Non-volitional Faking on a Personality Measure:
Testing the influence of Unconscious Processes

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Abstract
Personality measures were predicted to be susceptible to response distortion above and beyond volitional strategies of impression management. A 2 (Instruction Set) x 2 (Personality Feedback) x 2 (Mortality Salience) factorial design addressed social desirability biases in responding to personality measures. There were significant changes in all measures due to volitional (Fake Good) strategies. Thoughts of death lead to decreased distortion, but only on the measures sensitive to social desirability bias. Mortality Salience interacted with personality feedback, such that test responses were distorted in the opposite direction of the feedback, supporting Optimal Distinctiveness Theory. A significant interaction between Mortality Salience and Instruction Set suggests further attention be given to unconscious distortion in personality scores and that Terror Management Theory incorporate further research on individual differences.
Non-volitional Faking on a Personality Measure: Testing the influence of Unconscious Processes

There is a large body of research exploring faking on personality tests, and much of it has been funneled, perhaps by methodological constraints, into a relatively discrete area. Psychologists have long studied the prevalence, detectability, and applied effects of faking, with laudable effectiveness. There has been somewhat less focus on the internal, psychodynamic processes of the person doing the faking. This also may be attributed to methodological constraints involved in illuminating these internal processes with acceptable reliability and validity.

This research hopes to venture towards this psychodynamic terra incognita through an exploration of nonvolitional motives in test-taking. It will first review current understandings of personality tests, and the causes and consequences of faking them. Social desirability-based responding is presented as the most common paradigm for understanding faking, and this proposal will address how the splitting of this response set into impression management/volitional and self-deceptive enhancement/nonvolitional components was a necessary stepping stone to this current research.

The effective manipulation of nonvolitional response sets requires a theory and corresponding experimental paradigm. Terror management theory and its mortality salience effects are reviewed, and presented as plausible means for doing so. Thus, an experiment is proposed in which unconscious processes will be used to foster response distortion in personality tests. In the centerpiece of this research, this nonvolitional distortion will be induced in parallel to the typical distortion induction of the faking literature, which is volitional in nature. It is expected that this will demonstrate the power of unconscious biases in test-taking, and the utility of considering these when measuring faking and the criterion-related validity of personality measures.

Faking

A steady stream of research (Hough, Eaton, Dunnette, Kamp, & McCloy, 1990; Hogan, Hogan, & Roberts, 1996) provides reassurance that personality tests are a positive element of applicant selection batteries. They provide information over and above job knowledge and cognitive ability (Schmidt & Hunter, 1998) and this information may be less likely to foster adverse impact on protected groups (Ones & Visweswaren, 1998, with Ryan, Ployhart, & Friedel, 1998 for a countervailing view). Nonetheless, predictive validity coefficients rarely exceed the .25 barrier (Barrick & Mount, 1991) or, restricted to “Big 5” measures only, about .20 (Hurtz & Donovan, 2000). There are many plausible explanations lying both within the criterion space (performance), within the predictor (personality measures), and within their respective measurements. Concentrating on the predictor side of the dilemma, the construct validity of a measure is directly affected by the response set of the individual to whom it is administered. In this venue, a response set is a function of the motive, the approach, and the strategy of the test taker (Arvey, Strickland, Drauden, and Martin, 1990). Concerns with faking on personality measures fall in this same realm.

Faking Personality Tests. Faking may be viewed as a motivated effort to enhance or obscure salient traits, so as to present a tailored personality profile. It is the “manufactured” nature of this profile that causes such concern. Impression management
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(immediate and long-term efforts to present just such a favorable image to a target audience) is often an effective (and therefore fundamental) aspect of personal interaction (Wayne & Liden, 1995). Due to these impression management motives, the personality measure may not merely reflect a stable trait. Rather, it is a snapshot of a moving constellation of elements shaped by situational constraints. Will this purpose-built “image” of a personality trait be stable enough that the measure’s score will relate to future workplace success? This has been the topic of some debate, centered upon the effect of faking on the criterion-related validity of personality measures. On the surface, the faked personality profile would appear invalid, as it does not provide a “true score” for the faking test taker. Hence, any previously established relationship between the particular personality trait and performance would be weakened. Cogent voices (Kroger & Wood, 1993; Hogan, et al., 1996) remind us that “true” scores may be a “false” goal. From this viewpoint, a personality measure is not tapping into “truth,” but rather into truth as perceived (or hoped-for) by the test taker. It is easy to imagine that impression management (Bolino, 1999) and self-validation motives (Swann, 1987) also bear an ongoing influence on this human interaction. We therefore gain valuable perspective when we view a personality measure as merely another communication between an individual and an audience (Kroger & Wood, 1993). From this point of view, a true score is (at best) only true at that one particular moment.

What catches the attention of applied psychology is the nature of the response pattern active at that moment. The field has long grappled with the possibility of a response set oriented around something other than this true self-report of personality. Researchers have debated whether or not faking occurs, with Goldberg (1993) emphasizing its rarity, and Douglas, McDaniel, and Snell (1996) demonstrating that it is in varying degrees widespread. As an accurate measure of real-life faking generally encounters difficulties surrounding criterion measurement, decades of research focused on whether or not various personality measures were susceptible to impression management efforts. While it remains difficult to perceive a clear theoretical underpinning to faking, this body of research has shown that subjects can willfully alter their scores by .5 standard deviation (Ones, Viswesvaran & Korbin, 1995). “Willfully alter,” in the sense that most research examined group means in conditions under which some were tasked to respond honestly, and some to “fake good.” As psychologists chose sides and evolved experimental paradigms, this lead to the dominance of two issues in faking research, and in such theory-building as occurred: (1) the idea that faking is best measured through recourse to social desirability indices, and that (2) the primary motivation is volitional impression management by an applicant.

Social Desirability

Social desirability, also referred to as social distortion, has long been the sine qua non of research into faking. Most instruments that contain a faking detection subscale are relying upon manifestations of the latent construct of social desirability. Although the recent review by Snell et al. (2000) highlights the complexity of the social desirability construct, it devolves to validity – the extent to which social desirability moderates the interpretability of a measures’ scores. To a certain extent, this introduces another area of considerable debate, what is the effect of faking? Dating back to formative efforts in clinical psychology, such as Meehl and Hathaway’s (1946) L- and K-scales for the
MMPI, faking was seen as a source of bias and error in personality measures. The K-scale’s very purpose was to allow this response distortion to be measured and then precisely partialled out from the MMPI-generated profile. Amassing research, however, gradually turned this view around. Although early theorizing by Edwards (1970, 1990), that social desirability was more a personality trait than a response distortion, was debated by researchers such as Crowne and Marlow (1960). Recent studies tend to support the McRae and Costa (1983) argument that social desirability’s correlation with personality measures represents an underlying personality trait, rather than simple distortion. Ones et al. (1996) reported findings indicating that social desirability was correlated with Big Five measures of Emotional Stability and Conscientiousness, such that when Social Desirability was partialled out, these two variables became less effective predictors of performance. When this response set is partialled out, criterion validity is curtailed, and an element of reliable individual difference is lost (Ones et al., 1996). When Ellingson, Sackett and Hough (1999) empirically tested and extended the conclusions of Ones et al.’s meta-analysis, they found that partialling out a social desirability factor did not re-establish an “honest” score. One issue stemming from their study is that they factored out a unidimensional measure of social desirability (Ellingson et al., 1999). One of the major points made by Snell et al. (2000), however, was that social desirability is a very complex, multifaceted construct. A finer-grained look at faking may be more useful if it steps away from the standard unidimensional definition of faking, even if the effects of faking are also still undecided (Snell et al., 2000). The distinction that is important here, however, is that most faking research has been oriented around social desirability, and viewed faking motives as conscious, effortful attempts to match or represent a particular profile.

**Test-taker Motives**

Regarding motives, concurrent validity studies captured early critical attention, because of the danger in mistakenly assuming there would be equivalent motivations to appear socially desirable (to fake) amongst applicants and incumbents. Arvey, et al. (1990), among others, demonstrated that these two groups presented very different scores on the impression management scales of several instruments. This seemed chiefly due to different levels of volitional motivation. Beyond this one well-founded distinction regarding job-seeking motives to impression manage via selection instruments, there has been comparatively little attention to test-taker motivation in regards to faking.

Perhaps the most well developed addition has been Paulhus’s Two-Component Model, as epitomized in the Balanced Inventory of Desirable Responding (BIDR). The BIDR capitalizes on earlier factor analytic work, such as that of Block (1965) and Wiggins (1964). Corresponding to their gamma and alpha factors, the BIDR provides two subscales: a traditional Impression Management (IM) scale, and a Self-Deceptive Enhancement (SDE) scale. In it, there is recognition that Impression Management is not sufficient to explain a typical social desirability response set. Its SDE scale captures a motive that is self-directed, rather than other-directed. A person engaged in self-deceptive enhancement is responding in such a fashion as to ward off information that threatens self-schemas and self-esteem (Paulhus, 1984). Various manipulations of test administration conditions and instructions support the distinction between impression management and self-deceptive enhancement. For instance, research by Paulhus and his
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Damarin and Messick were not the first to speculate about effects of the unconscious in personality measures, as clinical psychologists had long considered unconscious influences in projective tests, such as the Rorschach (Rorschach, 1921) and Thematic Apperception Tests (Murray, 1943). Of course, their developers viewed the unconscious as a source of truth, rather than bias. Conversely, Meehl and Hathaway, developers of the MMPI’s K-scale, were actively concerned with distortion stemming from the unconscious even amongst “individuals who might be consciously quite honest and sincere in their responses” (Meehl & Hathaway, 1946). If there is an unconscious bias in responses to a noncognitive measure, is this faking? There has been relatively less attention given to unconscious bias in self-report measures, for two reasons. First, it has generally been easier to empirically control and assess volitional response sets via traditional “honest vs. fake good” paradigms. Secondly, there is reason to suspect that nonvolitional response biases have a different relationship to “true” scores. It can be proposed, because of the absence of deliberate, volitional distortion, that the unconscious response pattern is a more durable and accurate representation of what “personality” is. Although they approach this concept from different angles, researchers as diverse as Robert Hogan, Deniz Ones, and A.L. Edwards find that there is, within the construct of “Socially Desirable Responding,” something that contains a meaningful aspect of personality. When this response set is partialled out, criterion validity is curtailed, and an element of reliable individual difference is lost (Ones et al., 1996; Ellingson et al., 1999). It may be that this enduring element lies within the unconscious element of social desirability. Past advice to partial out only IM scores, and not SDE scores (Paulhus, 1984), follows this line of reasoning. Thus, although the findings support the concept of enduring, trait social desirability, it may well be that the stability arises from the more unconscious, self-deceptive aspect of social desirability. This is not to say, however, that
unconscious responding is unresponsive to situational forces. Although some previous experimental manipulations of a testing situation did not seem to foster variability in this unconscious responding, the social psychology literature provides a wealth of examples. From Kurt Lewin and Leon Festinger forward through Nisbett and Wilson’s “telling more than we can know…” research (1977), there are many examples of subjects being unaware of a deceptive manipulation and its influence over their attributions and behavior. The realm of response distortion in noncognitive measures, however, has encountered difficulty manipulating and measuring nonvolitional faking, even with the theoretical underpinning provided by Paulhus and associates. The distinction between conscious and unconscious thought seems worthy of further interest.

Measuring the Unconscious

The unconscious is not an easy target for rigorous study. While Freud identified the “Royal Road” to the unconscious (Freud – The Interpretation of Dreams, 1900), greater utility may be derived from the more utilitarian footpath of empirical manipulation. Cognitive psychology provides useful landmarks in the effort to move from a psychodynamic focus to more testable areas. In 1997, Wegner and Smart introduced the concept of “deep cognitive activation.” Essentially, the concept of consciousness is replaced by cognitive activation, which includes two complimentary structures: the active awareness of a thought, and its precursor, accessibility. This accessibility, and its distinction from active awareness, is best depicted by cognitive research into priming. In this sense, accessibility is the readiness of a thought to enter or affect awareness (Wegner & Smart, 1997). For instance, the words produced in word-fragment completion tasks have been found to be related to previously presented stimuli, even when the priming stimuli were presented so briefly that subjects could not recall, or even recognize, the stimulus words (Murphy & Zajonc, 1993). Thus, these words were accessible, but not in awareness, a state often referred to as the unconscious. When awareness and accessibility are both present, this is termed “full activation,” exemplified by focused concentration on a topic of personal significance. “Deep activation” describes a tendency to think about a particular topic, which is nonetheless not followed by awareness of the thought. A common reason that the thought does not enter awareness is mental control processes, such as distraction. Wegner and colleagues demonstrated that such mental control processes could suppress awareness of a thought, but that the willful act of suppression ironically increased the accessibility of the thought. The thought was therefore in a state of deep cognitive activation, rather than surface activation. This was demonstrated via increased spontaneous thoughts of white bears (Wegner et al., 1987), and in delayed response times on a Stroop interference task (Wegner & Erber, 1992). With these findings, it is plausible to think of the unconscious in clear cognitive terms of priming, thought associations, and accessibility, rather than the Freudian terminology so resistant to empiricism. Thus, there is reason to believe that the unconscious can be empirically employed by applied psychologists. The distortion in personality measures that has been attributed to unconscious processes should therefore be susceptible to experimental manipulation. Because this challenge has not yet been met, the effect of nonvolitional response distortion is still an unquantified aspect of social desirability-based response distortion. Before this challenge can be faced, an experimental manipulation is required, one that could demonstrate the relative influence of unconscious motives in a response
set. Although the Stroop paradigm has been shown to be useful, the requirement to utilize computers or other mechanical props may occasionally limit its application in research requiring larger sample sizes. For this reason, a different source of unconscious influence should be considered.

Terror Management Theory

Building from ideas advanced by Ernest Becker (1971), Jeff Greenberg and his associates (e.g. Greenberg, Solomon & Pyszczynski, 1997; Solomon, Greenberg, & Pyszczynski, 1991) have elaborated Terror Management Theory (TMT), which employs existential fears of death and meaninglessness to address common questions of social psychology. As the principle research paradigm for testing this theory’s hypotheses, they devised and repeatedly executed an experimental manipulation of the unconscious, called Mortality Salience (MS). It is this manipulation which may shed light on nonvolitional faking. As it has not moved far into the realm of industrial/organizational psychology, a careful review of Terror Management Theory is needed to establish how this would work.

In the beginning: As human mental processes evolved, humans gained a new ability - to think symbolically, to consider the future, to see themselves within time and space (Rosenblatt, Greenberg, Solomon, Pyszczynski, & Lyon, 1989), and to use these perspectives to more effectively adapt to the environment (Carver & Schier, 1981). These new cognitive attributes created a substantial problem, given the inherited, pre-existing motive to stay alive. All living creatures seem to have a hard-wired biological imperative to exist, but only humans, with their recently developed abstract thinking abilities, have to simultaneously deal with the absolute certainty of an eventual death in a universe that is inescapably uncontrollable (Solomon, Greenberg, & Pyszczynski, 1991). It is worth noting that the word “death” as used herein, is merely the most parsimonious way of describing, not just mortality, but meaninglessness, absence of connectedness or control, and existential vacuum. Humans, then, must reconcile the quandary of seeking survival as a primary task, while also anticipating inevitable failure. This recognition generates deep anxiety, which can be highly distracting. The nature of this distraction is depicted in the meta-analysis conducted by Kluger and DeNisi in support of their proposed Feedback Intervention Theory (FIT). Although their focus was on the feedback-performance relationship, they posited a three-level hierarchy of task learning, task performance, and meta-tasks, which seeks to explain the consequences of task distraction. When meta-tasks, such as the maintenance of self-efficacy and self-esteem, are made salient, task performance suffers (Kluger & DeNisi, 1996). Although they were only examining the effects of feedback on performance, their observations of instances wherein feedback inhibited performance (Kluger & DeNisi, 1996) suggests a resource allocation model (Kanfer & Ackerman, 1989) in which attention to distracters limits attention to task performance. This line of reasoning is not inconsistent with Greenberg and associates’ precept that an evolutionary basis can be found for TMT. If performance on the task of survival is considered, evolutionary processes are likely to have supported a means of limiting the distracting demands of the parallel task of dealing with fears of death and meaninglessness (Pyszczynski, Greenberg & Solomon, 1997). A common finding in cognitive psychology has been this potential for performance degradation during multi-tasking conditions (Schneider, Dumais & Shiffrin, 1984). Fisk and Schneider (1983) further demonstrated that performance need not suffer, if a task is
Automatized. TMT posits that development of a functional, automatized way of dealing with the terror of ultimate death would pay large survival dividends. This mechanism, succinctly, is culture (Becker, 1971).

The Buffer Against Existential Terror. Culture is defined as a mutually created, symbolic conception of the universe that features meaning, order, stability, and permanence. (Rosenblatt et al., 1989). There is likely an infinite range of manifestations, but one may find ready examples of how cultural worldviews provide avenues for encapsulating death and meaninglessness. Among them are religion, patriotism, children, material possessions, creativity, and fame. These are the elements of what TMT terms the cultural worldview buffer (Greenberg et al., 1990). Culture alone is not sufficient, however, to create a buffer against existential anxiety. The second component is self-esteem (Harmon-Jones et al., 1997). Self-esteem, of course has long been studied. Scheff (cited in Greenberg, et al. 1991) reported over 10,000 empirical studies employing self-esteem as a variable, but a dire absence of theoretically based explanations of why self-esteem is so central to human existence, or of how it would have developed that role. TMT gives self-esteem a purpose, by connecting it to culture. Self-esteem is the experience and the measure of living up to a culture’s expectations, standards, and beliefs. It therefore allows for tacit monitoring of the strength of the buffer against existential terror. Thus, the buffer is composed of a cultural worldview that one sincerely buys into, and of a sense that one is living up to its standards and expectations (Greenberg et al., 1990).

The process of believing in and adhering to a cultural worldview is largely an outcome of basic developmental and socialization processes, and can be seen as a superordinate goal, as postulated by Carver and Schier, 1981). Superordinate goals, much like Kluger and DeNisi’s meta-tasks, can serve their function of providing structure to personality and to behavior without necessarily being in conscious awareness. From a cognitive psychology perspective, one may propose that the process has been automatized. Automatizing a process pays clear dividends in multi-task situations, and, given the finitude of cognitive resources (Kahneman, 1973), learning and experience could lead it to be relatively fine-tuned, and calibrated so as to exert efficient, just-sufficient demands on cognitive resources. Clearly, it would defeat a cognitive-economy or resource allocation purpose if maintaining the existential anxiety buffer required undue, effortful, conscious attention. Although the very purpose of the buffer is to inhibit conscious awareness of this anxiety, its unconscious nature may also relate to this automaticity and cognitive efficiency. This fine balance provides an opportunity to test the theory. By manipulating any one of the three elements (existential terror and/or generalized anxiety, self-esteem, and cultural worldview allegiance), and cognitive load (Arndt, Greenberg, Pyszczynski, Simon, & Solomon, 1997) one might be able to observe reactions in the other elements (Solomon et al., 1991). For example, a drop in self-esteem often leads to an increase in anxiety, and in efforts to repair the self-esteem through culturally-relevant means. Further, a threat to the validity of one’s cultural worldview may signal inadequacy within the buffer, vulnerability to existential terror, and therefore anxiety. Finally, anything which increases awareness of death (or, to repeat, its existential corollaries) would spark efforts to strengthen the buffer – by bolstering commitment to the cultural worldview, and by efforts to elevate self-esteem (Arndt et al.,
This last condition is the core of the aforementioned experimental paradigm, Mortality Salience (MS).

**Mortality Salience**

When mortality is made salient, subjects are expected to make concerted, unconscious efforts to increase the efficacy of their anxiety buffer. These efforts comprise the dependent variables in a multitude of empirical tests. They may be categorized as follows:

- **Worldview Defense.** When reminded of their own mortality, subjects were more likely to punish those who violate their worldview’s standards, and to reward those who uphold them. In an experiment using municipal court judges as subjects, those in the MS condition set bail over nine times higher than judges not so primed (Rosenblatt et al., 1989). Given that judges would likely strive to be unswayed by conscious factors not pertaining to a case’s evidence, this provides support for the hypothesis that the processes are unconscious.

- **Exaggerated Consensus.** When mortality is made salient, subjects are reliably more likely to overestimate societal consensus with their own cultural worldview. In an experiment involving a stereotypical “man-on-the-street” public opinion poll, subjects under MS conditions were more likely to exaggerate social consensus with their own opinions (Pyszczynski, Wicklund, Floresku, Kock, Gauch, Solomon, & Greenberg, 1996). The induction of Mortality Salience was, in this instance, especially subtle, and perhaps less likely to spark conscious awareness: the independent variable was the location of the interview (either directly in front of a funeral parlor, or 100 yards away).

- **Prejudice and stereotype activation.** When mortality salience was induced by a particularly grisly video of an automobile accident caused by a manufacturing defect, subjects were significantly more likely to attribute blame, and to inflate damage awards, when the manufacturer was Japanese, rather than American (Nelson, Moore, Olivetti, & Scott, 1995). In another test, American college students previously lead to ponder their own death were significantly more likely to endorse the statement that “the Holocaust in Nazi Germany was God’s punishment for the Jews” (Kunzendorf, Hersey, Wilson, & Ethier, 1992). If it may be postulated that such statements are not necessarily socially desirable on typical college campuses in the 1990’s, it is reasonable to ponder the force of the unconscious, if it can overpower baseline impression management concerns.

**Does It Have to Be Death?**

In over 40 studies, Mortality Salience produced reliable and significant differences between experimental groups. A reasonable question is: Is it death, or something else? Alternative explanations for findings generated in the TMT research program come readily to mind. Researchers have manipulated the various control conditions to isolate potential confounds.

- **Affect.** Affect is an obvious target – it is reasonable to propose a confounding correlation between depressed mood and imagining one’s own death. The PANAS and PANAS-X measures of Positive and Negative Affect (Watson, Clark, & Tellegen, 1988) and the Multiple Affect Adjective Checklist (MAACL; Zuckerman & Lubin, 1965) have been repeatedly included in many of these studies, and subjects’ affect has NOT varied as a consequence of MS (e.g. Greenberg, et al., 1995; Lieberman, 1999; McGregor, Lieberman, Solomon, Greenberg, Arndt, Simon, & Pyszczynski, 1998).
Anxiety. Could it be anxiety? As it is already entwined with the precepts of TMT, perhaps the subjects' reactions are a function of heightened vs. baseline anxiety levels. This has been addressed by varying the control condition in a number of ways. As opposed to mortality salience, control subjects have been manipulated into giving equal thought to difficult exams (Greenberg et al., 1995), financial worries (Arndt et al., 1998), and painful dental treatments (Schimel et al., 1999). None of these conditions sparked the range of MS responses detailed above, leading again to the conclusion that there is something about death that is special. These control conditions were not without their effects, however – they generally lowered affect as measured on the PANAS, something which death thoughts could not accomplish. Although the argument is somewhat circular, Greenberg and associates attribute this to the very automaticity of the anxiety buffer. Existential terror is so potentially debilitating that the cultural worldview buffer kicks in before a change in affect can occur (Solomon et al., 1991). There may well be defenses against evaluation anxiety and pain, but perhaps not the pressure to develop their efficacy and automaticity.

Back to the Unconscious

It has been proposed that these processes are unconscious, and there have been indicators, mentioned above, that this is so. Greenberg and colleagues sought further evidence in a sequence of studies, which began with a proposal that the effects of mortality salience will vary based upon the intensity of the experimental induction. When the MS induction was of greater duration or intensity (elaborate guided imagery or lengthier, more emotionally-probing questionnaires) (Ochsmann & Reichelt, 1994; Greenberg, Pyszczynski, et al., 1994), subjects were less likely to engage in concurrent derogation of anti-American authors than those receiving a more subtle exposure to MS. In a follow-up to this study, Greenberg, et al. included neutral word-search tasks designed to distract one group of subjects from further conscious thoughts of death. These subjects were more likely to exhibit worldview defense than subjects whose word-search tasks included death-related words. Based on this line of research, they proposed that death-related thoughts frequently spark a near-term, direct effort to suppress them (Greenberg et al., 2000). So long as thoughts of death are conscious, there will be this effort to suppress them. This suppression, while actively engaged in, may reduce thoughts of death, and therefore inhibit mortality salience. Once suppressed, however, the normal human response, born of cognitive economy, is to move on to other day-to-day considerations. At this point, however, the thought are still accessible – as measured by typical word-fragment completion tasks (Greenberg et al., 1994). In the sense of Wegner’s ideas of deep cognitive activation and ironic mental control processes, the “good enough” suppression mechanisms set the stage for subsequent intrusion of mortality salience. They therefore exert an unconscious pressure on the existential terror buffer, with the now-familiar worldview defense. Thus, when the Mortality Salient subjects above were induced to maintain conscious focus on death (via the macabre word search), Worldview Defense was lessened (because they were actively engaged in suppressing their fears) (Greenberg et al., 1994). When subjects were provided a distraction from death-related thoughts, there was less impetus to suppress them through conscious efforts. By employing parallel tasks that varied the cognitive resources available to the subjects, Arndt, et al. (1997) found that if they had adequate cognitive resources, thoughts of death
were continuously consciously suppressed and became less accessible, thus leading to lowered levels of worldview defense. High ongoing cognitive load, however, lead to distraction, ineffective suppression, increased unconscious accessibility, and greater worldview defense. Thus, it is not the intensity of a mortality salience experience that shapes responses, rather it is consciousness of the MS-induced thoughts. When mortality and existential meaningless are in conscious awareness, the range of TMT defenses will not occur. They will only occur after they have been repressed from active awareness, or some form of distraction has intervened. Convincing evidence that mortality salience’s effects occur without the conscious awareness of the subjects resulted from Arndt et al.’s (1997) application of a typical cognitive science experimental paradigm. Subjects were tasked to identify a series of words briefly flashed on a computer screen, during which, they were also exposed to intermittent 50-millisecond flashes of the word “death” or “pain.” Subjects did not report seeing these secondary words, and were unable to pick them reliably from a list of four words. Nonetheless, a word stem-completion measure showed significantly higher accessibility of thoughts of death. Not surprisingly, these subjects were significantly more likely to show a pro-US bias in their attitudes toward the performance of foreign students (Arndt et al., 1997).

Optimal Distinctiveness

Worldview defense involves affirming one’s culture and efforts to meet its standards. I propose that these worldview defense behaviors are strongly affiliated with social desirability, a connection which was especially evident in Pyszczynski et al.’s (1996) study on exaggerated consensus estimates. TMT may thus be well suited to serve as mechanism for exploring nonvolitional faking. A study by Simon, Greenberg, Arndt, Pyszczynski, Clement, & Solomon (1997) helps to foreshadow this link. Given the reliability of the exaggerated consensus response to Mortality Salience, Simon introduced a further factor, Optimal Distinctiveness Theory (Brewer, 1991).

This theory proposed that a zero-sum dualism exists in the construction of self-identity. Following researchers such as Tajfel and Turner (1986), there is a need for inclusion in group(s), as these memberships provide a necessary element of self, called social identity. Social identity is enhance by social projection, in that accentuating the similarities between oneself and members of a valued group transfers those values to the self-identity, and thereby increases self-esteem (the perceived worth of that identity) (Brewer, 1991). In opposition, however, is the need to individuate, as advanced by luminaries such as Rank, Horney, and Maslow. Greatly simplified, there is a presumed need to establish a sense of individual uniqueness, as an element of individual growth and self-actualization. Through Optimal Distinctiveness Theory, Brewer (1991) proposes that these twin identity-drives work in a fine balance, as gains in one must necessarily threaten the other. Brewer found that one technique for obtaining an optimal balance was achieved by group memberships that provided both. (This may be seen amongst teenagers who adopt outlandish clothing and grooming, in order to be “different”, but whom, tellingly, do so within the context of rigid group norms and peer pressure to “belong” and to “fit in.”) (Brewer, 1991). Following Markus and Kunda (1986), Brewer experimentally manipulated subject’s perceptions of their own uniqueness, and found that depersonalization increased accentuation and value placed on one’s membership in a minority group (Brewer & Weber, 1994).
Just as Brewer’s subjects varied their emphasis on the minority/majority social element of their identity, people’s social consensus projections are also biased by situational variations in inclusiveness and individuation (Simon et al., 1997). What TMT adds, however, is a rationale behind the motive to maintain this “optimal balance.” An optimal balance serves the self-esteem element of the anxiety buffer, by providing self-validation that a person is a successful, valuable element of their cultural worldview. A glance at cross-cultural comparison provides reassurance: two cultures may vary greatly on where the balance hinges (e.g. greater inclusiveness in some Eastern cultures vs. an emphasis on individualism in America), but the result of an imbalance is the same: lowered self-esteem and anxiety. Since such an effect weakens the buffer against existential fear, Simon, et al., hypothesized (1997) that efforts to maintain optimal distinctiveness would be more strongly motivated when the cultural worldview buffer is placed under duress by conditions of mortality salience.

In their 1997 study, Simon, et al. provided subjects bogus feedback, ostensibly from a previously-administered personality measure. The feedback lead subjects to believe they were either overly conformist, socially deviant, or neutral on the measure. Subjects were further divided into Mortality Salient vs. Exam-Salient control conditions. All were then asked to evaluate 16 “self-esteem neutral” items such as “I like poetry” and “I like to read newspaper articles on crime.” Subjects rated their own agreement with the items, their estimate of what percentage of the general population agreed with the item, and how socially desirable it was to endorse each item. From this, a measure of social projection was constructed, and intergroup comparisons made. Main effects for both Mortality Salience and feedback were significant. Amongst interaction effects, social projection was highest in the MS group that received feedback indicating how non-conformist they were. MS subjects told that they were overly conformist, however, showed less social projection than even the control groups. Simon, et al. concluded that, when the need for emotional security is heightened by thoughts of death, people experience a greater motivation to maintain optimal distinctiveness, even if that entails holding minority positions on salient topics.

Nonvolitional Faking

Returning finally to the scope of this research, test responses may be just as vulnerable to Mortality Salience. If a test is, at heart, nothing more than an opportunity for representation to one’s self and to an “audience” (Hogan et al., 1996), than it is equally likely to be seized upon as a vehicle for worldview defense under conditions of mortality salience. Worldview defense, as sparked in the many tests of mortality salience, connotes a motivated adherence to personally relevant cultural and social standards. These standards and this adherence are proposed to be nearly synonymous with the concept social desirability. Therefore, as in previous TMT studies of unconsciously motivated exaggerated consensus and social projection, recourse to a social desirability-based response set will vary, based on the unconscious needs and challenges that are being experienced at the moment. Based on the evidence that the effects of mortality salience are not conscious, any influence on test responses is also likely to be nonvolitional. It is known that the first factor in social desirability responding, conscious impression management motives, can create distortion in noncognitive measures. Paulhus’ Impression Management subscale is frequently validated, specifically because
I/O psychologists have had effective experimental paradigms for manipulating attitudes and volitional motives of test-takers. This research intends to demonstrate that mortality salience will serve as an experimental paradigm for measuring the second factor of social desirability responding, self-deceptive enhancement. What this research expects to establish is that nonvolitional motives effect test taking response sets, that these motives can be actively manipulated, and that scores on measures of social desirability responding will show the subsequent effects. The results of this research may foster future attempts to resolve current controversies in the faking literature. This can happen if it proves possible to identify the direct effects of a nonvolitional response set, and separate it from its current status, in the “measurement error” portion of most models of faking. With that accomplished, greater resolution may be found in studies of traditional, volitional impression management.

Hypotheses

The experience of mortality salience summons a response which is calculated to buffer an individual from the anxiety it generates. Concurrent behavior, such as completing a personality measure may be used as the vehicle to strengthen this buffer. Thus, the response set that a person brings to a personality measure is likely to be distorted under conditions of mortality salience. Thus, a proposed main effect is this:

**Hypothesis 1:** Mortality salience, independent of instructions to fake good or respond honestly, will increase social desirability-based distortion in self-reports of personality.

In this particular situation, the direction of this response distortion will be determined by an individuals’ perception of their particular balance of optimal distinctiveness. An interaction is expected, in which mortality salience increases psychological reactivity to any situational cues that indicate level of social conformity.

**Hypothesis 2:** Mortality salience will interact with conformity feedback, such that feedback exerts a greater effect on social desirability-based response sets under conditions of mortality salience. Specifically, when mortality is made salient, high-conformity feedback will decrease social desirability-based responding and low conformity feedback will increase such socially desirable self-presentations.

These influences on the response set that an individual brings to a self-report instrument are distinct from overt instructions. The mortality salience-derived response set is nonvolitional, outside conscious awareness, and is expected to be associated with the SDE component of social desirability. The response set derived from instructions to respond honestly or to fake good is volitional, consciously applied, and is expected to exert its influence on the IM component of social desirability. When these twin motives are present, they may work together or at cross purposes, thus establishing a three-way interaction with mortality salience. When they both are active, socially desirable response sets are held back neither by conscious nor unconscious constraints. In this condition, there is the potential for maximal recourse to social desirability-based responding, as both motives receive a “greenlight” for amplified faking. It is likely easier to amplify faking then to defuse it, as the generally prevalent self-enhancing biases should
Hypothesis 3: Instructional set (respond honestly versus fake good) will interact with mortality salience and conformity feedback, such that their two-way interaction will lead to amplified socially desirable responding in the Fake Good condition. Specifically, fake good instructions will lead to higher social desirability-based responding in the Low Conformity/Mortality Salience condition, and in the High Conformity/Mortality Salience condition, the honest instructional set will lead to lower social desirability responding.

Within the mortality salience conditions, there are some critical comparisons to be made, as they go to the heart of this study. When the two motives (IM and SDE) are working at cross purposes, general social desirability responding should be curtailed by their countervailing influences. If this is true, then one of the most robust findings in the faking literature, that when subjects are instructed to fake, they can and will, may be susceptible to a rigorous test. In the past, the chief focus has been on this volitional response set, but this study proposes that the nonvolitional response set should also be potent. If this is so, then faking instructions may be considerably weakened.

Hypothesis 4: For social desirability response sets, the cell means for the Honest/High Conformity condition will be significantly lower than the Honest/Low Conformity and both Fake Good conditions. The Fake Good/Low Conformity cell means will similarly be higher than the other conditions. Most critically, the Fake Good/High Conformity and Honest/Low Conformity cell means will not differ significantly.

As a further test of the conflicting findings resulting from Paulhus’ and Ni’s research, SDE and IM response distortion will be examined. If Paulhus’ findings are supported, then it will be seen that SDE responding will not be significantly distorted by instructional set, but that it will increase as a function of mortality salience and conformity feedback.

Hypothesis 5: Instructional set will interact with scale type, to affect the degree of response distortion. Specifically, the difference between scores in the fake good and honest conditions will be largest for the IM scale and negligible for the SDE scale.

Hypothesis 6: A two way interaction between MS and conformity feedback will influence SDE responding, such that conformity feedback will not effect the SDE scale scores under exam salient conditions, but will do so under MS conditions. Specifically, SDE scores will increase in the presence of low conformity feedback and decrease in the presence of high conformity feedback.

Method

Participants

Participants were 214 students recruited through their attendance in a wide range of psychology classes at a large southeastern university. All received classroom extra credit for participation. Subjects were run in groups ranging in size from 12 to 28 students. All participants attended two sessions one week apart, where they were
randomly assigned to experimental conditions in this 2x2x2 factorial design. Researchers were blind to the experimental condition of the participants.

Procedures

Pilot Study #1. A pilot study was conducted to assess the relationship between affect, anxiety and Mortality Salience. 42 participants attended a screening session where they completed three psychological measures: the Creative Temperament (CT) research subscale of the California Psychological Inventory (Gough, 1987), the “trait” version of the State-Trait Anxiety Inventory (STAI) (Speilberger, 1984), and the “trait” version of the PANAS. At a follow-up session one week later, subjects completed the Mortality Salience Manipulation detailed in the focal study, below. They then completed the “state” element of the STAI and the PANAS. This Pilot Study was designed to clarify the potential affect/anxiety confound, chiefly so that the packet of personality measures in the Focal Study could be kept as short as possible. As the PANAS and the STAI were generally completed in two-three minutes, the decision was made to retain them in both sessions of the Focal Study, thus rendering this Pilot irrelevant in the face of the much larger sample size in the Focal Study.

Pilot Study #2. A second pilot qualitatively tested the efficacy of the conformity feedback manipulation planned for the Focal Study. 20 participants attended a screening session where they completed the STAI, PANAS, CT, and an abbreviated version of the Myers-Briggs Type Indicator. At their second session, participants received personalized feedback, described in the Focal Study, below, and completed a survey obtaining their judgments of the feedback, self-assessed personality, and open-ended questions regarding the accuracy of the feedback.

Focal Experiment

Upon arrival at the testing location, an on-campus classroom, participants completed a routine informed consent form explaining the ostensible purpose (to study the effectiveness of various groupings of personality tests at predicting future performance, such as academic grades) and the procedures involved. Once the administrative details were addressed, participants were provided folders containing the personality measures and an instruction sheet. The personality measures were the “trait” STAI, the CT scale, the abbreviated MBTI, and a modified “trait” PANAS with four additional adjectives embedded in it “Individualistic,” “Compliant,” “Follower,” and “Nonconformist.” Participants completed the measures at their own pace and departed when they were done, after receiving instructions to return one week later for the second session. Upon arrival at the second session, subjects signed a release form authorizing access to their grade point average in their academic records, and received their extra credit paperwork. Once this was completed, the researchers handed out a personalized, sealed packet with ostensible preliminary feedback from the initial screening session and a “Personal History with Personality Tests Survey” which contained within it a principle manipulation check, a 5-point Likert rating of the personality feedback’s accuracy. After these were completed and collected, the researchers provided the participants a second folder containing two sets of instructions and personality measures. The first, generic instructions preceded a “Projective Personality Measure” (the Mortality Salience manipulation), and the “state” versions of the PANAS and STAI. Note that, as in previous Terror Management research, these measures serve not only to assess their
particular realms, but also as a distraction task, allowing death concerns to recede from conscious awareness. They then turned to a second set of instructions (providing either the Honest or the Fake Good instructions) and more personality measures: the BIDR, and four subscales of the CPI. As participants completed the measures, they were allowed to leave, but then fully debriefed in a nearby room and dismissed by the researcher.

Independent Variables

Conformity Feedback. This was a pre-printed form with the participants name on it. It contained one of two three-paragraph statements purporting to disclose to the subjects that they tend to be either conformist or deviant relative to other university students. The first two paragraphs were identical in both conditions, were very general, and were designed to capitalize on the Barnum effect. As described by Forer (1949), this capitalizes on peoples’ predilection to interpret ambiguous feedback as being more individualized and personally relevant than it actually is. It has been used successfully in a number of previous TMT experiments (e.g. Harmon-Jones et al., 1997; Arndt & Greenberg, 1999). The third paragraph constituted the manipulation, which was one of the following two paragraphs:

You pride yourself on being an independent thinker; however you tend to be a social deviant. Your opinions and beliefs tend to be quite different from those of everyone else, suggesting that you have a problem being a part of a group and must always set yourself apart from others. You are oftentimes considered an outcast amongst your peers.

Or,

You try to be an independent thinker but often fail to do so, accepting others’ opinions without satisfactory proof. You tend to conform too much to the ideas of the groups you belong to, since peer pressure exerts an undue influence over you. Your opinions and beliefs tend to be that of everyone else, suggesting that you have a problem exerting your own unique ideas. (Simon et al., 1997)

Thus, this factor comprised the manipulation of the student’s reaction to information concerning their ostensible standing on a low to high conformity spectrum. This manipulation was highly similar to that used by Simon et al. (1997) on university undergraduates, and contained nearly identical written feedback.

Mortality Salience. The Projective Personality Instrument had two variants. One, intended to establish the mortality salience condition, included two questions related to personal mortality, asking: (a) what will happen to them as they physically die and (b) what emotions occur at the thought of their own death. The other variant differed by replacing these questions with two related to final exams, asking: (a) what will happen to them physically as they take a difficult exam and (b) what emotions occur at the thought of their own difficult exams. This factor established mortality salience. This manipulation has been repeatedly efficacious with research using undergraduates (Greenberg, Solomon et al., 1997; Harmon-Jones et al., 1997).

Instructions. Two different test-taking protocols were provided for the BIDR and the CPI, as follows:

Please complete all of the following tests in a way that makes you look as good as possible. In other words – instead of being honest, use your answers to give a very favorable impression of yourself. Imagine that you are trying to make as good an impression as possible, and answer accordingly. Please check the box indicating your understanding of these instructions. ___ I will answer the personality items on all three OPSCAN tests in a way to make me look as good as possible, even if that is not 100% honest for me.
Or,
Please complete all of these tests as honestly as possible. In other words – when everything is done, this information should allow us to see you in the same way that you actually see yourself. This applies to all of these personality measures. Please check the box indicating your understanding of these instructions. ___ I will answer all of these personality items as honestly as possible.

This factor establishes two different self-presentation motives, one based on self-referenced information, and the other on a social desirability standard. This manipulation has proven effective in previous research using similar populations (Paulhus et al., 1995; Hauenstein, 1998).

Dependent Variables

Balanced Inventory of Desirable Responding: The BIDR subscales of Impression Management and Self-Deceptive Enhancement, as discussed in the introduction, reflect a distinction between active, other-directed efforts to appear socially desirable, and between unconscious, self-directed efforts to meet internal standards.

California Psychological Inventory: This study employed several subscales of the CPI. The Creative Temperament (CT) scale is a research subscale of the CPI, designed to identify individuals who meet criteria such as “unconventional” versus “cautious and conservative.” The Good Impression (GI) scale was designed to be sensitive to response sets, and has shown itself to be susceptible to respondents seeking to “fake good” via social desirability response sets (Hauenstein, 1998). The subscales for Intellectual Efficiency (IE) and Psychological Mindedness (PY), known to be more resistant to social desirability motivations, were expected to present a useful contrast to the BIDR and the GI subscale. The Achievement via Independence subscale was designed to predict college performance and has been reasonably effective at this task (Gough, 1996). It has also been found to be less sensitive to social desirability, although scores can be volitionally distorted. The CPI scales possess a range of established criterion-related validity coefficients in relation to academic success in university undergraduates. Assessments of stability coefficients generally show a reliability of approximately .69, and alpha scores around .72 (Wegner, 1988).

Results

There were 214 participants in this study, distributed across the eight cells of this 2 x 2 x 2 design. As may be expected, some participants left items blank. Missing data were addressed by listwise and pairwise deletions in the various analyses, per SPSS 9.0 defaults. Cell sizes were therefore not consistent, but varied around an average of 24 cases per cell.

The quality of the conformity feedback variables was assessed in a pilot study. Subjects in this pilot study were generally very receptive to the feedback, which contained two paragraphs of Barnum statements, alongside the conformity manipulations. Several reacted exceptionally negatively to the word “follower”, which was subsequently dropped from the wording in the focal study. A second concern relating to conformity was whether certain individuals, who might already perceive themselves as exceptionally conformist or nonconformist, would not accept the feedback, and thereby nullify the manipulation. Two separate measures of conformity were administered during the screening session: An overt, self-report measure was embedded in the Trait version of
the PANAS. Balancing this was an empirically-keyed measure of conformity that was less transparent, the Creative Temperament Scale of the California Psychological Inventory. The Self-reported Conformity measure had a significant, but weak correlation with the CT Scale, $r = -0.219, p = .002$. The Self-reported Conformity scale also held a weak correlation with the measure of Feedback Accuracy, $r = 0.148, p = .031$. The correlation between the CT Scale and Feedback Accuracy was not significant, $r = -0.055, p = .435$. A simple regression analysis revealed no significant relationship between CT Scale scores and the manipulation check of self-assessed Feedback Accuracy, $R^2 = .003$ ($F(1, 203) = .612, p = .435$), and an ANOVA similarly demonstrated no relationship between Feedback Accuracy ratings and Self-reported Conformity ($F(1, 205) = 1.329, p = .223$). Table 1 provides means and standard deviations for the Self-reported Conformity and CT measures, broken out by Feedback Accuracy assessments. Based upon these findings, the decision was made to keep all subjects, regardless of their standings on the conformity measures. A third concern was whether ratings of Feedback Accuracy would vary by the Feedback manipulation, because university students may see nonconformity as a good trait. Analyses showed, however, that Feedback Accuracy was not related to the type of feedback provided ($F(1, 205) = .003, p = .958$). Affect and anxiety also did not vary significantly as an effect of conformist versus nonconformist feedback (PANAS Positive Affect: $F(1, 213) = 1.325, p = .251$; PANAS Negative Affect: $F(1, 213) = 2.469, p = .118$; STAI Anxiety: $F(1, 212) = .232, p = .630$). Means and standard deviations for the affect and anxiety scales are provided in Table 2.

### Manipulation Checks

Feedback Accuracy ratings were the principle manipulation check for the Feedback manipulation. Less than 2% of the participants labeled their feedback “Not Accurate” (“5” on a 5-point Likert scale). A total of 16.4% graded the feedback negatively, while 83.6% labeled it “3” or higher on accuracy. A MANOVA demonstrated that the feedback did not have a main effect on any of the dependent variables, and none was expected.

The second manipulation was the Exam Salience vs. Mortality Salience independent variable. By design an unconscious process, no direct manipulation check was available, and its efficacy can only be inferred from the hypothesis testing that follows. Ancillary analyses were conducted, however, to address concerns that Mortality Salience’s avenue of influence is via affect and anxiety, rather than the existential fears postulated by Terror Management Theory. There were no significant differences expected or found in Positive and Negative Affect, or in Anxiety, between the exam salient and mortality salient conditions. (PANAS Positive Affect: $F(1, 213) = 1.325, p = .251$; PANAS Negative Affect: $F(1, 213) = 2.469, p = .118$; STAI Anxiety: $F(1, 212) = .232, p = .630$). Means and standard deviations for the affect and anxiety scales are provided in Table 2.

The third manipulation, of Test-Taking Instructions, was as robust as the literature would suggest. The personality measures used are known to vary in their sensitivity to socially desirable responding, and this variability mirrored this study’s findings. For the GI and the BIDR, the Honest condition produced means of 13.79 and 8.86 respectively, and these means were significantly lower than the Fake Good condition $M = 29.35, t(208) = 16.89, p < .01$; and $M = 25.13, t(205) = 17.29, p < .01$. For the three measures less
susceptible to social desirability motives (the CPI’s Ai, Ie, and Py scales), the differences between the Honest conditions and Fake Good conditions were also significant, but of a lesser magnitude. Ai: $M = 21.75$ vs. $M = 23.74$, $t_{(209)} = 3.47$, $p < .01$; Ie: $M = 24.4$ vs. $M = 29.45$, $t_{(204)}$, $p < .01$; Py: $M = 13.76$ vs. $M = 16.56$, $t_{(206)} = 6.308$, $p < .01$.

Descriptive Statistics

Table 3 provides a correlation matrix for the measured variables in the study. Based upon the strong correlation ($r = .845$, $p < .01$) between the BIDR’s IM subscale and the CPI’s Gi subscale, a single Impression Management composite score was formed by standardizing and averaging their scores. The other BIDR subscale, the SDE, was less strongly correlated, $r = .672$, $p < .01$, with the Gi subscale, and $r = .688$, $p < .01$, with the IM subscale. Though weaker than the others, the .672 correlation between the two BIDR subscales was surprising, given previous findings demonstrating their divergent validity. When the correlation was re-examined within the experimental conditions, it was nonsignificant in the Honest conditions, but significant in the Fake Good conditions. The correlation amongst participants responding honestly (collapsed across Mortality Salience and Feedback conditions) was $r = .077$, $p = .442$, while amongst the corresponding Fake Good group, $r = .492$, $p < .001$. This, and the developer’s strong commitment to their divergent validity, lead to the decision to treat the SDE differently. Also, since the SDE and IM subscales were hypothesized to demonstrate different sensitivity to mortality salience, the SDE scale was not added to the composite. All subsequent analyses addressing the Impression Management component of social desirability response bias will refer to this composite score. Table 4 provides Means and Standard Deviations for all dependent variables, broken down by conditions. ANOVA methods were used to test the hypotheses arising from the 2 x 2 x 2 factorial design.

Hypothesis 1

This hypothesis is primarily oriented towards supporting Terror Management Theory, by providing a new dependent variable (social desirability responding) for testing the effects of mortality salience. Specifically, it was expected that mortality salience would lead to increased social desirability-based distortion. The first test of this hypothesis was an ANOVA of the manipulation’s effect on the Impression Management Composite. As expected, a significant main effect for mortality salience was observed, $F_{(1, 198)} = 4.751$, $p < .05$, with an effect size ($\eta^2$) of .023. IM Composite means, collapsed across Feedback and Instructions, were Mortality Salience: $M = .11$ (a $Z$-score indicating deviation from the Grand Mean in the socially desirable direction) and Exam Salience: $M = -.12$ (a $Z$-score indicating deviation from the Grand Mean in the “honest” direction). On the Self-Deceptive Enhancement Subscale, mortality salience also exerted a significant influence, $F_{(1,202)} = 5.590$, $p < .05$, with $\eta^2 = .027$, however, there was also a significant interaction of Instruction Set and Mortality Salience, $F_{(1, 209)} = 5.177$, $p < .05$, $\eta^2 = .025$. These SDE Means, collapsed across Feedback only, were $M = 2.33$ in the Honest/Exam Salient condition and $M = 2.25$ in the Honest/Mortality Salient condition. Within the Fake Good condition, cell means were 11.32 in the Exam Salient condition and $M = 8.70$ when Mortality was made salient. A simple effects analysis demonstrated that the interaction’s effects were driven by mortality salience’s potency in the Fake Good condition, $F_{(1,200)} = 10.982$, $p < .05$. Mortality salience’s effects were not significant in the Honest condition, $F_{(1,200)} = .01$. Examination of the means for the impression
manipulation composite and the self-deceptive enhancement subscale in the faking condition revealed that Mortality Salience’s effect was NOT in the predicted direction. For those significant effects, social desirability mean scores were lower in the mortality salience condition.

Because the remaining personality tests were less sensitive to social desirability bias, an overall MANOVA was conducted of the Ai, Ie, and Py subscales. This revealed no significant effect for Mortality Salience, $F_{(3,191)} = .510, p = .676$, or any of its interactions with Instructional set, $F_{(3,191)} = .612, p = .608$ and Conformity Feedback, $F_{(3,191)} = 1.357, p = .257$. The 3-way interaction approached significance, $F_{(3,191)} = 2.190, p = .091$, however the pattern of means did not support any specific prediction The only significant effect was for the instructional set, $F_{(3,191)} = 32.402, p < .01$. Given the lack of main effects or interactions involving either the mortality salience manipulation or the feedback conformity manipulation, the remaining analyses will utilize only the social desirability scales. In summary, Hypothesis 1 was not supported. Although significant effects for mortality salience were found on the social desirability scales, the means were in the opposite direction predicted in Hypothesis 1.

**Hypothesis 2**

This hypothesis predicted that the measures affected by social desirability would experience an interaction between the mortality salience and conformity feedback manipulations. An ANOVA of the Impression Management Composite revealed a significant interaction, $F_{(1,198)} = 3.941, p < .05, \eta^2 = .02$. Simple effects analysis demonstrated that mortality salience exerted a significant effect, $F_{(1,198)} = 6.159, p < .05$, on “conformist” feedback, while the effect, $F_{(1,198)} = 1.943$, on “nonconformist” feedback was not significant. Examination of the means in these conditions (collapsed across instruction set) revealed that the interaction between Exam Salience and Feedback was such that “conformist” feedback led to more socially desirable response patterns (Mean z-score = .15 versus .07). The relationship reversed in the mortality salience condition, such that the Mean z-score for the “conformist” condition was $M = -.15$ versus participants told they were “nonconformist,” $M = -.09$. Testing the SDE scale demonstrated that the interaction between mortality salience and conformity feedback was NOT significant, $F_{(1,202)} = .003, p = .955$.

In summary, Hypothesis 2 received some support, in that, under Mortality Salience conditions, “nonconformist” feedback led to an increase in social desirability-based responding, and “conformist” led participants to score lower. This support is limited by the lack of significant findings for the SDE subscale, and the unexpected influence of feedback in the exam salience conditions.

**Hypothesis 3**

Hypothesis 3 was the area of most concern for faking research, by virtue of predicting a 3-way interaction between the instruction set, mortality salience, and conformity feedback factors. For neither the IM Composite nor the SDE subscale was this 3-way interaction significant, with respective F-tests of $F_{(1,198)} = 1.187, p = .277$ and $F_{(1,202)} = .003, p = .958$. This hypothesis specifically predicted that the Fake Good/Mortality Salient/Nonconformist Feedback condition would create the highest stimulation to respond in a socially desirable fashion. It further stipulated that the Honest/Mortality Salient/Conformist Feedback condition would create the most
constrained use of social desirability-based responding. Planned comparisons of these two relationships revealed that they did not occur for any of the dependent variables. For both measures, the mean score for the Honest/Mortality Salient/Conformist Feedback condition was not significantly different from any of the other Honest instructional set conditions, and the mean score for the Fake Good/Mortality Salient/Nonconformist Feedback was not significantly different from any of the other Fake Good instructional set conditions. In summary, Hypothesis 3 was not supported.

Hypothesis 4

This hypothesis refined predictions of events specifically within the mortality salience condition. It predicted that the Honest/Conformist Feedback condition would lead to scores significantly lower, and the Fake Good/Nonconformist condition to scores significantly higher, than the other conditions. The difference between the Honest and Fake Good conditions, in all cases, was highly significant, which was to be expected, given the strength of the Instructional Set manipulation. The critical contrasts, therefore, were within the instructional sets. In the SDE subscale, the mean for the Fake Good/Nonconformist was the indeed the highest (as shown in Table 4), but again, the difference between it and Fake Good/Conformist was not significant, $t(51) = -.396, p = .693$. Additionally, the Honest/Conformist condition did not report the lowest mean, nor was it significantly different from the Honest/Nonconformist condition, $t(50) = 1.451, p = .153$. With the IM Composite, the means trended towards the predicted relationship, but planned simple contrasts found no difference significant between Fake Good/Nonconformist and Fake Good/Conformist conditions, $t(48) = -1.819, p = .075$. The Honest/Conformist and Honest Nonconformist also did not achieve significance, $t(48) = -.071, p = .944$.

This hypothesis’s third specific prediction, that the otherwise profound difference between Fake Good and Honest instruction sets would become nonsignificant when the Fake Good/Conformist and Honest/Nonconformist conditions are contrasted within the Mortality Salience condition. Amongst the measures known to be sensitive to a social desirability bias (the SDE subscales and the IM Composite) this did not occur, as the instructional set manipulation was too strong. In summary, Hypothesis 4 was not supported.

Hypothesis 5

This hypothesis was an effort to validate claims of the BIDR measure, that the SDE scale is less affected by “fake good” instructions than the IM scale. ANOVA analyses showed a significant effect of instruction set on both scales. For the SDE scale, the F-test provided $F_{(1,202)} = 192.383, p < .001$, with the manipulation explaining 49% of the variance in SDE scores. For the IM scale, $F_{(1,201)} = 252.613, p < .001$, and the manipulation explained 56% of the variance in IM scores. Means and standard deviations for the two scales in the two conditions are shown in Table 5. The scales were transformed to Z-scores, and the instructional set was again examined. The Fake Good Instructions produced a Mean z-score of .67 for the SDE scale, and .72 for the IM scale. In summary, Hypothesis 5 is, at best, weakly supported. Though the distortion on the SDE was indeed of a lesser magnitude, the standardized difference between the two scales was slight.
Hypothesis 6

This hypothesis was an effort to test whether the SDE scale, while purportedly less subject to volitional distortion, was still sensitive to less direct manipulations. Specifically, it was expected that SDE scores would increase in the Nonconformity condition, and decrease in the Conformity condition, and that this effect would only occur under Mortality Salience conditions. Table 6 provides mean SDE scores for these conditions, collapsed across Instructional Sets. It was reported earlier that the ANOVA examining this interaction already found it to be not significant, but separate t-tests were also conducted to test the differences between Conformist and Nonconformist feedback within the Mortality Salience conditions, collapsed across Instructional Set. Results were not significant in either condition, Mortality Salient: \( t_{(103)} = .437, p = .663 \); Exam Salient: \( t_{(103)} = -.329, p = .743 \). In summary, there was no support for Hypothesis 6.

Discussion

The goal of this present study was to produce evidence to show that faking on personality measures has been too simplistically defined. Researchers have been prone to view faking through an experimental paradigm emphasizing nothing more than volitional motivation, whether this be Honest vs. Fake Good test-taking instructions, or the more subtle Anonymous vs. Identified respondent-status manipulation. Applied Psychologists have likewise been focused on volitional motivation, especially with strategic, other-directed impression management motives. A review of the literature reveals controversies concerning the meaning, the methods, the extent, and the impact of faking on personality measures. To a certain extent this reflects similar controversy, surfacing in even the most basic personality textbooks, surrounding the construct “personality,” the measurement of it, and the ability to predict human behavior with those measures. This amount of continuing uncertainty, and the accompanying plethora of data, is diagnostic of incompleteness in basic theory building. While Snell and her associates have reinvigorated this process (Snell, et al., 2000), it remains that any theoretical model of faking on personality tests will still be underspecified if it relies solely on conscious response distortion directed to external audiences. This study originated as an attempt to provide additional material for future theory building, by providing evidence for unconscious response distortion directed to an internal audience. This generated three overarching questions: Can nonvolitional motives to fake good or to be honest overcome or attenuate volitional impression management motives? Can these nonvolitional motives be operationalized and effectively manipulated? Are current Social Desirability measures able to distinguish between the two? In other words, what is the current state of the relevant Independent and Dependent Variables, and of the theories underlying their combinations?

Can Nonvolitional Test-taking Motives be Manipulated?

This study demonstrated that social desirability-based tests are distorted by factors above and beyond explicit efforts to answer honestly or to present one’s self in an overly positive light. Regardless of whether socially desirable responding was characterized as self-directed (the SDE scale) or other-directed (the Impression Management Composite), subjects randomly distributed between Mortality Salient versus Exam Salient conditions answered differently. Previous interpretations of these scales
generally employed a model attributing scores to deliberate, motivated distortion. It is now observable, per Hypothesis 1, that about 2.5% of the variance that was formerly split between volitional distortion and error can now be attributed to other motives. Although this may be of slight consequence to the user of the test, it is of value for a researcher.

This source of variance appears to be mortality salience, and the automatic defense mechanisms it leads to. A standard, postulated reaction to reminders of one’s death is to bolster adherence to a cultural worldview. Being cultural, this worldview is a social creation, and adherence to it would be expected to map onto commonly held social norms, such as the dimension of social desirability. While cultures and sub-cultures vary, and it is unlikely that any two people hold precisely the same view of what is socially desirable, these individual differences evidently are not robust enough to alter the basic .5 S.D. shift under typical Fake Good conditions (Ones, Viswesvaran & Korbin, 1995). Thus, the prediction for mortality salience was an upward shift in adherence to norms mapped by social desirability concerns. As reported in Hypothesis 1, what happened was precisely the opposite. While Mortality Salience did affect test responses, social desirability-based distortion decreased in the Mortality Salience condition.

The Curiously Wrong Direction. Three explanations immediately occur: The measures were faulty, the manipulation was flawed, or the reasoning behind Hypothesis 1 was erroneous.

The Measures: Nothing known about the measures suggests that they caused this effect. Although there is much that could and shall be discussed regarding them, it remains true that they are sensitive to distortions based on social desirability, as evidenced by the main and interaction effects found for the Honest/Fake Good Instructional Set.

The Manipulation: Regarding the Exam/Mortality Salience manipulation, there must always be questions, in that most manipulation checks of unconscious effects would be expected to render them conscious. One could propose as a manipulation check a separate measure of mortality salience, such as a measure of stereotype-driven bias and discrimination (a very common and robust dependent variable in other Terror Management studies). The reason that was not done in this study was the concern that worldview defense …ANY worldview defense, lessens the unconscious accessibility of death-related thoughts, and hence may inhibit subsequent worldview defense (Arndt, et al., 1997). This is why the most critical dependent variables (the measures loading on social desirability) in this study were administered first, and why an independent measure of worldview defense/self-esteem bolstering was not used as a manipulation check. Even the measures of affect and anxiety, which some might expect to provide an indirect manipulation check, showed no difference across conditions. Terror Management Theory, of course, provided a specific and accurate prediction that affect and anxiety will not vary along this dimension. Thus, the only usable evidence that the mortality salience manipulation “worked” is its demonstrable effect on the dependent variables themselves. As this mortality salience manipulation was similar in design, administration, and experimental population to previous successful manipulations in other Terror Management studies, there is no reason to believe that this manipulation contained some new and unknown confound.
The Hypotheses: With every reason to believe that the decrease in social desirability was not an artifact of a confound in the measures or the manipulation, the prediction must be re-examined. The essential element of the findings for Hypothesis 1 was that the lower social desirability responding occurred only in the Fake Good condition for the SDE scale, but was a main effect in the IM Composite. Thus, what must be re-addressed is both a main effect and an interaction effect.

The main effect for Mortality Salience, found in the lowered social desirability scores on the IM Composite, has proven difficult to explain. The simplest explanation is that thoughts of death made the motive to be honest more salient than the motive to self-enhance. Given the strength and stability of the self-consistency drive (Swann, 1987), and the general occurrence of acquiescence to experimenter authority (Milgram, 1963) this should be construed as a powerful demonstration of Worldview Defense. Unfortunately, it is somewhat at odds with previous Mortality Salience findings. Honesty may just be too distal, too abstract a concept to exert an effect, in the absence of something channeling it in a way to make it more immediate. Why? The same reasoning that equates “behaving honestly” with self-enhancing commitment to a worldview should also have equated “behaving fairly” to the participants in the McGregor et al. study (1996). These individuals, when in a Mortality Salience condition, secretly slipped painful amounts of hot sauce into unsuspecting stranger’s food because they wrote an essay strongly critical of their political worldview. Many other Terror Management studies (Greenberg et al., 1990; Nelson et al., 1995) have demonstrated that the publicly-esteemed virtue of “equality and justice for all” was evidently NOT uppermost in people’s minds when they reached sharply prejudiced conclusions about minority groups and foreigners. Thus, to attribute a major effect to the simple desirability of the construct “honesty” is not in complete harmony with past Terror Management research, and flies in the face of multiple studies showing enhanced social consensus biases. Thus, for this study, the main effect cannot be explained with any great confidence.

The interaction effects for social desirability responding on the SDE scale under the intersection of Instructional Set and Mortality Salience can be addressed at a finer-grained level, which enhances their value. This explanation incorporates views from both the Faking and the Mortality Salience literature.

The Faking Perspective. From the standpoint of faking, it is useful to conceptualize taking a personality test as a task upon which there is measurable performance (changes in scores on a personality measure). The viewpoint that test-taking is performance on a task can be traced to research by Yerkes and Dodson (1908) in the early part of the century, that suggested arousal effects performance by encouraging dominant behaviors and discouraging secondary behaviors. This was updated in the social facilitation research by Zajonc (Zajonc, 1965), and brought to bear on the current issue by Paulhus in 1981, when he found evidence that the “dominant behavior” in social interaction is to respond in a moderately socially desirable fashion (Paulhus, 1981). This, of course, only considers the test-taking task, but interference may be equally, if not more, likely when performance on the task of test-faking is considered. Explaining the erosion on both tasks is well-suited to a cognitive interference model. To start with, it is expected that participants in Mortality Salience conditions will face a higher cognitive load than
participants in the Exam Salience condition. Mortality Salience is expected to cause a temporary increase in ongoing cognitive tasks in three ways: (1) the individual must, having actively suppressed conscious thoughts of death, subconsciously monitor intrusive thoughts to ensure that death is not cued back into conscious awareness, as in Wegner and Smart’s “White Bear” studies of thought suppression (1997); (2) the individual must accomplish the tasks of determining an available means of executing their worldview defense task of validating the cultural worldview, and (3) the individual must demonstrate their successful adherence to it. Although Terror Management Theory proposes that Culture provides a schema for automatizing these tasks, they should still provide near term interference.

Increased cognitive load diverts attentional resources from on-task performance, with subsequent performance degradation (Schneider, Dumais, & Shiffrin, 1984). When the task is self-presentation, perhaps cognitive interference-based attentional load leads to socially desirable self-presentation. Paulhus and associates (Paulhus, et al., 1989) demonstrated that high cognitive load caused by a digit-tracking task lead to increases in the speed and the positive valance of responses. When the task is self-presentation with a positive spin (faking) an unpublished study by Paulhus and Murphy (1987) demonstrated that, while social desirability scores were uniformly higher in Fake Good versus Honest Conditions, the relationship changed under high cognitive load. Under high, as opposed to low, cognitive load, honest responses showed the predicted mildly elevated social desirability but Fake Good scores showed mildly depressed social desirability. This was interpreted as support for an automatic, moderately positive bias in self-presentation (Paulhus, et al., 1989). When the primary task of self-presentation (whether in interpersonal communication or on a personality test) is disturbed by distracter tasks or competing attentional demands, people revert to an automatic response. This automatic response is neither totally honest (which would entail increased allocation of scare cognitive resources to self-assessment) nor totally faked (which would require explicit attention to impression management goals and strategies for reaching them). Instead, as was shown amongst participants in the Fake Good condition in this study, it is modestly positive, falling in between Honest and Fake Good profiles. Although the findings from the SDE scale did not demonstrate Paulhus and Murphy’s effect for the Honest condition, the parallel between the two studies’ Fake Good conditions is apparent.

At this point, the data for the main effect of Mortality Salience on the IM Composite were re-examined. Although the Mortality Salience/Instruction Set interaction was not significant, closer examination of the cell means for the IM Composite showed the Exam and Mortality Salience cell means within the Honest condition were not significantly different ($M = -.7181$ and $M = -.7906$, $t_{(99)} = .730$, $p = .467$). Continuing the similarity to the pattern in the SDE scale, the Exam and Mortality Salience cell means within the Fake Good condition were significantly different ($M = .8790$ and $M = .5511$, $t_{(103)} = 2.476$, $p < .05$). Thus, the IM Composite results follow the same trend as that found in the SDE scale, and might be better addressed by the two-part explanation provided for the interaction between Faking and Mortality Salience.

Thus, it seems that the findings of attenuated faking in this study’s Fake Good condition may be reasonably explained by inadvertent response distortion attributed to mortality salience-induced cognitive interference. Unfortunately, this cognitive
interference model does not explain this study’s reduction in social desirability bias in the Honest condition. Nonetheless, it should be recalled that there is one major difference between this study and the previous cognitive interference research, mortality salience. Although the absence of increased social desirability responding in the Honest condition shows a weakness in the reasoning behind Hypothesis 1, the simultaneous absence of the “automatic egotism” in the Honest condition could provide potential support for a Mortality Salience effect, if one could establish a possible clash between a Mortality Salience effect and the cognitive load/”automatic egoism” effect.

Complexity Within the Range of Mortality Salience. In the effort to provide an explanation for the reduced socially desirable responding in the Honest condition, a direct effect of Worldview Defense is proposed, instead of the indirect effect of cognitive interference. As in the discussion above, of the main effect for Mortality Salience, the concept of Honesty is employed. Recall that the principle goal in mortality salience conditions is adherence to a cultural worldview. Although this study initially proposed social desirability bias as the baseline means of internally dealing with existential fear, and this may map onto the dimension of a social desirability bias, this may be confounded, in this study, with the high cultural regard commonly attached to honesty. In explaining the main effect, this was a distant, abstract worldview defense “solution,” but in considering the interaction effect, we need to consider the powerful channel effect of the Honest instruction conditions. The subjects in this study’s Honest condition were provided a clear-cut avenue for worldview adherence in response to Mortality Salience: be as honest as possible. To the extent that honest responses, and the self-enhancing, self-esteem bolstering effects of being honest, addresses the threat caused by reminders of death, there may have been little motive to use individual test responses to accomplish the same goal.

Referring to particular elements of the experiment (the task of faking, the wording of the instruction set) thus allows for differing reactions to mortality salience to each exert their own influence in a compounded way. Once it is recognized that there are multiple means of responding to mortality salience, it becomes necessary for a researcher to explore the breadth of possible explanations and assess them all, rather than arbitrarily present a single explanation. It is therefore necessary to delve into various previous tests of Mortality Salience to seek explanations for this study’s findings. This highlights a potential problem with the theory, in that it IS reasonable to postulate multiple options for responding to Mortality Salience, even within a single situation. Even worse, it is troubling to even be able to attempt to apply mortality salience effects to explain either honest or distorted responding. As an example of the rapidity with which post hoc interpretations can accumulate when resorting to Terror Management Theory, two possible alternative explanations will be explored in the following paragraphs.

For instance, one could just as readily have predicted increased distortion in the Honest condition, via previous studies which found that mortality salience lead people to avoid tasks that involved self-focus (Arndt et al., 1998). With the reasoning that self-awareness increases the likelihood that individuals will face personal, existential questions of purpose, meaning, and fate, Terror Management Theory proposed that this would be aversive when Mortality Salience highlighted the negative answers to these questions. Based on this, Arndt et al. (1998) successfully predicted that subjects primed
with Mortality Salience would spend less effort writing about themselves, but that Mortality Salience would not lead to changes when they were writing about others. Transitioning from the Arndt et al. (1998) study to this one, it would have been reasonable to conclude that the current participants, in the Mortality Salience condition, would have put less effort into Honest responding, thus leading to moderately enhanced social desirability bias. This clearly highlights the need for further research which more precisely specifies the conditions leading to one form of worldview defense over another.

As a further source of complexity, Mortality Salience may provide competing explanations for the decrease in social desirability amongst Fake Good/Mortality Salient participants. Although the effect of Mortality Salience may have been simply to introduce a uniquely distracting form of cognitive interference as depicted above, it is important to recall the basic proposition that participants in the Mortality Salient will unconsciously bias their responses to defend against existential anxiety sparked by thoughts of death. This as a self-directed strategy, as the critical audience when dealing with this existential anxiety is one’s self. Outwardly directed impression management would only be efficacious in reducing existential anxiety if it is able to bolster the ongoing self-directed enhancement sparked by mortality salience. Given this, it is possible to expect that extreme social desirability responding, of the kind specifically requested in this manipulation, would NOT be a likely choice amongst people trying to believe that they are committed, good adherents of their cultural worldview. Although elements of a “college campus cultural worldview” might encourage participants to feel an increased need to be a “good subject” and obey the instructions, responses that are too obviously and too extremely oriented towards social desirability would not provide an internal defense against anxiety, since they are not plausible even to one’s self. Thus, perhaps the individual faces two competing motives – to obey the volitional “Fake Good” instructions, but also to provide answers that are believably positive. The attenuated social desirability bias found in the Fake Good/Mortality Salience condition may thus be evidence for a implicit compromise response pattern, rather than the “amplified faking” pattern predicted in Hypothesis 1.

In summation, the data in this study presented a complicated pattern, that can not be explained by simple recourse to a unidimensional, existentially-motivated social desirability bias. The difference between exam salient and mortality salient conditions, in the absence of covarying differences in affect or anxiety, is good support for Terror Management Theory. That this difference arises from nonvolitional motives is supported by the complicated interactions arising from the otherwise volitional Honest/Fake Good Manipulation. Left unsettlingly incomplete is a full explanation of HOW mortality salience exerted its effects. At this time, it is suggested that the worldview defense and self-esteem bolstering efforts that are stimulated by mortality salience may induce a cognitive load. This cognitive load may absorb a portion of the attentional resources that would otherwise be directed to performance on the test-taking/faking task. Given that faking personality tests may be a more involving task, requiring greater concentration, the distraction arising uniquely from mortality salience interferes more with faking than with honest responding. Additionally, the self-enhancement aspects of reacting to mortality salience suggest that individuals in a mortality salient condition may experience a subtle
increase to their motive to respond honestly and to fake only in a manner that is believable.

The Interaction with Conformist/Nonconformist Feedback

For one measure (the Impression Management Composite), the ANOVA demonstrated that the interaction performed as expected: mortality salience shaped how participants responded to personality feedback. The means showed this trend, with participants informed that they were social deviants consequently emphasizing their conformity, by responding to the measure in a socially desirable answer. Participants informed that they were excessively conformist responded by enhancing their individuality, through limiting their recourse to social desirability. These findings supported Hypothesis 2, which is further highlighted by the effects of the interaction when subjects were in the exam salient condition. Under exam salience, the relationship was reversed, with conformist feedback leading to higher scores on the Impression Management Composite. This is consistent with the findings in the Simon, et al. (1997) study, upon which this study’s manipulations were patterned. Simon’s findings presented the same crossing pattern with a different dependent variable (social projection), wherein scores were weakened by conformity feedback in the Mortality Salience condition, yet strengthened by conformity feedback in the Exam Salience condition. In both studies, Brewer’s Optimal Distinctiveness Theory (1991) predicts the direction of the reaction, and Terror Management Theory predicts when it will be energized. The consistent, unpredicted finding is that conformist feedback leads to increased social desirability motives in the exam salience condition, a finding which might be due to a mild priming effect. Simon, et al. (1997) suggested that the feedback manipulation is not an especially strong one, and may not gravely disrupt a person’s essential balance between individuation and social inclusion. Only when mortality salience activates the need to feel successful in adhering to a cultural worldview do small imbalances in optimal distinctiveness become of concern.

The simple effects analysis on this interaction revealed that the force behind the interaction was the significant effect of mortality salience on the potency of the conformist feedback, as the relationship was not significant with nonconformist feedback. This provides a useful vehicle for demonstrating the connection between self-esteem and typical worldview defense and adherence responses to mortality salience. A consistent finding in the Terror Management literature (Greenberg et al. 1992, 1993; Harmon-Jones et al., 1997) is that experimentally manipulated boosts to self-esteem lessen the motive to engage in worldview defense. Recall that there were no significant effects of feedback on affect or anxiety, no main effect on the responses to the personality tests, and no effect of type of feedback on the participant’s judgments of its accuracy. This said, the 42-item CT measure of conformity demonstrated negative skew ($skew = -.386$, $s.e. = .170$), indicating mean scores that trended in the nonconformist direction. Although the overt, self-report measure had slightly positive skew ($skew = .214$, $s.e. = .166$), the larger trend in the nonconformist direction may reflect the college student population from which the sample was derived. With this population, it may be that nonconformist feedback had a slightly positive valence, and the feedback may have provided a small boost to the participants’ self-esteem. Although this study contained no measure of self-esteem, the absence of a difference between exam and mortality salience manipulations in the
nonconformist condition suggest that an unintended boost in self-esteem may have attenuated the participants’ need to distort their responses as a means of worldview defense.

Is there Any Difference Between SDE and IM scales?

Hypotheses 5 and 6 addressed specific properties of the BIDR’s split into two subscales for Self-deceptive Enhancement and Impression Management, and received minimal support. The two-factor model of socially desirable responding is a venerable one, has received support in a number of factor analytic studies, and often demonstrates divergent validity in the subscales’ unique abilities to predict various external criteria (Paulhus, 1984). What is missing, however, is data concerning the correlation between the two BIDR scales. In the BIDR manual, there is no explicit statement regarding the correlation, although a range of $r = .20-.32$ is mentioned (Paulhus, 1998). In Paulhus’s 1995 examination of self-presentation strategies, the various correlations between the two scales and Big Five measures were reported for the various self-presentation conditions, but the correlation between the two scales themselves was not reported (Paulhus, 1995). The scale intercorrelation with this present sample was large enough, $r = .672$, $p < .01$, to raise doubts about the absolute distinctiveness of these two subscales. Although the correlation shrank to insignificance in the Honest condition, the strong relationship arising under the Fake Good condition is troubling, given that this is intended to serve as a measure of deception (Paulhus, 1998). This may provide indirect evidence for a change in the measure’s factor structure under Fake Good conditions. This in turn could imply that when examining the psychometric properties of a measure, it may be wise to examine it twice, under both response set conditions. Another area of some concern is this study’s findings relative to the fakability of the SDE scale. Paulhus found that the SDE scale means did not significantly differ between Honest and Fake Good conditions (Paulhus, 1995), although the BIDR’s manual does not mention this finding, or explicitly claim that the SDE is unfakeable (Paulhus, 1998). The manual does suggest that the SDE is less sensitive to situational demands, but there is no statistical data provided concerning the scale’s performance specifically in Fake Good conditions. The Honest/Fake Good manipulation in this present study produced means of 2.29 and 10.02, significantly different at $t_{208} = -13.66$, $p<.01$. This agrees with previous findings with an earlier version of the BIDR (Ni, 1995). Thus, in contrast to previous research reported by Paulhus (1995), the SDE scale is imminently fakable, and is certainly correlated with the IM scale, amongst individuals motivated to favorably distort their answers. Hypothesis 5 therefore did not receive meaningful support, and these findings resurface the concerns raised by Tetlock and Manstead (1985) in their critique of research that sought to dichotomize influences on behavior and attitudes into internal versus external causes. They concluded that theories of intrapsychic causes had too much overlap with impression management causes. Therefore, it was highly unlikely that an intrapsychic explanation for a particular finding could be complete without recourse to an impression management explanation, and vice versa (Tetlock & Manstead, 1985). Transposing these ideas onto the BIDR, it seems reasonable to propose that there may be some questions about its the factor structure. Items purporting to accentuate intrapsychic (self-deceptive enhancement) motives may be effected by outwardly directed impression management
concerns. Fundamentally, this suggests the need for a further examination of the factor structure of instruments such as the BIDR.

The high intercorrelation between the scales should therefore be expected, given the common focus on social desirability. Nonetheless, these results may be still in an acceptable range, if the scales retain divergent validity, in a different reactivity to the Mortality Salience and Conformity Feedback conditions. In terms of their reactivity to Mortality Salience, the SDE scale was significantly effected, with 2.7% of the variance attributable to the Mortality Salience manipulation. In contrast, the IM scale did not show a significant effect for Mortality Salience, $F(1,201) = 1.703, p = .193$. Because of the internal focus of the experience of mortality salience and subsequent worldview defense, it was expected that the SDE scale would be more susceptible to mortality salience-induced distortion, and this was born out. As discussed above, the direction of this distortion was not as predicted, but the differential sensitivity is evidence for divergent validity of the scales, for Terror Management Theory. It also suggests that, despite uncertainty over the two scales’ convergence, fundamental differences remain, and that these differences suggest some degree of distinction between internally versus externally directed response distortion. Unfortunately, a finer-grained assessment of the SDE scale did not reveal further information about the scale’s properties under Mortality Salience, thus failing to support Hypothesis 6. Regarding the Conformity Feedback manipulation, neither scale demonstrated a significant main effect. The SDE scale was affected by an interaction of Mortality Salience and Instruction Set, while the IM scale was affected only by an interaction of Mortality Salience and Conformity Feedback. Although there is still potential for a measure of inwardly-directed impression management to provide insight into the mechanisms of Terror Management, a measure less correlated with other-directed Impression Management will be necessary.

The Interaction of Mortality Salience, Feedback, and Instruction Set

Hypotheses 3 and 4, involving this 3-way interaction, were not supported. Given the small effect sizes reported for mortality salience and its interactions, it is probable that this 3-way interaction would be exceptionally difficult to detect without a much larger sample. The very robustness of the Instructional Set manipulation may also overshadow these complex interactions. “Insufficient Sample Size” is a weak explanation, however. Based upon this data, and what is known about faking, is it reasonable to continue to propose a meaningful interaction? Given difficulties in reaching firm conclusions about the construct validity of personality measures, the answer to this must be connected to their criterion-related validity. The small effect sizes involved with these nonvolitional effects relate to raw scores, and it is an open question whether different relationships may be discovered with criterion variables, such as college grades. To that end, arrangements have been made to obtain the participants grade point averages after the current semester has ended. Future analyses will be conducted to assess whether these manipulations had differential effects on the measures’ known ability to predict academic performance. Since ability to predict is the critical concern with personality tests, those results will govern whether this search should continue for nonvolitional variables that moderate the effects of willful impression management strategies. Given what is known about Mortality Salience, there is still reason to return to Hypothesis 3 in the future, although a
Nonvolitional Faking

means must be developed to provide more circumscribed predictions of specific worldview defense/adherence reactions.

Implications, Future Research, and Limitations

Mortality Salience. To summarize the implications of this study, the clearest findings support a Terror Management explanation of reactiveness to Mortality Salience, but the pattern of results do not indicate a single direction for future research and theory building on the phenomenon of faking. Mortality salience has reliably produced a complex pattern of behavior which relates to reaffirming and strengthening one’s cultural worldview, and to bolstering self-esteem by affirming one’s successful adherence to it. This study also significantly strengthened Terror Management claims that the mortality salience effects are not directly confounded with affect or anxiety. Very few Terror Management studies measured affect before their mortality salience manipulation, so the before and after nature of this assessment adds weight to the paradigm. Strangely, it has also been the case that few previous studies specifically measured anxiety, and the before-and-after use of the STAI in this study appears to be a novel addition to the literature. Also significant is the alteration in the dependent variable of concern, response bias. This contrasts with the most dramatic prior evidence, which appeared in the form of outwardly observable behavior, such as enhanced stereotyping, prejudice, and racially discriminatory behavior. Although these behaviors are all posited to exert their anxiety-buffering effect for the self as an audience to them, they are quite clearly outwardly directed. More subtle effects, in which the self is directly addressed, have been less common in Terror Management research. By measuring the effects of mortality salience on how people describe themselves, this study attempted to bypass the more observable behaviors. This surfaced one of the study’s limitations, difficulty in determining the meaning behind changes in self-report measures. A comparison may be drawn to Adam’s Equity Theory of workplace motivation, which has suffered empirically because of the immense range of possible ways in which an individual may choose to readdress inequity. Similarly, this research demonstrated that the range of possible worldview defense actions was large, and that determining WHICH reaction is operative within a particular person at a particular moment is a very challenging task. It is a task, however, which must be addressed before returning to this proposed interaction. While it remains important to build nonvolitional motives into any model of faking, and while the three-way interaction did approach significance on two occasions, it will first be necessary to build up a systematic body of research aimed at identifying individual differences and predispositions in mortality salience reactions. There are three studies which need to be done, and which should have preceded this research. (1) It will be helpful to incorporate direct, rather than inferential, measures of self-esteem. (2) It will be necessary to define a temporal sequence for mortality salience and worldview defense – how long does it last? A time series design with sequential measures of continuously-scored dependent variables would be useful to this end. (3) Lastly, a better understanding of the variability in potential worldview defenses in a given situation is necessary. Such a study would include a within-subject design which focuses on situations in which mortality salience might be expected to produce a range of different, even conflicting behaviors, and measure possible covariants such as locus of control, tolerance for ambiguity, and, of course, baseline “trait” social desirability.
The BIDR. Although the SDE subscale’s higher sensitivity to mortality salience was reassuring, the data in this study suggest that the factor structure of the BIDR may not always be clear-cut. While Paulhus reported support from confirmatory factor analyses (Paulhus, 1998), exploratory factor analyses should be performed on a larger data set, under a range of response set conditions. Such a psychometric analysis may disentangle item-level concerns about cross-loading, and scale level concerns about the size and number of factors.

Faking. Discussion of mortality salience aside, this study highlights the value of further research on situational influences on test-taking. We like to believe that, if we aggregate enough responses … enough “trues” and “falses,” we will identify something enduring within a person, such that we can estimate their attributes and motivations, and predict future behavior. What is equally probable is that whether that #2 pencil bubbles-in “true” or “false” is dependent on more than an underlying personality trait, or even on impression management motives. Future test validation studies should incorporate experimental tests of multiple situational confounds, rather than just the volitional motive to impress the tester. Because these measures are self-reports, the vector on which these situational confounds should be explored is the self, and the associated properties already established in other research fields, such as self-esteem, self-enhancement, self-verification, construal of meaning, and social identity construction. As these self-processes have been found to guide human choices and behaviors, they should be seen as valid sources of variability in the choices made on personality tests. This future research will likely benefit from more constrained manipulations of the unconscious. Probably the most promising will be the application of Stroop-style visual stimuli presented on a computer screen during computerized administration of personality tests. As the Stroop paradigm has generated quantifiable, significant influences on other attitudes and behaviors, there are solid reasons to apply it to the study of nonvolitional faking. While the capital requirements (computers and computer labs) inhibit attaining large samples, recent developments in web-based test administration may remove this constraint.
References


### Table 1.
Mean conformity scores reported by Feedback Accuracy Assessments.

<table>
<thead>
<tr>
<th>Feedback Accuracy</th>
<th>Self-reported Conformity</th>
<th>Creative Temperament subscale of the CPI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Most Accurate (1)</td>
<td>2.994</td>
<td>.6863</td>
</tr>
<tr>
<td></td>
<td>.5101</td>
<td>.1067</td>
</tr>
<tr>
<td>Accurate (2)</td>
<td>3.204</td>
<td>.6222</td>
</tr>
<tr>
<td></td>
<td>.4871</td>
<td>.1248</td>
</tr>
<tr>
<td>Neutral (3)</td>
<td>3.150</td>
<td>.5959</td>
</tr>
<tr>
<td></td>
<td>.5048</td>
<td>.1346</td>
</tr>
<tr>
<td>Inaccurate (4)</td>
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<td>.7676</td>
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<tr>
<td></td>
<td>.4810</td>
<td>.1485</td>
</tr>
<tr>
<td>Most Inaccurate (5)</td>
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<td>.4564</td>
</tr>
<tr>
<td></td>
<td>.4444</td>
<td>.0138</td>
</tr>
</tbody>
</table>

Note: N = 214. Self-reported Conformity ranged from 1 (most conformist) to 5 (most nonconformist). The CT subscale ranged from 0 (most conformist) to 1 (most nonconformist).
Table 2. 
Mean Affect and Anxiety Scores reported by Mortality Salience Condition and Conformity Feedback Condition.

<table>
<thead>
<tr>
<th>Measure</th>
<th>After Exam Salience</th>
<th>After Mortality Salience</th>
<th>After receiving Conformist Feedback</th>
<th>After receiving Non-conformist Feedback</th>
</tr>
</thead>
<tbody>
<tr>
<td>PANAS (state)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive Affect</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>2.943</td>
<td>3.051</td>
<td>3.077</td>
<td>2.909</td>
</tr>
<tr>
<td>SD</td>
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<td>.6754</td>
<td>.7057</td>
<td>.6852</td>
</tr>
<tr>
<td>n</td>
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<td>107</td>
<td>112</td>
<td>102</td>
</tr>
<tr>
<td>Negative Affect</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>1.508</td>
<td>1.642</td>
<td>1.585</td>
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<td>SD</td>
<td>.5719</td>
<td>.6158</td>
<td>.5766</td>
<td>.6207</td>
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<tr>
<td>n</td>
<td>107</td>
<td>107</td>
<td>112</td>
<td>102</td>
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<tr>
<td>STAI (state)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M</td>
<td>1.849</td>
<td>1.893</td>
<td>1.850</td>
<td>1.895</td>
</tr>
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<td>SD</td>
<td>.5231</td>
<td>.5788</td>
<td>.5115</td>
<td>.5920</td>
</tr>
<tr>
<td>n</td>
<td>107</td>
<td>106</td>
<td>111</td>
<td>102</td>
</tr>
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</table>

Note: N = 214. Both PANAS scales range from 1 (low affect) to 5 (high affect). The STAI scales ranges from 1 (low anxiety) to 4 (high anxiety).
### Table 3.
Bivariate Correlations for independent and dependent variables.

<table>
<thead>
<tr>
<th></th>
<th>Fdbk Accuracy</th>
<th>SR Conf Score</th>
<th>CT Score</th>
<th>SDE Score</th>
<th>IM Score</th>
<th>Gi Score</th>
<th>Ai Score</th>
<th>Ie Score</th>
<th>Py Score</th>
<th>PANAS Trait (+)</th>
<th>PANAS Trait (-)</th>
<th>PANAS State (+)</th>
<th>PANAS State (-)</th>
<th>STAI Trait</th>
<th>STAI State</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fdbk Acc</td>
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<td></td>
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<td>CT Score</td>
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<td>1.00</td>
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<td>SDE Score</td>
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<tr>
<td>IM Score</td>
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<td>.041</td>
<td>.688**</td>
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<td></td>
</tr>
<tr>
<td>Gi Score</td>
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<td>-.028</td>
<td>.083</td>
<td>.672**</td>
<td>.845**</td>
<td>1.00</td>
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<tr>
<td>Ai Score</td>
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<td>.004</td>
<td>-0.14</td>
<td>.217**</td>
<td>.299**</td>
<td>.363**</td>
<td>1.00</td>
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<tr>
<td>Ie Score</td>
<td>.047</td>
<td>.096</td>
<td>-.009</td>
<td>.458**</td>
<td>.513**</td>
<td>.605**</td>
<td>.719**</td>
<td>1.00</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Py Score</td>
<td>.116</td>
<td>.139*</td>
<td>-.045</td>
<td>.399**</td>
<td>.468**</td>
<td>.535**</td>
<td>.623**</td>
<td>.706**</td>
<td>1.00</td>
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<td></td>
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<tr>
<td>PANAS Trait (+)</td>
<td>-.005</td>
<td>.226*</td>
<td>-.122</td>
<td>.062</td>
<td>.015</td>
<td>.041</td>
<td>-.022</td>
<td>.063</td>
<td>.103</td>
<td>1.00</td>
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<tr>
<td>PANAS Trait (-)</td>
<td>-.134*</td>
<td>-.113</td>
<td>-.042</td>
<td>-.012</td>
<td>.015</td>
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<td>1.00</td>
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<tr>
<td>PANAS State (+)</td>
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<td>.057</td>
<td>-.097</td>
<td>-.072</td>
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<tr>
<td>PANAS State (-)</td>
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<td>-.023</td>
<td>-.056</td>
<td>-.067</td>
<td>-.067</td>
<td>-.116</td>
<td>-.185**</td>
<td>-.246**</td>
<td>-.257**</td>
<td>.022</td>
<td>.517**</td>
<td>-.006</td>
<td>1.00</td>
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<td></td>
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<tr>
<td>STAI Trait</td>
<td>-.128</td>
<td>-.180*</td>
<td>.011</td>
<td>-.038</td>
<td>.047</td>
<td>-.070</td>
<td>-.146*</td>
<td>-.230**</td>
<td>-.214**</td>
<td>-.368**</td>
<td>.720**</td>
<td>-.184**</td>
<td>.442**</td>
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<tr>
<td>STAI State</td>
<td>-.120</td>
<td>-.093</td>
<td>-.047</td>
<td>-.092</td>
<td>-.036</td>
<td>-.092</td>
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<td>-.227**</td>
<td>-.210**</td>
<td>-.162**</td>
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<td>-.274**</td>
<td>.788**</td>
<td>.583**</td>
<td>1.00</td>
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</tbody>
</table>

**Note:** $N = 214$. SR Conf = Self-reported Conformity, CT = Creative Temperament, SDE = Self-deceptive Enhancement, IM = Impression Management, Gi = Good Impression, Ai = Achievement via Independence, Ie = Intellectual Efficiency, Py = Psychological Mindedness, PANAS = Positive And Negative Affect Scales, STAI = State/Trait Anxiety Inventory. *$p < .05$; **$p < .01$. 
Table 4. Mean and standard deviation for each dependent variable, broken down by experimental conditions within the Instructional Set Factor.

<table>
<thead>
<tr>
<th>Dependent Variables</th>
<th>Exam Salience/Conformist</th>
<th>Exam Salience/Nonconformist</th>
<th>Mortality Salience/Conformist</th>
<th>Mortality Salience/Nonconformist</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>SDE Scale</td>
<td>2.6429</td>
<td>2.3760</td>
<td>1.9565</td>
<td>2.0775</td>
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<tr>
<td>IM Composite</td>
<td>-.6554</td>
<td>-.7946</td>
<td>-.7957</td>
<td>-.7860</td>
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<tr>
<td>Honest Instruction Set</td>
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<tr>
<td>SDE Scale</td>
<td>11.0370</td>
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<tr>
<td>IM Composite</td>
<td>.9459</td>
<td>.8096</td>
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<td>.7687</td>
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<tr>
<td>Ie Scale</td>
<td>30.0000</td>
<td>3.3110</td>
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<td>Py Scale</td>
<td>17.1071</td>
<td>2.5142</td>
<td>16.5556</td>
<td>2.5318</td>
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</tbody>
</table>

Table 5. Mean, standard deviation, and cell size for scores on the BIDR subscales: SDE and IM, by Instructional Set.

<table>
<thead>
<tr>
<th>Instructional Set</th>
<th>BIDR Subscale Scores</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Self-deceptive</td>
<td>Impression</td>
</tr>
<tr>
<td></td>
<td>Enhancement (SDE)</td>
<td>Management (IM)</td>
</tr>
<tr>
<td>Honest</td>
<td>M</td>
<td>2.2913</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>2.1311</td>
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<tr>
<td></td>
<td>n</td>
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<tr>
<td>Fake Good</td>
<td>M</td>
<td>10.0187</td>
</tr>
<tr>
<td></td>
<td>SD</td>
<td>5.3482</td>
</tr>
<tr>
<td></td>
<td>n</td>
<td>107</td>
</tr>
</tbody>
</table>

Note: Cell means between the Honest and Fake Good conditions are significant at $p < .01$ for both scales.
Table 6. Mean, standard deviation, and cell size for SDE scores within the Mortality Salience x Conformity Feedback interaction, collapsed across Instructional Sets.

<table>
<thead>
<tr>
<th>Feedback</th>
<th>Self-deceptive Enhancement (SDE) Scale Scores in Mortality Salience</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Exam Salience</td>
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<tr>
<td>Conformist</td>
<td>M</td>
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<tr>
<td></td>
<td>SD</td>
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<tr>
<td></td>
<td>n</td>
</tr>
<tr>
<td>Nonconformist</td>
<td>M</td>
</tr>
<tr>
<td></td>
<td>SD</td>
</tr>
<tr>
<td></td>
<td>n</td>
</tr>
</tbody>
</table>

Note: Cell means did not significantly differ across the Conformity Feedback conditions.
Curriculum Vitae

PERSONAL
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Psychology Department
5088 Derring Hall
Blacksburg, VA 24061-0436
(540) 231-6670

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2001, Masters of Science, Virginia Polytechnic Institute and State University

EXPERIENCE
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PROFESSIONAL GOALS
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