

The Effect of Response Distortion on the Accuracy of  
Predictive Inferences of Personality Inventories

by

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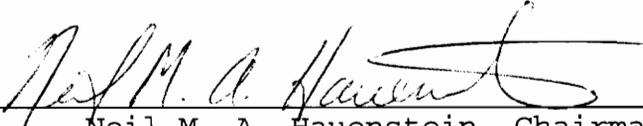
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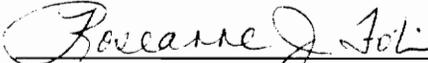
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Abstract

The effects of faking on the predictive ability of the CPI and a social desirability (SD) scale were assessed. Three hundred and twenty-two subjects were asked to respond to the CPI and the SD scale twice, once responding honestly, and once faking to create socially desirable self-images. Results indicate that subjects could successfully distort their responses on all scales. Depending on the scale characteristics, faking could both reduce as well as increase scale variability and reliability. People who are highly intelligent did not distort their responses any better than people of lower intelligence. Furthermore, response distortion was found to have negative effects on valid scales. It did not affect scales that had no predictive ability. However, for certain scales, faking could improve the likelihood of those scales to predict performance when the amount of faked responses in the sample was between 10% and 30%. Implications for organizations and for further research were also discussed.

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## The Effect of Intentional Response Distortion on the Accuracy of Predictive Inferences of Personality Inventories

Pre-employment personality testing has been one of the most controversial issues in employment selection for over two decades. Early research concluded that personality tests produced only modest validities when predicting job performance (Guion & Gottier, 1965; Schmitt, Gooding & Ryan, 1984), therefore, it was recommended that personality tests not be used as predictors of job performance. However, with increased interest in the five-factor model of personality (Digman, 1990) and the rise in popularity of the Myers-Briggs Type indicator (Snell, 1994), there is renewed acceptance of the use of personality testing and an increased usage of personality inventories in employment selection. (Day & Silverman, 1990).

In a similar vein, recent evidence suggests that personality tests are perhaps better at predicting different aspects of performance than once believed. Day & Silverman (1990) found that personality was a valid predictor of performance in jobs where the non-technical requirements were high. Other recent studies found that personality testing assessed important job relevant personal factors such as motivation to work (Hollenbeck, Brief, Whitener, & Pauli, 1988), interpersonal skills (Tett, Jackson, & Rothstein, 1991), and ability to perform in diverse situations (Day &

Bedeian, 1991). Individual trait dimensions also have been found to be good predictors of performance for certain occupational groups. Hogan, Hogan, & Busch (1984) found that adjustment, conscientiousness, and agreeableness are significantly correlated with blue collar jobs while imagination, ambition, and sociability are related to managerial performance.

Although the use of personality tests in employment selection has increased recently, the issue of the fakability of personality measures continues to be of great concern for researchers. Meehl and Hathaway (1946) observed that personality tests are susceptible "to 'faking' or 'lying' in one way or another as well as their even greater susceptibility to unconscious self-deception and role-playing on the part of the individuals who may be consciously quite honest and sincere in their responses" (1946, p525).

Faking can be defined as systematic distortions of one's feelings, attitudes, and behavior. Furnham (1990) described three types of faking behavior on self-report measures. First of all, subjects may "deliberately sabotage" research, by giving responses that have no meaning for them (e.g. enter answers randomly or follow a set pattern). The second type of faking is "sheer ignorance". Subjects are unable to report their attitudes or behavior accurately although they believe they have responded honestly. Finally, subjects may intentionally distort their answers to present a certain

presentation of the self, most often in the desirable, socially accepted direction. This "fake-good" is labeled "motivational distortion" by Furnham and as "social desirability" by other researchers.

Most of the studies on response distortion has concentrated on social desirability because it has appeared to be the most common problem in personality testing. Especially in applied areas, such as in employment situations, individuals are believed to be motivated to present themselves in a positive light. Paulhus (1984) discussed two-component models of socially desirable responding, in particular, the self-deception and impression management component model. He believed that social desirability consisted of self-deception where respondents actually believe their positive self-reports and impression management where respondents consciously distort responses to create positive self images. The present study dealt with faking for the purpose of presenting the most socially desirable self images.

#### Can people fake personality inventories?

Past research results have shown that people are able to distort their responses on personality measures to yield different profiles for different purposes. Research on the clinical diagnostic tests such as the Minnesota Multiphasic Personality Inventory and on measures used in applied settings have come to this conclusion. Kelly and Greene

(1989) found that psychiatric patients were able to fake "normal" profiles on the MMPI when instructed to do so while Grow, McCaugh, & Eno (1980) found that normal subjects were able to fake in socially undesirable manner (fake bad) on the same test.

Because of suggestions that an empirically developed instrument specific for the purpose of selection may be more resistant to response distortion, Thornton and Gierasch (1980) used a personality inventory developed for one occupation in a specific organization in their study on faking behavior. Nine of the ten scales of the inventory were designed to predict specific aspects of good performance and one scale was to predict overall performance. The results showed that subjects successfully faked on 7 out of 10 scales in a positive direction when instructed to fake good to maximize the chances of getting a job with the company. Finally, using a forced-choice adjective checklist, Dunnette, McCartney, Carlson and Kirchner (1962) instructed currently employed salesmen as well as sales applicants to respond to their inventory honestly and to fake-good. They concluded that both groups were able to change responses to match the stereotyped image of a successful salesperson.

Most recent studies have found that people can not only distort their responses in the general socially desirable way, but they are also able to fake specific profiles. Using a standard personality inventory popular in Germany, the

Freiburger Persönlichkeitsinventar (FPI), Krahe (1989) instructed subjects to fake a specific personality profile (e.g. social worker, computer science major, business administrator, and sports teacher) that is either high or low on personality dimensions of "social orientation" and "achievement orientation". The results showed that subjects were able to identify the items measuring the specific dimensions and fake their responses in the desired direction. Furthermore, they were able to change their responses to other related scales accordingly to support the distorted profiles.

Krahe's (1989) study suggests that response distortions are more than the general faking good or faking bad. Individuals are able to fake specific profiles that cannot be categorized as either "good" or "bad". Thumin and Barclay (1993) found that even without instructions to do so, people fake to achieve their specific purposes. The researchers compared personal profiles of job applicants with a group of evening business school students matched for job experience, age, gender, and education. The applicants took the inventory in an employment selection setting while the students took the same personality inventory for personal information and benefit. The results showed that applicants scored significantly higher on 10 of 11 scales which indicates fake-good behavior. Variance of the responses was also significantly lower on 7 scales for applicants than for

students. However, the researchers found that overall profile shapes were identical for the two groups, suggesting that faking did not affect the essence of the personality constructs measured.

#### Can faking be detected?

From the evidence presented above, it is clear that personality measures are, in general, susceptible to faking. Several methods have been developed over the years to address the problem of response distortions. Hough, Eaton, Dunnette, Kamp & McCloy (1990) summarized four different strategies for reducing faking. First, forced-choice items force subjects to choose between two equally desirable items, thereby, reduce the chance of the choice made being influenced by social desirability. Second, subtle items were used to replace obvious ones due to the belief that subtle items have higher validity than obvious items because they prevent subjects from making guesses about the underlying construct. The third strategy is to warn subjects about negative consequences that may follow their distortions and to inform them that distortions can be detected. Finally and most often, detection scales (i.e. response validity scales) are included in personality tests to identify faking behavior. The use of detection scales is based on the assumption that if subjects choose socially desirable items on one scale, they are likely to do the same on other scales. Consequently, a high level of such activity on the lie scale

will lead to detectable response distortions on scales measuring underlying constructs (Elliott, 1981).

These strategies have had varied in terms of successful reduction of faking. Forced-choice items matched on social desirability have been found to be susceptible to faking. Subtle items have shown less validity than obvious items. Warning test-takers against faking behavior has shown to be most promising in preventing response distortion (Hough, et al., 1990). In spite of the potential usefulness of the warning strategy, research has concentrated on lie scales within personality measures.

Hough et al (1990) investigated the effectiveness of lie scales for detecting faking. The researchers modified the Five-factor personality model and developed a personality inventory to measure six constructs (urgency, adjustment, agreeableness, dependability, intelligence, and affiliation) that have been shown to be important predictors of job performance. Four response validity scales were developed to detect distortion: Social Desirability Scale for identifying intentional distortion in the desirable directions; the Poor Impression Scale for detecting intentional distortion in unfavorable directions (e.g. to avoid draft, etc.); Self-Knowledge Scale for the degree of accurate self-knowledge and understanding; and the Nonrandom Response Scale for catching careless or random responses. The study found that the Social Desirability Scale detected response distortions under

the fake-good condition and that the other three scales detected distorted self-descriptions under the fake-bad condition. However, the researchers did not report the magnitude of faking responses that were captured by the scales.

Other studies have concluded that subjects often can fake good without being detected. McAnulty, Rappaport, and McAnulty (1985) showed that the response validity scales of MMPI could not differentiate between subjects who reported to have responded honestly and subjects who claimed to have faked good. Validity scales L, F, K were used separately and in combination (i.e. F-K and L+K) to detect faking. Subjects were asked to complete the MMPI first and then on another questionnaire indicate whether or not they had faked on the inventory and for what reason. Results showed that the scales, used alone and in combination, all failed to discriminate fake-good subjects from honest ones. Furthermore, 63.3% of fake-good subjects scored above the recommended cut-off score of -11 on the F-K.

In Velicer and Weiner's (1975) study on Eysenck Personality Inventory (EPI), subjects in the experiment condition were instructed to fake one of the following profiles: salesman, librarian, and ideal-self. In addition, subjects were also assigned to one of three sophistication conditions: (1) control, (2) minimum sophistication where subjects were informed of the number and the names of scales

in the inventory, and (3) reasonable sophistication where subjects were also given an example of the scale in addition to the information given to the minimum group. Velicer and Wiener reported that given minimum information about the test, subjects could fake good without being detected by the validity scale. They concluded that as the general public had gained much knowledge of psychology, psychologists could no longer assume that subjects were naive about the test used and the purpose behind the test. Somewhat sophisticated subjects could easily beat the validity scales. The result was also supported by Dunnette, Koun, and Barber's (1981) study which found that the EPI lie scale was unable to differentiate honest and faked answers.

Finally, Elliott (1976) asked 12 occupational psychologists and personnel officers who were experienced in selection and familiar with the 16PF scales to make selection decisions based on six 16PF profiles. Half of the profiles were honest responses, and half were faked according to previous research results. The faked profiles received higher ratings than the honest ones which indicates that successful distortions can "beat" the judgment of even the experienced assessors.

#### Faking and test construct validity

A major concern that has led to the development of various strategies to counter faking is that response distortions can threaten the validity of personality test

results, especially the ability to measure and interpret some permanent dispositions of interest (Kroger & Wood, 1993). In other words, faking negatively affects the construct validity of a test. According to Binning and Barrett (1989), psychological constructs are "labels for clusters of covarying behavior ..... which simplifies and economized the exchange of information and facilitates the process of discovering behavioral regularities" (p479). In the validation process, psychologists attempt to identify constructs and relationships between them by developing measures or causal conditions for each. The relationship between various measures is then studied.

In general, construct validation refers to the process of identifying constructs by developing their measures and examining the relationships between the measures and the constructs. Traditionally, research has centered mostly on the construct-measure links in terms of whether a given test reliably reflect an individual's standing on the construct of interest (Binning & Barrett, 1989). Obviously, faking on the measures will misplace the individual on the construct and interfere with the understanding of personality dispositions.

The use of personality tests that lack construct validity may lead to negative consequences in applied settings, especially in clinical settings where a measure is often used to decide whether an individual should be institutionalized. Clearly, it is important to differentiate individuals who

fake the symptoms from those who are truly mentally sick. In organizational settings, construct validity is also critical for the theoretical understandings of the relationship between the predictor domain and the performance domain. In addition, construct validity leads to the ultimate understanding of performance behavior.

Binning & Barrett (1989) argued that the job performance behavior domain be treated as a single construct although it differs from other psychological constructs. Unlike most psychological constructs which are naturally occurring clusters of meaningfully related behaviors, the performance construct domains are created or determined by organizational decision makers to transform organizational goals and objectives into statements of valued behaviors and outcomes. As such, validation of a personnel selection process involves five inferences: first, measures of predictor constructs are related to measures of the performance domain; second, predictor measures are representative of the predictor construct domains; third, the predictor construct domain overlaps the performance domain; fourth, criterion measures are representative of the performance domain; and finally, the predictor measures are related to the performance construct (Binning & Barrett, 1989). Although all inferences are equally meaningful in research, the relationship between the predictor measure and the performance construct has taken on greater importance in practice. Evidence of this

relationship is labeled "criterion validity" or "predictive validity". The latter term is used in the present study because it best describes the selection test - job performance relationship.

Faking and the predictive validity of an inventory in personnel selection

Although research psychologists are concerned with the issue of faking and its effect on construct validity, practitioners in organizations are more concerned with the question of whether faking influences the predictive inferences of test scores. Here, the emphasis is on the extent to which assessment information allows accurate predictions of subsequent performance on the job (Binning & Barrett, 1989). Unlike construct validity that requires solid theoretical foundation, predictive validity is, by nature, empirical, and at times, atheoretical. A predictor measure can be highly related to subsequent job performance in spite inadequate explication of the predictor construct domain. For example, although the predictor measure may not adequately represent the intended construct domain, it is possible that other constructs are being measured that happen to be related to job performance. In regard to construct validity, response distortion limits the inferences that can be made about the underlying constructs, and therefore must be controlled and corrected. In the predictive domain, however, the effect of response distortion on the

relationship between the predictor measure and the performance domain is not clear. Intuitively, it is tempting to extend the logic that the negative effect of faking on construct validity can be generalized to predictive studies. Nevertheless, it is possible that faking has no effect on predictive validity or that it may even improve predictive validity. The focus of the current study is on the possible effects of faking in socially desirable ways on predictive validity.

The few studies that have addressed this issue have generated inconclusive results. Some of them have provided support for the common belief that response distortions on self-report personality measures curtail the predictive validity of the tests in employment selection settings. Costello, Schneider, & Schoenfeld (1993) used the MMPI to assess whether differences on the dissimulation index correlated with disciplinary suspension days of police applicants later on the job. The index is determined by the F scale score minus the K scale score. Positive F minus K values indicate "fake-bad" and negative F minus K values indicate "fake-good". A positive correlation was found between "fake-good" and the number of disciplinary days. However, although 147 out of 200 applicants produced score in the "fake-good" direction, only 46 of them had any days of disciplinary suspension after they were employed.

In Dunnette, et al's (1962) study discussed earlier, without instructions, relatively few naive applicants (one in seven) were found to have faked when their scores were compared to the cut-off faking score decided by analyzing the responses of subjects in the instructed-to-fake sample. Performance ratings of sales effectiveness from managers were available for 45 subjects. Correlations between the personality test scores and performance ratings were calculated for these subjects. Results showed that there was significant correlations between honest scores and performance ratings on several dimensions that included Sales Effectiveness, Assertiveness, Cooperativeness, and Calmness. None of the correlations between faked scores and performance ratings were significant. Consequently, the researchers concluded that response distortion had negative effect on the validity of the adjective checklist for predicting selling effectiveness.

Schmit and Ryan (1992) proposed that test-taking motivations moderates the ability of a test to predict performance in selection situations. They further argued that personality tests are more susceptible to motivational influences than ability tests. Under instructions to play the role of an applicant trying to get a desired job, subjects were asked to take an ability test, the School and College Ability Test (SCAT) and a personality test, the California Personality Inventory (CPI) twice, first when the

selection ratio was low (2:150) and the reward was high (\$20 each for those selected) and then when the selection ratio was higher (6:148) and the reward was lower (two \$20 and four \$10 each for those selected). Test-taking motivation was measured by The Test Attitude Survey (TAS) developed by Arvey, Strickland, Drauden & Martin (1990). The survey includes nine subscales: Motivation, Lack of Concentration, Belief in Tests, Comparative Anxiety, Test Ease, External Attributions, General Need Achievement, Future Effects, and Preparation. TAS is sensitive to test conditions and differences between incumbents and job applicants (Arvey, et al, 1990).

Schmit and Ryan (1992) found that test-taking motivation, as measured by TAS, moderated the ability of both the personality test and the ability test to predict college academic performance, although motivation affect the ability and personality tests differently. For the ability test, the predictive validity of the ability test was higher for subjects with high test-taking motivations. For the personality test, the predicative validity was higher for subjects with low test-taking motivations. In addition, the researchers divided the sample of responses into three groups using Lanning's (1989) regression equations for predicting invalid response patterns on the CPI. Subjects were separated into three groups according to their response patterns: valid (n = 105), fake-good (n = 21), and other-invalid (n = 20).

Similar to Dunnette et al's (1961) results, Schmitt and Ryan found that a relatively small number of subjects (17 out of 146) actually faked. Majority of these fake-good subjects (17 out of 21) were in the high motivation group which demonstrated no predictive validity for personality tests.

Schmit and Ryan (1992) suggested that a possible explanation for the findings of decreasing predictive validity is range restriction of scores on either the predictor tests or the criterion (performance), or both. Crocker and Algina (1986) listed several conditions under which restriction of range may occur. First, it is due to explicit selection on the predictor variable. Second, range restriction is likely when selection is made on some other variable that is correlated with the predictor. Third, ceiling and floor effects on the predictor and/or the criterion can cause range restriction. Finally, it may be a function of the scaling procedure.

In the faking context, the ceiling/floor effect is likely to be the cause. Some individuals may be willing to describe themselves quite unfavorably in honest conditions but can fake-good well to improve their profile to a greater than average extent when instructed or motivated. As a result, there will be substantial reduction in the distribution of variance in the sample. Schmit & Ryan (1992) reported that in their study the subsamples with the lower CPI validity coefficients had significantly larger CPI scale means and

significantly smaller variance compared to subsamples with larger validity coefficients. Their assertion is supported by Thumin & Barclay (1993) who found that mean scores for students and job applicants differ significantly on 10 of 11 scales, and that job applicants have significantly smaller standard deviations on 7 of the 11 scales than the students.

Although the evidence presented above has shown that faking has negative effects on the predictive validity of personality tests, other studies have arrived at the opposite conclusion that faking in a socially desirable way may in fact improve predictive validity. Kriedt & Dawson (1961) reported that social desirability as a response set actually contribute to the success of the Gordon Personal Inventory (GPI) in predicting job performance. The GPI was administered to female entry level insurance employees. It was found that the subscale trait scores were highly related to the social desirability score. The highest predictive validity was found for the social desirability score. When social desirability was partialled out of the trait scores, the trait scales, which moderately correlated with clerical performance showed significant reductions in their predictive validities.

Ruch & Ruch (1967) used the MMPI to test the hypothesis that self-report personality inventories work because they can be faked. The MMPI was given to 182 salesmen. Five scales (Hypochondriasis, Psychopathic Deviate, Psychasthenia,

Schizophrenia, and Hypomania) were used to predict sales performance. All five scales successfully discriminated successful salesmen from the unsuccessful ones without correction for social desirability. In fact, correction for social desirability was found to decrease validity: only three of the corrected scales had significant validity once social desirability was partialled out.

Finally, Hough et al's (1990) study also showed that intentional response distortion of personality scales may not be as serious a problem as once assumed. Predictive validity of most scales in their study were not much different for the overly desirable group and the accurate group. In other words, distortion did not affect the validity of the personality constructs.

The inclusive research results regarding the effect of faking on predictive validity and the inability of personality tests to control the negative effect of faking on construct validity have prompted psychologists to reexamine faking behavior.

#### A different perspective on faking

Over the years, a few researchers have begun to view response distortion in a different light, as in terms of "motivational distortion" which is individuals' intelligent adaptations to the environment (Cattell, 1986) and in terms of social role-taking (Kroger, 1974).

Cattell advocated a trait-view theory which asserts that response distortion is multidimensional and is a function of the person's situation and personality (Merydith & Wallbrown, 1991). The social roles an individual has to play in different situations motivate him/her to assume different role behaviors. Deception can be conscious or unconscious and is a function of motivation to adapt to a situation. Personality scale scores reflect the situation in which subjects take the test. Furthermore, social desirability is related to other personality traits such as extroversion and anxiety.

Empirical research supports Cattell's hypothesis that social desirability is related to other personality traits. Seisdedos (1993) analyzed faking studies on the MMPI, the EPI, and the 16PF using large samples of Spanish subjects. It was found that scores on the lie scale of EPI were negatively related to Psychoticism and Neuroticism and that high motivational distortion scores on the 16PF related negatively to Anxiety and positively to Extroversion which indicated high stability and socialization. In general, subjects who scored high on the dissimulation scales had the following characteristics: boldness, stability, self-assurance, self-control, and relaxation. Seisdedos suggested that subjects scoring high on social desirability were able to subjectively conform to social norms of the time which meant that they were well-fitted for the environment.

Elliott (1981) also found a positive correlation between scores on the 16PF lie scale and stability for job applicants, management nominees, and assessment center trainees from different work populations (paper industry managers, food industry managers, bank promotion candidates, computer trainees, programmers/analysts, and graduate students). He suggested that people responded in the social desirability way because it was appropriate behavior for healthy people.

The studies that found high correlations between social desirability and personality traits renewed the debate on whether social desirability is a personality/cognitive trait or a response set. As discussed before, research has pointed to the two-dimensional nature of social desirability (Millham, 1974; Millham & Jacobson, 1978; Paulhus, 1984). Paulhus (1984) pointed out that the self-deception component is invariant and unconscious. It reflects the underlying self-images and individual cognitive styles. On the other hand, impression management is deliberate falsification, the degree of which varies according to Situational cues.

From a social-psychological perspective, Kroger (1974) also viewed faking as a form of role taking. He suggested that "faking involves much more than 'putting one's best foot forward' or answering in socially desirable ways. It involves responses that are much more fine tuned to the requirements of particular test situations, namely role-

taking" (p133). Individuals approach employment selection situations in the same way as they do in other social situations: by identifying the particular requirements of the situation and adopt the appropriate social role, as qualified job applicants in the case of employment selection. People successful at role-taking rely on a variety of social cues. In the test situation, the cues may be the personal characteristics of the examiner, the perceived purpose of the test, and the test items (Kroger, 1974). Faking is specific to the unique situation. It can be different from one situation to the next, depending on the Situational cues.

Kroger further asserted that the success of faking depends on applicants' favorable motivation, accurate conception of the role involved, role-taking skills, and role relevant information in the test. Of the four conditions, accurate conception and role-relevant cues are most important. According to Kroger (1974), even though an individual is highly motivated and skillful, he/she may find it difficult to fake if the concept of the role and/or relevant cues are lacking.

Kroger & Turnbull (1974) asked undergraduate Navy ROTC students to fake a MMPI profile of a "military officer" or a "creative artist". Subjects were successful at faking a profile of the military officer without being detected by the lie scale but could not create an accurate profile of a creative artist. The researchers concluded that the failure

was due to subjects not having an accurate conception of the artist role. In later studies, the subjects became successful at faking the role after information on characteristics of an artist was provided. Kroger (1974) concluded that "providing the respondents with greater information in the form of explicit instructions, detailed role definitions, and highly role-relevant test items resulted in more successful faking" (p133). In personnel selection, it is likely that applicants who successfully "beat" the tests are highly motivated, more skillful, better at capturing social cues, and have a more clear understanding of the personality demands of the job. In this sense, the ability to fake good may indicate the effectiveness of an applicant. On the other hand, if people do not have the ability to adapt to the situation or if they misperceive the norm and the role, their personality profiles as shown would deviate from that demanded by the organization. Consequently, these people are not likely to be accepted for the job. If this assumption is true, fake-good may increase the predictive validity of a test instead of decreasing it.

#### The present study

The research reviewed here has shown that, so far, researchers have been unable to determine the effect of faking on predictive validity of personality tests. In part, because the majority of studies have focused on whether individuals can successfully fake personality tests and the

effect of faking on construct validity. Little attention has been paid to the effect of faking on predictive validity. As a result, performance criteria were not established and performance data was not collected for subjects in faking and honest conditions.

Another possible explanation is that studies which did investigate faking and predictive validity were limited by weak manipulations. For instance, only Dunnette, et al (1962) gave subjects specific instructions to respond honestly and to fake-good. Other studies have given indirect fake-good instructions (i.e. pretend to be job applicants). Still, some researchers did not give subjects any instructions. The assumption that subjects were faking good was made based on the personality test scores and lie scale scores.

A third problem is the small samples of faking subjects. The percentage of the faking subjects in the subject pool is often quite small. For example, in Schmit and Ryan (1992)'s study, the fake-good condition had 21 subjects compared to the total sample of 147 subjects, such small samples reduces confidence in the conclusions.

Finally, a possible explanation for the inconclusive results of past research is that the relationship between fake-good and predictive validity is nonlinear. When a relatively small number of people fake good in a sample of applicants, the predictive validity may rise as suggested by

the motivational distortion and social role-taking. However, as the number of people faking increases, range restriction on the predictor eventually decreases predictive validity.

The present study focused solely on the predictive validity of the personality tests. It proposed to investigate two questions: 1) In which direction does faking affect predictive validity of a self-report personality test? and 2) Through what mechanism does faking affect predictive validity? Faking behavior was manipulated through two administrations of the predictor personality test to each subject. Subjects were given specific instructions to respond honestly and to fake good. Because faking behavior was manipulated instead of inferred from criterion scores, the researcher is able to make more definitive conclusions about its effects.

Previous studies have found that correcting for social desirability on a personality test hurt the predictive ability of valid scales (Kriedt & Dawson, 1961; Ruch & Ruch, 1967). Based on Cattell's (1986) theory and Kroger's (1974) perspective which suggested that successful response distortion in a socially desirable manner indicated the effectiveness and environmental fitness of an individual, it seems reasonable to extend the logic to speculate that faking would not only improve the predictive ability of valid personality scales but also those non-valid scales. Hypothesis 1 thus predicted that faking in a socially

desirable manner improves the predictive validity of a personality test.

The second key question was that if faking improved predictive validity, which factor best facilitated the success? Intelligence was investigated in the present research. It appears likely that intelligence may account for role taking skills such that more intelligent individuals would produce more socially desirable profiles under instructions to fake-good than less intelligence individuals. Because high scores on the CPI scales indicate more socially desirability personality, as a result, Hypothesis 2 predicted that the correlations between personality scores and intelligence would increase in the faking condition, such that individuals of higher intelligence would possess higher personality scores in the faking condition than individuals of lower intelligence.

There has been only limited research on the relationship between intelligence and faking behavior. Anderson, Sison, and Wester (1984) investigated whether high IQ subjects could fake better on the Personal Orientation Inventory (POI) than low IQ subjects. The results showed that high IQ subjects did not fake any better than low IQ subjects on the POI. In fact, no significant relationship was found between IQ and the ability to fake-good. The small number of subjects in both the high IQ and the low IQ groups ( $n = 18$ ) might account for the insignificant results.

Finally, as Schmit & Ryan (1992) suggested, range restriction may affect predictive validity of a test. As a result, Hypothesis 3 predicts that the amount of faking responses in a sample moderates the predictive validity of the test such that response distortion improves predicative validity when faking responses consist only a small percentage of the response sample. Because of range restriction, predictive validity of the personality test will decrease when there is a large percentage of faking responses in the response sample.

An additional variable, social desirability, was examined in the present research. Twenty items were included in the study to measure the self-deception and impression management components. The researcher was interested in examining the effect of faking on the two components as well as on the relationship between social desirability and performance. Although previous research has found that measures of self-deception was more resistant to faking (Paulhus, Bruce, & Trapnell, 1995), there is little research on the effect of faking on the relationship between social desirability and performance. As a result, social desirability was treated in an exploratory manner and no predictions were made.

### Method

#### Subjects

Subjects were 346 undergraduate students at a large state university in the Southeastern U.S. The students were

enrolled in various psychology courses and received credit for their participation in the study.

### Predictors

The California Psychological Inventory (CPI) was used in this study to measure personality. CPI is commonly used in the personnel selection process (Becker, 1989). It is a 480 item self-administered inventory answered on true/false bases. Unlike other personality instruments designed to be used in psychiatrically disturbed populations, CPI seeks to be a brief, accurate, and practical means of assessing normal human characteristics, personality attributes important for everyday living. CPI was designed to be used in common settings such as school and workplace (Gough & Lanning, 1986). The inventory consists of 18 subscales which can be grouped into four categories. They are measures of poise, ascendancy, self-assurance, and interpersonal adequacy (Category I); socialization, maturity responsibility and intrapersonal structuring of values (Category II); achievement potential and intellectual efficiency (Category III); and intellectual and interest modes (Category IV).

Faking on CPI has been reported. Montross, Neas, Smith, and Hensley (1988) found that subjects could alter their CPI profiles through role-playing high gender identifications without being detected. Dicken (1960) found that psychologists could fake different profiles on the CPI without being detected by the Good impression (Gi) scale.

The results are evidence that it is possible to dissimulate on the CPI.

The present study used a shortened version of CPI in the interest of reducing test-taking fatigue for the subjects who had to take the inventory twice under different instructions. Nine relevant subscales of California Psychological Inventory (CPI) were used. They included Achievement via Independence (Ai), Communality (Cm), Good Impression (Gi), Intellectual Efficiency (Ie), Psychological Mindedness (Py), Responsibility (Re), Social Presence (Sp), Sociability (Sy), and Sense of Well-being (Wb). These scales were selected for two reasons. First, 6 of the 9 scales were components of a regression equation developed to forecast college performance. Gough and Lanning (1986) found that scales Re, Ai, Ie, and Py correlated highly with academic performance as measured by Grade Point Average. Wb and Gi were shown to account for large unique variances in multiple regression analyses. As a result, the researchers developed the following CPI equation to forecast college academic performance:  $GPA = 30.60 - .26Wb + .35Re - .19Gi + .39Ai + .22Ie + .36Py$ . Personality scores computed from this equation were found to correlate at .38 with GPA for male students and at .36 for female students. Second, Sy, Sp, and Cm scales were included in the present study because they had been shown to have no correlations with academic performance. As discussed earlier, the researcher was interested in

investigating whether faking will improve the correlations between non-valid scales and performance.

According to Gough (1975), Ai was constructed to identify factors which facilitate achievement in settings where autonomy and independence are required. Cm indicates the degree to which a person's pattern of responses corresponds to the common pattern established for the measure. Gi identifies individuals who are concerned about reactions of the others and who are capable of creating favorable impressions. Ie measures the degree of intellectual efficiency a person has achieved. Py measures the extent to which an individual responds to his/her inner needs, motives, as well as the experiences of others. Re identifies individuals who are conscientious, responsible and dependable. Sp assesses spontaneity, poise, and self-confidence in personal and social interactions. Sy identifies outgoing, sociable, and participative individuals. Finally, Wb identifies people who are free from self-doubt and who minimize worries and complaints.

Subjects' Scholastic Aptitude Test (SAT) scores were used as a measure of their general intelligence. It has been generally known that SAT is a good indicator of intelligence and correlates highly with other intelligence tests (Wachs & Harris, 1986).

Finally, twenty social desirability items were included in the present research. Ten of them measured Self-Deception

and the other ten items measured Impression Management (Paulhus, 1984). The items were found to have the highest factor loadings on each factor of social desirability. The Self-Deception (SDE) items tapped into deep personal concerns such as sexual and parental conflicts (e.g. "Have you ever enjoyed your bowel movements?"). The Impression Management (IM) items involved socially desirable but relatively rare overt behaviors (e.g. "I am always courteous, even to people who are disagreeable").

### Procedure

All subjects were asked to sign an informed consent form indicating their willingness to participate in the study and to give researchers permission to gain access to their academic records.

Each subject completed the revised CPI twice, with a 5-minute interval, under instructions to answer honestly and under instructions to fake good so to obtain a highly desired and competitive scholarship. To control for order effect, half of the subjects received the faking instruction in the first administration and half received honest instruction first.

Subjects were asked to record their name, social security numbers, gender and age on each of the test answer sheets so that the experimenter could access their academic records for the SAT scores and the criterion scores.

Once the subjects completed the two tests, they were debriefed and allowed to leave.

### Independent Variables

Subjects were asked to respond to the CPI honestly and to present themselves in the best light possible. The directions given to the subjects under the two conditions are as follows:

#### *Honest Instructions*

You have been given a copy of the California Personality Inventory. Please answer each item as honestly as possible on the answer sheet provided. We are interested in your true self, the true personality traits you possess. So please answer each item as you really see yourself. Do **NOT** respond in such a way that your image is different than what it really is even though it may be the image you would like to present to others. Please return your test booklet and answer sheet to the administrator when you are done and you will be given instructions for your task for the next phase of the experiment.

#### *Fake Instructions*

You have been given a copy of the California Psychological Inventory. This test is used by colleges and universities to screen applicants for academic scholarships. Imagine that you have been asked to take this test because you are applying for a highly desirable but very competitive scholarship. Respond to the items in such a way that you

portray yourself as possessing as many good traits as possible because this provides the best chance of getting the scholarship. Alter your answers from how you see yourself to what response makes the best impression. Please return your test booklet and answer sheet to the administrator when you are done and you will be given instructions for your task for the next phase of the experiment.

Their responses on the subscales as well as their weighted scores under the two conditions were used to predict academic performance.

#### Criterion

Based on Schmit & Ryan (1992)'s study, subjects' cumulative GPA was used as the criterion. Thus the researcher has an objective rather than self-report measure of performance.

#### Manipulation Checks

The average mean differences of responses between fake-good and honest responses was computed to assess whether the manipulation of faking was successful.

#### Results

Twenty-four subjects were dropped from the analysis for various reasons. Thirteen subjects were excluded because they failed to complete enough of the second administration of the CPI, either under the honest or the faking instruction. Eleven subjects were dropped because

information of their GPA and SAT scores were unavailable at the time of data collection. Of the 346 subjects who participated in the study, 322 were included in the analysis of the results.

Means and standard deviations of scores on the 9 scales of the CPI and the social desirability scale in both honest and faking conditions are shown in Table 1.

Table 1

Means and Standard Deviations of the Honest and Faked Responses to the CPI and Social Desirability Scales and Two-tailed t-test Values of Differences

CPI Scales	Honest (n=322)		Faking (n=322)		two-tailed
	Mean	Sd	Mean	Sd	t-value
Ai	17.637	4.523	18.896	3.312	5.20*
Cm	22.426	5.283	20.950	5.471	-5.08*
Gi	15.761	5.280	29.001	7.048	26.18*
Ie	32.304	6.572	37.752	6.601	14.16*
Py	10.332	2.626	12.683	2.067	15.06*
Re	24.429	5.386	32.385	8.156	17.20*
Sd	11.335	3.224	15.196	3.685	15.96*
SDE	6.445	2.234	8.633	1.714	14.92*
IM	5.670	1.982	7.617	2.475	11.28*
Sp	34.233	7.240	32.562	4.842	-4.08*
Sy	23.295	5.486	27.022	5.735	10.95*
Wb	28.705	7.463	35.919	8.883	14.73*

\*  $p < .001$

The differences in mean scores between the honest and faked responses were tested through two-tailed, paired t-tests. Results of the analysis are also displayed in Table

1. It is evident that significant differences emerged as a function of the faking instruction for all scales. The results are in keeping with previous findings that when instructed, subjects were able to successfully fake personality tests (e.g. Krahe, 1989). Subjects scored higher on the Ai, Sy, Wb, Ie, Re, Gi, and Py scales and lower on the Cm and Sp scales in the faking condition. Similarly, subjects successfully faked the social desirability scale and its sub-component scales. Subjects scored higher on both SDE and IM scales. It appears that there was little difference in subjects' ability to fake the self-deception items and the impression management items.

Table 2 shows the number of items comprising each scale, scale variance, and coefficient alpha for each scale. The alpha coefficients and variances are presented separately for each condition to address questions about the impact of faking behavior on test reliability.

Table 2

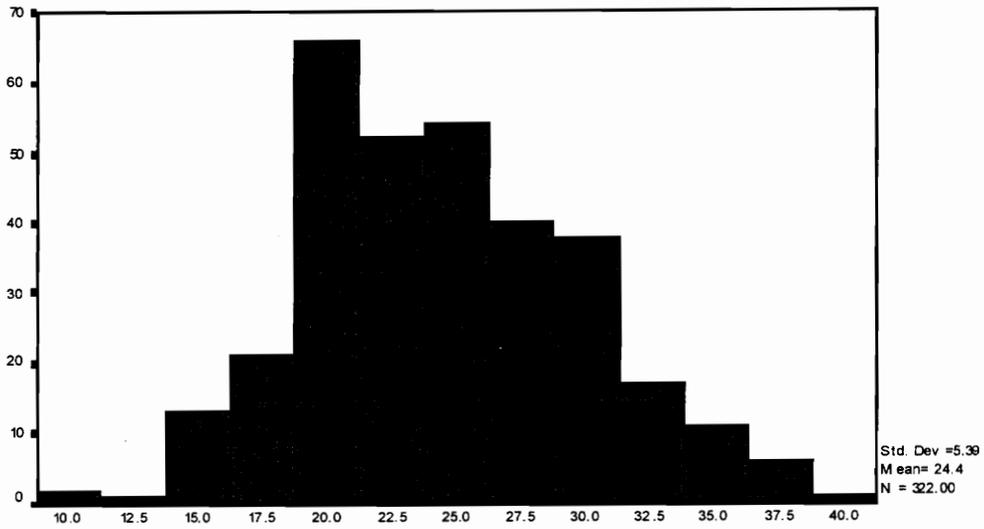
Internal Consistency Reliability of the CPI and the Social  
Desirability Scales in Honest and Faking Conditions

CPI Scales	# of Items	Honest (n = 322)		Faking (n = 322)	
		Alpha	Variance	Alpha	Variance
Ai	32	.6591	20.46	.5297	10.97
Cm	28	.8766	27.91	.8864	29.94
Gi	40	.7646	27.88	.8762	49.68
Ie	52	.7160	43.20	.6912	43.58
Py	22	.4255	6.90	.3905	4.27
Re	42	.7329	29.01	.8204	66.52
Sd	20	.6099	10.39	.8253	13.58
SDE	10	.6316	5.07	.6784	2.91
IM	10	.4855	3.91	.5320	2.33
Sp	56	.7531	52.42	.6449	23.45
Sy	36	.7109	30.10	.5890	32.89
Wb	44	.8320	55.70	.8467	78.92

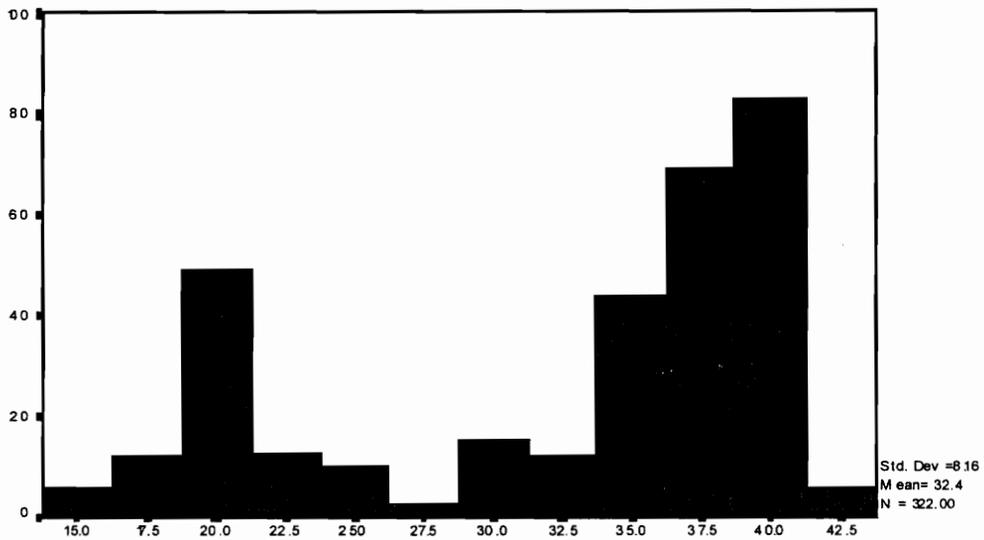
The reliabilities of the CPI scales in the honest condition were similar to the ones reported in the test manual. Gough (1975) reported test-retest reliability for high-school students. The correlations were .63 for Ai, .44 for Cm, .69 for Gi, .77 for Ie, .49 for Py, .73 for Re, .63 for Sp, .68 for Sy, and .72 for Wb.

In the present study, for the scales Ai (achievement via independence), Py (psychological mindedness), Sp (social presence), both internal consistency and variance decreased in the faking condition. For these scales, most subjects apparently distorted responses in one direction. This process led to significant changes in mean scores (Ai and Py were distorted toward the positive pole and Sp toward the negative pole). As a byproduct of this unidirectional shift in faked responses, variance for each of these scales decreased, which in turn resulted in lower levels of reliability. These results suggest that subjects agreed on interpretation of the items on these scales in terms of presenting a desirable impression. Further, this normative agreement led to a detrimental effect on the reliability of these scales.

In contrast, internal consistency reliability and variance increased in the faking condition for Gi (good impression), Re (responsibility), and Sd (social desirability). This increase was due to "bimodal faking". Subjects apparently disagreed on whether high or low scores were better on these scales. Thus, responses became bimodal which resulted in increased response variability and internal reliability. An examination of the histograms of these three scales confirmed the reasoning (see Figures 1 - 6).



RE



RE

Figure 1. Histogram of Honest Responses to the Re Scale

Figure 2. Histogram of Faked Responses to the Re Scale

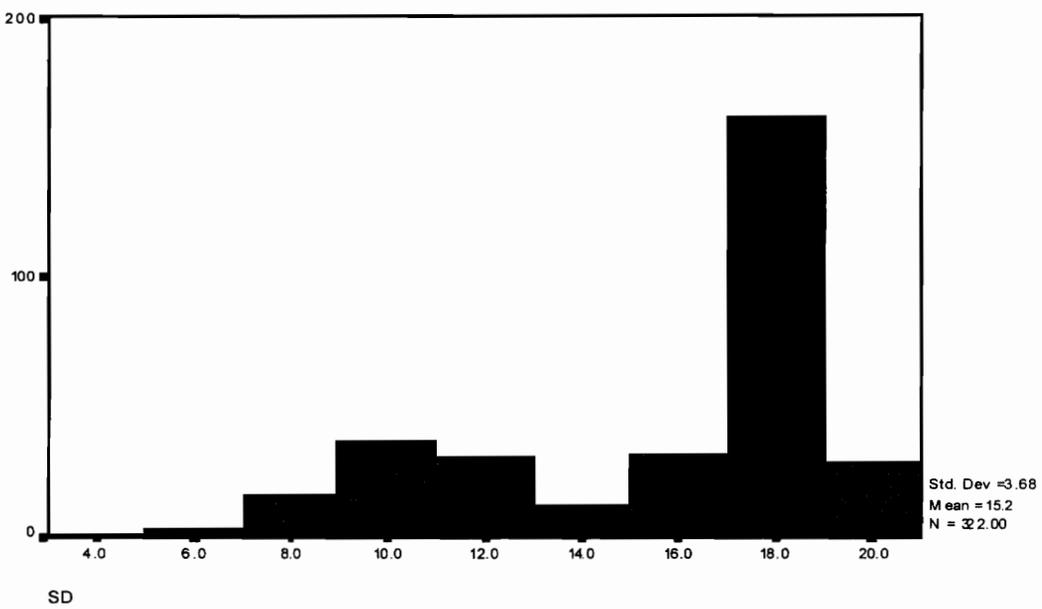
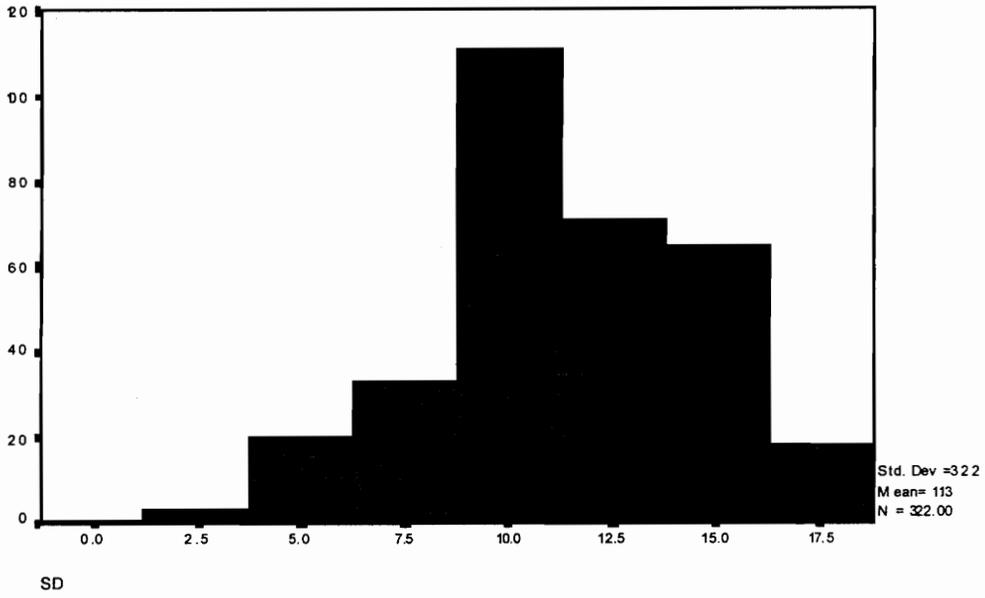
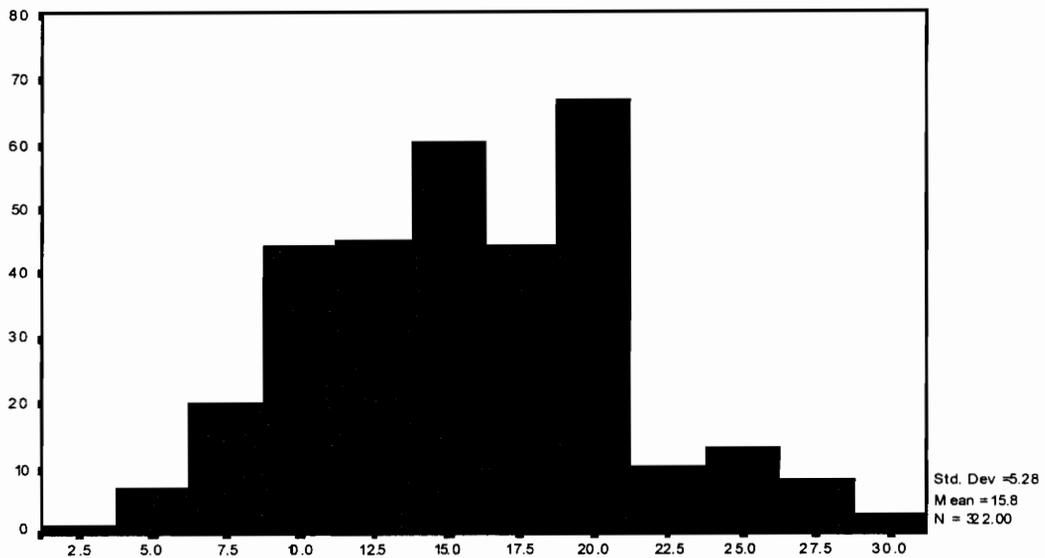
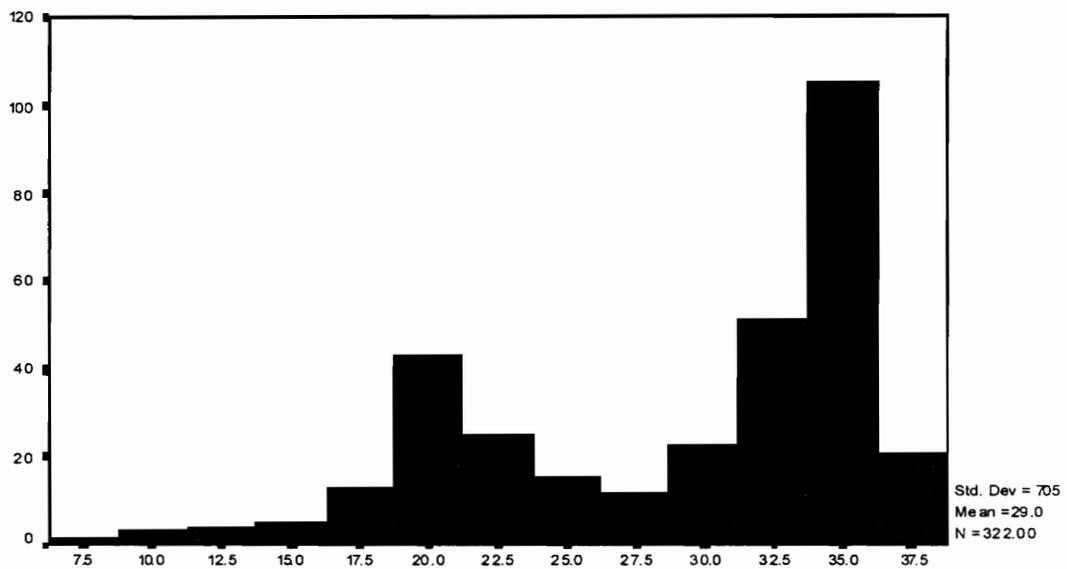


Figure 3. Histogram of Honest Responses to the Sd Scale

Figure 4. Histogram of Faked Responses to the Sd Scale



GI



GI

Figure 5. Histogram of Honest Responses to the Gi Scale

Figure 6. Histogram of Faked Responses to the Gi Scale

The reliability coefficients and variances remained the same in the faking condition for scales Cm (communality) and

measure "the degree to which an individual's reactions and responses correspond to the modal ("common") patterns established for the inventory" (Gough, 1975, p11). The Ie scale was designed to identify "the degree of personal and intellectual efficiency which the individual has attained" (Gough, 1975, p11). It appears that faking has no effect on the psychometric properties of these scales. Specifically, response variability remained unchanged in the faking condition in spite of the fact that subjects were able to raise and lower their scores on Cm and Ie.

The Sy (sociability) scale showed a decrease in reliability coefficient and a slight increase in variance in the faking condition. Because Sy total variance was similar between the honest and faked conditions, the decrease in reliability is due to decreases in inter-item covariations as indicated by lower intercorrelations among the scale items. Apparently, subjects had problems interpreting responses to Sy items in light of presenting a positive self-image. Even though average faked Sy scale scores were higher than average honest Sy scale scores, subjects were less systematic in their endorsements of the items.

For scale Wb, reliability coefficient remained fairly stable in the faking condition, but scale variance increased. The only way for this pattern to have occurred is that increases in inter-item covariances in the faking condition were offset by corresponding increases in item variances. As

such, the inter-item correlation matrix did not change significantly in the faking condition, resulting in a stable coefficient alpha. Unlike the scales where the faked responses became bimodal (i. e. Gi, Re, and Sd), with increased scale variability and reliability, for Sy, subjects seemingly had enough disagreement as to which items to distort and what direction to fake so as not to improve reliability in spite of increases in scale variance.

Finally, items measuring the two components of social desirability showed a slight increase in reliability but a decrease in variance. It appears that subjects agreed how the direction to fake on the items which resulted in decreased variance.

In general, scale scores in the honest condition were positively correlated with the scale scores in the faking condition. The Cm scale showed the highest correlation of .53. The next highest correlation are for the Ie, Wb, Ai, and Sy with correlations of .45, .43, .42 and .41 respectively. The weighted score has a correlation of .36. Sp, Py, and Re have correlations of .31, .31, and .30 respectively. The social desirability scale has the lowest significant correlation of .22. Honest SDE scores correlated with faked SDE scores at .17 while honest IM scores correlated with faked IM scores at .11. Scale Gi has the only nonsignificant correlation of  $-.07$  ( $p=.24$ ). The scale identifies "persons capable of creating a favorable

impression, and who are concerned about how others react to them" (Gough, 1975, p10). As shown earlier, faking on this scale is bimodal. The strongest effects for faking occurred for Gi. The faked Gi mean scores shifted fourteen points toward the positive end of the scale, by far the most dramatic shift in mean scores. However, the faked distribution was bimodal. As such, the faked Gi scores bore little resemblance to the honest scores.

Given the results above, it appears that subjects were capable of response distortion on the CPI as well as on the social desirability items. However, faking didn't affect the response patterns uniformly. Depending on agreement level and assumptions about the items, subjects' response distortion either improved or reduced or did not affect reliability. In addition, faking didn't drastically affect subjects' rank order. Those who had high scores when responded honestly also tended to maintain high scores when faking.

#### The predictive validity of the CPI

The main research question had to do with how faking affected the predictive validity of the CPI. Multiple regression analysis was used to address the question. GPA served as the criterion and was regressed on the 9 subscales and the Sd items individually. In addition, GPA was regressed on the CPI weighted score derived from Gough & Lanning's (1986) regression equation. Table 3 presents the

correlations among the CPI scales, the social desirability items and GPA in the two experimental conditions.

Table 3

Correlations of the CPI scales, the social desirability scales, and weighted scores with GPA in Honest and Fake Conditions

CPI Scales	Honest	Faking
	(n=322)	(n=322)
	GPA	GPA
Ai	.145**	.014
Cm	.056	.069
Gi	.076	.012
Ie	.089	.043
Py	.098	.036
Re	.145**	.025
Sd	.108(m)	.071
SDE	.087	.007
IM	.078	.078
Sp	-.023	.058
Sy	.057	.030
Wb	.068	.051
weighted	.153**	.017

\* p<.05

\*\* p<.01

Only two scales in the honest condition were correlated with GPA. The Ai scale, constructed to forecast academic performance in college (Gough, 1953) had the highest coefficient ( $r = .15$ ) among the 10 scales. Re was the only other dimension that predicted GPA ( $r = .14$ ). Among the rest

of the scales, only Sd approaches significance ( $r = .11$ ,  $p = .054$ ) although neither the self-deception nor the impression management component was significant. The weighted score also was related to GPA in the honest condition ( $r = .15$ ), however, the relation was weaker and was much lower than the cross validation coefficient of .38 reported in Gough and Lanning (1986).

None of the scales nor the weighted score predict GPA in the faking condition. Furthermore, 10 of the 13 correlations were smaller in magnitude in the faking condition. It appears that faking reduced the predictive validity of several CPI individual scales and the weighted CPI score when the response sample contained all faking responses. Hypothesis 1 which stated that faking improves the predictive validity of the CPI was not supported.

It is easy to understand why the Ai scale did not predict GPA when subjects distorted their responses. As previously mentioned, range restriction occurred in the faked responses for the Ai scale. Range restriction on the predictor will cause a decrease in the observed validity coefficients. Furthermore, Re predicted GPA in the honest condition, but did not predict GPA in the faking condition. This occurred in spite of the fact that Re showed a definite increase in both total scale variance and scale reliability in the faking condition. Apparently, subjects' decisions about which direction to fake on Re was not correlated with GPA.

At a more general level, the failure of the faked profiles to predict GPA may be in part a function that, relative to the honest condition, scale scores became more intercorrelated in the faking condition (see Table 4 & 5). Because of the extreme high interscale correlations, each individual scale was unable to account for much unique variance in the prediction of GPA.

Table 4

Matrix of Interscale Correlations and Correlations with the

CPI Weighted scores in the Honest Condition

Scale	Cm	Gi	Ie	Py	Re	Sd	Sp	Sy	Wb	weighted
Ai	.523	.185	.737	.420	.572	.350	.408	.377	.600	.831
Cm		-.223	.640	.141	.521	.302	.532	.559	.665	.533
Gi			.197	.391	.334	.473	-.096	.002	.235	.042
Ie				.489	.634	.460	.640	.669	.779	.758
Py					.389	.346	.348	.288	.449	.524
Re						.545	.248	.456	.614	.746
Sd							.260	.357	.576	.294
Sp								.743	.590	.393
Sy									.552	.476
Wb										.448

note: correlation coefficients are significant at .01 level when  $r > |.141|$

Table 5

Matrix of Interscale Correlations and Correlations with the

CPI Weighted scores in the Faking Condition

Scale	Cm	Gi	Ie	Py	Re	Sd	Sp	Sy	Wb	weighted
Ai	.434	.493	.678	.430	.587	.492	.466	.535	.603	.835
Cm		.530	.759	.216	.769	.727	.551	.814	.814	.536
Gi			.765	.511	.862	.792	.238	.710	.811	.518
Ie				.487	.877	.798	.542	.862	.911	.776
Py					.452	.364	.298	.365	.425	.613
Re						.867	.393	.862	.912	.737
Sd							.434	.820	.856	.564
Sp								.633	.498	.475
Sy									.894	.623
Wb										.610

note: correlation coefficients are significant at .01 level when  $r > |.141|$

The correlations between scales in the honest condition range from  $-.22$  to  $.78$ . They are similar to those in the CPI manual which shows interscale correlations range from  $-.10$  to  $.52$  for the same scales. In the faking condition, the correlations between scales range from  $.22$  to  $.91$ . It appears that subjects who fake high scores on one scale are more likely to have high scores on other scales in the faking condition.

#### Effects of intelligence

Hypothesis 2 predicted that if faking did improved the predictive validity of the inventory, the correlations between personality scores and intelligence would increase in the faking condition, such that individuals of higher intelligence would possess higher personality scores in the faking condition than individuals of lower intelligence. Because faking was not found to improve the predictive ability of the CPI, Hypothesis 2 was not testable. Nevertheless, Table 6 showed the correlations between SAT scores and the scale scores in the two conditions.

Table 6

Correlations of the CPI scales, the social desirability scales, and weighted scores with SAT scores in Honest and Faking Conditions

CPI Scales	Honest	Faking
	(n=322) SAT	(n=322) SAT
Ai	.220**	.123*
Cm	.060	.055
Gi	.024	.060
Ie	.195**	.186**
Py	.248**	.119*
Re	.042	.068
Sd	.009	.080
SDE	.025	.051
IM	-.099	.050
Sp	.077	.110
Sy	.057	.088
Wb	.123*	.125*
weighted	.203**	.130*

\*  $p < .05$

\*\*  $p < .01$

Table 6 showed that the correlations between SAT scores and the personality scores did not change drastically in the faking condition. Ai, Ie, Py, Wb, and the weighted scores were significant in the honest condition and continued to be significant when respondents faked their responses. The nonsignificant correlations did not improve greatly in the faking condition.

### Moderator effect of sample size

Finally, Hypothesis 3 predicted that sample size moderates the predictive validity of the CPI such that faking improves the predictive validity when the percentage of faking people is small.

Regression analysis was used to test the moderator effect of the sample size of faking people. Honest and faked responses were combined to create new response samples. The sample size of faking subjects were predetermined to be 1%, 10%, 30%, 50%, 70%, 90%, and 99% of the total sample of subjects. To create the new response samples, the computer randomly selected the appropriate number of faked responses and mixed them with the appropriate number honest responses. For example, when faked responses consisted of 10% of the total sample, 32 subjects were chosen, their faked responses substituted for their honest responses. Then a regression analysis was conducted on this sample which had 10% (i.e. 32) faked response sets, and 90% (i.e. 290) honest response sets. Twenty samples of responses were generated for each faking percentage level. Each time, GPA was regressed on all individual scales as well as the CPI weighted score.

Table 7 shows the mean  $R^2$ , the percentage of times  $R^2$  was significant at .05 level, and the mean regression weights for each scale and the CPI weighted score across all percentage levels of faking responses.

Table 7

Mean  $R^2$ , Percentage of significant  $R^2$ , and Mean Regression Weights of the Individual Scales and the CPI Weighted Scores at Different Levels of Faking Responses

	1% Faked			10% Faked			30% Faked			50% Faked		
	Mean $R^2$	% of Sig	Mean b	Mean $R^2$	% of Sig	Mean b	Mean $R^2$	% of Sig	Mean b	Mean $R^2$	% of Sig	Mean b
Ai	.020	100%	.019	.017	90%	.018	.015	70%	.012	.008	30%	.012
Cm	.003	0%	.006	.003	0%	.006	.004	0%	.006	.004	0%	.007
Gi	.006	0%	.008	.006	25%	.005	.004	15%	.002	.004	5%	.003
Ie	.007	0%	.007	.012	40%	.009	.006	20%	.006	.005	10%	.003
Py	.009	0%	.020	.010	30%	.019	.008	25%	.017	.005	10%	.012
Re	.019	95%	.014	.015	45%	.011	.008	20%	.007	.007	15%	.005
Sd	.012	45%	.019	.010	40%	.016	.009	35%	.014	.007	30%	.014
Sp	.001	0%	-.002	0	0%	-.001	.001	0%	0	.001	0%	0
Sy	.003	0%	.006	.004	5%	.006	.003	0%	.005	.003	0%	.004
Wb	.005	0%	.005	.005	5%	.005	.005	10%	.004	.004	5%	.003
weight	.021	100%	.024	.020	100%	.024	.015	75%	.020	.010	40%	.017

Table 7 (Cont' d)

Mean  $R^2$ , Percentage of significant  $R^2$ , and Mean Regression Weights of the Individual Scales and the CPI Weighted scores at Different Levels of Faking Responses

	70% Faked			90% Faked			99% Faked		
	Mean $R^2$	% of Sig	Mean b	Mean $R^2$	% of Sig	Mean b	Mean $R^2$	% of Sig	Mean b
Ai	.005	10%	.010	.002	0%	.006	0	0	.003
Cm	.004	0%	.007	.005	0%	.007	.005	0%	.007
Gi	.002	0%	.002	.001	0%	0	0	0%	.002
Ie	.003	0%	.004	.003	0%	.004	.002	0%	.004
Py	.004	5%	.018	.002	0%	.010	.002	0%	.010
Re	.003	0%	.004	.001	0%	.002	.005	0%	.001
Sd	.007	25%	.010	.010	0%	.001	.010	0%	.010
Sp	.001	0%	.001	.002	0%	.005	.003	0%	.006
Sy	.002	0%	.003	.001	0%	.003	.001	0%	.003
Wb	.003	0%	.003	.003	0%	.003	.003	0%	.003
weight	.005	5%	.013	.003	0%	.010	.003	0%	.001

Table 7 showed some limited support for hypothesis 3 that predicted percentage of faked responses in the sample would moderate the predictive validity of the CPI. First, sample size of faked responses has no effect on scales Cm and Sp. The two scales did not predict GPA in the honest condition. The nonsignificant validities showed no improvement as faked responses were mixed into the sample. The lack of predictive validity for the two scales lend further support to Gough & Lanning's (1986) finding that neither Cm nor Sp had any relationship with college GPA.

Second, for scales Re, Ai, Sd and the CPI weighted score that predicted GPA in the honest condition, results showed that faking attenuated predictive validity. Re showed an immediate drop in validity. The correlation between Re and GPA was significant Ninety-five percent of the time with 1% of faking responses in the sample. The decline in validity accelerated when the sample included 10% faked responses with only 45% significant  $R^2$ 's. However, the scale was robust in that even when 50% of the responses in the sample were faked, it still showed significant validity 15% of the time. Predictive validity of scales Ai and the CPI weighted score were even less affected by faking. Even when the sample contained 30% of faked responses, over 70% of the  $R^2$ 's were significant for Ai and the composite score. Validity coefficient was still significant 5% of the time when 70% of the responses were faked.

Finally, scales Ie, Gi, Py, and Wb demonstrated the nonlinear relationship predicted by Hypothesis 3 when looking at the percentage of times significant correlations occurred. Ie, in particular, lends the most support. Ie was not correlated with GPA in the honest condition, nor when 1% of the sample is faking. However, when the response sample included 10% faked responses, the correlation between Ie and GPA was significant 45% of the time. The validity declined at 30% faked response level to 20% significant correlations. Finally, at 50% faked response level, only 10% of  $R^2$ s remained significant. Py, Wb, and Gi showed similar though weaker nonlinear relationship. Sy have the weakest nonlinear relationship in that 5% of Sy's  $R^2$ s were significant at 10% faked response level, but the validities at 30% faked response level showed no significant  $R^2$ .

For those dimensions exhibiting the nonlinear effects of the faked response sample size, it is interesting to note that the average amount of variance explained in the criterion typically did not increase when the substitution of faked responses resulted in significant validities. This suggest that the inclusion of the faked responses increased the variability of the distribution of observed validity coefficients.

How this spurious positive effect works requires further research. It is not clear why certain scales had the positive effects and others did not. For example, both Ie

and Cm showed little change in variance and reliability in the faking condition, however, Ie showed significant improvement in validity with a small percentage of faking responses in the sample while Cm showed no sign of change in validity. In the same vein, Re, Gi, and Sd scales all demonstrated bimodal faking with increases in reliability and variance. But, of the three scales, only Gi showed the nonlinear relationship.

### Discussion

The purpose of the present study was to examine the effect of response distortion on the predictive ability of a personality measure. The literature reviewed in the introduction to this paper has shown that majority of the personality tests can be successfully faked by test takers for different purposes. Response distortion threatens the construct validity of the personality measure. It jeopardizes the ultimate understanding of psychological constructs as well as accurate interpretations of individuals' standings on psychological traits. However, the effect of faking on predictive validity is not clear. Some studies have shown that faking has a negative effect on predictive validity of a personality test (e.g. Dunnette, et al, 1962). Others have arrived at the opposite conclusion that faking improves the ability of a personality test to predict performance (e.g. Kiedt & Dawson, 1961).

The present study tested the theoretical perspectives of Cattell (1986) and Kroger (1974). The two researchers advocated that response distortion is a function of personality and situation. Kroger (1974) proposed that individuals approach social situations by projecting and adopting appropriate social roles. In order to fake successfully, a person must be motivated, has accurate conceptions of the role involved, and has role-taking skills. The situation, on the other hand, must provide relevant social cues. From this perspective, it appears that individuals who can successfully fake an employment test are more effective employees. They are motivated, skillful, and highly aware of the situational cues. More important, they have better understanding of the role requirements of their job. Thus, the first question addressed in this study was whether faking in a socially desirable way improves predictive validity of a personality test.

The second hypothesis examined whether intelligence was the mechanism by which faking improved predictive validity. Intelligence may affect role-taking skills such that more intelligent individuals would produce more appropriate profiles than less intelligent individuals.

The last issued addressed in the study was whether the magnitude of faking responses in a sample affect the predictive ability of the test. Schmitt & Ryan (1992) suggested that faking may cause range restrictions of

response variance which, in turn, will attenuate the predictive ability of the test. The likely moderating effect of sample size of faking responses was examined.

Results of the present study supported previous research conclusions that when instructed, subjects were able to distort their self-descriptions in a socially desirable way. Subjects were able to fake on all nine CPI scales and the social desirability scale. Scale means increased for 6 of the CPI scales and the social desirability scale in the faking condition

Furthermore, although Hypothesis 2 was not testable, the correlations between personality scores and SAT indicates that individuals of high intelligence were not able to produce more socially desirable profiles in the faking condition than individuals of lower intelligence. Snell (1994) offered one explanation for why subjects with higher intelligence were not better at faking on a personality measure than subjects with lower intelligence. She suggested that individuals of high intelligence are accustomed to successes. As a result, they tend to believe that the personality characteristics they already possess are highly appropriate. Therefore, they are not motivated to recognize the differences between their personality characteristics and those required for the role and to change responses accordingly. More research is needed to test this interesting hypothesis.

The key finding of the research is that the effects of response distortion are complex. Faking has both detrimental and positive effects on the psychometric properties of a personality test.

In terms of the detrimental effects, the results of the study demonstrated that faking could restrict scale variance and reduce reliability. The negative effect was found to influence scales Ai, Py, and Sp most. The three scales showed reductions in both scale variance and reliability. Scale Sy was less affected with a reduction only in scale reliability. It appears that faking has the most detrimental effects on scales where subjects distorted their responses uniformly in one direction. One conceivable explanation for the detrimental effect on the variance and reliability is that those scales had low item subtlety or high item face validity. Most subjects could agree on their interpretations of the purposes of the items and subjects with low scores were able to substantially improve their images in the faking condition. Consequently, the distribution of responses was reduced.

Furthermore, faking could invalidate valid predictors when a large number of subjects distorted their responses. Scales Ai, Re, Sd and the CPI composite score all predicted GPA in the honest condition. The correlation between the scales and GPA gradually declined when faked responses are mixed into the sample. However, the detrimental effect was

not as severe as previously assumed. Valid scales were able to retain their predictive power at least part of the time even when more than 50% of the subjects distorted their responses.

More significantly, the present study found that response distortion in a socially desirable manner had positive effects on the psychometric properties of a personality scale. Interestingly, the positive effect appears to be spurious such that it is not related to the scale measuring the trait. Primarily, faking can enhance the variability and reliability of certain scales. For example, scales Gi, Re, and Sd all exhibited increases in both scale variability and reliability in the faking condition. In addition, scales Sy and Wb showed an increase in scale variance. Evidently, the positive effect is most likely to occur when there is disagreement among subjects on how to interpret items so to make positive impressions. Such disagreement leads to either bimodal faking or simply random, nonsystematic attempts at distortion.

Finally, the present study found that response distortion could improve the likelihood that non-valid scales become valid predictors when a relative small amount of faking is involved. Five out of the seven non-valid CPI scales showed improvement in predictive validity. The correlations between the scale scores and GPA were most likely to be significant when about 10% of the responses in the sample are faked.

This finding is important because Dunnette et al. (1962) and Hough et al. (1990) have found that, without specific instructions to distort responses, relatively few applicants faked on a personality measure. Dunnette et al. (1962) suggested that only one out of seven applicants would voluntarily fake their responses in an employment selection setting. As such, the present study showed that the small amount of faking may actually improve predictive validity of some scales.

Interestingly, faking had no effects on scales that had close to zero correlation with GPA. For example, scales Cm and Sp had the lowest nonsignificant correlations with GPA when subjects responded honestly. There was no change in their validity when faked responses were substituted for honest responses. It seems that for personality measures with zero predictive power, faking will not change the existing psychometric properties. The results also showed that, unlike responses to other scales, the mean scores were reduced on these two scales. Subjects appeared to have no clear understanding of how to present positive images on these scales.

The two-component model of social desirability was examined in an exploratory manner in the present study. Contrary to previous research findings (Paulhus, 1984; Paulhus, et al., 1995), subjects in the present study showed no difference in their ability to significantly improve

scores on both the self-deception and impression management items. Although social desirability as a whole moderately predicated college academic performance in the honest condition, neither of the two components were significant. As with other scales, faking did not improve the relationship between the components of social desirability and GPA.

In summary, the findings and conclusions of the present study are unique in that they provide support for the contradicting perspectives of response distortion. Faking was found to have both negative and positive effects on the psychometric properties of a personality scale. In support of the viewpoint that faking has negative effects, intentional distortion was found to reduce scale variance and reliability. The results are in keeping with previous research findings that faking behavior has negative impacts on scale variability and reliability (e.g. Krahe, 1989; Thumin & Barclay, 1993). Furthermore, similar to Dunnette et al.'s (1962) results, the present study found that faking could invalidate scales that possessed predictive validity when most subjects in the sample distorted their responses.

On the other hand, the present study also provided evidences that counter the negative view of faking and are in support of the perspective that faking in a socially desirable way has positive effects. Faking can increase scale variance and reliability when subjects disagree on the interpretation of the items. Moreover, the present study

found that previously non-valid personality scales are more likely to predict performance when 10% to 30% of the responses are faked in a socially desirable way. However, findings and conclusions of the present study do not support Cattell's theory and Kroger's social-psychological perspective. Response distortion in a socially desirable manner does not uniformly improve predictive validity for all personality measures. The positive effect is contingent on the magnitude of the faked responses in the sample. It also appears to be spurious and is independent of scale characteristics.

Overall, the evidence here supports Hough et al.'s (1990) conclusion that faking on a personality measure in a socially desirable way is not a serious problem. As discussed before, both Dunnette et al.'s (1962) and Hough et al.'s (1992) studies showed that without specific instructions to distort responses, few applicants do so. The present study showed that when the sample included 10% - 30% faked responses, the valid scales were still able to maintain their validity most of the time. In addition, previously invalid scales could become valid predictor with a relatively small number of faked responses in the sample.

The results of the present study has important implications for future research as well as for organizations. It is important to identify the characteristics of the small number of individuals who are

inclined to fake on personality measures in selection situations. Furthermore, do applicants who fake in the selection process have the same characteristics of the individuals who fake in the test validation study? If they do, then the personality measure is likely to be a valid predictor. If not, the measure can be less accurate in predicating performance.

Organizations should be aware that applicants are capable of distort their responses on personality measures. However, organizations should not be overly concerned with their decision to use personality measures for employment selection purpose. Because majority of the applicants tend not to distort their responses, a small amount of faking may actually improve the ability of the test to predict performance.

In general, the present study has a number of limitations which necessitates the qualifications of any conclusions and generalizations: a number of the CPI scales have low reliabilities; subjects were mostly freshmen or sophomores. Another concern, and limitation, has to do with the stability and suitability of the criterion. First, because a large number of the subjects were freshmen or sophomore, only their first semester or first year GPAs were available at the time of data collection. First semester and first year GPAs are not stable and are not representative of college academic performance. In addition, as literature suggests,

personality measures are best at predicting non-technical and inter-personal aspects of performance (Day & Silverman, 1990; Hollenbeck, et al., 1988; Tett, et al., 1991) which is not reflected in GPA.

The present research should be viewed as the first step in the exploration of the effects of response distortions on a personality test. A number of issues need further exploration. How does the spurious positive effect of faking work? What causes certain scales to become more valid while others lose validity when faked responses are included? Further research should pursue the issue of faking with a more reliable personality measure, performance tasks that involve more interpersonal aspects, and current job applicants. In short, there is great potential value in exploring response distortion in a socially desirable way with further research efforts.

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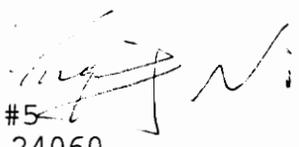
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