Annual Review of Psychology, 38,* 299–337. https://doi.org/10.1146/annurev.ps.38.020187.001503

McCall, G. J., & Simmons, J. L. (1978). *Identities and Interactions: An Examination of Human Associations in Everyday Life*. Free Press

McConnell, A. R., (2011). The multiple self-aspects framework: Self-Concept representation and its implications. *Personality and Social Psychology Review, 15*(1) 3-27. https://doi.org/10.1177/1088868310371101

Navarro-González, D., Lorenzo-Seva, U., & Vigil-Colet, A. (2016). How response bias affects the factorial structure of personality self-reports. *Psicothema,28*(4), 465-470. doi: 10.7334/psicothema2016.113.

Niepel, M., Rudolph, U., Shützwohl, A., & Meyer, W.-U. (1994). Temporal characteristics of the surprise reaction induced by schema-discrepant visual and auditory events. *Cognition and Emotion, 8*(5), 433–452. https://doi.org/10.1080/02699939408408951

Nisbett, R. E., & Wilson, T. D. (1977). Telling more than we can know: Verbal reports on mental processes. *Psychological Review, 84*(3), 231–259. https://doi.org/10.1037/0033-295X.84.3.231

Oyserman, D., Elmore, K., & Smith, G. (2011). Self, self-concept, and identity. In M. R. Leary & J. P. Tangney (Eds.) *Handbook of Self and Identity* (2nd ed., pp. 69-104), Guilford Publications.

Paulhus DL (1984). Two-component models of socially desirable responding. *Journal of Personality and Social Psychology, 46*(3), 598–609. https://doi.org/10.1037/0022-3514.46.3.598

Paulhus, D. L. (1991). Measurement and control of response bias. In J. P. Robinson, P. R. Shaver, & L. S. Wrightsman (Eds.), *Measures of Personality and Social Psychological Attitudes*, (pp. 17-59). Academic Press.

Paulhus, D. L. (2002) Socially desirable responding: The evolution of a construct. In H. Braun, D. N. Jackson, D. E. Wiley (Eds.), *The Role of Constructs in Psychological and Educational Measurement*. L. Erlbaum Associates.

Paxton, A. E., Stryker, L. A., Toobert, D. J., Ammerman, A. S., & Glasgow, R. E., (2011). Starting the conversation: Performance of a brief dietary assessment and intervention tool for health professionals. *American Journal of Preventive Medicine*, *40*(1), 67-71. https://doi.org/10.1016/j.amepre.2010.10.009

Raghavarao, D., & Federer, W. T. (1979). Block total response as an alternative to the randomized response method in surveys. *Journal of the Royal Statistical Society Series B (Methodological), 41*(1), 40–45.

Rosenberg, M. (1979). *Conceiving the Self*. Basic Books

Sackeim, H. A., & Gur, R. C. (1978). Self-deception, self-confrontation, and consciousness. In G. E. Schwartz & D. Shapiro (Eds.), *Consciousness and Self-Regulation, Advances in Research* (Vol. 2, pp. 139-197). Plenum Press.

Schwarz, N. (1999). Self-reports: How the questions shape the answers. *American Psychologist*, *54*(2), 93–105. https://doi.org/10.1037/0003-066X.54.2.93

Sedikides, C., Gaertner, L., & Toguchi, Y., (2003). Pancultural self-enhancement. *Journal of Personality and Social Psychology, 84*(1), 60-79. doi: 10.1037/0022-3514.84.1.60

Sedikides, C., & Strube, M. J. (1997). Self-evaluation: To thine own self be good, to thine own self be sure, to thine own self be true, and to thine own self be better. In M. P. Zanna (Ed.), *Advances in Experimental Social Psychology* (vol. 29, pp. 209–269). Academic Press.

Seih, Y., Buhrmester, M. D., Lin, Y., Huang, C., & Swann, W. B., Jr. (2013) Do people want to be flattered or understood: The cross-cultural universality of self-

verification. *Journal of Experimental Social Psychology*, *49*(1), 169-172. https://doi.org/10.1016/j.jesp.2012.09.004

Showers, C. J., & Zeigler-Hill, V., (2011). Organization of self-knowledge: Features, functions, and flexibility. In M. R. Leary & J. P. Tangney (Eds.) *Handbook of Self and Identity* (2nd ed., pp. 105-123), Guilford Publications.

Stets, J. E., & Burke, P. J. (2000) Identity theory and social identity theory. *Social Psychology Quarterly, 63*(3), 224-237. https://doi.org/10.2307/2695870

Stöber, J., Dette, D. E., & Musch, J. (2002). Comparing continuous and dichotomous scoring of the Balanced Inventory of Desirable Responding. *Journal of Personality Assessment, 78*, 370-389. doi:10.1207/S15327752JPA7802_10

Stryker, S., & Serpe, R. T. (1994). Identity salience and psychological centrality: Equivalent, overlapping, or complementary concepts? *Social Psychology Quarterly, 57*(1), 16–35. https://doi.org/10.2307/2786972

Sudman, S., Bradburn, N. M., & Schwarz, N. (1996). *Thinking about answers: The application of cognitive processes to survey methodology.* Jossey-Bass.

Swann, W. B., Jr. (1983). Self-Verification: Bringing social reality into harmony with the self. In J. Suls & A. G. Greenwald (Eds.), *Social Psychological Perspectives on the Self* (Vol. 2, pp. 33–66). Hillsdale, NJ: Erlbaum.

Swann, W. B., Jr. (1987). Identity negotiation: Where two roads meet. *Journal of Personality and Social Psychology, 53*(6), 1038–1051. https://doi.org/10.1037/0022-3514.53.6.1038

Swann, W. B., Jr. (1996). *Self-traps: The elusive quest for higher self-esteem*. Freeman.

Swann, W. B., Jr., & Buhrmester, M. D. (2012). Self-verification: The search for coherence. In M. R. Leary & J. P. Tangney (Eds.), *Handbook of Self and Identity*, (2nd ed., pp. 405–424). Guilford.

Swann, W. B., & Read, S. J. (1981a). Acquiring self-knowledge: The search for feedback that fits. *Journal of Personality and Social Psychology, 41*(6), 1119–1128. https://doi.org/10.1037/0022-3514.41.6.1119

Swann, W. B., & Read, S. J. (1981b). Self-verification processes: How we sustain our self-conceptions. *Journal of Experimental Social Psychology, 17*(4), 351–372. https://doi.org/10.1016/0022-1031(81)90043-3

Taylor, S. E., & Crocker, J. (1981). Schematic bases of social information processing. In E. T. Higgins, C. P. Herman, & M.P Zanna (Eds.), *Social Cognition*: *The Ontario Symposium* (Vol. 1, pp. 89-134). L. Erlbaum Associates.

Tinsley, Catherine H., Howell, Taeya M., & Amanatullah, Emily T. (2015). Who should bring home the bacon? How deterministic views of gender constrain spousal wage preferences. *Organizational Behavior and Human Decision Processes, 126*(1), 37-48. https://dx.doi.org/10.1016/j.obhdp.2014.09.003

Tinsley, C. H., Howell, T. M., & Amanatullah, E. T. (2015). Gender Determinism Scale [Database record]. APA PsycTests. https://doi.org/10.1037/t39181-000

Tourangeau, R., & Yan, T. (2007). Sensitive questions in surveys. *Psychological Bulletin, 133*(5), 859–883. https://doi.org/10.1037/0033-2909.133.5.859

Tversky, A. & Kahneman, D. (1974). Judgment under uncertainty: Heuristics and biases. *Science, 185*(4157), 1124-1131. doi: 10.1126/science.185.4157.1124

Varela, J. G., Gonzalez, E., Jr., Clark, J. W., Cramer, R. J., & Crosby, J. W. (2013). Development and preliminary validation of the Negative Attitude Toward Immigrants Scale. *Journal of Latina/o Psychology, 1*(3), 155-170. https://dx.doi.org/10.1037/a0033707

Varela, J. G., Gonzalez, E., Jr., Clark, J. W., Cramer, R. J., & Crosby, J. W. (2013). Negative Attitude Toward Immigrants Scale [Database record]. APA PsycTESTS. https://dx.doi.org/10.1037/t24796-000

Wiggins, J. S. (1964). Convergences among stylistic response measures from objective personality tests. *Educational and Psychological Measurement, 24*(3), 551–562. https://doi.org/10.1177/001316446402400310

Williams, P. G., Rau, H. K., Suchy, Y., Thorgusen, S. R., & Smith, T. W., (2017). On the validity of self-report assessment of cognitive abilities: Attentional control scale associations with cognitive performance, emotional adjustment, and personality. *Psychological Assessment, 29*(5), 519-530. http://dx.doi.org/10.1037/pas0000361