

THE PREDICTIVE VALIDITY OF FACE-VALID
AND SUBTLE MMPI PD SCALE ITEMS
UNDER FAKING CONDITIONS

By

DAVID L. WORTHINGTON

Bachelor of Arts

Oklahoma State University

Stillwater, Oklahoma

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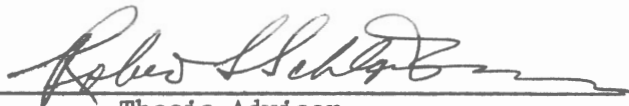
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Dean of Graduate College

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CHAPTER I

INTRODUCTION

Regarding the attempts to construct valid and effective psychological tests, controversy has existed for many years between proponents of two differing test construction strategies. Proponents of the empirical approach emphasize the importance of the predictive utility of a given measure over and above that of internal homogeneity and the interpretability of content into some existing theoretical framework (Gough, 1968). The single most important consideration is the empirical discrimination of the test items as the responses of subjects are compared to those of criterion groups. Also, scoring does not assume that a valid self rating has been given (Meehl, 1945). Such popular tests as the Minnesota Multiphasic Personality Inventory (MMPI) and the California Psychological Inventory (CPI) were developed by way of the empirical strategy.

On the other hand, what has been termed the intuitive-internal approach generally begins with a careful conceptual analysis of a personality construct (based on some existing theory). The item selection procedure emphasizes intrascale, inter-item homogeneity and suppression of response style biases. Here, the empirical approach is criticized for heterogeneity within a given scale, item overlap, and a general lack of theoretical interpretability (Jackson, 1971). However, the theoretical elegance of the intuitive-internal approach has often taken

precedence over concern for empirical correlates (Gynther & Gynther, 1976).

Following from this argument over general test construction approach is another controversy: that of the relative merit of subtle versus obvious (face-valid) test items. Inherent in the empirically derived inventories are items in which the trait or type of pathology being measured cannot be readily discerned by logically or intuitively examining the item. These test questions are a product of the very nature of the empirical construction approach. Several investigators have concluded that these subtle items are of little or no value and illustrate a major source of error despite their empirical derivation. Duff (1965) found an inverse relationship between degree of item subtlety and item discriminating power. Others have concluded that only items possessing very strong face validity have held up in cross-validation studies (Goldberg & Slovic, 1967), and even that subtle items are more truly indicators of healthy adjustment and are thus inappropriately scored for pathology (Wales & Seeman, 1969). On the other hand, subtle items, by the very nature of their subtlety, have been considered by some to illustrate a major advantage of the empirical approach (Meehl, 1945). Berg (1955) states that face-valid content is wholly unimportant as a source of variance in personality scales.

A recent study by Gynther, Burkhart, and Hovanitz (1979) was designed to assess the relative contributions of obvious and subtle item endorsement to prediction of a relevant criterion. The Minnesota Multiphasic Personality Inventory (MMPI) Pd scale was divided into obvious, subtle, and neutral subscales, and scores on these subscales were

compared with the results of a non-conformity questionnaire. Results showed the obvious items to be the most powerful predictors of the criterion; however, the subtle subscale was demonstrated to make a smaller, yet unique, contribution to the prediction.

The results of the above study are fascinating in that not only were subtle test items shown to be of distinct value in themselves, but also the relative degrees of contribution were estimated for subtle and obvious, as well as neutral, items. Given the fact that subjects were "honest" test takers, an interesting question arises as to the relative contribution of subtle versus obvious items under various conditions wherein subjects are faking. It has been shown that subtle items are more resistant to faking than are the obvious (Burkhart, Christian, and Gynther, 1978). However, the relative contributions of subtle versus obvious items as they relate to a relevant criterion measure have not yet been investigated under faking conditions. It is this task which the present study attempts to undertake.

Literature Review

With regard to the empirical test construction approach, Meehl's (1945) essay represents perhaps the earliest comprehensive paper which both explains and espouses the merits of this strategy. Written during the period in which the MMPI was being developed, the article attacks any more intuitive approach on the ground of susceptibility to distortion. The empirical approach is discussed as the only truly scientific method of construction, with the empirical discrimination of items considered to be the sole criterion for their inclusion.

Interest in the subtle dimension of the empirical approach is also

expressed during this era (Meehl & Hathaway, 1946). An early distinction made between subtle and obvious test items involved distinguishing between what were known as "X" and "O" items. First applied to the MMPI Hy scale, "O" ("zero") statements were those which were endorsed in a given direction by a majority of normals, but scored in the direction of pathology on the basis that a greater majority of the hospitalized populations so responded. Thus endorsement by a subject in the same direction (either true or false) as most "normals" would have the result of augmenting his or her score toward pathology. It can be reasoned that across a number of these items the individual consistently responding in this manner does show a pattern somewhat more indicative of the typical hospitalized patient. "X" items, on the other hand, simply discriminated patients from normals on the basis of opposite response patterns, and were considered to be more obvious. For each of these items, the majority of normals responded in the opposite direction from the majority of psychiatric patients.

A more comprehensive attempt at designing subtle and obvious keys was first undertaken for the MMPI by Weiner (1948). It was hoped that the newly developed subtle keys would be useful in measuring the personality functioning of sophisticated or defensive subjects. All F scale items also appearing in clinical scales were labeled as "obvious," as F item endorsement was in general considered open admission of pathology. Items for which a blank (no response) was considered clinically significant were labeled as "subtle." All other scorings were based upon the combined clinical judgments of Weiner and his associates.

Weiner found that the endorsement of obvious statements was

fairly uncommon among normals, while quite common among hospitalized patients. Conversely, endorsement of subtle items was distributed rather normally. Here it can be argued that perhaps the better defended "normal" population was more capable of avoiding obvious as opposed to subtle indicators of pathology. Thus, as Weiner suggested, subtle items could be considered to be of great value. However, it could be asserted that subtle test statements are in fact unrelated to pathology and are thus inappropriately included (Wales & Seemen, 1969).

Following this early work centering around the development of the MMPI was a period in which the aforementioned issues appear to have remained fairly dormant. Two decades later, Gough (1968) again summarized the empirical position, stating that a test must be internally homogeneous and factorially independent if and only if it is intended to define a unidimensional trait of personality. If, however, the purpose of a scale is to predict a person's behavior, or how he or she will be described by those who know him or her well, then these internal statistical considerations are irrelevant unless it can be shown that the predictive utility of the measure is improved by their fulfillment.

Although empirically derived inventories such as the CPI and MMPI have continued to be widely utilized and proponents espouse verbally the logic behind this type scale, recent literature has cast serious doubt upon the value of subtle items specifically and the entire empirical approach in general. One such study attempted to determine the relationship between degree of item subtlety and the ability of items to discriminate normals from hospitalized, psychiatric subjects

(Duff, 1965). In this case degree of item subtlety was based upon how well experienced psychology graduate students could match the various MMPI statements with the correct scale and direction scored. Three scales were employed: the Hy, Pd, and Sc portions of the test. Here, Duff found an inverse relationship between item subtlety and discriminating power. Only forty percent of his most subtle group of statements discriminated the hospitalized patients from the normals. On the other hand, over ninety percent of obvious items were endorsed oppositely by these two groups. Duff concludes that subtle items, being poorer discriminators, are of little value and should be discarded.

A 1971 paper by Jackson issued an interesting challenge to the empirical proponents which eventually materialized into evidence in favor of a more face-valid, intuitive strategy. Conditions were specified under which a contest of validity was proposed between empirical scales and intuitive scales constructed by total novices. A study was later designed to answer Jackson's challenge (Ashton & Goldberg, 1973). The following inventories were administered and compared to average peer ratings for each respective subject: the California Personality Inventory (CPI), the Personality Research Form, scales of Sociability, Achievement, and Dominance constructed by psychology graduate students, and similar scales constructed by total novices. Of the above, only the CPI was empirically derived, while each of the others is an example of the more intuitive approach.

It was found that the validity of tests constructed by average graduate students and by the most skilled novices was equal to that of the CPI. The validity of the best graduate student scales and the

Personality Research Form was found to be equal, and greater than that of the CPI. Although these results are not as extreme as Jackson may have predicted, they do represent strong evidence in favor of the more face-valid approach.

Given that the discrimination between subtle and obvious items has merit, questions regarding the use of this information become relevant. Rather than discard subtle items altogether, Cronbach (1970) suggests that separate subtle and obvious keys be employed with the MMPI on those scales for which it can be shown that complimentary information is being obtained. However this subtle versus obvious distinction is to be employed, it is important that a refined, comprehensive set of keys be available.

The development of this broader set of keys was attempted by Christian, Burkhart, and Gynther (1978). A five-point distinction was made between subtle and obvious, and all MMPI clinical scales were included. Raters read each item and attempted to judge how clearly each was indicative of a psychological problem. Unlike Duff's (1965) raters, these judges were psychologically naive college students (no formal training in psychology). This was considered to be more appropriate in that the typical client or patient likewise lacks this formal experience.

The authors found some scales to be more obvious than others. In particular it was shown that Sc scale items were considered to be most obvious while Mf and Si statements appeared to be the least obvious indicators of pathology, in general. This result is not surprising when the content of these various scales is considered. However, the formal knowledge of this phenomenon is quite useful in that for some

scales (e.g., Sc) it may be unnecessary or even inappropriate to attempt to employ the subtle-obvious distinction. On the other hand, for others this may be of the greatest importance. If, for example, it can be definitively shown that subtle items are of absolutely no worth or are a major source of error, those scales containing many subtle items would be in need of drastic alteration. Also, it is quite possible that under certain circumstances or with specific populations the use of this subtle-obvious distinction may become more viable if these unusual conditions contribute differentially to the accuracy of the subtle versus the obvious.

Such a specific circumstance could be that under which the subject is faking. A study was conducted by Wales and Seeman (1969) which attempted to illustrate the effect upon subtle and obvious items of conditions wherein subjects were asked to alter test performance. Hospitalized patients were given the MMPI in the usual fashion and again under instructions to attempt to answer in such a way as to appear as "healthy" and well-adjusted as possible. Results showed what has been referred to as the "paradoxical" faking phenomenon for subtle test items. When asked to "fake good," subjects were able to successfully manipulate the obvious test statements (the old "X" and "O" distinction was used) in the favorable direction. However, subtle items were shown to compensate in the opposite direction. Not only were these items resistant to faking, but attempts to manipulate subtle statements toward a "healthier" score resulted in these items contributing in the direction of pathology. It could be asserted that herein lies the value of the subtle portion of the test. Perhaps the MMPI has proven to be so lasting and useful at least in part because any attempt to

to manipulate test results (e.g., to "fake good") has been at least partially foiled as a result of this paradoxical relationship. Wales and Seeman, however, conclude that subtle items are unsuccessfully manipulated because "0" (subtle) items are probably more truly indicators of non-pathological adjustment and are presently inappropriately scored for pathology. Here it is speculated that subjects are in fact manipulating "0" items successfully but that the scoring keys for many of these subtle items are presently in error.

In a follow-up study the paradoxical relationship was again demonstrated (Wales & Seeman, 1972). The MMPI was administered and subjects (college students) were asked to respond to the test honestly. A second administration followed in which these same subjects were asked to complete the test under one of the following "faking" conditions: as if it were one year from now, as if responses corresponded to the individual's "ideal self," or as if they were simply attempting to appear as psychologically healthy as possible. Subtle test items again were consistently shown to react paradoxically to faking particularly under the simple "fake good" condition. Least dramatic, although still significant, was the paradoxical effect noted under the "one year from now" condition. As each faked protocol was compared to that individual's "honest" test, it was evident that at the very least the presence of "0" items does tend to negate to some extent the effects of faking.

Several methods have been identified which are fairly accurate in detecting the "fake good" response set of MMPI subjects (Wales & Seeman, 1968). These involve mathematical manipulations of "X" and "0" scores, as well as a separate validity scale developed by Cofer

(1949). Given the demonstrated effectiveness of these methods, it is possible that subtle items may be useful in improving score accuracy under faking conditions as identified by these methods. Subtle items, under these circumstances, may in fact qualify as more useful than the obvious items in the detection of pathology.

An important recent study has shown that the paradoxical relationship regarding the attempted faking of subtle items is also evident under conditions employing the more sophisticated five-category subtle and obvious ratings of Burkhart, Christian, and Gynther (1978). Endorsement of obvious items was a direct function of instructional set, whereas endorsement of subtle items was inversely related to instructional set. For both fake-good and fake-bad conditions, subjects were again able to successfully manipulate obvious items, while the subtle portion of the test tended to compensate in the opposite direction. That subtle items are apparently resistant to fake-bad as well as fake-good instructional sets, when considered along with the findings of Wales and Seeman (1972), seems to lend support to an idea that the paradoxical functioning of subtle items may represent a more general phenomenon. Perhaps any number of distorting response sets are affected. If this be the case, then this portion of the test can be considered to represent a valuable safety mechanism against distortion. However, if under normal "honest" circumstances these items merely represent a major source of error, it could be argued that the subtle dimension of the test is more often a hindrance to accurate interpretation.

A study conducted by Gynther, Burkhart, and Hovanitz (1979) was designed to assess the relative contributions of the obvious versus the

subtle items as these relate to a relevant criterion measure. Faking conditions were not included. MMPI Pd scale statements were categorized as either subtle, obvious, or neutral based upon the five-point scale mentioned earlier (Christian, Burkhart, & Gynther, 1978). Scores in each of these areas were compared to scores on a behaviorally based nonconformity questionnaire. Results again showed the obvious items to be the most useful portion of the test, this time as measured in terms of the above criterion. The subtle subscale, however, was determined to have made a unique, although much smaller, contribution to the prediction of the reported nonconforming behavior.

Relationships calculated between Pd subscores and MMPI scales L and K showed negative relationships between Pd-Obvious and L and K, while a positive correlation was reported between Pd-Subtle and K. No significant relationship was detected between Pd-Subtle and L, perhaps as a result of the rather narrow range and relatively obvious content of the L scale. In general, L and K scores were negatively correlated with the nonconformity measure, suggesting that the more defensive subjects reported engaging in significantly less deviant behavior.

Subsequent studies have measured relative contributions of subtle versus obvious items to the Hypomania and Depression subscales (Hovanitz & Gynther, 1980; Burkhart, Gynther, & Fromouth, 1980). Although evidence persists that subtle items may contribute to the accuracy of certain scales, face-valid statements continue to be reported as the most relevant predictors of criterion correlates.

Statement of the Problem

While proponents of each of the two major test construction strategies continue to argue the merits of their prospective positions, a great deal of the recent experimental evidence has been supportive of the more face-valid intuitive-internal approach (e.g., Duff, 1965; Gynther, Burkhart, & Hovanitz, 1979; Burkhart, Gynther, & Fromouth, 1980). Authors of these studies have centered their conclusions around the assertion that the more subtle portions of empirically derived inventories are in fact unrelated to the traits which they were designed to assess. At the very least these experimenters have reported that while subtle test items may be of some minimal value, the more face-valid portions of these inventories are consistently superior predictors of any relevant criterion.

The previously cited study of Gynther, Burkhart, and Hovanitz (1979) employed comprehensive, novice-rated subtle and obvious scales, and found the obvious portion of the MMPI Pd scale to be a much better predictor of a criterion of admitted nonconforming behavior. The authors conclude the subscales composed of items clearly related to the criterion possess more discriminative power in general than do subscales composed of items not obviously related. This may be accurate under standard test-taking instructions; however, under faking conditions this may not be the case.

Wrobel and Lachar (1982) have demonstrated that obvious items are more accurate criterion predictors even for more defensive subjects as measured by the K scale. However, there is evidence to suggest that K scale scores are inversely related to admitted deviant behavior, particularly among females (Gynther, Burkhart, & Hovanitz, 1979).

Highly defensive subjects as measured by K may not accurately respond to the symptom checklist employed by Wrobel and Lachar, thus affecting the accuracy of the above findings.

It has been shown consistently that subtle items are inherently resistant to faking (Wales & Seeman, 1969, 1972; Burkhart, Christian & Gynther, 1978). However, the relative contribution of subtle versus obvious test statements to a relevant criterion has not been assessed under faking circumstances. The present study attempts to make such an assessment. Based upon the literature reviewed, the following can be hypothesized:

1. A greater number of MMPI Pd scale obvious items will be endorsed in the direction of pathology under fake-bad as opposed to fake-good conditions.
2. A greater number of subtle items will be endorsed pathologically under fake-good as opposed to fake-bad conditions.
3. Under standard control conditions the obvious items will represent a more positively correlated criterion predictor than will the subtle items.
4. Under both fake-good and fake-bad conditions the subtle dimension will be correlated more positively with the criterion than will its more obvious counterpart.

If this last hypothesis were to be demonstrated, a substantially stronger case would exist regarding the value of the much berated subtle portion of the empirically derived inventories.

CHAPTER II

METHOD

Subjects

Serving as subjects were 150 university students enrolled in introductory psychology courses. All data were collected anonymously from groups of approximately 25 subjects. It has been shown that males report significantly more deviant behavior than do females (Gynther et al., 1979); therefore, only male subjects were employed. Extra credit was awarded for participation.

Instruments

Both the MMPI (Hathaway & McKinley, 1967) and a nonconformity scale were administered to each subject. The nonconformity scale (see Appendix A) is that which was used by Gynther, Burkhart, and Hovanitz (1979). It is a face-valid behavioral questionnaire designed to assess the individual's tendency to break existing societal norms, laws and regulations. Eight of the scale's 30 items consist of the abbreviated form of Nye's (1958) scale used by Elion and Megargee (1975), while the remaining 22 items were added by Gynther, Burkhart, and Hovanitz. Reliability indices have been computed (coefficient alpha = .83, test-retest for a 2-week interval = .94), and a wide range of deviant behaviors is represented (Gynther et al., 1979). Included are such minor

offenses as those reflected in questions which ask the subject whether he or she has ever "driven at speeds significantly above the legal limits" or "cut or torn out pages of library books or journals?" Also present are questions regarding more serious nonconformity, such as those asking whether he or she has ever "carried a concealed weapon" or "sold narcotic drugs?"

Procedure

All subjects were first presented with the nonconformity questionnaire. Complete anonymity was assured and the voluntary nature of subject participation was emphasized. While total honesty was encouraged, subjects were made aware that at any time it was perfectly acceptable to terminate the testing, and extra credit would still be awarded. Should this occur for any reason, options were presented wherein the participant could choose to retain his answer sheet upon leaving, or simply return his incomplete materials anonymously. (See Appendix B for complete instructions.) The nonconformity questionnaire asks subjects to anonymously rate the number of times they have engaged in each of the various nonconforming behaviors since the beginning of grade school. As in the previous study (Gynther et al., 1979) a score was obtained by assigning a value of 0 to items rated never, 1 to items rated once or twice, 2 to items rated several times, and 3 to items rated very often. The score for each subject was the sum of these values.

Subjects were randomly assigned to one of three MMPI conditions. The first 399 items of the MMPI (Form R) were completed under either a standard, fake-good, or fake-bad instructional set. The fake-good

instructional set asked the subject to respond "in such a way as to create the best possible impression; for example, an impression you would like to make in applying for a very desirable job" (Burkhart, Christian, & Gynther, 1978). The fake-bad instructional set required the subject to respond "in such a way as to make a very bad impression; for example, an impression you would like to make in order to be considered very maladjusted." Of the 399 items, only responses to the L, K, and Pd scales were examined. L and K are validity indicators while Pd reflects a "primary dimension ranging from constricted conformity to the antisocial acting out of impulses" (Lachar, 1974). The Pd scale was divided into subtle (Pd-S, N = 12), neutral (Pd-N, N = 19), and obvious (Pd-O, N = 19) subscales according to ratings obtained by Christian, Burkhart, & Gynther (1978). As in a previous study (Gynther, Burkhart, & Hovanitz, 1979) the categories of subtle and very subtle were combined, as were the obvious and very obvious items.

CHAPTER III

RESULTS

Correlations between Pd subscores and MMPI scales L and K were calculated, and results were quite similar to those found in the previous study of Gynther, Burkhart, and Hovanitz (1979). As recorded in Table I, it was found that, under control conditions, K was negatively related to Pd-0. On the other hand, the correlation between K and Pd-S was positive. The relationship between L and Pd-0 was negative, while that between L and Pd-S was nonsignificant. For the control group, the greater a subject's defensiveness as measured by L and K, the fewer Pd-0 items he was likely to endorse. On the other hand, the more defensive subjects (as measured by K) were likely to endorse more Pd-S items. As in the previous study, L, with its restricted range of content and lack of ambiguity, was not significantly related to Pd-S.

Under fake-good conditions a similar pattern was present, as Pd-0 items correlated negatively with both L and K. In this case relationships between Pd-S and K, as well as Pd-S and L, were significantly positive. Again, greater defensiveness is associated with endorsement of fewer obvious items, yet a greater number of subtle indicators.

Finally, for the fake-bad group this same relationship was illustrated, albeit only for K. The negative correlation of K with Pd-0 and the positive correlation between K and Pd-S were statistically significant. No significant correlations involving L were found under this

TABLE I
 CORRELATIONS OF PD SUBSCORES WITH
 MMPI SCALES L AND K

| Condition | | | | |
|-----------|----------|-------------|-------------|-------------|
| | | <u>Pd-O</u> | <u>Pd-S</u> | <u>Pd-N</u> |
| Control | <u>L</u> | -.33* | .17 | -.09 |
| | <u>K</u> | -.51** | .35** | -.18 |
| Fake-good | <u>L</u> | -.42** | .28* | -.10 |
| | <u>K</u> | -.42** | .40** | .03 |
| Fake-bad | <u>L</u> | -.21 | -.06 | .15 |
| | <u>K</u> | -.40** | .33* | .05 |

* $p < .05$

** $p < .01$

condition.

In order to control for overall error rate, a multivariate analysis of variance (MANOVA) was performed using number of items endorsed (subtle, obvious, and neutral) as dependent variables. Serving as the independent variable was experimental group (fake-good, fake-bad, and control). As reported in Table II, the multivariate test strongly supports the conclusion that, overall, Pd item endorsement is affected by response set. In fact, one-way analyses confirm that for each of the dependent variables (obvious, subtle, neutral), response patterns were affected by experimental group (fake-good, fake-bad, control). The strongest effect was demonstrated with the obvious items, although the ratio calculated for the neutral variable was also quite high. For subtle items, a smaller, yet still very significant value was obtained.

Since statistical significance was obtained in these analyses, the Newman-Keuls method for pairwise comparison of means was employed, and these results are presented in Table III. Appendix C presents these same results graphically. The mean number of obvious items endorsed was significantly greater for fake-bad as opposed to fake-good conditions. Likewise, the fake-bad mean was statistically greater than that for the control group. Also, significantly more items were endorsed in the direction of pathology under control as opposed to fake-good conditions. The significant difference found between means under fake-bad versus fake-good conditions is supportive of hypothesis (1).

With regard to the subtle portion, the difference between means under fake-good as opposed to fake-bad conditions was found to be nonsignificant. However, means for both fake-bad and fake-good groups were significantly greater than that of the control group. Apparently,

TABLE II
ANALYSES OF VARIANCE

| Dependent Variable | Source | df | SS | F | Pr>F |
|--------------------|--------|-----|---------|--------|-------|
| Obvious | Model | 2 | 5640.12 | 384.06 | .0001 |
| | Error | 147 | 1079.38 | | |
| | Total | 149 | 6719.50 | | |
| Subtle | Model | 2 | 41.16 | 7.55 | .001 |
| | Error | 147 | 400.68 | | |
| | Total | 149 | 441.81 | | |
| Neutral | Model | 2 | 1542.45 | 143.05 | .0001 |
| | Error | 147 | 792.54 | | |
| | Total | 149 | 2334.99 | | |

MANOVA test for hypothesis of no overall group effect (Wilks' criterion):

$F(6,290) = 78.07$

$PROB>F = .0001$

TABLE III
NEWMAN-KEULS PAIRWISE
COMPARISON OF MEANS

| Item Type | Group A | \bar{X}_a | Total(T_a) | Group B | \bar{X}_b | Total(T_b) | $T_a - T_b$ | C.V. (P<.05) |
|-----------|-----------|-------------|----------------|-----------|-------------|----------------|-------------|--------------|
| Obvious | Fake-bad | 16.16 | 808 | Fake-good | 1.82 | 91 | 717* | 64.38 |
| | Fake-bad | 16.16 | 808 | Control | 5.12 | 256 | 552* | 53.65 |
| | Control | 5.12 | 256 | Fake-good | 1.82 | 91 | 165* | 53.65 |
| Subtle | Fake-bad | 6.44 | 322 | Fake-good | 6.02 | 301 | 21 | 32.70 |
| | Fake-bad | 6.44 | 322 | Control | 5.18 | 259 | 63* | 39.24 |
| | Fake-good | 6.02 | 301 | Control | 5.18 | 259 | 43* | 32.70 |
| Neutral | Fake-bad | 13.02 | 651 | Fake-good | 5.38 | 269 | 382* | 55.16 |
| | Fake-bad | 13.02 | 651 | Control | 7.62 | 381 | 270* | 45.97 |
| | Control | 7.62 | 381 | Fake-good | 5.38 | 269 | 112* | 45.97 |

* $p < .05$

the attempt to fake in either direction resulted in greater endorsement of subtle items when compared to a more "honest" response set. While the difference between fake-good and fake-bad means was nonsignificant, the obtained value of 6.44 for fake-bad was greater than the fake-good mean of 6.02. For this reason it was unnecessary to specifically test hypothesis (2), which predicted a greater number of subtle items to be endorsed under fake-good as opposed to fake-bad conditions.

Neutral items were indicative of a pattern quite similar to that of the more obvious statements. The highest mean was found for the fake-bad group, while the lowest was obtained for fake-good conditions. Significant differences were shown for each of the possible pairwise comparisons. These items were apparently manipulated in the same manner as were the obvious, but perhaps to a somewhat milder degree. At any rate, it seems that for both the obvious and the neutral items subjects were able to successfully manipulate their scores. Comparisons of the mean scores for subtle items, on the other hand, produced somewhat more enigmatic findings.

Regarding the nonconformity measure, the overall mean score obtained was 20.23 ($SD=8.62$), as compared to a mean of 15.49 ($SD=8.46$) reported for male subjects in the Gynther et al., (1979) study.

Pearson correlation coefficients were calculated between the nonconformity scale and MMPI scales L and K in order to determine the effect of defensiveness on nonconformity scores. Under faking conditions the nonconformity scale is taken honestly, while the MMPI is purposely distorted; therefore, these correlations were determined for the control group only. Although negatively correlated with L ($r=-.28$, $p<.05$), the nonconformity measure lacked significance in its

correlation with K ($r = -.13$, ns). This is in accordance with the findings of Gynther et al., (1979) for male subjects.

However, as shown in Table IV, no significant relationship was found between the nonconformity scale and either the Pd-0 or Pd-S items under control conditions. On the other hand, the relationship between the nonconformity scale and Pd-N was positive and statistically significant. Hypothesis (3) was not supported in that the obvious items did not represent a significantly more positive criterion predictor than did the subtle, $t(47) = .35$, ns.

Surprisingly, under fake-good conditions the correlation between the Pd-0 items and the criterion was significant and positive. The subtle portion, on the other hand, did not significantly correlate with the nonconformity questionnaire. Clearly, hypothesis (4), which predicted that subtle items would be correlated more positively with the criterion under faking circumstances was not supported for the fake-good condition. Similarly, under fake-bad instructions, subtle items did not represent a more positively correlated criterion predictor than did the obvious, $t(47) = .23$, ns. Correlations of the nonconformity scale with Pd-0 and Pd-S both lacked significance for the fake-bad condition. Also, under neither of the faking conditions were neutral items significant criterion predictors.

In order to determine the relative contribution of subtle, obvious, and neutral scores to the nonconformity score, semipartial and multiple correlations were computed using the SAS RSQUARE technique. These results are presented in Table V. Under fake-good conditions, as reported previously, obvious items represented a significant criterion predictor. Controlling for the influence of either subtle or neutral

TABLE IV
 ZERO-ORDER CORRELATIONS OF PD SUBSCORES
 WITH NONCONFORMITY SCORES

| Condition | Correlation | | |
|-----------|-------------|-------------|-------------|
| | <u>Pd-0</u> | <u>Pd-S</u> | <u>Pd-N</u> |
| Control | .19 | .12 | .29* |
| Fake-good | .42** | -.25 | .16 |
| Fake-bad | .07 | .12 | .02 |

* $p < .05$

** $p < .01$

TABLE V
 MULTIPLE AND SEMIPARTIAL CORRELATIONS OF PD SUBSCORES
 WITH NONCONFORMITY SCORES

| Predictor | Fake good | | Fake bad | | Control | |
|------------------|-----------|---------|----------|------|----------|-------|
| | R-Square | F | R-Square | F | R-Square | F |
| O | .178 | 10.37** | .005 | .24 | .037 | 1.81 |
| O/S ^a | .156 | 9.18** | .004 | .19 | .035 | 1.75 |
| O/N | .155 | 9.12** | .010 | .48 | .001 | .05 |
| O/SN | .124 | 7.29** | .010 | .48 | .010 | .48 |
| S | .065 | 3.19 | .014 | .71 | .015 | .73 |
| S/O | .043 | 2.53 | .013 | .65 | .013 | .65 |
| S/N | .072 | 4.24* | .016 | .75 | .008 | .40 |
| S/ON | .041 | 2.41 | .016 | .75 | .004 | .20 |
| N | .025 | 1.25 | .000 | .00 | .083 | 4.38* |
| N/O | .002 | .18 | .005 | .24 | .047 | 2.35 |
| N/S | .032 | 1.88 | .016 | .75 | .076 | 3.80 |
| N/OS | .000 | .00 | .008 | .38 | .042 | 2.10 |
| OS | .221 | 6.67** | .018 | .43 | .050 | 1.24 |
| OS/N | .196 | 11.53** | .026 | 1.22 | .009 | .45 |
| ON | .180 | 5.16** | .010 | .24 | .084 | 2.16 |
| ON/S | .156 | 9.18** | .012 | .57 | .077 | 3.85 |
| SN | .097 | 2.52 | .016 | .38 | .091 | 2.35 |
| SN/O | .043 | 2.53 | .021 | 1.00 | .055 | 2.75 |
| OSN | .221 | 4.35* | .026 | .41 | .092 | 1.55 |

^a O/S refers to the obvious portion of the Pd scale with the effects of the subtle portion controlled.

* $p < .05$

** $p < .01$

portions resulted in slightly smaller, yet still significant, values. Likewise, when both subtle and neutral influences are partitioned out, significance is retained. Multiple correlations and their respective semipartials were also significant in all cases which retained the influence of the obvious items. Interestingly, subtle items were judged to be significant nonconformity indicators without the presence of the neutral portion, apparently indicating some masking phenomenon between subtle and neutral items for this condition.

Under control conditions, as reported earlier, neutral items were significantly related to the nonconformity scale. However, controlling for the influence of obvious items resulted in loss of significance, as did the partitioning out of the effects of subtle items. In fact, with the exception of the zero-order correlation reported above, there were no significant relationships found between Pd subscores and the nonconformity scale for the control group. Similarly, there were no such correlations present under fake-bad conditions.

CHAPTER IV

DISCUSSION

Correlations calculated between Pd subscores and the defensiveness measure K indicate, as expected, that defensive subjects tend to endorse fewer obviously pathological items. Interestingly, this relationship is retained for both faking conditions as well as for the control group. Subtle items, however, are more frequently endorsed in the pathological direction by more defensive subjects. This "paradoxical effect" is not surprising considering previous findings which involved subtle items and faking (Wales & Seeman, 1969). Neutral items, presumably falling somewhere between the subtle and obvious in terms of their apparent relationship to pathology, were unrelated to K under all conditions.

Results concerning the correlations of L with Pd subscores are less conclusive. Where significant relationships occurred, however, results are similar to the findings involving K. Under fake-good instructions, L and Pd-0 are negatively related, while L and Pd-S are correlated positively. For the control group, a significant negative relationship is present between L and Pd-0, although no correlations were significant under fake-bad conditions. L is itself a rather obvious scale, and may in general tend to covary more with obvious items for this reason (Gynther et al., 1979). The less obvious K scale can be considered a more sophisticated measure of defensiveness,

and may therefore be more effective, particularly for intelligent subjects. At any rate, results involving the correlations between K and the Pd subscores support the position that subtle items are resistant to faking, whereas the obvious are not.

Further evidence that obvious items are susceptible to manipulation was found in the analysis of variance. With mean obvious scores of 16.16 for fake-bad and only 1.82 for fake-good, it is more than apparent that the "dishonest" subject can easily avoid (or facilitate) detection of pathology via this portion of the test.

Subtle items, on the other hand, produced somewhat more curious results. It was reasoned that if subtle items are indeed resistant to faking (Wales & Seeman, 1969, 1972; Burkhart, Christian, & Gynther, 1978), then subjects attempting to fake-good would in fact appear to be more maladjusted than those attempting to fake-bad. This should particularly be the case if the "paradoxical" faking phenomenon demonstrated by Wales and Seeman (1969), which was the basis on which hypothesis (2) was constructed, is again demonstrated. However, results showed no significant difference between mean subtle scores for fake-good as opposed to fake-bad conditions. The fact that both faking groups produced higher mean scores than did the control was hardly to be expected. However, it should be pointed out that in the case of the Wales and Seeman study (1969), only control and "fake-good" groups were employed; results of the present experiment, excluding the fake-bad group, are identical to those found previously. The surprising difference involves the elevation, rather than diminution, of subtle scores for the fake-bad group.

Although there were no significant differences between subtle

scores for fake-good versus fake-bad groups, it is important to realize that variability among subtle means was relatively minor when compared to that of the obvious means. While obvious means varied between 1.82 for fake-good and 16.16 for fake-bad, the largest difference among subtle means was between 5.18 (control) and 6.44 (fake-bad). And while it cannot be stated that subtle items were completely resistant to faking, they most definitely were under the fake-good instructional set. Also, for the fake-bad condition, the attempt to appear "very maladjusted" resulted in a mean subtle score elevation of just slightly over one point when compared to the control group.

In retrospect, it can be stated that the obtained correlations between Pd subscales and defensiveness scales L and K are not particularly surprising. The same can probably be said of the response of the Pd subscales to faking, as determined by the analyses of variance. However, the introduction of the nonconformity questionnaire produced results which were quite unexpected. Gynther et al., (1979) reported a correlation of .33 ($p < .001$) between the nonconformity scale and Pd-0 for males under "honest" circumstances. Likewise, a relationship of .26 ($p < .01$) was reported between nonconformity and Pd-S. The present study found no significant correlations in either case. Curiously, Pd-N and the nonconformity scale were positively correlated ($r = .29$, $p < .05$). And equally unexpected was the .42 ($p < .01$) correlation between Pd-0 and the nonconformity scale under fake-good conditions, particularly considering there were no other significant correlations for either faking group.

In attempting to lend some semblance of understanding to the above findings, it is the lack of relationship between Pd subscores and the

nonconformity scale which is central to this process. A critical aspect of this study involved the comparative utility of subtle versus obvious items in the prediction of some behaviorally based criterion. In order to assess these differences (if any), it is apparent that the criterion employed should be related to these items under control conditions. Without this relationship, it is difficult to predict correlations which may occur under faking circumstances. In the case of the present study, failure to replicate the findings of Gynther et al., (1979) with respect to the nonconformity scale under control conditions tends to nullify any expectations regarding faking circumstances. For control conditions, the finding that only neutral items are significantly correlated is ironic in that Pd-N was the only subscale found by the above authors to be unrelated to nonconformity.

Explanations regarding the lack of correlation reported above remain quite tentative; however, several possible contributors are worthy of discussion. The use of a "normal" college population may represent one of these important factors. That the Pd scale was normed using somewhat older, less educated individuals is of relevance, in addition to speculation that there are relatively few "psychopathic deviants" among the college population. Perhaps the use of a more "deviant" subject population would produce different results. At any rate, college males enrolled in introductory psychology courses represent, at the very least, a group which is relatively homogenous when compared to the population at large.

Perhaps of importance, also, is the fact that while the nonconformity scale assesses behavior which has occurred at virtually any time in the individual's life, the MMPI in general is more concerned

with relatively recent events. This time frame difference between the two scales could conceivably contribute to the lack of correlation reported here. In addition, the nonconformity questionnaire assesses only behavior, while the Pd scale deals with attitudes as well as actual events. Finally, the range of behaviors which the nonconformity scale spans is wide; however, a great number of the questions involves behaviors which are so "normal" as to possibly preclude covariance with the Pd scale items. Taken at face value, it is difficult to assess any strong relationship between, for example, drinking beer under age and elevated Pd scores several years later.

Given the possible sources of error mentioned above, the failure of certain Pd subscores to covary with the criterion may appear more plausible. However, it remains difficult to understand the discrepancy between these findings and those of Gynther et al., (1979). Also, lacking adequate explanation is the positive correlation obtained between the nonconformity scale and Pd-0 under the fake-good condition. Given that the mean obvious score for this instructional set was 1.82, it would seem particularly unlikely that Pd-0 scores could consistently covary with the criterion. It would be interesting to speculate regarding the results of any attempted replication of these findings. At any rate, future research may help to further delineate the curious relationships in general reported between Pd subscores and the nonconformity scale. What is clear presently is the fact that these unexpected findings preclude illumination of several key questions proposed in this study.

Summary and Conclusions

In summary, attempts to determine the relative utility of subtle versus obvious test items have proved inconclusive. It has again been demonstrated that subtle items are relatively resistant to faking when compared to obvious items. This was particularly the case under fake-good conditions, wherein the "paradoxical" faking phenomenon was indeed present for the subtle dimension. Under fake-bad instructions subtle items were successfully manipulated, although to a relatively minor degree.

Findings concerning the relationships of subtle and obvious scores to defensiveness were generally unsurprising as well. Both subtle and obvious statements covaried more strongly with the relatively complex K scale than with the more obvious measure of defensiveness, L. Under control as well as faking conditions, obvious items were negatively correlated with K, while subtle scores were positively correlated. This would seem to indicate that while subtle items are resistant to defensiveness (in the K sense), the obvious are not.

While, in general, the above findings were as could be expected, results pertaining to the nonconformity questionnaire were not anticipated. Given that relationships between the nonconformity measure and Pd subscales generally lacked significance under control conditions, correlations with regard to faking circumstances would not be expected to lend definitive conclusions. As pointed out previously, the intent of comparisons employing the criterion variable was to define in some behavioral sense the relative merits of subtle versus obvious items. Inconclusive findings regarding the relationship of the behavioral

measure to the Pd subscales appear to have postponed the resolution of these issues.

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APPENDIX A

NONCONFORMITY SCALE

Recent research has shown that everyone breaks some rules, regulations or laws during his or her lifetime. Some break them regularly, others less often. Below are some which are frequently broken, at least by some people. Check those that you have broken since beginning grade school. Have you:

1. Driven a car without a driver's license or learner's permit? (do not include driver training courses).
very often _____ several times _____ once or twice _____ no _____
2. "Run away" from home?
no _____ once or twice _____ several times _____ very often _____
3. Taken things of medium value (between \$2 and \$50)?
no _____ once or twice _____ several times _____ very often _____
4. Taken things of large value (over \$50)?
no _____ once or twice _____ several times _____ very often _____
5. Taken a car for a ride without the owner's knowledge?
very often _____ several times _____ once or twice _____ no _____
6. Bought or drank beer, wine or liquor under age (include drinking at home)?
no _____ once or twice _____ several times _____ very often _____
7. Purposely damaged or destroyed public or private property that did not belong to you?
very often _____ several times _____ once or twice _____ no _____
8. Used marijuana?
no _____ once or twice _____ several times _____ very often _____
9. Sold marijuana?
very often _____ several times _____ once or twice _____ no _____
10. Written bad checks?
no _____ once or twice _____ several times _____ very often _____

11. Participated in illegal gambling?
very often _____ several times _____ once or twice _____ no _____
12. Brought liquor into Oklahoma from out-of-state?
no _____ once or twice _____ several times _____ very often _____
13. Been involved in fights?
very often _____ several times _____ once or twice _____ no _____
14. Been involved in fights with deadly weapons (do not include war-time experience)?
no _____ once or twice _____ several times _____ very often _____
15. Been suspended or expelled from school?
very often _____ several times _____ once or twice _____ no _____
16. Cheated on an examination?
no _____ once or twice _____ several times _____ very often _____
17. Used psychedelic drugs (e.g., LSD)?
very often _____ several times _____ once or twice _____ no _____
18. Sold psychedelic drugs?
no _____ once or twice _____ several times _____ very often _____
19. Driven a car while intoxicated?
very often _____ several times _____ once or twice _____ no _____
20. Cut or torn out pages of library books or journals?
no _____ once or twice _____ several times _____ very often _____
21. Looked in windows of persons of the opposite sex (i.e. "Peeping Tom")?
very often _____ several times _____ once or twice _____ no _____
22. Had sexual relations with an "underage" person of the opposite sex (do not include occasions when you were also "underage")?
no _____ once or twice _____ several times _____ very often _____
23. Not paid parking tickets?
very often _____ several times _____ once or twice _____ no _____
24. Driven at speeds significantly above the legal limits?
no _____ once or twice _____ several times _____ very often _____
25. Carried a concealed weapon?
very often _____ several times _____ once or twice _____ no _____
26. Used narcotic drugs (e.g., heroin)?
no _____ once or twice _____ several times _____ very often _____
27. Sold narcotic drugs?
very often _____ several times _____ once or twice _____ no _____

28. Pretended to be someone you are not (e.g., physician, lawyer, etc.) to gain an unfair advantage or make a profit?
no _____ once or twice _____ several times _____ very often _____
29. Ignored fines for overdue books?
very often _____ several times _____ once or twice _____ no _____
30. Phoned someone you didn't know and made obscene or suggestive proposals?
no _____ once or twice _____ several times _____ very often _____

APPENDIX B

SUBJECT INSTRUCTIONS

"In this experiment we are attempting to compare certain behaviors with some different kinds of test results. Each of you will be asked to complete two different tests: a short, 20-item questionnaire and a longer, True-False type scale. Some of the questions we are asking are of a very personal nature. I want to emphasize very clearly that all questionnaires will be handled completely anonymously. Envelopes will be provided for turning in all materials, and no names or code numbers will appear anywhere on any of the forms. Also, participation on your part is completely voluntary. If for any reason you don't wish to complete the task, please feel perfectly free to stop. You may either turn in your materials at that time and leave, or sit quietly until the others have finished. Also, you may choose to take your answer sheet with you when you leave. Regardless of whether or not you choose to take the tests, your extra credit will be awarded. However, if you do choose to participate, it is very important that you take the task seriously, and answer all questions as honestly as possible. Those of you who feel that you cannot answer all of the questions honestly, just turn in your materials unanswered. Again, full extra credit will still be awarded, and there is no way for your individual paper to be identified."

(Pass out nonconformity scale here.)

"Each of you now have a copy of a short, 30-item questionnaire, and a corresponding answer sheet. Instructions are included at the top of the first page. Please read the instructions and complete the questionnaire at your leisure. When you have finished, place the answer sheet in the envelope provided and wait quietly. When everyone has finished we will proceed to the next test."

When all subjects have completed the nonconformity scale, MMPI's will be passed out. Depending upon predetermined, randomly assigned treatment group, subjects will at this point be read one of the following sets of instructions:

- (A) "Each of you now have a copy of a True-False type personality questionnaire." (Use of the booklet will be demonstrated here.) "Please read the instructions and proceed at your own pace."
- (B) "Each of you now have a copy of a True-False type personality questionnaire." (Use of the booklet will be demonstrated here.) "Please disregard the instructions printed in the booklet as we have a special set of instructions for our purposes. You are to respond to this test in such a way as to create the best possible impression; for example, an impression you would like to make in applying for a very desirable job. Do not leave any blank spaces if you can avoid it. Try to make some answer to every statement. Remember, you are attempting to create the best possible impression; for example, an impression you would like to make in applying for a very desirable job."
- (C) "Each of you now have a copy of a True-False type personality

questionnaire." (Use of the booklet will be demonstrated here). "Please disregard the instructions printed in the booklet as we have a special set of instructions for our purposes. You are to respond to this test in such a way as to create a very bad impression; for example, an impression you would like to make in order to be considered very maladjusted. Do not leave any blank spaces if you can avoid it. Try to make some answer to every statement. Remember, you are attempting to create a very bad impression; for example, an impression you would like to make in order to be considered very maladjusted."

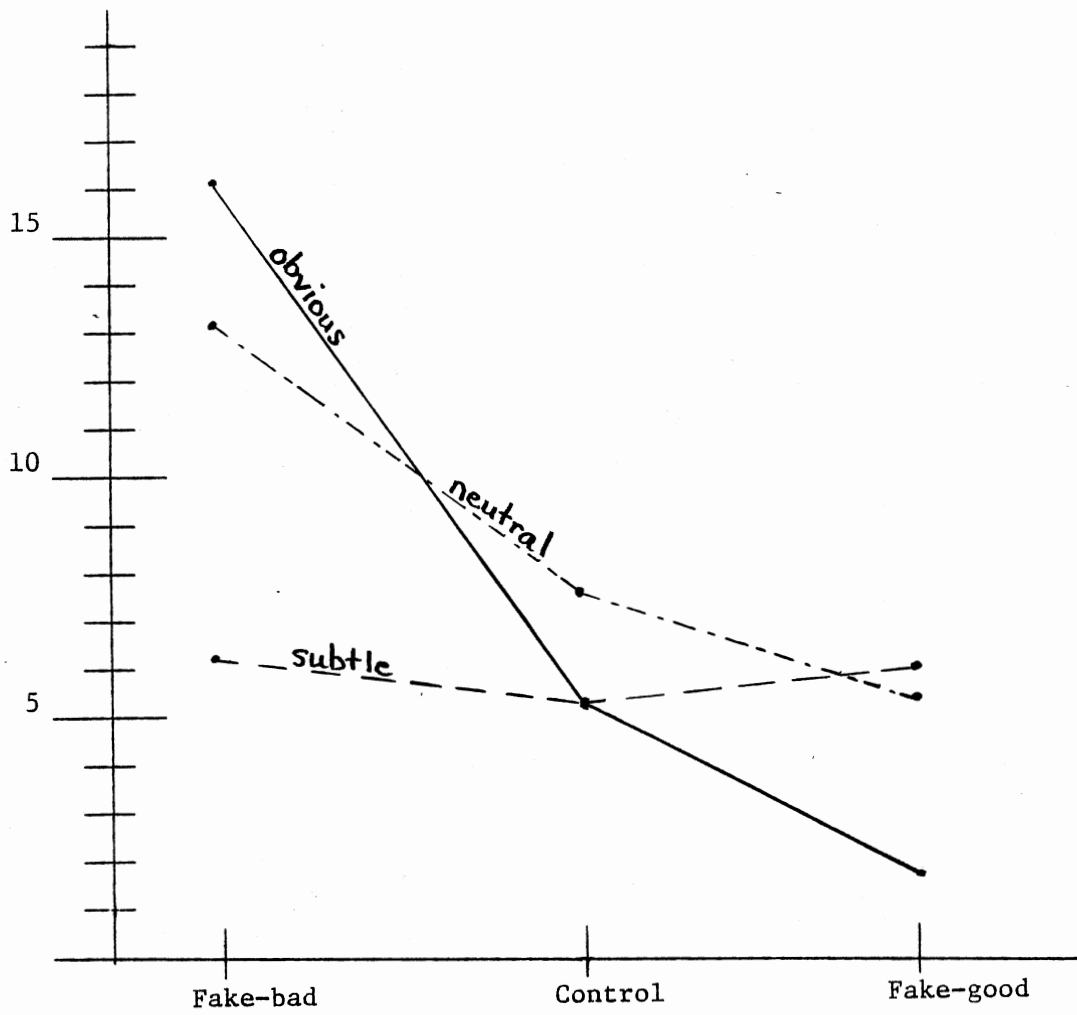
All subjects will receive the following instructions:

"It is only necessary to answer the first 399 items. When these have been completed, simply place your answer sheet in the envelope with your earlier test and turn it in along with your test booklet. Don't write your name anywhere, and only answer the first 399 items."

"Anyone interested in the results or details of this study can contact me later this semester via their psychology instructor. At this point it is important that you do not discuss the experiment with anyone in order for future subjects to remain unbiased. Your participation has been greatly appreciated." (Questions will be answered at this point regarding the instructions, and subjects will be told to proceed.)

APPENDIX C

NUMBER OF PD SUBSCALE ITEMS ENDORSED



VITA

David L. Worthington

Candidated for the Degree of

Master of Science

Thesis: THE PREDICTIVE VALIDITY OF FACE-VALID AND SUBTLE MMPI PD SCALE
ITEMS UNDER FAKING CONDITIONS

Major Field: Psychology

Biographical:

Personal Data: Born in Cushing, Oklahoma, on February 4, 1958,
the son of Mr. and Mrs. Donald L. Worthington.

Education: Graduated from C. E. Donart High School, Stillwater,
Oklahoma, in 1976; received Bachelor of Arts in Psychology
from Oklahoma State University in December, 1979; enrolled
in Master's program at Oklahoma State University, 1980-1983;
completed requirements for the degree of Master of Science
at Oklahoma State University in May, 1983.

Professional Experience: Graduate Research Assistant, Oklahoma
State University Psychology Department, 1980; Graduate Teach-
ing Assistant, Oklahoma State University Psychology Depart-
ment, 1980-1981; Psychological Associate, Psychological
Services Center, Oklahoma State University, 1981-1983;
Psychological Associate, Central Oklahoma Juvenile Treatment
Center, 1982; Psychological Associate, Lloyd E. Rader In-
tensive Treatment Center, 1983.