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ABSTRACT

Recently, there has been a resurgence of interest in the use of response latencies in psychological assessment. Some research has suggested that response times associated with answering personality and integrity questionnaires may be useful in differentiating among honest responders and individuals who are lying. Using an experimental paradigm with 100 unemployed individuals seeking work, the ability of personnel test item response latencies to distinguish between subjects instructed to lie and those instructed to respond honestly was examined. Based on a general model of lying derived from schema theory, it was predicted that applicants who were lying on a personnel test would take relatively longer to admit to negative or delinquent behaviors than job candidates who were responding honestly. The results demonstrated support for the general model of lying, and discriminant function analysis indicated that response latencies to items on standard personnel tests could significantly differentiate between those who were lying and those who were honest. Theoretical and applied implications are discussed. (Author/BF)

Response Latency Detection of Lying on Personnel Tests

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ABSTRACT

Using an experimental paradigm with 100 unemployed individuals seeking work, the ability of personnel test item response latencies to distinguish between subjects instructed to lie and those instructed to respond honestly was examined. Based on a general model of lying derived from schema theory, it was predicted that liars should take relatively longer to admit to delinquent characteristics concerning themselves. Results demonstrated support for the general model of lying, and discriminant function analysis indicated that response latencies to items on standard personnel tests could significantly differentiate between liars and honest test respondents. Theoretical and applied implications are discussed.

Response Latency Detection of Lying on Personnel Tests

Recently, there has been a resurgence of interest in the use of response latencies in psychological assessment. In particular, research over the last four years (e.g., George, 1989; Holden & Kroner, 1992; Holden, Kroner, Fekken, & Popham, 1992; Hsu, Santelli, & Hsu, 1989; McDaniel & Timm, 1990) has suggested that response times associated with answering personality and integrity questionnaires may be useful in differentiating among honest responders and individuals who are lying. A nonintrusive index of honest responding that is based on test item response times and that could be integrated with standard procedures for testing personality characteristics and potential delinquent behaviors in job applicants would be a significant advancement for job candidate assessment. Potentially, this index could address employer concerns about the accuracy of applicants' self-report of sensitive topics (e.g., theft, dishonesty, drug use, etc.) in a manner which is theoretically based, empirically valid, nonintrusive, and publicly acceptable.

Holden et al. (1992) have put forth a model of personality test item response dissimulation. Based on schema theory, the model predicts that test item response latencies that have been adjusted to remove extraneous variance (e.g., reading speed, number of words in the item) should be faster for schema-congruent test answers than for noncongruent responses. Thus, because admitting to delinquent behavior is incongruent with the liar's schema to appear favorably, individuals who are presenting themselves positively should take relatively longer to endorse undesirable or deviant test item content than desirable or favorable test item content. Such a within-individual effect also produces a between-individuals effect (Holden & Kroner, 1992; Holden et al., 1992) whereby liars who are faking good may be differentiated from honest respondents because they will take relatively longer to endorse negative characteristics about themselves. Respondents who are lying in order to present themselves favorably will endorse some items reflecting delinquency because too many "good" responses would readily expose the liar Holden et al. were able to demonstrate support for their model that generalized across various test instruments and across different subject populations (i.e., students and maximum security prison inmates). They further suggested that their findings represented a general model that should be applicable to other assessment contexts (e.g., employment selection) and to other popula (e.g., job applicants).

The purpose of the present research was to evaluate the generalizability of this model to the problem of faking on personnel screening tests. Following from the model, it was predicted that latencies for responses to personnel test items could differentiate between job applicants who are presenting themselves honestly and those who are lying. More specifically, the following prediction was tested: **Applicants who are lying on a personnel test will take relatively longer to admit to negative or delinquent behaviors than job candidates who are responding honestly.**

METHOD

A 203-item true/false personnel questionnaire was administered. Included within this inventory were 77 filler items and 126 items empirically related to delinquent behaviors. These delinquency items were 69 items of the Hogan Reliability Scale (Hogan & Hogan, 1989), 22 items focusing on drug use and criminal activities from the Inwald Selection Inventory (Inwald, 1988), the 25-item Michigan Alcoholism Screening Test (MAST; Selzer, 1971), and the 20-item Drug Abuse Screening Test (DAST; Skinner, 1983).

Participants were 100 unemployed adults (58 men, 42 women) who were actively seeking employment through Employment and Immigration Canada. These subjects were volunteers who were paid $15 for their participation in this research. Mean age of the sample was 28.35 years.

Subjects within each sex were randomly assigned to either a Standard or Fake group. Using a Zenith microcomputer, all subjects were administered the personnel inventory. Respondents were required to use only two keys on the keyboard; T if they felt that an item was true, or F if they considered an item to be false. Subjects in the fake group were presented with the following job scenario and instructions:

> **Imagine that you are applying for a job. The job is a sensitive government position involving the handling of money and confidential material. As part of the application procedure, please complete the following personnel security survey. You wish, however, to respond so as to MAXIMIZE YOUR CHANCES OF BEING HIRED. Therefore, do not necessarily answer the following statements truthfully, but answer so that you WILL BE HIRED. FAKE this test so you will get the job. Although you may feel you would never represent yourself dishonestly, please try to do so for this study. However, BEWARE that the survey has certain features (WHICH YOU WANT TO AVOID) designed to detect "faking". Do your best to FAKE out the survey and get the job. All your responses are strictly CONFIDENTIAL. Please respond to all items even if some seem not applicable.**

Individuals in the Standard condition were presented with the same job scenario but were asked to answer as honestly as possible. For both groups, instructions were repeated after every 80th item. Subjects were not informed that their response latencies for each item were being automatically recorded by the microcomputer.

Following Holden et al.'s (1991, 1992) procedure, item response latencies were adjusted to remove confounds associated with main effects attributable to persons and stimuli, resulting in differential response latencies that reflected the interaction of the respondent with the test item content. First, raw item latencies were trimmed to reduce the influence of statistical outliers. Latencies of less than 0.5 seconds or greater than 40 seconds were assigned values of 0.5 seconds or 40 seconds, respectively. Second,

response times were standardized across items within each subject to correct for confounding individual differences such as gender and reading speed. Third, within each item, response times were standardized using the means and standard deviations of the standard instruction group. This standardization adjusts for confounding test item characteristics such as item length, vocabulary level, and order of presentation. Overall, this double standardization procedure yields differential item response latencies calibrated both with respect to the respondent and with respect to the test item. Fourth, to ensure that no statistical outliers still existed, response time standard scores less than -3.00 or greater than 3.00 were set to -3.00 or 3.00, respectively. Because endorsement or rejection of a psychological stimulus represents a critical difference (Holden et al., 1991; Kuiper, 1981) and because distinguishing between true and false responding is important (Tetrick, 1989), mean item differential response latencies were calculated separately for (a) true responses endorsing delinquent behavior, (b) false responses endorsing delinquent behavior, (c) true responses rejecting delinquent behavior, and (d) false responses rejecting delinquent behavior. Delinquent responses were based on the scoring key for items from each inventory. For each subject, these four mean response latencies then represented the units of analysis.

RESULTS

As a manipulation check, the various regular scales on the inventories were scored (Table 1) and compared between groups. Significant group differences (e.g., t (98) = 4.88 $p < .001$, for total scores) indicated that the induction of faking had been successful.

Table 2 reports the mean differential response latencies for the two groups as a function of endorsing versus rejecting an item and true versus false responding. Significance tests indicated that fakers were significantly slower than nonfakers to provide a true response indicating delinquent behavior (mean differential latencies of .320 and .155, respectively), t (98) = -2.18, $p < .05$. Conversely, fakers were significantly faster than nonfakers to produce a false response indicating nondelinquency (mean differential latencies of -.055 and -.011, respectively), t (98) = 2.00, $p < .05$. Individuals in the faking and standard conditions did not differ significantly in providing either true nondelinquent or false delinquent responses.

Using discriminant function analysis, the four response latency measures could significantly differentiate between individuals instructed to lie and those instructed to answer honestly, χ^2 (4, N = 97) = 9.52, $p < .05$. Assuming equal prior probabilities (i.e., the correct classification rate associated with chance to be 50%), the response latency measures produced a classification hit rate of 64% (Table 3).

DISCUSSION

Data indicate that differential response latencies can discriminate significantly between unemployed persons instructed to lie and those instructed to answer honestly on a personnel test. In particular, true responses indicating delinquent behavior took relatively longer for those subjects in the lying condition than for those respondents who

were asked to respond honestly. This is in accord with the model of test item response dissimulation proposed by Holden et al. (1992).

The model, however, predicts that the effect should also emerge for false responses indicative of delinquency. This was not found. Consideration of the unbalanced scoring key for the test items used and examination of Table 2 may offer an explanation. Only 21 of the 126 scored items are false-keyed. Therefore, on average, false responses indicating delinquency will be much more infrequent than true responses indicating delinquency. Empirically, this was indeed the case. Mean differential response latencies for false answers representative of delinquency were based, on average, on 4 and 7 responses for individuals in the fake and standard groups, respectively. In fact, three individuals failed to provide any false, keyed answers and 42 subjects provided fewer than five such responses. Thus, mean response times for false delinquent responses may be based on too few exemplars to provide a reliable result. A similar finding has been reported by Samuels (1992) and may be a general characteristic for personnel tests where true-keyed items predominate on scales of delinquency. Future research should direct itself toward examining whether the present negative results for latencies of false responses indicating delinquency are attributable to reliability problems or to a different process being applicable to responding false.

CONCLUSIONS

1. Response latencies can significantly distinguish between unemployed persons instructed to lie and those asked to respond honestly on a personnel test.

2. That liars take relatively longer to give responses indicating delinquency supports the Holden et al. (1992) model of test item response dissimulation.

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Table 1
Descriptive Scale Score Statistics for Groups

	Group					
	Fake (N = 50)			Standard (N = 50)		
Scale	M	SD	Alpha	M	SD	Alpha
Likes Crowds	3.48	1.54	.75	2.94	1.81	.79
Unhappy Childhood **	1.94	1.74	.69	3.58	1.93	.76
Obnoxiousness **	1.12	1.15	.38	2.74	1.76	.53
School Trouble *	0.54	1.13	.85	1.18	1.51	.85
Delinquency **	0.90	1.37	.72	2.36	1.99	.78
Legal System Contacts *	0.96	1.59	.82	1.84	2.04	.84
Employment Trouble **	1.36	1.72	.68	4.12	2.37	.63
Illegal Use of Drugs **	0.88	2.21	.93	2.70	3.56	.94
Alcohol Use **	2.88	2.82	.84	5.06	3.04	.80
Exhibitionism	3.08	1.59	.59	3.54	1.84	.76
Depression **	0.70	1.34	.74	3.26	2.40	.80
MAST **	2.26	3.65	.90	5.52	5.18	.90
DAST	1.30	3.41	.94	2.68	4.03	.91
Total **	21.40	17.91	.96	41.52	23.00	.96

* $p < .05$ for test of mean differences.

** $p < .01$ for test of mean differences.

NOTE: Unit weight scoring was used for the MAST.

Table 2

Mean Differential Response Latencies as a Function of Faking Condition, Endorsement of Delinquency, and True vs. False Responding

	Group	
Response	Fake (N = 50)	Standard (N = 50)
True Delinquent *	.320 (17)	.154 (34)
True Nondelinquent	.028 (18)	-.061 (15)
False Delinquent	.061 (04)	.121 (07)
False Nondelinquent *	-.055 (87)	-.010 (70)

* $p < .05$

NOTE: Because latencies have been standardized, negative values are possible. Further, because items are not balanced for direction of keying and because different individuals provide different numbers of delinquent responses and true responses, means in the table do not center around zero. Average number of items used for calculating the mean differential response latency in each condition is parenthesized.

Table 3
Response Latencies' Discriminant Function Classification Results

	Predicted Group	
Actual Group	Honest	Fake
Honest (N = 49)	32	17
Fake (N = 48)	18	30

Hit Rate = 64%

NOTE: Analysis is based on 97 subjects because three subjects did not produce any false, keyed responses.