Factors related to faking ability: A structural equation model application

Lyndsay B. Wrensen

University of Tennessee at Chattanooga
Department of Psychology / 2803
615 McCallie Ave.
Chattanooga, TN 37403
Tel.: (404) 242-5053
E-Mail: lbwren@hotmail.com

Michael D. Biderman

University of Tennessee at Chattanooga
Department of Psychology / 2803
615 McCallie Ave.
Chattanooga, TN 37403
Tel.: (423) 425-4268
Fax: (423) 267-2289
E-Mail: Michael-Biderman@utc.edu

Authors’ Note: Correspondence regarding this article should be sent to Michael Biderman, Department of Psychology / 2803, U.T. Chattanooga, 615 McCallie Ave., Chattanooga, TN 37403. E-mail: Michael-Biderman@utc.edu

Poster
TITLE
Factors related to faking ability: A structural equation model application

ABSTRACT
Ability to fake the Big 5 personality dimensions was defined using a structural equation model. Faking ability was positively related to cognitive ability, emotional intelligence, and integrity and was negatively related to social desirability. It was not related to any of the Big 5 dimensions after controlling for cognitive ability.

PRESS PARAGRAPH
Personality tests are becoming more prevalent in employee selection. Unfortunately there is considerable evidence that such tests can be faked. Assuming that persons scoring highest on such tests are most likely to be chosen for employment, the issue of what kinds of persons are selected must be addressed. This study investigated the relationship of ability to fake personality tests to several personal characteristics. We found that persons who faked best were those with high cognitive ability, high emotional intelligence, and high integrity who gave fewest socially desirable responses.
Use of noncognitive measures such as personality tests for selection in organizations has increased in recent years. Many have been found to be valid predictors of job performance (Ones, Viswesveran, & Schmidt, 1993; Ones & Viswesvaran, 1998); they are easy to administer and fairly inexpensive (Barrick & Mount, 1991). Most importantly, they have been found to have less adverse impact than cognitive ability tests (e.g., Schmidt & Hunter, 1998). However, concern has risen regarding the possibility of applicant faking of noncognitive tests (e.g., Barrick & Mount, 1996; Dunnet, Koun, & Barber, 1981; Dunnette, McCarntney, Carlson, & Kirchner, 1962; Furnham & Craig, 1987; Furnham & Drakeley, 2000). Although there remains some disagreement regarding the magnitude of applicant faking in employment settings, there is evidence that faking can have a significant effect on who is selected for a position (Weiner & Gibson, 2000). The possibility of applicant faking may have serious implications for employers, who might hire individuals due to their ability to fake the tests rather than as a result of the characteristics presumably measured by the tests.

Related to the above consideration is the potential effect of faking on test validity. Some studies have found that faking affects the validity of personality tests (e.g. Rosse, Stecher, Miller, & Levin, 1998; Schmit & Ryan, 1992). Although other studies have found that the validity of these measures is not negatively influenced by faking (McCrae & Costa, 1983; Ones, Viswesvaran, & Reiss, 1996) faking will remain of concern if there are individual differences in faking among the population and that faking is not related to important job attributes.

*Types of faking*

Following Snell and Sydell (1999), we consider two separate attributes of faking...
behavior. First, an applicant must have the motivation or tendency or propensity to fake. Second, the applicant must possess the ability to fake. Individual differences in the motivation to fake may exist for several reasons. For example, certain individuals may feel that faking is morally wrong, while others may be more inclined to believe faking is acceptable (McFarland & Ryan, 2000). Motivation to fake may be related to demographics, individual traits, and perceptual factors (Snell & Sydell, 1999). On the other hand, the ability to fake may relate to a different collection of personal and experiential variables than motivation. For example, ability may be related to experience and knowledge of job characteristics or knowledge of constructs (Frie, 1997) or dispositional or internal characteristics that are different from those that affect motivation to fake (Snell & Sydell, 1999; Biderman & Nguyen, 2004).

Experimental Designs

The stream of faking research that has focused on ability to fake has used designs comparing condition in which participants were instructed to respond honestly with conditions in which participants were instructed to respond in a faking-good manner (e.g., Biderman & Nguyen, 2004; McFarland & Ryan 2000; Martin, Bowen, & Hunt, 2002; Mersman and Shultz, 1998; Zickar & Robie, 1999;).

It might be argued that an instructed faking paradigm such as that described above is too artificial and removed from actual applicant situations. We agree that designs with better external validity would be more appropriate when the motivation or tendency to fake is studied. However, we feel that the instructed faking design is appropriate when the interest of the research is only on the ability to fake.

This study used an instructed faking design to investigate the personal
characteristics related to the ability to fake as opposed to motivation to fake. Although
previous studies have examined the relationships of personal characteristics to amount of
faking, few have investigated their relationships to faking ability only. Mersman and
Shultz (1998) used differences between faked and honest Big 5 dimension scores as five
separate faking ability measures. They found that cognitive ability was positively related
to ability to fake extroversion, conscientiousness, and stability. They also found negative
relationships between social desirability and two of the faking ability dimension scores.
McFarland and Ryan’s (2000) study provided “initial evidence that even when people
fake responses, there are individual differences in the extent to which people fake.” Their
study used difference scores to define faking ability to fake seven difference
measures, including the Big 5.

Biderman and Nguyen (2004) addressed the issue of faking ability using
structural equation modeling (SEM) techniques. Rather than considering ability to fake
separate dimensions, they defined a single overall faking ability as a latent variable
indicated by measures of the Big 5 personality dimensions and a situational judgment
test. They found that cognitive ability was related to faking ability, but after controlling
for cognitive ability, none of the Big Five Personality Dimensions was related to the
ability to fake. Following up on the trend begun by these two studies, the paper presented
here applied the structural equation model used by Biderman and Nguyen (2004) to
examine other personality characteristics that might correlate with faking ability.

*Individual Differences Related to Faking*

Biderman and Nguyen (2004) found that cognitive ability was related to their
general faking ability latent variable. In order to replicate their results, we included a
measure of cognitive ability in the present study.

Snell & Sydell (1999) noted that those with higher emotional intelligence might be able choose more appropriate responses because they may possess better perceptiveness into the elusive details of a given behavior. This suggests that individuals high on emotional intelligence would be better able to successfully fake a noncognitive test. Therefore, we included a measure of emotional intelligence and expected to find a positive relationship between it and faking ability.

Some research has suggested that self-monitoring may be linked to the ability to fake noncognitive tests. Snyder (1974a) found that high self-monitors have the ability to regulate the impressions that they make on others. However, McFarland and Ryan (2000) found that high self-monitors were not better able to fake than low self-monitors. A self-monitoring scale was included in the present study, although due to the discrepancies in prior research we had no specific expectation concerning the direction of its relationship to faking ability.

Previous research has suggested that integrity may be related to the ability to fake. Some studies have found that individuals who score high on integrity tests are more apt to fake (e.g. Cunningham et al., 1994; Lilienfeld, Andrews, Stone-Romero, & Stone, 1994). However, in a study directed specifically at faking ability McFarland and Ryan (2000) found that those who were low in integrity were better able to fake. Given the paucity of research relating integrity to faking ability, we included a common integrity test but had no specific expectations concerning the relationship of integrity to faking ability.

Much research on faking has utilized social desirability scales, on the assumption
that persons indicating they engage in a large number of socially desirable responses are responding to social or normative pressures rather than giving accurate descriptions of behavior (Ellingson, Smith, & Sackett, 2001). Because, as reported by Ones, Visesvaran, and Reiss (1996), “most industrial-organizational psychologists still treat scores on social desirability scales as a response bias and as evidence of faking.” a measure of social desirability was included here although we had no specific expectations concerning its relationship to faking ability.

McFarland & Ryan (2000) used difference scores to measure ability to fake seven separate dimensions and found several significant relationships between Big 5 dimension scores and differences scores on the other Big 5 dimension, e.g., a relationship of neuroticism to difference scores for extroversion, agreeableness, and conscientiousness. Biderman and Nyugen (2004) found that faking ability defined as a latent variable in a structural equation model was not related to any of the Big 5 dimension after controlling for cognitive ability. Although it would seem logical to expect a relationship between certain personality dimensions and the motivation or tendency to fake, what one should expect for the ability to fake is less clear. For that reason, the relationship of faking ability to the Big 5 dimension was examined here without any specific expectations concerning strength or direction of relationship.

Method

Participants

Two hundred students from a Southeastern university participated in this study. Some received extra credit for participation in the study.

Materials
The materials included in this study consisted of a packet containing the following tests and questionnaires.

**Cognitive Ability.** The Wonderlic Personnel Test (The Wonderlic Personnel Test, 2002) was used to measure participants’ cognitive ability. The manual reports reliabilities larger than .90 (Geisinger, 2000).

**Emotional Intelligence.** The Emotional Intelligence Test Abridged was used to measure emotional intelligence. This 17-item test is a shortened version of Queendom’s Emotional Intelligence Test has been shown to have estimates of reliability ranging from .79 to .88. (Jerabek, 1998).

**Self-Monitoring.** Snyder’s (1974a,b) Self-Monitoring Scale was used to measure self-monitoring. The scale concern personal reactions to a number of different situations used to assess self-monitoring. Reliabilities of .70 have been reported (Snyder & Gangestad, 1986).

**Social Desirability.** The Social Desirability Scale-17 (SDS-17) was embedded into the self-monitoring scale. Reliabilities of .75 or larger were reported by (Stöber, 2001).

**Integrity.** The Stanton Survey was included in the questionnaire battery given to participants. Reliabilities greater than .90 have been reported (Harris and Gentry, 1992).

**Big 5 Personality Dimensions.** The Big 5 personality inventory was a 50-item scale provided by Goldberg (2004). Participants were to verify the accuracy of each item as it described his or herself with a number ranging from 1 (very inaccurate) to 5 (very accurate). The scales have shown to have estimates of reliability ranging from .74 to .90. (Goldberg, 1999; in press). Respondents’ positions on the Big 5 dimension were
assessed as latent variables using the structural equation model of Biderman and Nguyen (2004)

Faking Ability. Faking ability was assessed as a latent variable using the structural equation model of Biderman and Nguyen (2004).

Procedure

After participants signed a consent form, the researcher introduced herself and passed out the questionnaire packet. Participants were then given the Big 5 questionnaire, with half of the participants receiving instructions to respond honestly and half receiving faking instructions. After finishing the personality measure, participants filled out the Wonderlic Personnel Test. Next, the Snyder Self-Monitoring scale was administered with the SDS-17 Social Desirability scale embedded in it. The participants then completed the Emotional Intelligence Test, followed by the Stanton Survey. After the participants complete this test, they filled out the personality measure again, preceded by instructions to respond honestly or to fake, depending on which condition they received first.

Honest instructions. Under the honest condition, the directions were as follows:

Please answer the following questions on this test as honestly as possible. Your answers will remain completely confidential and anonymous. I have no way of connecting the test back to you. Your answers will be used for research purposes only and will not be used to evaluate you in any way. The nature of this project requires that you answer the following questions as honestly as possible, so please provide as accurate answers as you can.

Faking instructions. Under the fake condition, the directions were as follows:
Please answer the following questions in such as way as to make you look as good as an applicant as possible for a job you would want. I am not interested in what your real answers for each question would be. Instead, for each item, select the response that you feel will give you the highest score and make you look like the best job applicant.

Results

Big 5 scale scores were created by averaging the responses to each of the ten items for each dimension: extroversion, agreeableness, conscientiousness, stability, and openness after the negatively worded items were reverse coded. Means, standard deviations, correlations, and reliability estimates all of the scales are presented in Table 1. For all five scales, the mean scores in the faking condition were larger than those in the honest condition indicating that participants were able to fake on all the Big 5 dimensions. Reliability estimates ranged from .74 to .87.

Structural Equation Model

Since it is generally recognized that factors in structural equation models should have at least three indicators, three testlets for each the Big Five dimensions were created (Bandalos, 2002). An exploratory factor analysis was performed for each set of ten items for the five dimensions. The item with the smallest commonality was dropped, and each of the remaining nine items for each dimension was arbitrarily assigned to one of three testlets. This resulted in the creation of a total of 30 testlets with three testlets from each measure under the honest and under the fake conditions. These data are available from the second author.

The model reported by Biderman and Nguyen (2004) was applied to the testlet
data using Amos, Version 5 (Arbuckle & Wothke, 1999). The model consists of six latent variables—five representing the Big Five dimensions and one representing overall faking ability. Each of the Big 5 latent variables was indicated by three honest condition testlets and three faking condition testlets for that dimension. The single latent variable representing generalized faking ability as presented in Biderman and Nyugen’s (2004) was indicated by the faking condition testlets for all dimensions. Following Biderman and Nguyen (2004), residuals of the faking condition testlets for each dimension were allowed to covary among themselves. Furthermore, residuals of corresponding honest condition and faking condition testlets were allowed to covary. This measurement model is presented in Figure 1. Goodness of fit of the model was satisfactory. The GFI of .838 was slightly less than desirable, but the CFI of .938 and the RMSEA of .058 were close to the recommended values (Fan, Thompson, & Wang, 1999; Kelloway, 1998, p. 27-28).

Relationships of the various measures to faking ability were assessed by adding a structural model to the model of Figure 1 in which the faking ability latent variable was regressed onto the other measures. The structural paths that were added included the regression of faking ability onto each of the Big 5 latent variables, onto the other observed variables, and onto order of presentation. In a preliminary analysis, none of the Big 5 dimensions was significant, so the model was restated, dropping the regressions onto the Big 5 dimensions. The resulting structural model without the links to the Big 5 dimensions is presented in Figure 2. Goodness of fit of this model is acceptable, with GFI, CFI and RMSEA equal to .822, .928, and .054 respectively.

Strength of the relationship of a measure to faking ability was assessed by examining individual regression coefficients. Since the relationship of faking ability to
each variable was assessed controlling for all the other variables these coefficients assess the unique relationship of faking ability to each of the variables.

Faking ability was uniquely related to cognitive ability (p = .015), emotional intelligence (p=.048), integrity (p=.029), and social desirability (p=.003). The unique relationship with self-monitoring was not significant (p=.851). Specifically, respondents who scored higher on the measure of cognitive ability and on the measure of emotional intelligence were better able to fake. Those whose integrity scores indicated greater integrity had higher faking ability scores. Finally those who gave fewer socially desirable responses had higher faking ability scores.

Discussion

The current study replicated and extended the application of the model presented by Biderman and Nguyen (2004). Specifically, our findings are consistent with the hypothesis of a single general faking ability affecting all Big 5 dimensions, and we replicated the finding of Biderman and Nguyen that faking ability so defined is positively related to cognitive ability. This study extended that of Biderman and Nguyen, however, in showing that the faking ability is also related to other personal characteristics.

Faking in this experimental situation required the respondents to understand the wording of each item and to be able to figure out the change in response to that item that would put themselves in a positive light. For these reasons, it is not surprising that those with higher cognitive ability exhibited greater change in the appropriate direction.

It was expected that those with higher emotional intelligence would be better able to fake. Supporting that expectation, this study found a positive relationship between the particular dimensions of emotional intelligence measured by the test we used and faking
ability. This specific test measured “ability to recognize and label one’s feelings and needs, and reconcile those needs with both one’s long-term goals and the needs of other people” (Jerabek, 1998). We note that other authors have also suggested that emotional intelligence be treated as an ability, e.g., Mayer and Salovey (1997).

We found a positive relationship between integrity and faking ability - participants who answered questions related to matters such as stealing in the workplace, breaking company policy, and making dishonest statements in a manner indicating high integrity demonstrated greater faking ability. As noted above, some previous research has indicated that individuals who score high on integrity tests are more apt to fake (e.g. Cunningham et al., 1994; Lilienfeld, Andrews, Stone-Romero, & Stone, 1994). Others have found that those who were low in integrity showed greater faking ability (McFarland & Ryan, 2000). At the present time, we have no thorough explanation for the positive relationship found here.

Social-desirability was negatively related to faking ability as defined in this study. Those with the greatest number of social desirable responses obtained the lowest faking ability scores. This finding is opposite the conventional wisdom underlying the use of social desirability scales in faking research although it replicates the finding of Mersman and Shultz (1998). In much of the prior research using social desirability, it has been assumed that high scores were associated with greater tendency to fake. However, some research has suggested that “intentional distortion of self-descriptions in a socially desirable way may not be the problem it has assumed to be” (Hough et al, 1990, pg. 592). Dunnette, McCartney, Carlson, and Kirchner (1962) also found that few applicants distort their self-descriptions in a socially desirable way. Our results and those of Mersman and
Shultz (1998) indicate that those scoring high on such tests are less able to modify their scores. This finding suggests that social desirability may be an ambiguous indicator of faking – perhaps positively indicating faking propensity but negatively indicating faking ability.

The single personality variable that was not related to the ability to fake was self-monitoring. Although previous research (e.g., Snyder, 1974a) seems to indicate that high self-monitors are better at controlling the impressions that they make on others, we did not find a relationship between self-monitoring and faking. Related to this finding, McFarland and Ryan (2000) did not find a relationship between any of their faking difference scores and self-monitoring.

Consistent with Biderman and Nyugen’s (2004) study, no relationships were found to exist between the Big Five personality dimensions and the ability to fake. This finding makes sense considering that the Big Five personality dimensions are personality traits, rather than “abilities”, like cognitive ability and emotional intelligence. Although we might expect a relationship between a Big 5 dimension, such as neuroticism, and tendency or motivation to fake, such relationships appear not to exist with respect to ability to fake.

*Limitations*

This study investigated faking ability, rather than faking propensity. Given that a distinction between the two has been argued for here, a limitation of the present study is its failure to consider both. Clearly studies directed toward defining and measuring both faking propensity and ability are needed for a clearer understanding of faking of noncognitive tests.
A second concern is the use of an instructed faking design. Some have criticized the use of such designs as lacking in external validity (Eysenck, Eysenck, & Shaw, 1974). We have no disagreement with the argument that this design lacks external validity. However, we feel that this design is very appropriate when the focus of the research is only on the ability to fake because it reduces any confound with individual differences in tendency or motivation to fake. Having said that, however, we realize the results here must be integrated with research using actual applicant samples.

Faking ability was defined using a comparison of responses to a set of items from the Goldberg collection of Big 5 markers. We found evidence for ceiling effects in the faking condition on some of the scales using these items. Future research should explore alternative sets of items or alternative response scales to minimize such effects.

Conclusion

This study found that those better able to fake noncognitive measures are those individuals who score high on cognitive ability and emotional intelligence tests, high on integrity tests, and those who respond in a socially desirable manner. Understanding the nature of these relationships may give us better insight into the type of person scoring highest on those tests when faking is of concern.
References


Frei, R. L. (1997). *Fake this test! Do you have the ability to raise your score on a service orientation inventory?* University of Akron (Unpublished doctoral dissertation).


(http://pubpages.unh.edu/~ckb/SELFMON2.html).


Table 1. Means, standard deviations, correlations, and reliabilities of the measures.

<table>
<thead>
<tr>
<th>Variables</th>
<th>H-&gt;F Order</th>
<th>F-&gt;H Order</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Std.</td>
</tr>
<tr>
<td>1. H: Ext</td>
<td>3.36</td>
<td>.77</td>
</tr>
<tr>
<td>2. H: Agree</td>
<td>4.07</td>
<td>.62</td>
</tr>
<tr>
<td>3. H: Consc</td>
<td>3.68</td>
<td>.66</td>
</tr>
<tr>
<td>4. H: Stabil</td>
<td>3.24</td>
<td>.79</td>
</tr>
<tr>
<td>5. H: Open</td>
<td>3.77</td>
<td>.58</td>
</tr>
<tr>
<td>6. F: Ext</td>
<td>3.75</td>
<td>.73</td>
</tr>
<tr>
<td>7. F: Agree</td>
<td>4.32</td>
<td>.59</td>
</tr>
<tr>
<td>8. F: Consc</td>
<td>4.40</td>
<td>.71</td>
</tr>
<tr>
<td>9. F: Stabil</td>
<td>3.99</td>
<td>.85</td>
</tr>
<tr>
<td>10. F: Open</td>
<td>4.24</td>
<td>.58</td>
</tr>
<tr>
<td>11. Cog Abil</td>
<td>23.89</td>
<td>6.34</td>
</tr>
<tr>
<td>13. Self-Monitor</td>
<td>12.48</td>
<td>4.14</td>
</tr>
<tr>
<td>15. Integrity</td>
<td>33.71</td>
<td>11.53</td>
</tr>
</tbody>
</table>

Note: Where available, reliability estimates are shown underlined along the diagonal. Because they were not scores as simple summated scales, reliability estimates were not available for the Wonderlic, Emotional Intelligence, Self-Monitoring, and Integrity scales.
Figure 1. Measurement model based on Biderman and Nguyen (2004). Correlations and standardized loadings are presented.

Measurement Model
Chi-square = 564.595
df = 350
p = .000
CFI = .938
GFI = .838
RMSEA = .058
Figure 2. Faking Model with Tests of Structural Hypothesis. In this figure, triplets of regression paths and correlations have been averaged to simplify the presentation of the model. Averaged correlations and standardized loadings are presented. CA=Cognitive ability. EI=Emotional Intelligence. INT=Integrity. SD=Social Desirability. SM=Self Monitoring. For this model, $X^2(494)=739.363$, GFI=.822, CFI=.928, and RMSEA = .054. (* represents $p < .05$).