Summer 2017

Investigation of the Predictive Validity of Implicit and Explicit Measures of Integrity

Andrew C. Schneider

Missouri State University, Schneider123@live.missouristate.edu

INVESTIGATION OF THE PREDICTIVE VALIDITY OF IMPLICIT AND

EXPLICIT MEASURES OF INTEGRITY

A Masters Thesis

Presented to

The Graduate College of

Missouri State University

In Partial Fulfillment

Of the Requirements for the Degree

Master of Science, Psychology

By

Andrew C. Schneider

August 2017

INVESTIGATION OF THE PREDICTIVE VALIDITY OF IMPLICIT AND EXPLICIT MEASURES OF INTEGRITY

Psychology

Missouri State University, August 2017

Master of Science

Andrew C. Schneider

ABSTRACT

The present study examined the incremental predictive validity of two overt-based Implicit Association Tests (IATs) and three personality-based IATs for behavior related to integrity and character. The overt-based IATs assess attributes related to self and honesty. The personality-based IATs assess attributes related to the "dark triad" of personality – Machiavellianism, subclinical narcissism, and subclinical psychopathy. A temptation manipulation provided opportunities for subjects to lie, cheat, and steal on a number finding task, to receive a greater financial reward. In addition to the five IATs, subjects also completed five explicit (self-report) overt and personality-based integrity measures. Findings did not support the predictive power or the incremental validity of the IATs but the impression management subscale of the explicit personality-based Paulhus Deception Scale could predict the criterion behavior for only those who lied.

KEYWORDS: implicit association test, character failure, psychopathy, dark triad, integrity, personality, counterproductive work behavior, organizational citizenship behavior

This abstract is approved as to form and content

_____

Donald L. Fischer, PhD
Chairperson, Advisory Committee
Missouri State University

INVESTIGATION OF THE PREDICTIVE VALIDITY OF IMPLICIT AND

EXPLICIT MEASURES OF INTEGRITY

By

Andrew C. Schneider

A Masters Thesis
Submitted to the Graduate College
Of Missouri State University
In Partial Fulfillment of the Requirements
For the Degree of Master of Science

August 2017

Approved:

_____
Donald L. Fischer, PhD

_____
Carol F. Shoptaugh, PhD

_____
Michelle E. Visio, PhD

_____
Julie Masterson, PhD: Dean, Graduate College

ACKNOWLEDGEMENTS

I would like to thank the following people for their help with this project, first and for most Dr. Donald Fischer, for steering the ship amongst the fog, Sheryl Lobo, for her help in developing and administering all the psychological measures, and Molly Hendricks on and Philip Soza for their help running the experiment.

I dedicate this thesis to the Industrial Organizational Psychology faculty at Missouri State University and all the research assistants who made it possible.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

INTRODUCTION

Most people assume that if they had the choice to act honestly or dishonestly they would choose the former. This could be wishful thinking. Evidence suggests that individuals in both leadership and membership roles fall victim to character failure with devastating consequences. For example, the executives at Enron, who fraudulently reported company assets, cost 20,000 employees their jobs (Cohn, 2006), more than $60 billion in market value loss, and a loss of $2 billion in pension plans (AP, 2011). The Military Police at Abu Ghraib who violated Geneva Convention standards for the treatment of detainees cost the military an unknown amount of credibility and status. Those who perpetrated the Madoff investment firm's fraud cost clients $65 billion in losses (Yang, 2014). The Association of Certified Fraud Examiners (2006) suggests that employee theft and fraud has been estimated at $600 billion a year in the United States. It is not only individuals in employment situations that act dishonestly, the Internal Revenue Service estimates that there is a 15% noncompliance rate and a gap of $300 billion between what taxpayers should pay and what they actually pay (Herman, 2005).

It is no surprise that organizations have an interest in predicting character failure to mitigate these risks (Berry, Sackett & Wiemann 2007), especially in situations that tempt individuals to act dishonestly to gain personal reward. To achieve this, valid psychological measures of integrity are needed. Although there have been attempts to accurately assess risks related to character failure, there remains room for improvement. This study examines the predictive validity of new implicit measures designed to assess this risk.

LITERATURE REVIEW

Explicit Measures of Integrity

The polygraph test was one of the first tests created to detect deception but the Employee Polygraph Protection Act, adopted in 1988, prohibits most private employers from using it for pre-employment purposes to screen out potential employees (Dalton & Metzger, 1993; Saxe, 1994). This led to the creation of explicit self-report integrity tests, designed to predict job performance and counterproductive work behaviors (CWB). Sackett, Burris, and Callahan (1989) and Ones, Viswesvaran, and Schmidt (1993) suggest CWB criteria can be divided into two categories – narrow (e.g., actual theft, theft admissions, and dismissals for actual theft) and broad (e.g., behaviors as disciplinary problems, excessive tardiness and absenteeism, turnover, violence on the job, substance abuse, property damage, organizational rule breaking, theft, and other disruptive or irresponsible behaviors). Sackett et al., (1989) also state that using the same type of test to predict these two different criterion domains or using different types of tests to predict different types of criteria produces validity issues which prevent us from drawing strong conclusions. In conclusion, Sackett et al., (1989) suggested two types of tests to predict these criteria: overt integrity tests and personality-based integrity tests.

Overt Integrity Tests. Overt integrity or transparent tests can be argued to be more applicable to assess the narrow criteria and they have two sections. One section deals with individual's perceptions of theft and dishonesty by assessing their beliefs about the frequency of employee theft, appropriate punishments of theft, perceived ease of theft, and common rationalizations about theft (Sacket et al., 1989; e.g., "Someone

2

who steals because his family is in need should not be treated the same as a common thief." and "I am too honest to steal."). The second section asks participants to admit their own theft behaviors and illegal activities by asking questions about dollar amount stolen in the past year, drug use, and gambling (Sacket et al., 1989; e.g., "I have thought about taking money from an employer without actually doing it."). Examples of explicit overt integrity tests include the Employee Integrity Index, Personnel Selection Inventory, the Employee Attitude Inventory, the Stanton Survey, the Reid Report, the Phase II Profile, the Milby Profile, and the Trustworthiness Attitude Survey.

      Personality-based Integrity Tests. Personality-based or covert tests can be argued to be more applicable to assess the broad criteria and do not ask questions regarding theft or dishonesty and were not developed to predict theft-related behaviors (Ones et al., 1993). They use composite measures of personality dimensions, such as reliability, conscientiousness, adjustment, trustworthiness, and sociability to predict a broad range of counterproductive work behaviors that include disciplinary problems, violence on the job, excessive absenteeism and tardiness, and drug abuse (Ones et al., 1993; e.g., "Did you get in trouble with your teachers very often in high school?"). These personality-based integrity tests investigate the "dark triad" of personality which includes Machiavellianism (manipulative personality), subclinical narcissism (grandiosity, entitlement, dominance, and superiority), and subclinical psychopathy (impulsivity and thrill-seeking, and low empathy and anxiety; Paulhus & Williams, 2002). Examples of explicit personality-based integrity tests include the Levenson Self-Report Psychopathy Scales, Paulhus Deception Scales, Personnel Reaction Blank, the

PDI Employment Inventory (PDI-EI), and the Reliability Scale of the Hogan Personality Series.

Validity of Explicit Measures of Integrity. Ones et al., (1993) conducted a comprehensive meta-analysis of overt integrity tests and personality-based integrity tests and found the validities for predicting CWBs to be positive, substantial, and in useful ranges. They meta-analyzed 665 validity studies and found the prediction of broad CWB to be .39 (.27 uncorrected) for overt tests and .29 (.20 uncorrected) for personality-based. When using narrow CWBs both tests predict .13 (.09 uncorrected) but they claim this is artificially reduced because of the low base rate of theft and when this is corrected the validity is .33. They also found that overt and personality-based tests predict job performance .41 (.23 uncorrected) and the measures are unrelated to cognitive ability.

Reasons explaining these modest relationships between integrity tests and CWBs include: (1) the CWBs are not readily observable, (2) social desirability could artificially depress self-reports, (3) difficulty detecting the proportion of CWBs and if the detected CWBs is a random sample of all CWBs, (4) generalizability of lab studies that temp participants to produce CWBs to on-the-job behaviors (e.g., is taking candy from a dish similar to on-the-job theft?), (5) using a single act of CWB to define your criteria, and (6) self-knowledge artifacts.

Ones et al., (1993) also identified several methodological moderators for CWB criterion. The first is the type of test (overt vs. personality-based). The second is the criterion measurement method which was either admissions (self-report of past CWB) or external (organizational records of CWB). This brings two concerns; social desirability could artificially depress self-reports and not all CWBs are detected which could

artificially depress organizational records. The third is criterion breadth (narrow vs. broad counter productivity). The fourth is validation strategy (predictive vs. concurrent). The fifth is the validation sample (applicants vs. employees).

Berry et al., (2007) argue that relationships among integrity tests cannot be viewed as interchangeable, and are not generalizable to anything with an "integrity test" label. Ones et al., (1993) investigation found that the mean correlation of overt tests is .45 (.32 uncorrected), of personality-based tests is .70 (.43 uncorrected), and between overt and personality tests is .39 (.25 uncorrected). Ones, Viswesvaran, and Schmidt (1996) meta-analysis found no differences between race but women score .11 to .27 standard score units higher depending on the test. Applicant reactions to integrity tests do not produce strong negative responses but contextual factors such as explaining the rationale for using the test can affect this.

Confounds of Explicit Measures of Integrity. While there are few studies that have investigated applicants' faking on integrity tests, there is evidence that suggests individuals fake or misrepresent themselves on applications in general (Alliger & Dwight, 2000). Examples of applicant dissimulation include: (1) 15% of nursing applicants lied about previous employment and 25% provided reasons for leaving their last job that did not match their previous employer (Goldstein, 1971), (2) 35% of electrician applicants when asked about prior experience working with a made-up tool reported using that tool (Pannone, 1984), (3) 45% of applicants for state jobs indicated they had observed or performed one or more tasks that do not exist (Anderson, Warner, & Spencer, 1984).

Alliger and Dwight (2000) conducted a meta-analytic investigation of susceptibility of integrity tests to faking and coaching. They found that participants taking personality-based integrity tests could inflate their scores by a quarter to one-half a standard deviation, a moderate effect, by both faking or coaching techniques. For overt integrity tests, participants could inflate their scores by one standard deviation when faking and when coached they could inflate it by one and a half standard deviations. This suggests that both types of tests can be manipulated by the user with overt tests more at risk.

There are several ways to combat this artificial inflation, such as, warning participants against misrepresentation (Wheeler, Hamill, & Tippins, 1996), using item response theory to identify fakers (Alliger & Dwight, 2000), using integrity tests that are less susceptible to impression management or self-knowledge artifacts (e.g., Implicit Association Tests of integrity). Both the overt and personality-based explicit integrity tests rely on self-reports which can be contaminated by impression management and self-knowledge artifacts (Berry et al., 2007). Individuals can be motivated to impression manage to look more favorably as an applicant or as an ego-defense mechanism.

Implicit Measures of Integrity

While explicit overt and personality-based integrity tests are useful in predicting CWBs (Ones et al., 1993; Sackett et al., 1989) there is room for improvement (Van Iddekinge, Roth, Raymark, & Odle-Dusseau, 2012). One way is to investigate implicit attitudes, which are judgments that are under the control of automatically activated evaluations without the performer's awareness of causation (Greenwald & Banaji, 1995; Greenwald, Mcghee, & Schwartz, 1998). Greenwald developed the Implicit Association

Test (IAT) to measure the strength of automatic associations or evaluations of implicit attitudes (Greenwald et al., 1998). His original IAT's used a five-block procedure but Greenwald, Nosek, and Banaji, (2003) later concluded a seven-block procedure was more reliable (see Table 1).

Table 1. Schematic Overview of the Seven Block Implicit Association Test.

Blocks	Left Key Assignment (E)	Right Key Assignment (I)
1 (practice)	FLOWER	INSECT
2 (practice)	GOOD	BAD
3 (practice)	FLOWER + GOOD	INSECT + BAD
4 (test)	FLOWER + GOOD	INSECT + BAD
5 (practice)	BAD	GOOD
6 (practice)	FLOWER + BAD	INSECT + GOOD
7 (test)	FLOWER + BAD	INSECT + GOOD

This IAT assessed implicit attitudes toward flowers, relative to insects; flowers and insects being the target concepts, with good and bad being the attribute concepts. These concepts are presented at the top left or right corner of the computer screen. In block 1, participants are instructed to rapidly classify words into one of the two categories FLOWER (by pressing the "E" on the left-hand side of the keyboard) or INSECT (by pressing "I" on the right-hand side of the keyboard). The words to be classified are stimuli (exemplars) that are presented, one at a time, in the center of the computer screen, such as lily, rose, daisy and tulip for the FLOWER concept and ant, wasp, beetle and fly for the INSECT concept. In block 2, the task is repeated but with the attribute concepts; GOOD and BAD are presented in the top left and right corner of the

computer screen, respectively, and GOOD (e.g., marvelous, joyful, superb, etc.) and

BAD (e.g., tragic, horrible, awful, etc.) stimuli are displayed in the center of the screen to

be categorized. In block 3, the previous two tasks are combined with both the target and

attribute concept in the top corner of the screen to classify compatible pairings.

Participants are instructed to press "E" if the stimuli words are either FLOWER or

GOOD exemplars and press "I" for INSECT or BAD exemplars. The first three blocks

present 20 classification trails. In block 4, the test block, the target and attribute concepts

stay the same but there are 40 classification trials. After block 4, the target and attribute

concept assignment keys are reversed. In block 5, participants are instructed to press the

left "E" key for BAD stimuli and the right "I" key for GOOD stimuli. In block 6,

participants classify incompatible pairings of FLOWER and BAD by pressing the left key

and INSECT and GOOD by pressing the right key. Blocks 5 and 6 present 20

classification trails. In block 7, the final test block, the target and attribute concepts stay

the same but there are 40 classification trials.

This is an example of a seven-block IAT procedure. It is theorized that the

difference in reaction times, for the alternate pairings, provides a measure of the

difference in the strength of the implicit (automatic) associations (Greenwald et al.,

1998). This IAT effect is calculated by comparing latency data from blocks 3 and 4 to 6

and 7, which provides 120 reaction times, for each participant, for the classification tasks.

To establish the strength and direction of the associations between the target and attribute

concepts a D-score is calculated. The D-score is generated by dividing the difference

between test block means by the standard deviation of all the latencies in the two test

blocks (Greenwald et al., 2003). A larger positive D-score is theorized to indicate a

stronger association between the hypothesized pairing (e.g., flowers with good and insects with bad) and a larger negative D-score indicate a stronger association between the reverse pairing (e.g., flowers with bad and insects with good). When there are strong implicit associations between targets and attributes, it is hypothesized the classifications will be quicker and more accurate versus weak implicit associations will have slower classifications and more errors.

Overt-Based Implicit Association Tests. While impression management and lack of self-knowledge artifacts can contaminate explicit integrity tests (Berry et al., 2007; Greenwald, Poehiman, Uhlrnann, & Banaji 2009), there has been an effort to control for these by developing both overt and personality-based IATs. Fischer and Bates (2008) developed overt-based IATs based on Ryan and Sackett's (1987) Employee Integrity Inventory. The IATs use transparent target concepts (e.g., Honest and Dishonest) and stimuli (e.g., lie, cheat, steal and truthful, integrity, fair). Their IATs predicted integrity behavior as well as explicit measures and they substantially incremented the predictive validity of explicit measures (Fischer, Osafo, & Turner, 2010; Fischer, Thompson, & Turner, 2012).

Personality-Based Implicit Association Tests. Steffens and Konig (2006) developed bipolar IATs based on the Big Five personality traits. The target concepts (e.g., Agreeable or Conscientious) were paired with their cognitive opposite (e.g., Not Agreeable or Not Conscientious). Schnabel, Asendorpf, and Greenwald (2008) suggest that IATs are influenced by the positive and negative valence of the attribute categories (e.g., Conscientious vs. Not Conscientious), and by their specific semantic meaning. For example, a bipolar target concept of "Honest" and "Dishonest" may be recoded, by

participants, as positive and negative, respectably, especially because individuals have a strong tendency to associate themselves with more positive versus negative attributes (Schnabel et al., 2008). To combat this, non-bipolar valence-balanced IATs can be used. This method pairs concepts by matching their valence and evaluative dimension, such as positive aspects of conscientiousness (e.g., determined and disciplined) with positive aspects of agreeableness (e.g., warmhearted and docile) and another IAT would pair the negative aspects of both concepts. This method is like a forced-choice measure that matches items according to their social desirability. Schnabel et al., (2008) found that using non-bipolar IAT concepts (e.g., Conscientious and Sociability) can mitigate the confound of positive or negative valence and these IATs are useful when it is difficult to find synonyms that are balanced on an evaluative dimension for bipolar attribute concepts. For example, finding negative-valence synonyms for extraversion or agreeableness, or positive-valence synonyms for anxiousness or angriness can be problematic.

To further the literature on integrity testing and character Thomas, Fischer, and Willis (2015) developed four non-bipolar valence-balanced IATs to assess attributes related to Paulhus and Williams' (2002) dark triad personality syndromes that include narcissism (grandiosity, entitlement, and dominance), Machiavellianism (manipulative personality), and psychopathy (impulsivity, thrill seeking and low empathy). Paulhus and Williams (2002) suggested that these personality constructs can and do exist in normal, non-clinical individuals. Paired attributes that strongly associated with psychopathy (irresponsible, mean, confident) with attributes that are weakly associated with psychopathy (anxious, shy, nice) were paired with a self-referent dichotomy (me, not-

10

me). According to this procedure, larger IAT effects (higher test scores) should reflect stronger self-psychopathy associations in one's implicit self-concept. These IATs relate to the agreeableness and conscientiousness Big Five personality traits. The positive (Confident-Nice) and negative (Mean-Shy) IATs contained attributes related to agreeableness (ruthless and manipulative). The Adventurous-Conscientious and Irresponsible-Anxious IATs contained attributes related to conscientiousness (impulsiveness and lack of goals). They found some support for the construct validity of the IATs and a subsequent study revealed some evidence of predictive validity for behavior related to integrity and character (Fischer, Stassen, Thomas & Willis, 2015), although evidence suggesting the IATs were contaminated by excessive measurement error was present (mean reliability was .58)

To address the measurement error Willis (2016) followed Lane, Banaji, Nosek and Greenwald (2007) logic to refine the target concept labels and stimuli words so that they are more easily and accurately classified. Reducing the ambiguity about items' appropriate categorization will decrease reaction times and classification errors, both of which distort the IAT effect. Willis (2016) improved upon the Fischer et al. (2015) IATs by removing stimuli that had too much semantic similarity across comparison categories (e.g., fearful/fearless), by removing those that were too difficult to classify, and by changing some target concept labels to improve stimuli-category relationships (e.g., Daring to Bold). The result was a more reliable set of IATs (alpha coefficients ranged from .50 to .77; Willis, 2016).

Confounds of Implicit Measures of Integrity. IATs can also be impression managed by slowing one's response time, but participants normally don't discover this

strategy (Cvencek, Greenwald, Brown, Gray, & Snowden, 2008), especially without instructions (Kim, 2003) and extreme response latencies can be detected by the researcher. Self-report measures are especially susceptible to impression management, which can reduce their predictive validity on socially sensitive topics such as attitudes (Greenwald et al., 2009) but IATs are resistant to this and should have little influence on their predictive validity (Egloff & Schmukle, 2002). Job applicants instructed to impression manage a job application could appear low in anxiety on self-report measures even when their anxiety self-concept IAT were relatively unaffected (Egloff & Schmukle, 2002).

A hallmark of IATs is that they do not depend on introspection (Greenwald, Banaji, Rudman, Farnham, Nosek, & Mellott, 2002), which is a weakness of self-report measures because individuals may report what they believe about themselves without realizing that these beliefs do not accurately predict their actual behavior. For example, using self-report measures to accurately assess attitudes of health behaviors has been problematic because behaviors (e.g., practicing safe sex, stopping smoking, and eating healthy) are not always in harmony with intentions (e.g., statistics regarding sexually transmitted disease, smoking, and obesity; Lane et al., 2007). This suggests that implicit processes can influence individual's behavior, especially in situations where quick decisions are made. IATs are more resistant to faking (Greenwald et al., 2009; Schnabel et al., 2008) and are the least influenced by it when compared to self-report measures (Kim, 2003). Kim (2003), also states that individuals would find it difficult to fake an IAT without instructions. For example, subjects instructed to make themselves appear low in anxiety in a job application scenario could impression manage the self-report

measure but were unable to fake the anxiety self-concept IAT (Egloff & Schmukle, 2002). Banse, Seise, and Zerbes (2001) found similar findings with a homosexual-heterosexual attitude IAT measure, as did Kim (2003) with a race attitude IAT measure.

The Current Study

The current study examined the criterion-related validity evidence of the personality-based IATs for construct relevant behavior. The purpose was to examine whether the IATs accurately predict behaviors related to integrity, such as lying, cheating, and stealing. Predictive validity would provide evidence that the IATs have useful and practical applications for assessing an individual's risk of character failure. The results of this study will allow us to extend the behavioral domain for which the implicit measures have potential value for individuals and organizations interested in better-managing risks related to character failure.

Hypotheses

Hypothesis 1: The three non-bipolar, valence-balanced IATs developed by Thomas, Fischer, and Willis, (2015) and Willis (2016), and the two overt-based IATs developed by Fischer and Bates (2008) will predict behavior related to lying, cheating, and stealing.

Hypothesis 2: The three non-bipolar, valence-balanced IATs developed by Thomas, Fischer, and Willis, (2015) and Willis (2016), and the two overt-based IATs developed by Fischer and Bates (2008) will incrementally improve upon the prediction of behavior that both overt and personality-based self-report measures achieve.

METHOD

Participants

A total of 242 students were recruited from Introductory Psychology courses and received credit for participating in the study. The mean age of participants was 19.69 ($SD = 3.25$). Of the sample, 37% were male and 80.2% were non-Hispanic whites. Years of employment data were also collected with 33% reporting less than two years of work experience, 50% with three to five years of experience, and 12% with over five years of experience. This study was reviewed and approved by the Missouri State University Institutional Review Board (Sep 28, 2016; approval # IRB-FY2017-195).

Measures

Explicit Measures. One overt integrity measure and two personality-based integrity measures were used in this study. These tests were administered on lab computers using a link to Millisecond.com. The full online questionnaire can be found in Appendix A.

Explicit Overt Integrity Measure. The overt-based integrity measure used in this study was the Employee Integrity Index (EII; Ryan & Sackett, 1987). The EII contains 63 items using a five-point Likert scale, asking individuals how statements best describe themselves ranging from strongly agree to strongly disagree, on prevalence of counterproductive behavior (e.g., "Nearly every worker has at some time cheated his company out of something."), and appropriateness of punitive sanctions (e.g., "A person caught stealing $50 from his employer should be fired."). In addition, in a multiple-choice format, it asks admissions of dishonest conduct (e.g., "How long has it been since

you have stolen money from anyone or any place?"). Reliability estimates for the measure are typically very good ($\alpha > .90$).

Explicit Personality-Based Integrity Measures. The Levenson Self-Report Psychopathy Scale (LSRP; Levenson, Kiehl, & Fitzpatrick, 1995) was one of the personality-based integrity measures used and it contains 28 items, using a five-point Likert-type scale, asking individuals how statements best describe themselves ranging from strongly agree to strongly disagree. The scale is divided into two subscales: primary and secondary psychopathy. The primary psychopathy subscale (LSRP-1; 18 items) is about lying, lack of remorse, callousness, and selfishness, for example, "For me, what's right is whatever I can get away with." and "I enjoy manipulating other people's feelings." The secondary psychopathy subscale (LSRP-2; 10 items) is about impulsiveness, thrill-seeking behaviors, intolerance of frustration and irresponsibility, for example, "I am often bored." and "I quickly lose interest in tasks I start." The reliabilities for the subscales are reported to be adequate with LSRP-1 $\alpha = .82$ and LSPR-2 $\alpha = .63$ (Levenson et al., 1995).

The Paulhus Deception Scales (PDS; Paulhus, 1998) was the second personality-based integrity measure used and it contains 40 items, using a five-point Likert-type scale, asking individuals how true statements are ranging from not true to very true. The measure is divided into two subscales: impression management and self-deceptive enhancement. The impression management subscale (PDS-IM; 20 items) contains questions like "I never take things that don't belong to me." The self-deceptive enhancement subscale (PDS-SD; 20 items) contains questions like "I am a completely rational person." Hogan and Hogan (2001) and Robins and Paulhus (2001) describe the

latter subscale as reflecting the narcissistic syndrome. The User's Manual 11 (Paulhus, 1998) reports adequate reliability (α .70 to .84).

Implicit Measures. Two overt-based IATs and three personality-based IATs were used in this study, along with the standard seven-block procedure and the D-score described by Greenwald et al. (2003). These tests were administered on lab computers using a link to Millisecond.com.

Overt-Based IATs. Participants completed two bipolar overt-based IATs adapted from Fischer and Bates (2008). These IATs produce implicit measures that target associations of self-integrity and employer-integrity with target concepts of Self-Other, Employer-Employee, and Honest-Dishonest. The larger the IAT score, the stronger the implicit associations of one's self with honesty and employers with honesty. The target concepts and word stimuli for the overt IATs are presented in Table 2.

Table 2. Target Concepts (in italics) and Word Stimuli for the Overt IATs

Person		Group		Attribute	
Self	*Other*	*Employer*	*Employee*	*Honest*	*Dishonest*
me	them	manager	subordinate	fair	unfair
my	their	boss	laborer	integrity	steal
mine	theirs	supervisor	worker	sincere	deceive
self	other	employer	employee	trustworthy	cheat
I	they			truthful	lie
				moral	corrupt

Personality-Based IATs. Participants completed three non-bipolar valence-balanced personality-based IATs developed by Thomas, Fischer, and Willis (2015) and improved by Willis (2016). The target concepts were Bold, Mean, and Reckless, while the valence-balanced comparison categories were Nice, Shy, and Anxious, respectively (e.g., Bold-Nice, Mean-Shy, Reckless-Anxious). The larger positive IAT effects indicate an implicit self-concept that is more strongly associated with the dark side personality traits (Bold, Mean, Reckless). The target concepts and word stimuli for each of the IATs are provided in Table 3.

Table 3. Target Concepts (in italics) and Word Stimuli for the Personality-based IATs

Pd IAT 1		Pd IAT 2		Pd IAT 3	
Bold	*Nice*	*Mean*	*Shy*	*Reckless*	*Anxious*
Bold	Nice	Mean	Shy	Reckless	Anxious
Daring	Friendly	Rude	Withdrawn	Daredevil	Worried
Fearless	Warm	Malicious	Quiet	Brash	Afraid
Thrilling	Polite	Hateful	Bashful	Risky	Tense
Dominating	Kind	Hostile	Reserved	Impulsive	Nervous

Criterion Measures. The temptation manipulation produced two criterion measures. The first measure is a dichotomized variable based on whether the participant claimed to solve more matrices than they solved (lied or told truth). The second measure, for those who lied, is how many matrices the participant claimed to solve above how many they actually solved (magnitude of lie).

Procedure

A temptation manipulation provided subjects with an opportunity to lie about their performance on a number finding task to receive a greater cash reward according to a procedure described by Ariely (2013). A total of 35 sessions were conducted with the number of subjects per session varying from one to 25. Subjects signed up for a study claiming to be about mental ability and personality traits. They then reported to a classroom where a matrix worksheet and subject ID card were placed face-down on individual desks. The last matrix on each worksheet had the subject's ID number embedded in it. This allowed the researcher to match the ID card to the matrix worksheet and determine the number of matrices the subject actually solved compared with the number the subject claimed to have solved. The matrix worksheet had 18 matrices and each contained 12 numbers as seen in Figure 1.

1.69	1.82	2.91
4.67	4.81	3.05
5.82	5.06	4.28
6.36	5.19	4.57

Figure 1. An Example of a Matrix from the Matrix Worksheet

Their task was to circle the two numbers that would equal exactly 10 when they added them together, as do the two circled numbers in this example (Note: the cells containing 4.81 and 5.19 are circled in the matrix above but were not for actual testing).

They were given five minutes to complete as many of these problems as they could and were told they would be paid .25 cents for each matrix they solve correctly. When one minute and 45 seconds were left on the countdown timer a confederate raised their hand and said, "I just finished, should I shred it now?" and the researcher responded with, "Just wait until the time runs out." A confederate was used because pilot study data indicated small variance on the magnitude of lying.

When the five minutes expired subjects were instructed to take their matrix worksheet to a shredder in the back of the room and shred it. After they shredded their worksheet they brought their subject ID card to the researcher, in the front of the room, and told the researcher how many problems they solved. After receiving their cash reward, they were told to go to a computer lab (in the building) to complete the personality measures. This is where the explicit measures were administered - Levinson Self-report Psychopathy Scales, Paulhus Deception Scales, Employee Integrity Index and some demographic items. (Note: the researcher wrote the room number and amount of money received on the subject's ID card when each subject tendered his/her card, before returning it to him/her.).

The shredder was rigged to only shred the sides of the worksheet leaving the matrices visible while appearing to shred the whole page. The ability to match the worksheets with the ID cards while the subjects believed their worksheet was completely shredded is due to Ariely's (2013) work.

Upon completing the explicit measures, subjects received the debriefing information (on screen) that is provided in Appendix B. They were then directed to another room in the Psychology building to receive credit. There a researcher finished

the debriefing process, rewarded credit, and read the informed consent form (see

Appendix C) with the subject. Upon completion of the consent form, researchers invited

subjects to volunteer for an additional part of the study, which involved the

administration of the five implicit measures (the IATs) and subjects would be rewarded

with additional credit. All but 20 subjects volunteered for the additional part of the study.

RESULTS

The dichotomized criterion measure based upon whether subjects ($N = 220$) lied or told the truth about their performance on the matrix task, revealed that 51% claimed to solve more matrices than they actually solved (lied), and 49% claimed to solve the number of matrices they actually solved (truth). Twenty-two of the 242 subjects (9%) had insufficient criterion data (e.g., the matrix worksheet was uninterpretable due to the shredding or the subject did not follow directions) and were excluded from the hypotheses testing. The magnitude of lying ranged from one to 18, with the worksheet containing a total of 18 matrices but only eight were actually solvable (e.g., had two numbers that correctly added up to 10). The vast majority of participants who lied did not claim all 18; on average, the liars claimed to solve 2.8. The frequency-magnitude of lying is as follows: lied by 1 (36%), 2-3 (43%), 4-6 (16%), and just one individual claimed to solve 7, 8, 9, 10, 16, and 18 (5%), respectively. Those who told the truth solved 3.1 matrices on average. The frequency-magnitude of matrices solved correctly for those who told the truth were: 0 (10%), 1 (11%), 2-3 (37%), 4-6 (40%) and just one individual solved 7 and 8 (2%).

These results differ from Ariely's (2013) but our temptation manipulations were not the same. Ariely (2013) had two temptation manipulations that were comparable. First, a condition without a confederate with the average number of matrices solved being six out of 20. Second, a condition with a confederate and the participants took their financial reward out of an envelope placed on their desk, with the average number of matrices solved being 15 out of 20. Table 4 contains descriptive statistics of the

21

demographics, five explicit measures, five implicit measures, and the dichotomized
criterion measure.

Table 4. Descriptive Statistics of the Study Variables

Variables	N	Mean	SD	Alpha
Demographics				
Age	229	19.69	3.25	NA
Yrs. of Employment	228	3.67	3.76	NA
Explicit Measures				
LSRP-1	230	1.82	.40	.80
LSRP-2	230	2.08	.42	.74
EII	230	3.56	.39	.90
PDS-IM	230	6.36	3.46	.71
PDS-SD	230	2.69	2.62	.71
Implicit Measures[1]				
Employer-Integrity[2]	216	-.17	.37	.53
Self-Integirty[3]	215	.33	.41	.64
Bold-Nice	216	-.62	.40	.69
Mean-Shy	216	-.56	.38	.62
Reckless-Anxious	215	-.21	.37	.64
Criterion Measure				
Lied or Truth	220	.51	.50	NA
Magnitude of Lie	112	2.8	2.6	NA

LSRP 1 & 2 - Levinson Self-Report Psychopathy Scales, EII - Employee Integrity Index,
PDS-IM - Paulhus Deception Scales-Impression Management, PDS-SD - Paulhus
Deception Scales-Self Deception, Employer-Integrity – Overt IAT, Self-Integrity – Overt
IAT, Bold-Nice – Covert IAT, Mean-Shy – Cover IAT, Reckless-Anxious – Covert IAT.
[1]All implicit measures are standardized IAT effects (D scores).
[2]Higher scores indicate a stronger association of employer+honest (or worker+dishonest)
[3]Higher scores indicate a stronger association of self+honest (or other+dishonest)

Test of Hypothesis 1

To test whether the three personality-based IATs (Thomas, Fischer, & Willis,
2014; Willis 2016) and the two overt-based IATs (Fischer & Bates, 2008), predict the

criterion behavior of lying, cheating, and stealing, several discriminant function analyses (DFA) were conducted. The DFA for the lie or truth dichotomous criterion measure was not significant ($p = .766$). Unfortunately, plots of the cell means revealed that the patterns differed from that which was expected. For the two overt IATs (Self-Integrity and Employer-Integrity) there should be a larger positive IAT score (implicit association) for the truth group than the lie group, but we found the opposite. The larger the IAT effect, the stronger the implicit associations of one's self with honesty and employers with honesty. For the three personality-based IATs (Reckless-Anxious, Mean-Shy, and Bold-Nice) there should be a larger positive IAT score for the lie group than the truth group, but we found the opposite. The larger positive IAT effects indicate an implicit self-concept that is more strongly associated with the dark side personality traits. Figure 2 displays the means for the IAT measures on the truth or lie criterion measure. To further examine the hypothesis that the five IATs predict behavior related to integrity, a multiple regression analysis was conducted using the magnitude of lie measure as the dependent variable, and the five IATs as the independent variables. The results of this analysis was not significant ($r = .10$, $F (5, 195) = .41$, $p = .836$).

Figure 2. Means for the IATs Based on a Dichotomized Lie or Truth Measure.

Test of Hypothesis 2

Two hierarchical logistic regression analyses were conducted to predict the lie or truth dichotomous criterion measure using the three personality-based IATs (Thomas, Fischer, & Willis, 2015; Willis 2016) and the two overt-based IATs (Fischer & Bates, 2008) as predictors, with the goal to incrementally improve upon the prediction of behavior that both overt and personality-based self-report measures achieve. For the first analysis, the five IATs were added to the prediction model, followed by the five explicit measures. A test of the full model against a constant only model was not statistically significant, indicating that the predictors did not reliably distinguish between the lie and truth criterion ($\Delta\chi^2 = 11.992$, $p = .152$). Nagelkerke's R^2 of .047 indicated a weak relationship between prediction and grouping. Prediction success overall was 59.2% (68.4% for lie and 49.5% for truth). The Wald criterion demonstrated that none of the predictors significantly contributed to the model ($p > .05$).

For the second analysis, the five explicit measures were added to the prediction model, followed by the five IATs measures. A test of the full model against a constant only model was not statistically significant, indicating that the predictors did not reliably distinguish between the lie and truth criterion ($\Delta\chi^2 = 11.992$, $p = .152$). Nagelkerke's R^2 of .047 indicated a weak relationship between prediction and grouping. Prediction success overall was 59.2% (68.4% for lie and 49.5% for truth). The Wald criterion demonstrated that none of the predictors significantly contributed to the model ($p > .05$).

However, a step-wise multiple linear regression procedure using the magnitude of lie measure as the dependent variable, including only those who lied, and adding the five explicit measures and the five IATs at the same time as the independent variables

produced a model with only one of the explicit measures subscales (PDS-IM) as a predictor (r = .29, F (1, 96) = 8.56, p = .004; see Table 5).

Table 5. Stepwise Regression Analysis for Predicting Magnitude of Lie

Independent Variable	B	β	Sig.	R	R^2	R^2 Change	F Change	Sig. F Change
Step 1								
PDS-SD	.14							
PDS-IM	.22	.29	.004	.29	.08	.08	8.56	.004
LSRP-1	.08							
LSRP-2	.13							
EII	.01							
Bold-Nice	.06							
Employer-Integrity	.11							
Mean-Shy	.01							
Reckless-Anxious	.06							
Self-Integrity	.01							

In addition, the dichotomized criterion measure (lie or truth) was correlated with the five explicit measures and five IATs (see Table 6) with only the Reckless-Anxious IAT producing significant results (r = -.15, p = .034). The following IATs had a positive correlation with explicit measures: Bold-Nice and LSRP-2 (r = .144, p = .046), Mean-Shy and LSRP-1 (r = .214, p = .003), and Reckless-Anxious and LSRP-1 (r = .151, p = .037).

Another correlation analysis was conducted for the five explicit measures and five IATs with the magnitude of lie being the criterion measure (see Table 7), including only those who lied (e.g., excluding all truth participants). The results show the criterion measure is only significantly negatively correlated with PDS-IM (r = -.18, p = .009).

Table 6. Zero-order Correlations for Lied or Truth

Variables	1	2	3	4	5	6	7	8	9	10
Explicit Measures										
1. PDS-SD	-									
2. PDS-IM	.28**	-								
3. LSRP-1	.09	-.34**	-							
4. LSRP-2	-.23**	-.39**	.29**	-						
5. EII	-.03	.52**	-.49**	-.29**	-					
Implicit Measures										
6. Bold-Nice	-.04	-.05	.12	.14*	-.14	-				
7. Employer-Integrity	.06	.08	-.03	-.03	.07	.04	-			
8. Mean-Shy	.03	-.09	.21**	.13	-.09	.25**	.17*	-		
9. Reckless-Anxious	.01	-.06	.15*	.14	-.03	.23**	-.02	.20**	-	
10. Self-Integrity	.02	.09	-.13	-.14	.14	-.14	.01	-.23**	-.34**	-
Criterion Measure										
11. Lied or Truth	-.05	-.03	-.03	-.09	-.02	-.12	-.00	-.09	-.15*	.12

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Table 7. Zero-order Correlations for Magnitude of Lie

Variables	1	2	3	4	5	6	7	8	9	10
Explicit Measures										
1. PDS-SD	-									
2. PDS-IM	.28**	-								
3. LSRP-1	.09	-.34**	-							
4. LSRP-2	-.23**	-.39**	.29**	-						
5. EII	-.03	.52**	-.49**	-.29**	-					
Implicit Measures										
6. Bold-Nice	-.04	-.05	.12	.14*	-.14	-				
7. Employer-Integrity	.06	.08	-.03	-.03	.07	.04	-			
8. Mean-Shy	.03	-.09	.21**	.13	-.09	.25**	.17*	-		
9. Reckless-Anxious	.01	-.06	.15*	.14	-.03	.22**	-.02	.20**	-	
10. Self-Integrity	.02	.09	-.13	-.14	.14	-.14	.01	-.23**	-.34**	-
Criterion Measure										
11. Magnitude of Lie	-.01	-.18**	.08	.07	-.11	-.07	-.07	-.02	-.03	.04

**. Correlation is significant at the 0.01 level (2-tailed)
*. Correlation is significant at the 0.05 level (2-tailed)
Note: Magnitude of lie includes only those who lied

DISCUSSION

Predictive Validity of Personality-based IATs

The results did not provide evidence that the five IATs predicted the criterion behavior related to integrity, with all IAT effects going in the opposite predictive direction and the multiple regression analysis producing nonsignificant results. This shows that the IATs were unable to predict if a subject would lie or tell the truth on the matrix task. This could be due to contamination in the IATs, design of the study (e.g., length of study and confederate), or the criterion measure was not an accurate measure of integrity.

Evidence of Incremental Validity

The results did not provide evidence that any of the IATs can incrementally improve upon the prediction of behavior that both overt and personality-based self-report measures achieve, with both adding the explicit and IATs first in the prediction model producing nonsignificant results, but when only using subjects who lied, the model could predict the criterion measure with the impression management subscale of the explicit personality-based Paulhus Deception Scale.

Limitations

The purpose of this study was to validate a measures ability to predict integrity behavior. The IATs reliabilities come close to but do not meet Nunnally's (1978) standards for making decisions about treatment conditions ($\alpha > .70$) or making decisions

27

about individuals using psychological measures ($\alpha > .90$). This concluded the IATs were too contaminated to use as a tool for identifying individuals who were at greater risk of integrity failures. The length of the experiment could have played a role in the IATs not being significant with the temptation manipulation, self-administering the explicit scales, being debriefed, and then self-administering the IATs taking about 1.5 hours. Also, when subjects were standing in line to receive their financial reward they could have been influenced by overhearing others performance (e.g., if a subject in front of someone said they solved more it could influence them to try and appear more intelligent by claiming around the same). Another limitation could be the generalizability of the criterion measure to workplace integrity. In addition, the confederate could have influenced subjects to lie about their performance, not for personal gain but to not appear unintelligent when verbally telling the researcher about their performance. During the informed consent, the researcher had an opportunity to evaluate participants distress level and overall feelings toward the experiment. At that time, multiple participants self-disclosed their lying behavior and attributed it to feeling unintelligent or embarrassed in response to their manipulated subjective experience of poor performance in the temptation manipulation.

Implications for Future Research

Future studies should consider using a temptation manipulation that is more representative of workplace character failure and has multiple criterion measures. For example, the researcher could directly ask subjects if they lied or not, or give subjects more money than they claimed and see if the subject discloses the error. Also, the

confederate could have been a catalyst for bringing in confounding factors such as the moderating role of the subject's self-confidence. If a subject had low self-confidence they might be more likely to lie because they don't trust or have faith in their abilities.

REFERENCES

Alliger, G. M., & Dwight, S. A. (2000). A Meta-Analytic Investigation of the Susceptibility of Integrity Tests to Faking and Coaching. Educational and Psychological Measurement, 60(1), 59-72. doi:10.1177/00131640021970367

Anderson, C. D.,Warner, J. L.,&Spencer, C. C. (1984). Inflation bias in self-assessment examinations: Implications for valid employee selection. Journal of Applied Psychology, 69, 574- 580.

AP. (2011, December 01). 10 YEARS LATER: What Happened To The Former Employees Of Enron? Retrieved April 14, 2017, from http://www.businessinsider.com/10-years-later-what-happened-to-the-former-employees-of-enron-2011-12

Ariely, D. (2013). The (honest) truth about dishonesty: how we lie to everyone - especially ourselves. London: HarperCollins.

Association of Certified Fraud Examiners (2006). "2006 ACFE Report to the Nation on Occupational Fraud & Abuse," [available at http://www.acfe.com/documents/2006-rttn.pdf].

Banse, R., Seise, J., & Zerbes, N. (2001). Implicit attitudes towards homosexuality: Reliability, validity, and controllability of the IAT. Zeitschrift fu¨r Experimentelle Psychologie, 48, 145–160.

Berry, C. M., Sackett, P. R., & Wiemann, S. A. (2007). A Review of Recent Developments in Integrity Test Research. PsycEXTRA Dataset. doi:10.1037/e518612013-237

Cohn, S. (2006, May 26). Some Enron victims still trying to recover. Retrieved May 25, 2017, from http://www.nbcnews.com/id/12976443/ns/business-cnbc_tv/t/some-enron-victims-still-trying-recover/#.WSdDzevytb6

Cvencek, D., Greenwald, A. G., Brown, A., Gray, N. S., & Snowden, R. J. (2008). Faking of the Implicit Association Test is statistically detectable and partly correctable. Manuscript submitted for publication

Dalton, D. R., & Metzger, M. B. (1993). "Integrity testing" for personnel selection: An unsparing perspective. Journal of Business Ethics, 12(2), 147-156. doi:10.1007/bf00871934

Egloff, B., & Schmukle, S. C. (2002). Predictive validity of an Implicit Association Test for assessing anxiety. Journal of Personality and Social Psychology, 83, 1441–1455.

Fischer, D. & Bates, J. (2008, April). The Development and Investigation of an IAT for Workplace Integrity. Paper presented at the 23th annual meeting of the Society for Industrial and Organizational Psychology, San Francisco, CA

Fischer, D., Osafo, E. & Turner, B. (2010, April). Further Investigation of an IAT for Workplace Integrity. Paper presented at the 25th annual meeting of the Society for Industrial and Organizational Psychology, Atlanta, GA

Fischer, D, Stassen, M, Thomas, B & Willis, D. (2015, April). Predicting character failure with IATs based on Dark Side traits. In S. Culbertson (Chair), What makes the Dark Triad maladaptive for work? Symposium conducted at the 30th annual meeting of the Society for Industrial and Organizational Psychology, Philadelphia, PA

Fischer, D., Thompson, P. & Turner, B. (2012, April). Predicting integrity behavior with the Implicit Association Test. Paper presented at the 27th annual meeting of the Society for Industrial and Organizational Psychology, San Diego, CA

Goldstein, I. C. (1971). The application blank: Howhonest are the responses? Journal of Applied Psychology, 55, 491-492.

Greenwald, A. G., & Banaji, M. R. (1995). Implicit social cognition: Attitudes, self-esteem, and stereotypes. Journal of Personality and Social Psychology, 102, 4-27.

Greenwald, A. G., Banaji, M. R., Rudman, L. A., Farnham, S. D., Nosek, B. A., & Mellott, D. S. (2002). A unified theory of implicit attitudes, stereotypes, selfesteem, and self-concept. Psychological Review, 109, 3-25.

Greenwald, A. G., Mcghee, D. E., & Schwartz, J. L. (1998). Measuring individual differences in implicit cognition: The implicit association test. Journal of Personality and Social Psychology, 74(6), 1464-1480. doi:10.1037/0022-3514.74.6.1464

Greenwald, A. G., Nosek, B. A., & Banaji, M. R. (2003). Understanding and using the Implicit Association Test: I. An improved scoring algorithm. Journal of Personality and Social Psychology, 85(2), 197-216. doi:10.1037/0022-3514.85.2.197

Greenwald, A. G., Poehiman, T. A., Uhlrnann, E. L., & Banaji, M. R. (2009). Understanding and Using the Implicit Association Test: III. Meta-Analysis of Predictive Validity. Journal Of Personality & Social Psychology, 97(1), 17-41.

Herman, T. (2005). "Study Suggests Tax Cheating Is on the Rise; Most Detailed Survey in 15 years Finds $250 Billion-Plus Gap; Ramping up Audits on Wealthy," The Wall Street Journal, (March 30), D1.

Hogan, R., & Hogan, J. (2001). Assessing Leadership: A View from the Dark Side. International Journal of Selection and Assessment, 9(1&2), 40-51. doi:10.1111/1468-2389.00162

Kim, D.-Y. (2003). Voluntary controllability of the Implicit Association Test (IAT). Social Psychology Quarterly, 66, 83–96.

Lane, K. A., Banaji, M. R., Nosek, B. A. & Greenwald, A. G. (2007). Understanding and using the Implicit Association Test: IV. What we know (so far) (pp 59 – 102). In B. Wittenbrink & N. S. Schwarz (Eds.). *Implicit measures of attitudes: Procedures and controversies.* New York: Guilford Press.

Levenson, M. R., Kiehl, K. A., & Fitzpatrick, C. M. (1995). Assessing psychopathic attributes in a noninstitutionalized population. Journal of Personality and Social Psychology, 68(1), 151-158. doi:10.1037//0022-3514.68.1.151

Nunnally, J. (1978). Psychometric theory. New York: McGraw-Hill.

Ones, D. S., Viswesvaran, C., & Schmidt, F. L. (1993). Comprehensive meta-analysis of integrity test validities: Findings and implications for personnel selection and theories of job performance. Journal of Applied Psychology, 78(4), 679-703. doi:10.1037/0021-9010.78.4.679

Pannone, R. D. (1984). Predicting test performance: A content valid approach to screening applicants. Personnel Psychology, 37, 507-514.

Paulhus, D. (1998). Paulhus Deception Scales (PDS): The Balanced Inventory of Desirable Responding – 7 Users Manual. North Tonawanda, NY: MHS

Paulhus, D. L., & Williams, K. M. (2002). The Dark Triad of personality: Narcissism, Machiavellianism, and psychopathy. Journal of Research in Personality, 36(6), 556-563. doi:10.1016/s0092-6566(02)00505-6

Ryan, A. & Sackett, P. (1987). Pre-employment honesty testing. *Journal of Business & Psychology, 1,* 248-256.

Robins, R. W., & Paulhus, D. L. (2001). The character of self-enhancers: Implications for organizations. Personality psychology in the workplace., 193-219. doi:10.1037/10434-008

Sackett, P. R., Burris, L. R., & Callahan, C. (1989). Integrity testing for personnel selection: An update. Personnel Psychology, 42(3), 491-529.

Saxe, L. (1994). Detection of Deception: Polygraph and Integrity Tests. Current Directions In Psychological Science, 3(3), 69-73. doi:10.1111/1467-8721.ep10770416

Schnabel, K., Asendorpf, J. B., & Greenwald, A. G. (2008). Assessment of Individual Differences in Implicit Cognition. European Journal of Psychological Assessment, 24(4), 210-217. doi:10.1027/1015-5759.24.4.210

Steffens, M. C., & König, S. S. (2006). Predicting Spontaneous Big Five Behavior with Implicit Association Tests. European Journal of Psychological Assessment, 22(1), 13-20. doi:10.1027/1015-5759.22.1.13

Thomas, B., Fischer, D., & Willis, D. (2015, April). Development of Non-bipolar valence balance IATs for dark side personality attributes. Paper prepared for the 30th annual meeting of the Society for Industrial and Organizational Psychology, Philadelphia, PA

Van Iddekinge, C. H., Roth, P. L., Raymark, P. H., & Odle-Dusseau, H. N. (2012). The criterion-related validity of integrity tests: An updated meta-analysis. Journal Of Applied Psychology, 97(3), 499-530. doi:10.1037/a0021196Wheeler, J. K., Hamill, L.

Wheeler, J. K. , Hamill, L. S., & Tippins, N. T. (1996, April). Warnings against candidate misrepresentations: Do they work? Paper presented at the annual meeting of the Society for Industrial and Organizational Psychology, San Diego, CA.

Willis, D. D. (2016). The development and validation of personality-based implicit measures for predicting character failure (Unpublished master's thesis). Missouri State University, Springfield, Missouri.

Yang, S. (2014, July 01). 5 Years Ago Bernie Madoff Was Sentenced to 150 Years In Prison – Here's How His Scheme Worked. Retrieved April 14, 2017, from http://www.businessinsider.com/how-bernie-madoffs-ponzi-scheme-worked-2014-7

Appendix A: Online Questionnaire for Explicit Measures

Demographics

Part 1: PLEASE RESPOND TO THE FOLLOWING DEMOGRAPHIC ITEMS.
1. Subject ID:
2. Age:
3. Sex:
     A. Male
     B. Female
4. Race/Ethnicity:
     A. African American
     B. Asian American/Pacific Islander
     C. Mexican American, Latin American, Hispanic
     D. European American (Caucasian)
     E. Native American
     Other:
5. Years of work experience:

Paulhus Deception Scales

Part 2: Read each item carefully and then rate each of the statements by marking the appropriate response choice. If you are unsure of how to answer a particular item, please choose the answer that describes you as accurately as possible. No item should be left unanswered.

6. My first impressions of people usually turn out to be right.
     Not true 12345Very True
7. It would be hard for me to break any of my bad habits.
     Not true 12345Very True
8. I don't care to know what other people really think of me.
     Not true 12345Very True
9. I have not always been honest with myself.
     Not true 12345Very True
10. I always know why I like things.
     Not true 12345Very True
11. When my emotions are aroused, it biases my thinking.
     Not true 12345Very True
12. Once I've made up my mind, other people cannot change my opinion.
     Not true 12345Very True
13. I am not a safe driver when I exceed the speed limit.
     Not true 12345Very True

14. I am fully in control of my own fate.
    Not true 12345Very True
15. It's hard for me to shut off a disturbing thought.
    Not true 12345Very True
16. I never regret my decisions.
    Not true 12345Very True
17. I sometimes lose out on things because I cannot make up my mind soon enough.
    Not true 12345Very True
18. The reason I vote is because my vote can make a difference.
    Not true 12345Very True
19. People don't seem to notice me and my abilities.
    Not true 12345Very True
20. I am a completely rational person.
    Not true 12345Very True
21. I rarely appreciate criticism.
    Not true 12345Very True
22. I am very confident of my judgments.
    Not true 12345Very True
23. I have sometimes doubted my abilities as a lover.
    Not true 12345Very True
24. It's alright with me if some people happen to dislike me.
    Not true 12345Very True
25. I'm just an average person.
    Not true 12345Very True
26. I sometimes tell lies if I have to.
    Not true 12345Very True
27. I never cover up my mistakes.
    Not true 12345Very True
28. There have been occasions when I have taken advantage of someone.
    Not true 12345Very True
29. I never swear.
    Not true 12345Very True
30. I sometimes try to get even rather than forgive and forget.
    Not true 12345Very True
31. I always obey laws, even if I'm unlikely to get caught.
    Not true 12345Very True
32. I have said something bad about a friend behind his or her back.
    Not true 12345Very True
33. When I hear people talking privately, I avoid listening.
    Not true 12345Very True
34. I have received too much change from a salesperson without telling him or her.
    Not true 12345Very True
35. I always declare everything at customs.
    Not true 12345Very True
36. When I was young, I sometimes stole things.
    Not true 12345Very True

37. I have never dropped litter on the street.
    Not true 12345Very True
38. I sometimes drive faster than the speed limit.
    Not true 12345Very True
39. I never read sexy books or magazines.
    Not true12345Very True
40. I have done things that I don't tell other people about.
    Not true 12345Very True
41. I never take things that don't belong to me.
    Not true 12345Very True
42. I have taken sick-leave from work or school even though I wasn't really sick.
    Not true 12345Very True
43. I have never damaged a library book or store merchandise without reporting it.
    Not true 12345Very True
44. I have some pretty awful habits.
    Not true 12345Very True
45. I don't gossip about other people's business.
    Not true12345Very True

Levenson Self-Report Psychopathy Scale

Part 3: PLEASE RESPOND TO EACH OF THESE QUESTIONS USING THE FOLLOWING RATING SCALE.

   Strongly disagree Disagree Neither Agree Strongly agree

- I don't scare easily
- Success is based on survival of the fittest; I am not concerned about the losers.
- I find myself in the same kinds of trouble, time after time.
- For me, what's right is whatever I can get away with.
- I am often bored.
- In today's world, I feel justified in doing anything I can get away with to succeed.
- I find that I am able to pursue one goal for a long time.
- My main purpose in life is getting as many goodies as I can.
- I don't plan anything very far in advance.
- Making a lot of money is my most important goal.
- I quickly lose interest in tasks I start.
- I let others worry about higher values; my main concern is with the bottom line.
- Most of my problems are due to the fact that other people just don't understand me.
- People who are stupid enough to get ripped off usually deserve it.
- Before I do anything, I carefully consider the possible consequences.
- Looking out for myself is my top priority.
- I have been in a lot of shouting matches with other people.
- I tell other people what they want to hear so that they will do what I want them to do.
- When I get frustrated, I often "let off steam" by blowing my top.

- I would be upset if my success came at someone else's expense.
- Love is overrated.
- I often admire a really clever scam.
- I make a point of trying not to hurt others in pursuit of my goals.
- I enjoy manipulating other people's feelings.
- I feel bad if my words or actions cause someone else to feel emotional pain.
- Even if I were trying very hard to sell something, I wouldn't lie about it.
- Cheating is not justified because it is unfair to others.

Employee Integrity Index

Part 4: PLEASE RESPOND TO EACH OF THESE QUESTIONS USING THE FOLLOWING RATING SCALE.

46.   Pick the response that best describes you.

Strongly disagree Disagree Neither Agree Strongly agree

- Someone who steals because his family is in need should not be treated the same as a common thief.
- Most companies take advantage of people who work for them.
- I've thought about taking money form an employer without actually doing it.
- The average employee will tell his boss about a fellow employee who is stealing money.
- I have known people who have stolen money from their employer.
- Making personal phone calls at work without an O.K. is stealing.
- I am too honest to steal.
- I've thought of ways in which a dishonest person could steal from the company if a dishonest person had my job.
- A judge freed a worker who had stolen money from his employer, because the employer paid such low wages. To what extent do you agree or disagree with the judge?
- I have occasionally had ideas and thoughts that I would not like other people to know about.
- The average policeman would overlook a traffic violation if offered money.
- I would turn in a fellow worker I saw stealing.

47.   Pick the response that best describes you.
        Strongly disagree Disagree Neither Agree Strongly agree
- Taking paper clips, pencils, or envelopes from a place where you work is stealing.
- A person caught stealing $50 from his employer should be fired.
- I've been tempted to steal company money to buy something I really wanted.
- I secretly feel good when I read about a successful robbery in the papers.
- Most bosses treat their employees unfairly.

- Nearly every worker has at some time cheated his company out of something.
- It's O.K. for an employee to allow friends to use his/her employee discount card, even though the company does not allow it.
- I have on occasion been at least a little tempted to steal something.
- A person who pays back money he/she stole from the company should be fired anyway.
- A person could steal company merchandise for ten years without being caught.
- Most people I've worked with have stolen something at one time or another.
- If I get into a movie without paying and be sure I wouldn't be caught, I'd do it.

48. Pick the response that best describes you.
    Strongly disagree Disagree Neither Agree Strongly agree
    - A life of crime would be exciting.
    - Most people cheat on their income tax.
    - Honesty is always the best policy.
    - I have sometimes felt like swearing.
    - It's okay to lie about the past to help get a job if you will be very honest after you're hired.
    - Someone who helped another employee steal a little merchandise from the company should be fired.
    - A person should always tell the truth.
    - I like almost everyone.
    - I have been approached by someone with a plan to steal something.
    - Most people are honest only because they are afraid they'll be caught.
    - It's fair for an employee to borrow some money from the company without asking if he/she has worked there for a long time.
    - If I were given an extra 25 cents change at the supermarket, I would return it.

49. Pick the response that best describes you.
    Strongly disagree Disagree Neither Agree Strongly agree
    - A certain degree of dishonesty is just part of human nature.
    - I get angry when someone treats me really badly.
    - I'd be willing to take a lie detector test if money was missing on the job.
    - Employers expect a certain amount of stealing.
    - I am almost never wrong about things.
    - It would be easy to steal from my employer if I wanted to.
    - Just about everyone has shoplifted something.
    - I am always able to accomplish my goals in life.
    - Most people are basically dishonest.
    - If I found $3.00 in the coin return of a payphone, I'd send the money to the phone company.
    - Most of my friends have taken a little money or merchandise from their employer.
    - I sometimes think of doing dishonest things.

50. Pick the response that best describes you.
     Strongly disagree Disagree Neither Agree Strongly agree
     - A person who refuses to take a lie detector test probably has something to hide.
     - Do you agree with the proverb "once a thief, always a thief."
     - Cheating a little on an expense account is really not the same as stealing.
     - People who say they have never stolen anything are lying.
     - An employee should be fired if the employer finds out the employee lied on the application blank.
     - A person who buys stolen merchandise is as bad as the person who originally stole it.
     - I sometimes enjoy listening to gossip.
     - After waiting 20 minutes for a waitress to bring the bill, it would be O.K. to leave the restaurant without paying.
     - Most people I've worked with have never stolen from their employers.
     - I sometimes put things off when I shouldn't.
     - If I found a wallet with money, I'd return it to the owner.
     - My conscience would bother me if I cheated someone.
     - The penalties for theft are too severe.

Part 5: PLEASE RESPOND TO EACH QUESTION BY SELECTING ONE OF THE FIVE OPTIONS.

51. Over the last three years, what's the total dollar value of merchandise and property that you've taken from your employers?
     A. over $100
     B. $51-$100
     C. $11-$50
     D. $1-$10
     E. $0
52. Over the last three years, what's the total amount of money you've taken without permission from your employer?
     A. over $100
     B. $51-$100
     C. $11-$50
     D. $1-$10
     E. $0
53. The most expensive thing you've ever taken from a store and not paid for was worth?
     A. over $100
     B. $51-$100
     C. $11-$50
     D. $1-$10
     E. $0
54. What is the total amount of money you have taken without permission from places other than work, such as schools, parents and friends
     A. over $100
     B. $51-$100

C. $11-$50

D. $1-$10

E. $0

55. What is the dollar value of all property you have taken without permission from places other than work, such as from school and from friends?

    A. over $100

    B. $51-$100

    C. $11-$50

    D. $1-$10

    E. $0

56. How long has it been since you have stolen money from anyone or any place?

    A. less than 6 months ago

    B. 1 year ago

    C. several years ago

    D. when I was a child

    E. I have never stolen any money

57. Have you ever changed price tags in a store because the prices were too high?

    A. never

    B. once

    C. twice

    D. a few times

    E. many times

58. Have you ever given unauthorized discounts to friends?

    A. never

    B. once

    C. twice

    D. a few times

    E. many times

59. Have you ever knowingly purchased stolen merchandise?

    A. never

    B. once

    C. twice

    D. a few times

    E. many times

60. What percentage of employees steal something from their company?

    A. 75% B. 50% C. 25% D. 10% E. 1%

61. What percentage of employees steals over $10 worth of cash or merchandise every month?

    A. 75% B. 50% C. 25% D. 10% E. 1%

Appendix B: Debriefing

"Some deception is involved in this study and we need to tell you about this in order to get your fully informed consent to use the data we have collected. What we're really interested in is the relationship between some personality measures that we're developing and actual behavior related to integrity and character – lying, cheating & stealing behavior. We use what is called a "temptation manipulation" in order to obtain this behavior – we create a situation where you (the subject) have an opportunity to lie or tell the truth. . . just like the "sting" operations you've seen on TV or in movies where they bait a target in an effort to get them to do something while they're watching. In our case, we tempted you with a situation where you could lie about your performance in order to receive more money. Your matrix worksheet contained your subject number in the last problem and it wasn't destroyed by the shredding machine, so we can compare the number of problems you actually solved with the number you claimed when we paid you.

Before you read any further, please tell us if you knew anything about this study OTHER than the information that we posted at the Sona System web site where you signed up the study or that you were told at the beginning by the research assistant – did you talk with anyone who had already participated in this study?

□ YES   □ No

First, it is important for you to understand that it is difficult to do research like this – research that examines the relationship between psychological measures and actual behavior, especially when the behavior is potentially compromising. At the same time, it is important to learn more about the dynamics of integrity so that we can better manage

41

the risks related to character failure – like the illegal conduct of the executives at Enron who fraudulently "cooked the books" and broke laws that led to a corporate collapse and the financial ruin of many innocent people . . . or like the illegal conduct of the MP's who violated Geneva Convention standards and abused prisoners at Abu Ghraib in Iraq . . . or like the illegal conduct of police officers who engage in racial profiling when deciding who to pull over and arrest.

IF we can develop psychological measures that accurately identify those who are at higher risk of character failure then we can work on ways to mitigate this problem by developing interventions – ways of structuring work environments so those who are prone to temptation do not fall prey to it – in much the same way that treatment programs for alcohol/drug abusers intervene with those at risk of "falling off the wagon" by helping them identify situations that are "dangerous" (like bars & parties where alcohol is flowing) and then develop strategies that help them NOT fall prey to these temptations – like avoiding bars (finding "new playgrounds & new playmates" is the AA motto) . . . or calling your sponsor BEFORE you throw down that first drink. We're not interested in alcohol/drug addiction – we're interested in lying/cheating/stealing behavior . . . but, just as with addiction, intervention BEGINS with awareness. How would I know if I'm at risk for cooking the books or abusing prisoners? If you ask me "are you a person of good character?" I would honestly tell you "YES!" . . . I think of myself as a person who tries to do the right thing . . . but do I really know what I'd do if I were there in the room when the Enron executives were cooking up their illegal schemes and urging me to join in . . . or what I'd do if I were there at Abu Ghraib in Iraq being told by higher ranking officers to abuse the prisoners? Milgram's classic studies illustrate this problem (Milgram asked

his subjects to electrically shock a 'learner' every time he made a mistake). If you'd asked ANY of Milgram's subjects – before they ever set foot on the Yale University campus – "Are you the kind of person who would torture an innocent victim to death because a Yale professor was telling you to, would you do it?" ALL of them would say "Absolutely not!" . . . and they wouldn't be lying to you – like me, they think of themselves as people who try to do the right thing. But, in fact, we know 2 out of 3 of Milgram's subjects actually do go all the way and electrocute the victim, even with him screaming in pain in the next room. The problem is that we often don't have the kind of self-knowledge or self-insight to accurately predict what we would actually do in situations that challenge our integrity.

We are telling you this so that you might understand WHY we're doing this research. We are trying to develop psychological measures that better predict who is and who isn't at risk of character failure and doing things they later regret . . . we're not just on a lark, trying to trick students into doing something that is potentially distressing. It is also important that you understand we are NOT interested in who you are in any way; we are ONLY interested in what you said/did (on the matrix task) and how you respond on the psychological measures we're developing. Your name is NOT recorded in ANY of our records; you are only identified by the 5-digit number we assigned you . . . and the only reason we give you that number is because we have to have some way of connecting your data from multiple sources – your personality scales are on different servers and your matrix performance on another. . . once the information from these sources is connected even the 5-digit number is destroyed and your data becomes just another record in our file, indistinguishable from any other record in the file.

However, because there IS a remote risk of harm to you – specifically, a potential for you to be distressed or angry at us for "setting you up" (tempting you to lie about your performance on the matrix task), the University's Human Subjects Protection Committee requires that we formally assess IF you feel harmed by the way we have treated you or IF you are dissatisfied with the protections we are offering you (anonymity) or IF you object to what we say we intend to do with the data we have collected . . . because if you ARE upset then we need to explore these feelings with you and talk about what you might do in response to these feelings – more specifically, we need to make sure you know there are campus resources like the Counseling Center in Carrington Hall where you can talk with a licensed professional (without any cost to you) and explore what you might do in this regard.

For that reason, we need to formally ask you now – Do you feel distressed – are you angry or upset about having participated in this study?

□ YES   □ No

We also need to tell you that if you should decide at some future time that you were harmed by participating in this study, you can (and should) contact Professor Fischer in the Psychology Dept to discuss these feelings and what you might do about them or communicate any of these concerns directly to a member of the University's IRB, either now or in the future (we will provide you with a name and contact information upon your request).

Please click on the 'Submit' button below and take your subject ID card to the research assistant to receive your Sona credit."

Appendix C: Informed Consent Form

Informed Consent Form

The procedures and purpose of the "Mental Ability and Personality Study" in which I participated have been described to me and I understand that deception was used to tempt subjects to tell lies. I also understand that the data which were collected are anonymous in that no names (including mine) appear in any of the records.

I understand that those conducting this study are required to assess and report all adverse responses subjects may have regarding their participation. In accord with this requirement, I have checked the alternative below that represents the amount of **distress** (how worried, angry, or upset) I currently feel regarding having participated in this study:

___(1) not at all

___(2) small/slight

___(3) somewhat, but not a lot

___(4) much/substantial

___(5) very much

I understand that all data pertaining to my participation will be destroyed if I do not want to authorize its use. By checking the appropriate alternative below, I am indicating what I want in this regard:

___(1) I **do** authorize Professor Fischer to retain and use my data.

___(2) I **do not** authorize any use of my data and I want it destroyed.

Signed_____, Date_____