THE VALIDATION OF A NEUROTIC STYLES INVENTORY

A Thesis
by
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Chairperson, Thesis Committee

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Dean of the Graduate School
ABSTRACT

THE VALIDATION OF A NEUROTIC STYLES INVENTORY.

(December 1982)

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Thesis Chairperson: Arthur M. Skibbe

The purpose of this study was to provide construct and concurrent validity data for the Impulsive Scale of Seiks's Neurotic Styles Inventory (NSI). A college student population (n = 50) was compared to a prison inmate population (n = 50) on the Impulsive Scale of the NSI and the Pd Scale (scale 4) of the MMPI. Correlations between the two measures supported the concurrent validity of the NSI scale. However, the highest correlations occurred between the Impulsive Scale and the Schizophrenia Scale (scale 8) of the MMPI. Prisoners obtained higher scores on the Impulsive Scale than did college students, but the difference did not reach statistical significance. The results of the study were confounded by the inclusion of a large number (n = 36) of females in the college student sample. Suggestions were made for future research.
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INTRODUCTION

Although the classification of mental disorders has been widely criticized, classification systems continue to be useful for statistical and communication purposes, and, to the extent that diagnostic categories are distinctive and can be rated reliably, they contribute to the planning of treatment programs. The diagnosis of neurotic disorders, in particular, has traditionally posed a problem for clinicians because of a lack of consensus as to how to define "neurosis," and a general lack of understanding of the neurotic process.

David Shapiro (1965) has made a valuable contribution to an understanding of neuroticism. In the past, neuroticism has been defined in terms of personality traits, behavioral symptoms, and defense mechanisms employed by the neurotic individual. In his book, Neurotic Styles, Shapiro proposes that neuroticism results from variations in a style of thinking, which may in some ways be quite adaptive. He suggests that this general style of thinking and experiencing is a matrix from which traditionally described pathological traits and symptoms, as well as adaptive traits, evolve. There is a consistency between adaptive traits and the nature of neurosis. That is, consistencies between adaptive trait and symptom are reflective of the individual's general mode of functioning.
Shapiro first became interested in particular styles of thinking and perceiving through his work with psychological tests, particularly the Rorschach. He believes that it is from observation of the individual's style of thinking and perceiving that inference concerning diagnosis should be drawn. As a result of his observations of hundreds of clients dealing with the Rorschach Inkblots, he began to consider ways of thinking and perceiving as representations of psychological structures in their own right. By "style," Shapiro is referring to a mode of functioning (thinking, perceiving, and experiencing emotion) which may be inferred from a wide range of behavior. By "neurotic style," he is referring to those modes of functioning which appear to be related to various neurotic conditions.

Shapiro (1965) considers four neurotic styles: Obsessive-Compulsive, Paranoid, Hysterical, and Impulsive. He discusses traits, defense mechanisms, ways of thinking and perceiving, and the emotional experience characteristic of each style. Rather than providing the clinician with a cookbook of neurotic traits, Shapiro has given insight into the overall way of life, conscious attitudes, and overt behavior of the neurotic character. In the context of the neurotic's subjective experience and general mode of functioning, the characteristic behaviors are rendered comprehensible.

The particular neurotic style of interest in this study is the impulsive style. This style is characteristic of those individuals usually diagnosed as impulsive characters or psychopathic individuals. Variations of the impulsive style include "passive-neurotic
characters and narcissistic characters, and certain kinds of male homosexuals, alcoholics, and probably addicts" (p. 134). Common to this group is a style of cognition, a general mode of action, and a distinct type of subjective experience of action.

The distinctive quality of the impulsive character's subjective experience is centered around an impairment of normal feelings of deliberateness and intention. This impairment is manifested in the impulsive character's experience of "impulse" or "irresistible impulse" and in the experience of "whim." The subjective experience of the impulsive character, as described by Shapiro (1965), is an experience of "having executed a significant action, not a trivial one, without a clear and complete sense of motivation, decision, or sustained wish" (p. 136). Experiences of impulse are not experiences of executing an action because of external pressures, but are transient, abrupt, and partial wishes, desires, or decisions. Shapiro notes that the experience is somewhat similar to the normal experience of whim. However, the normal person does not immediately act upon his/her whim, but discards or gives further attention to his/her inclination to perform an action. Whims, as experienced by the normal individual, are considered in the context of stable aims and interests. Whether or not the normal individual acts upon his/her whim, is dependent upon an integrative process. If the whim is not compatible with important goals, relationships or attitudes, it is discarded. The impulsive person is lacking in active interests, aims, values and goals, at least beyond the immediate concerns of
his/her own life. Durable emotional relationships, and family interests are not usually very strong and may be completely absent.

An important aspect of the impulsive character's subjective experience is a disavowal of responsibility for impulsive actions. The most obvious example of such disavowal is the externalization of responsibility, which is often reported by the impulsive person as an inability to resist temptation. Impulsive characters acknowledge having committed an act, but do not feel responsible; they actually feel they could not help themselves. Such action exemplifies a distortion and attenuation of the normal experience of wanting, in which the sense of intention and deliberateness is impaired. For example, an impulsive individual who has performed a criminal act may state, "I did it, but I don't know why," or "I didn't mean to do it, it just happened." Such statements suggest that the person did not intend to do it, but was unable to control himself/herself. Such disavowals of responsibility may be expected in these individuals whenever a defensive need for them arises. Impairment of intention and deliberateness is a basic aspect of the subjective experience of impulsive characters.

Impulsive action is speedy, usually abrupt, and is also unplanned. The period between thought and execution is usually short. Impulsive action does not follow from aims and preparations characteristic of normal activity. As mentioned earlier, in the normal person, the whim appears in a context of relatively stable and continuous interests and aims. The whim undergoes modification, is acted upon or discarded, on the basis of its compatibility
with important goals, relationships or attitudes. The whim, or half-formed inclination to do something, is the beginning of a complex integrative process for most people.

Impulsive actions have often been viewed as behavioral eruptions during which the general executive functions break down. Shapiro (1965) believes impulsive actions to be the result of a general mode of functioning. The integrative process, characteristic of normal individuals, is absent in the mental processes of the impulsive individual. Unplanned action, abruptness, and speediness of execution of impulsive acts reflect this deficiency. There is an integrative process present, but it is quite different from that present in the normal individual. The impulsive character's interests are geared toward immediate gains and satisfaction; therefore, he/she has developed a well-practiced set of techniques for achieving his/her goals. The experience of impulse, characteristic of these individuals, is consistent and does not occur as the result of a breakdown.

A whim, as experienced by the normal individual, is paired against stable and continuous aims and interests in an integrative process. The impulsive person's lack of such stable and continuous aims and interests accounts for the apparent breakdown in executive processes. If a whim cannot accrue affective and associative support from stable and continuous aims and interests, it cannot develop into a sustained choice or intention. As the impulsive character's inclination to act is not anchored in stable interests, it tends to shift erratically. Thus, it follows that the impulsive
person acts to satisfy his/her urge. His/her interests are limited to immediate satisfaction. In other words, in the absence of long-term goals and interests, the promise of immediate satisfaction gains subjective significance, and forebearance, or tolerance of frustration, is not considered by the impulsive person.

The impulsive style may be quite adaptive in certain areas of living. This style would be adaptive in those situations requiring a readiness for quick action or expression. For instance, in an emergency situation, speedy action would be most beneficial. Shapiro (1965) notes that many actual as well as fictional "men of action," men with excellent practical competence and a capacity for quick and unhesitating action, exhibit this general style of functioning. He also states that many impulsive people possess considerable social facility and are often very charming and engaging. They may be quite playful, and, given a good intellectual endowment, they may be witty and entertaining.

There is a cognitive aspect to the impulsive character's behavior, a form of judgment that, fallible as it might be, collaborates with the inclination to act. Judgment requires self-criticism and consideration of alternative possibilities and solutions to problems. This process is abbreviated or discarded by the impulsive character. A business deal which appears doomed for failure to the normal individual might appeal to the impulsive individual as promising. The impulsive character may marry someone on the shortest of acquaintances or perform a criminal act just because it appears that it can be pulled off. The impulsive
person's judgment is poor and his/her cognition in general is deficient. The normal person searches, weighs, and develops his/her initial hunch or impression. The impulsive character's "style" is to act quickly, with little prior reflection. The initial hunch is the final choice.

Shapiro (1965) states that impulsive cognition may be described as "passive" and "concrete." The "passive" and "concrete" aspects of impulsive cognition result in bad judgment. The impulsive individual's attention is easily captured. His/her attention does not search actively and analytically; he/she is captivated by the most striking aspects of the situation. That which fascinates the impulsive person is not only the starting point of a cognitive, integrative process, but is also its conclusion. In this respect, the impulsive person's cognition may be called "passive." If he/she does not search, considering this aspect and that aspect of a situation, he/she does not see the possible implications of his/her action, but sees things only in their most obvious and immediately personally relevant perspective. In the sense that the impulsive character does not see the potential negative impact of his/her action, his/her mode of cognition is relatively "concrete."

The impulsive mode of cognition has limitations which are manifested in a variety of ways. Impulsive people exhibit an impairment in planning, concentration, logical objectivity, and reflectiveness in general. Planning, like judgment, requires consideration of various possibilities and direction of attention not merely to what is striking or immediately impressive, but also to
what might be important in the future. The impulsive individual's mode of cognition is dominated by the present, and as a result, the significance of the distant future receives little attention. Concentration requires sharply focused, sustained attention and examination. The impulsive character's mode of cognition is passively responsive and, therefore, distracted by the obvious or most striking implications of a situation. Reflection requires a shifting of attention from this aspect of a situation to that, a turning over in one's mind various possibilities of choices and solutions. Objectivity implies an ability to take distance; it requires attention that is directed not only to what is obvious or most striking, but also to what is permanent and significant in a more general sense. Passive, concrete cognition, therefore, is not objective or reflective, and does not lend itself to planning and concentration.

Shapiro (1965) does not propose that impulsive characters lack practical intelligence. Their intelligence is not a planning, abstracting, reflective intelligence, but neither is it immobilized nor disorganized. These people often have keen practical intelligence; however, it is intelligence that lends itself to execution of short-range, immediate aims. Impulsive characters may function competently and with a certain effectiveness. Shapiro states that they "operate," and may be very good at this. Therefore, these limitations do not imply a lack of practical intelligence, but an intelligence more suited to the execution of short-term endeavors.
Shapiro (1965) states that it is from observation of the individual's style of thinking and perceiving that inferences concerning diagnosis should be drawn. He has focused on "modes of functioning," which involve ways of thinking and perceiving, ways of experiencing emotion, modes of subjective experience, and modes of activity. In addition to describing modes of functioning, Shapiro has addressed the pathological, as well as the adaptive, nature of "neurotic styles." An individual may not be clinically neurotic, but may present a "style" which, if the individual becomes neurotic, forms the basis for a specific neurosis.

Clinicians have found Shapiro's insights into the overall way of life, conscious attitudes, and overt behavior of the neurotic character consistent with their observations and helpful in generating hypotheses. However, there is little empirical research supporting Shapiro's descriptions. Most of the research on impulsivity is restricted to descriptions of behavioral manifestations, personality traits, and defensive mechanisms employed. This research does appear to support Shapiro's contention that impulsivity may be pathological, as well as adaptive.

Eysenck and Eysenck (1977) administered sets of items traditionally used to measure impulsiveness to three groups of male and female subjects. A factor analysis was performed on the data with four factors being derived: narrow impulsiveness, risk-taking, non-planning, and liveliness. The narrow impulsiveness factor included items which referred to the speedy execution of action. The items which comprised the risk-taking factor made reference to the
individual's desire for danger and enjoyment of risk. The non-
planning factor contained items related to the tendency to do
things on the spur of the moment. The liveliness factor included
questions concerning the person's ability to make decisions quickly. These factors were then correlated with the four personality
dimensions of the Eysenck Personality Questionnaire (extraversion,
neuroticism, psychoticism, and dissimulation). Overall, the re-
sults suggested that impulsivity is positively correlated with psy-
choticism, with the exception of the liveliness factor, which was
positively correlated only with extraversion. These results appear
to indicate that only the liveliness component (the ability to make
decisions quickly) of impulsivity is adaptive.

The Risk Scale, developed by Torrance and Ziller, as cited in
Kipnis (1971), was devised to identify individuals who would be
likely to succeed in risky occupations. Kipnis developed an impul-
siveness scale to predict success of enlisted men in the Navy.
Both of these studies suggest that the risk-taking component of im-
pulsiveness is often adaptive.

Dahlstrom, Welsh, and Dahlstrom (1972) suggested that eleva-
tions on the Pd Scale (scale 4) and Ma Scale (scale 9) of the MMPI
were indicative of impulsivity. Furthermore, they suggested that
individuals who obtained a (4-9) profile exhibited psychopathic be-
havior. However, Duckworth (1979) reported that elevations on the
Pd Scale were quite common among college students concerned with
peaceful societal change, and were frequently found among persons
in the helping professions. Panton (1980) stated that prisoners
typically obtained high scores (t scores of 70 or above) on the Pd Scale of the MMPI. These studies suggest that impulsivity has a pathological, as well as an adaptive component.

The literature appears to provide support for Shapiro's descriptions of impulsivity. However, as mentioned earlier, traditional descriptions and attempts to measure impulsiveness have been limited to behavioral symptoms and personality traits. Traditional measures focus on the person's self-descriptions, what others think of him or her, and the individual's behavior. In addition to describing behavior and personality traits, Shapiro describes ways of thinking and perceiving, ways of experiencing emotion, and modes of subjective experience. Shapiro proposes that ways of thinking and perceiving are representations of psychological structures in their own right; however, there is little research to support such a proposal.

Seik (1979) has constructed an instrument designed to assess the four neurotic styles (Obsessive-Compulsive, Impulsive, Hysterical, and Paranoid) as described by Shapiro. The instrument, the Neurotic Styles Inventory (NSI), is a paper and pencil measure consisting of 100 questions which are answered either "true" or "false." The items consist of descriptions of various facets of each style, including ways of thinking, perceiving, experiencing emotions, and behaving. Only items which were related to unambiguous and specific manifestations of each style, as presented by Shapiro, were included, and inferences beyond his descriptions were avoided.
Two revisions of an initial item pool were administered to undergraduate students in the process of developing the Neurotic Styles Inventory. The first inventory consisted of 160 items and was administered to 242 male and female students. Responses to these items were analyzed and items were retained or eliminated on the basis of subtest correlations and item difficulty indices. New items were added to measure traits which were not represented in the retained items. Attempts were also made to balance the proportion of true versus false keyed items. The revised inventory was then administered to 258 male and female subjects. Item subtest correlations, corrected item subtest correlations, and internal consistencies for each scale were then calculated. Items were then selected for the final instrument. The final product was then administered to 304 subjects (192 female and 112 male undergraduate students) for the purpose of collecting reliability and normative data. The data were analyzed separately for males and females. No significant differences between means for males and females were found on the Paranoid and Impulsive scales. The combined mean on the Impulsive Scale was 7.66 and the combined mean on the Paranoid Scale was 12.16. The mean scores on the Obsessive-Compulsive and Hysterical scales were significantly greater for females than for males. The mean for females was 15.08 and the mean for males was 14.18 on the Obsessive-Compulsive Scale. The greatest difference in means was on the Hysterical Scale, with means of 15.36 for females and 13.58 for males. The raw score distribution for all scales approximated the normal curve.
The Kuder-Richardson 20 formula was used in calculating the internal consistency of each scale. Reliability estimates for three of the scales were near .70: Impulsive (.72), Hysterical (.70), and Obsessive-Compulsive (.67). The Paranoid Scale had the lowest reliability (.43).

Statement of the Problem

Seik's inventory appears to offer promise as a measure of Shapiro's constructs. However, additional research is needed before the instrument can prove useful clinically. Investigation regarding the reliability of the Paranoid Scale is the most apparent psychometric need of the inventory. Other psychometric needs include additional normative, reliability, and particularly, validity data for various groups. The purpose of this study is to attempt to develop construct and concurrent validity data for the Impulsive Scale of Seik's Neurotic Styles Inventory.

Research indicates that prison inmates typically obtain high scores on the Pd Scale (scale 4) of the MMPI, which is indicative of impulsive and psychopathic behavior (Panton, 1980). Shapiro states that "impulsive styles" are exhibited by those individuals usually diagnosed as impulsive or psychopathic characters, so the Pd Scale should correlate with the Impulsive Scale on the NSI. Such a comparison should provide information concurrent validity of the Impulsive Scale.

In addition, a prison inmate population was compared with a college student population to provide initial construct validity of the Impulsive Scale. It was hypothesized that prison inmates
would obtain statistically significant higher scores on both the Pd Scale of the MMPI and the Impulsive Scale of the NSI than college students. It was also hypothesized that statistically significant Pearson correlations would be obtained between the two measures, for college students and prisoners.

In addition to correlations between the Impulsive Scale of the NSI and Pd Scale, correlations between the Impulsive Scale and all other MMPI scales were calculated. Dahlstrom, Welsh, and Dahlstrom (1975) reported correlations as high as .73 between the Pd Scale and the other MMPI scales; therefore, significant correlations between the Impulsive Scale of the NSI and the other scales of the MMPI were expected.
METHOD

Subjects

The subjects for this study were 50 male inmates at a southern correctional center for youthful offenders and 50 undergraduate students (14 males and 36 females) at a rural southern university.

Prison Sample. Written permission was obtained from the Department of Corrections to conduct the study with inmates within the prison unit. When a male is sentenced to a North Carolina prison, he is first sent to a diagnostic and reception center where his file is established. The prison unit at which this study was conducted processes approximately 60 inmates per month. The reception process involves group administration of a battery of psychological tests which includes the MMPI, the Wide Range Achievement Test, and the Revised Beta Intelligence Test.

The prison inmates included in this study were selected, over a four-month period, from those undergoing initial processing. Inmates were selected for purposes of this study on the basis of several criteria. To be eligible for the study, inmates were required to be between 18-22 years old and Caucasian. Only those inmates achieving a minimal sixth-grade reading level, as indicated by their performance on the Wide Range Achievement Test, were included in the sample. Any MMPI profile with a t score greater than 70 on validity scale L or K, or a t score greater than 85 on
validity scale F is considered invalid by the Department of Corrections. These were also the criteria utilized in this study. Only those inmates with a valid MMPI profile were selected for inclusion in this study.

Student Sample. All college student subjects were Caucasian undergraduates enrolled in introductory psychology courses at Appalachian State University, a medium-sized southern state university. The ages for students ranged from 19 to 22, with a mean age of 19.04. College subjects were recruited from three separate psychology classes and participation in the study was voluntary, with extra course credit offered to participants. It was assumed that all college students could comprehend the items on both the Neurotic Styles Inventory and the MMPI; therefore, no college student was eliminated from the sample on the basis of reading ability. As with the prisoners, any student subject achieving a t score greater than 70 on validity scales L or K, or a t score greater than 85 on validity scale F of the MMPI was not included in the sample. Ten students had invalid MMPI profiles and were replaced by 10 additional students who were enrolled in one of the three original introductory psychology courses.

Procedure

All inmates undergoing initial processing were administered the Minnesota Multiphasic Personality Inventory (MMPI) and the Wide Range Achievement Test (WRAT). Both tests were hand scored immediately after administration. All inmates who achieved a minimal sixth-grade reading level on the Wide Range Achievement Test and
had a valid MMPI profile were recalled to the prison diagnostic center and administered the Neurotic Styles Inventory (NSI) in its entirety. All tests were administered during the same day. Both the MMPI and NSI were administered to the prison subjects in groups, under the supervision of a qualified research assistant. The inmates were told that both inventories were personality questionnaires and were instructed verbally, and in writing, to record their responses on the appropriate answer sheets. The research assistant returned the hand scored MMPI and WRAT profiles and the NSI answer sheets to this author. The NSI profiles were then computer scored.

The MMPI and NSI inventories were distributed to the college students in class by the instructor. The students were told that both inventories were personality inventories and were instructed verbally, and in writing, to record their responses on the appropriate answer sheets. The inventories were completed by the students on their own time and were returned to the instructor the following day. The MMPI answer sheets were hand-scored by this author and the NSI forms were computer scored.

Pearson correlations between the raw scores of the MMPI scales (with appropriate K corrections) and the Impulsive Scale of the NSI were computed. Correlations between the two measures were examined for the entire sample (students and inmates) and separately for students and inmates, for males and females, and college males. Intercorrelations among the MMPI scales were also calculated for each group. A t test was used in examining differences between
inmates and students on the Impulsive Scale of the NSI and on each of the MMPI scales.
RESULTS

It was hypothesized that prison inmates would obtain significantly higher scores than college students on both the Pd Scale of the MMPI and Impulsive Scale of the NSI. The data comparing the means for inmates and students on the Pd Scale and the Impulsive Scale of the NSI are presented in Table 1. As predicted, prison inmates scored significantly higher on the Pd Scale of the MMPI than did the college students ($t (98) = 5.02, p < .0001$). The mean scores for inmates and students were 28.06 and 23.26 respectively. Although the inmates' mean score ($\bar{x} = 8.3$) on the Impulsive Scale of the NSI was higher than that for students ($\bar{x} = 7.0$), the difference did not reach significance ($t (98) = 1.64, p < .10$).

Significant differences were also found between inmates and students on the L, F, K, Mf, Pa, Sc, Ma, and Si scales of the MMPI, while the mean scores on the remaining MMPI scales were not found to be significantly different. The data comparing differences between students and inmates on the MMPI scales, excluding the Pd scale, are presented in Table 2.

The second major hypothesis of the present study was that statistically significant Pearson correlations would be obtained between the Pd Scale of the MMPI and the Impulsive Scale of the NSI. Correlations between the two measures were computed for the entire sample and for each subgroup (Table 3). The obtained
TABLE 1
MEANS AND t VALUES FOR STUDENTS AND INMATES
ON THE Pd SCALE AND THE IMPULSIVE SCALE

<table>
<thead>
<tr>
<th>Scale</th>
<th>Mean for Inmates</th>
<th>Mean for Students</th>
<th>t Values</th>
<th>Probability of a Type I Error</th>
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</thead>
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<tr>
<td>Pd + .4k</td>
<td>28.06</td>
<td>23.26</td>
<td>5.02</td>
<td>.0001</td>
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<tr>
<td>Imp</td>
<td>8.30</td>
<td>7.00</td>
<td>1.64</td>
<td>.1050</td>
</tr>
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</table>

TABLE 2
MEANS AND t VALUES FOR STUDENTS AND INMATES
ON THE MMPI SCALES

<table>
<thead>
<tr>
<th>Scale</th>
<th>Mean for Inmates</th>
<th>Mean for Students</th>
<th>t Values</th>
<th>Probability of a Type I Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>L</td>
<td>4.62</td>
<td>3.06</td>
<td>3.97</td>
<td>.0001</td>
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<tr>
<td>F</td>
<td>8.10</td>
<td>4.62</td>
<td>4.90</td>
<td>.0001</td>
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<tr>
<td>K</td>
<td>11.48</td>
<td>14.52</td>
<td>-3.58</td>
<td>.0010</td>
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<tr>
<td>Hs + .5k</td>
<td>12.78</td>
<td>12.80</td>
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<tr>
<td>D</td>
<td>21.86</td>
<td>19.88</td>
<td>1.78</td>
<td>.0780</td>
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<td>Hy</td>
<td>19.70</td>
<td>21.20</td>
<td>-1.55</td>
<td>.1230</td>
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<tr>
<td>Mf</td>
<td>25.08</td>
<td>34.62</td>
<td>-6.33</td>
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<td>Pa</td>
<td>13.16</td>
<td>10.46</td>
<td>3.82</td>
<td>.0001</td>
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<tr>
<td>Pt + 1.0k</td>
<td>30.32</td>
<td>28.26</td>
<td>2.77</td>
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<td>Sc + 1.0k</td>
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<td>26.46</td>
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<td>Ma</td>
<td>23.58</td>
<td>21.52</td>
<td>2.14</td>
<td>.0350</td>
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<tr>
<td>Si</td>
<td>29.48</td>
<td>24.04</td>
<td>3.36</td>
<td>.0010</td>
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TABLE 3
PEARSON CORRELATIONS BETWEEN THE Pd SCALE AND THE IMPULSIVE SCALE

<table>
<thead>
<tr>
<th>Group</th>
<th>Correlation</th>
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<tr>
<td>Entire Sample (50 inmates, 50 students)</td>
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<td>Males (50 inmates, 14 students)</td>
<td>.36</td>
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<td>Prison Inmates (50 males)</td>
<td>.29</td>
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<td>College Students (14 males, 36 females)</td>
<td>.59</td>
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<td>Female Students (36 females)</td>
<td>.56</td>
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<td>Male Students (14 males)</td>
<td>.70</td>
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results indicated that the two measures were significantly related on each comparison, with Pearson correlations ranging from .29 to .70. For the entire sample (college students and prison inmates combined), the correlation was found to be .45 (p < .0001). For the college student sample as a whole, a correlation of .59 (p < .0001) was found, while the comparable relationship for the prison inmate sample was found to be .29 (p < .02). The correlation for males, which included all inmates and 14 males in the student sample, was found to be .36 (p < .01); however, for the college males the correlation was .70 (p < .01). For college females, the correlation was found to be .56 (p < .0001).

In addition to correlations between the Impulsive Scale and the Pd Scale, Pearson correlations between the Impulsive Scale of the NSI and the other MMPI scales were examined (Table 4). Overall, significant correlations were found between the Impulsive Scale and most of the MMPI scales. However, correlations varied greatly among groups, particularly correlations between the Impulsive Scale and the Hy, Mf, Ma, and Si scales. Correlations between the Impulsive Scale and the MMPI scales were generally higher for college males than for the other groups.

It was expected that the highest correlations would occur between the Impulsive Scale and Pd Scale; however, the highest correlations were found between the Impulsive Scale and the Sc Scale of the MMPI. These correlations were consistently high for all groups.
TABLE 4

INTERCORRELATIONS BETWEEN THE MMPI SCALES AND THE IMPULSIVE SCALE OF THE NSI

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<td>82</td>
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</table>

Group A - Entire Sample (50 inmates, 50 students)
B - All Males (50 inmates, 14 students)
C - Prison Inmates (50 males)
D - College Students (14 males, 36 females)
E - Female Students (36 females)
F - Males Students (14 males)

Note: The decimal points have been omitted and correlations have been rounded to the nearest 1/100.
Correlations among the various MMPI scales were examined and are available from the author. The results were generally in agreement with those reported by Dahlstrom et al. (1972).
DISCUSSION

The purpose of this study was to provide initial validity data for the Impulsive Scale of Seik's Neurotic Styles Inventory (NSI). Prison inmates were compared with college students on the Impulsive Scale of the NSI and the Pd Scale of the MMPI. Also, correlations between the two measures were examined. The mean score for prison inmates on the Pd Scale of the MMPI was significantly greater than the mean for college students. This result was expected and is consistent with findings reported by Panton (1980), Lanyon (1968), and Duckworth (1979).

The significant difference between inmates and students on the Pd Scale of the MMPI was not fully reflected in the findings on the Impulsive Scale of the NSI. The mean for the prison sample ($\bar{x} = 8.04$) was greater than that found for the college sample ($\bar{x} = 7.0$); however, the difference did not reach statistical significance. What this means in terms of the construct validity of the Impulsive Scale is unclear at this point, although several interpretations must be considered.

The student sample in the present study included a large number of female subjects ($n = 36$). Seik (1979) reported no differences between males and females on the Impulsive Scale of the NSI; therefore, the inclusion of females in the present study should not have affected the results, with reference to differences...
between prison inmates and college students on the Impulsive Scale. However, the inclusion of females in the student sample presents problems when attempting to interpret differences between inmates and students on the MMPI scales. Hathaway and McKinley (1967) report differences on most of the scales of the MMPI for males and females and separate scoring profiles were developed for purposes of interpretation. Even though the mean scores obtained by the subjects in the present study are typical for college students and prison inmates, caution should be exercised when interpreting differences between the two samples. In retrospect, it is apparent that the present study may have been compromised by the use of the large number of female subjects in the college sample.

Seik's inventory was developed using a college population. An initial item pool was administered to students, with items being analyzed and retained or eliminated on the basis of subtest correlations and item difficulty indices. The use of student subjects in the normative sample may restrict the utility of the instrument, with reference to use with other populations. The inventory appears to be an effective measure of Shapiro's constructs when used with college students. However, the exclusive use of college students in the normative sample presents a problem when attempting to validate the instrument with a population such as prison inmates.

Reading comprehension may be related to the lack of significant difference between inmates and students on the Impulsive Scale. Although only those inmates achieving a sixth-grade reading level on the WRAT were included in the prison sample it is possible that
someone with a sixth-grade reading level would have difficulty comprehending some of the items on the NSI. For example, item 41 of the Impulsive Scale states "I can generally postpone immediate satisfaction when it would interfere with long-term goals," and item 50 reads "The course of my life has seemingly been determined by accidental or external circumstances." In the future, attention should be paid to the question of item complexity and reading level.

Shapiro (1965) describes "style" as a mode of functioning (thinking, perceiving, and experiencing emotion) which may be inferred from a wide range of behavior. By "neurotic style," he is referring to those modes of functioning which appear to be related to various neurotic conditions. Shapiro states that the impulsive style is characteristic of those individuals usually diagnosed as impulsive characters or psychopathic individuals. He further states that variations of the impulsive style include passive-neurotic characters, narcissistic characters, certain kinds of homosexuals, alcoholics, and drug addicts. Shapiro suggests that neuroticism stems from variations in a style of thinking, which may in many ways be quite adaptive. That is, a person's style of thinking and experiencing is a matrix from which traditionally described pathological traits and symptoms, as well as adaptive traits evolve. Shapiro's description of "style" and lack of reference to behavioral symptoms may account for the negligible difference between inmates and students on the Impulsive Scale of the NSI. In other words, Shapiro's descriptions are restricted to ways of thinking, perceiving, and experiencing emotion, and the
potentially pathological behavioral manifestations of impulsivity may not be heavily represented in the NSI scores. Therefore, it is likely that the NSI scale scores imply similarities of "style" between college students and inmates, rather than differences in behavior. Also, it is possible that college students respond to the more adaptive NSI items, while prisoners obtain similar scores yet respond to other, more pathology oriented items.

Although the difference between prison inmates and college students on the Impulsive Scale did not reach statistical significance, there were significant differences between the two samples on the Pd Scale of the MMPI. These results suggest that the Impulsive Scale of the NSI and the Pd Scale of the MMPI are not measuring exactly the same concept. The students and inmates obtained similar mean scores on the Impulsive Scale of the NSI, which suggests that the impulsive "styles" (ways of thinking, perceiving, and experiencing emotions) of the two samples may be similar in some ways. The comparison between the two samples was made under the assumption that inmates are more impulsive than college students because the prison inmates had committed impulsive acts which led to their incarceration. Shapiro's (1965) descriptions are lacking in behavioral manifestations of impulsivity, and differences in the behavior of the two samples might not have been reflected in the scale scores on the NSI. However, the Pd Scale of the MMPI appears to measure differences in impulsive behavior, possibly grossly impulsive behavior, and the difference between inmates and students was apparently reflected in the scale scores.
Carlson (1981) questions the types of behavior which result in elevated Pd Scale scores. He describes the construction of the Carlson Psychological Survey (CPS), which was developed with items and scales intended expressly for offenders. The fourth scale of the CPS, the Antisocial Tendencies Scale, was expected to have a substantial correlation with the Pd Scale of the MMPI. The obtained correlation was low and negative, therefore, Carlson concluded the two scales are not measuring the same concept. Carlson believes the results of his study suggest the Pd Scale may be more a measure of juvenile behavior being acted out, while the CPS Scale is a measure of more adult and more serious behaviors. If this is the case, it may provide partial explanation for the differences in the size of the Pd-NSI correlation for students (.59) as compared to prisoners (.29).

Panton (1980) reports that prison inmates typically obtain high scores (t scores above 70) on the Pd Scale of the MMPI, which is indicative of impulsive and psychopathic behavior. Panton states that these people are generally characterized by angry disidentification with recognized conventions, exhibit an apparent inability to plan ahead, have a reckless disregard of the consequences of their actions, and behave in generally unpredictable fashion. Duckworth (1979) describes individuals with an elevated Pd Scale as unable to profit from their experiences, unable to plan ahead, and as resentful of rules and regulations.

The MMPI profile configuration for inmates in the present investigation was quite similar to results reported by Panton (1980),
which involved 2,551 male inmates, and resulted in an MMPI profile with peaks on the Pd, Sc, and Ma scales. Panton states that elevations on these scales are frequent in the behavior disorders. This pattern is nearly always associated with some form of acting out behavior. Such individuals exhibit a tendency to get into trouble with their environment, arousal seeking and a need for excitement and stimulation are characteristic of such people, and antisocial and criminal acts are not uncommon. Duckworth (1979) describes this profile configuration as typical of individuals who have a history of repeated aggressive situations in which others get hurt. It should be noted that the Impulsive Scale of the NSI is highly correlated with all three of these scales.

The results of the present study also involved peaks on the Pd and Ma scales of the MMPI for college students. However, the t scores for students were near 60, considerably below those found for prison inmates. This result is consistent with results reported by Lanyon (1968). Lanyon found that this profile configuration was typical for college students majoring in psychology and sociology. Duckworth (1979) reports that this profile configuration, when found in college student populations, usually indicates concern about the social problems of the world, and that such scores on the Pd and Ma scales of the MMPI are common for social workers, psychologists, and others in the helping professions.

In addition to the differences between inmates and students on the Pd and Ma scales of the MMPI, there were significant differences between the two samples on all three validity scales and all the
clinical scales except Hs, Hy, D, and Pt. Generally, the mean scores for the various scales are in agreement with results reported in the literature for prison inmates and college students.

Correlations between the Impulsive Scale of the NSI and the Pd Scale of the MMPI were statistically significant and support the concurrent validity of Shapiro's descriptions of impulsivity. The correlations for the various groups, with the exception of prison inmates, were generally strong. However, the highest correlations occurred between the Impulsive Scale and the Sc Scale of the MMPI. Harris and Lingoes (1972) devised subscales for each of the scales of the MMPI. They report that subscale Sc2c, a subscale of the Sc Scale, measures feelings of not being in control of one's impulses, which may be experienced as strange and alien, and feelings of being at the mercy of one's impulses and emotions. This is consistent with Shapiro's description of the subjective experience of impulsive characters. Harris and Lingoes state that the other subscales of the Sc Scale, subscales Scla, Sc1b, Sc2b, and Sc3, measure such characteristics as social alienation, emotional alienation, cognitive and conative lack of ego mastery, and sensorimotor disassociation. It is probable that subscale Sc2c, which appears to measure cognitive impulse control, accounted for the unusually high correlations between the Impulsive Scale of the NSI and the Sc Scale of the MMPI. Due to the use of several MMPI scoring formats in the present study, this possibility could not be pursued. Examination of correlations between subscale Sc2c and the Impulsive Scale might elucidate the high correlations between the Impulsive
Scale and the Sc Scale of the MMPI. If subscale Sc2c accounted for the resulting high correlation, then further support for Shapiro's descriptions would be indicated. Research investigating this possibility is needed.

Correlations among the MMPI scales were examined and were found to be similar to results reported by Dahlstrom, Welsh, and Dalstrom (1975). However, the intercorrelations for college males were somewhat higher than those for the other groups. The number of college males (n = 14) included in the study was rather small, which may account for this difference.

In summary, the difference between prison inmates and college students on the Impulsive Scale of the NSI did not reach statistical significance; however, this result may be partially attributable to Shapiro's description of "style" and lack of reference to symptoms. What this means in terms of the construct validity of the Impulsive Scale is not clear. The correlations between the Impulsive Scale of the NSI and the Pd Scale of the MMPI were significant, providing support for the concurrent validity of the Impulsive Scale. However, the Pd Scale correlations were much higher for college students than for prisoners.

The results were confounded by the inclusion of a large number of females in the student sample and caution should be exercised in interpreting differences between inmates and students, particularly on the MMPI scales. Further research, unconfounded by sex differences, would add clarity to the results of the present study.
It was expected that the highest correlations between the Impulsive Scale and the MMPI scales would occur between the Impulsive Scale and the Pd Scale; however, the highest correlations between the two inventories were between the Impulsive Scale and the Sc Scale. It was suggested that subscale Sc2c, a subscale of the Sc Scale, may have accounted for this result. It was not possible to examine correlations between subscale Sc2c of the MMPI and the Impulsive Scale. Further research, investigating the relationship between the Sc Scale and the Impulsive Scale, is needed and would help clarify this result.

Seik's (1979) inventory appears to offer promise as a measure of Shapiro's constructs. However, much research is needed before the instrument can prove useful clinically. A college student population was utilized during the development of the NSI, which should be taken into consideration when conducting research with other populations using the instrument. In addition to research examining the validity of the Impulsive Scale of Seik's Neurotic Styles Inventory, investigation regarding validity, reliability and normative data for all the scales (the Hysteria Scale, Obsessive-Compulsive Scale, Paranoia Scale, and the Impulsive Scale) of the inventory is needed.
REFERENCES
REFERENCES


Barratt, E. S. Anxiety and impulsiveness related to psychomotor efficiency. Perceptual Motor Skills, 1959, 9, 191-198.


APPENDIX A

The Neurotic Styles Inventory
The Neurotic Styles Inventory

This inventory consists of numbered statements. Read each item and decide whether the statement is true or false as it pertains to you personally. Remember to give YOUR OWN opinion of yourself. Do not leave any blank spaces if you can avoid it.

1. If I had my choice, I would prefer a career as an artist over a career in engineering.

2. I hardly ever get embarrassed.

3. I am generally aware of several alternatives in a situation and am able to make a choice between them.

4. I often end up doing things that I really don't want to do.

5. When I have free time, I like to plan ahead so that I get the most relaxation into the little time I have.

6. I rarely press myself to fulfill unending duties, responsibilities, and tasks.

7. I am generally relaxed and comfortable when I am around people who have authority over me (boss, teacher, etc.).

8. Sometimes I overreact to situations.

9. Generally when people around me have hidden motives I don't realize it until someone else points it out to me.

10. I am not easily influenced by others' opinions about things.

11. I am less tender and sentimental than most people of my sex.

12. Irresistible temptation is no excuse for quick unthinking actions.

13. As a rule, I don't produce much in the way of work.

14. Occasionally I wonder if I'm not too strict with myself.

15. I am almost never disappointed by other people.

16. I'm not concerned about how I appear to others.
17. Most people will dominate you if you allow them to.
18. I am a laughet; a giggler; a chuckler.
19. I am usually described as having "good judgment."
20. Many people I know tend to be so naive and trusting that they often "get taken in" by others.
21. I usually plan my day ahead, rather than do what comes up.
22. I rarely do things without knowing why.
23. I get my feelings hurt quite easily. I guess I'm just too sensitive.
24. I find it difficult to concentrate on what I am doing.
25. I trust my thoughts rather than my feelings when making an important decision.
26. I can usually be counted on to stir up some excitement.
27. My life is centered around my work, be it job or school.
28. When I notice something new or different about a person's personality I am not satisfied until I understand how I missed it in the first place.
29. I critically examine different aspects of a situation.
30. While working on a problem, I have a tendency to worry over details that sometimes seem insignificant.
31. In most social groups there are one or two people "in charge" and everyone else are like docile sheep.
32. I am more romantic than most people.
33. I often act on hunches or first impressions.
34. I tend to learn and remember a great deal of factual information.
35. I would like to have a job which required attention to much technical data.
36. I am generally concerned about the moral signifiiance of my behavior.
37. I can size up a situation more quickly and accurately than most people.
38. I have often gone ahead with plans that I knew would probably not work out.

39. I am most comfortable when I'm aware of my "role" (e.g., worker, student) and am able to behave accordingly.

40. Sometimes I'm so unaware of what's going on around me that people think I'm spacey.

41. I can generally postpone immediate satisfaction when it would interfere with long-term goals.

42. I'm really not too efficient when it comes to getting work done.

43. I have frequently done things that I didn't really mean to do.

44. I would like to be hypnotized.

45. I feel things more intensely than most other people.

46. I often find myself in trouble.

47. I take pride in the fact that I have a clearly defined purpose which guides my life.

48. I am quite sensitive to the meanings hidden behind a glance, a comment, or certain nonverbal behavior.

49. If I had to summarize my attributes in one phrase, it would be "will power."

50. The course of my life has seemingly been determined by accidental or external circumstances.

51. In contemplating a task, I seldom pay attention to detail.

52. I tend to respond quickly and intensely to persons and things in my environment.

53. Other people have a tendency to get me into trouble.

54. Even in insignificant acts, I can see moral or ethical implications.

55. I keep a lot of my ideas to myself.

56. Theories and opinions are more interesting to me than facts.

57. I am struck by the colorful things in life.

58. I'm good at making and carrying through with long-term plans.
59. I can concentrate for long periods of time on intellectual tasks.
60. When I sit down to relax, I get anxious because I feel like I'm wasting time.
61. My interests and goals tend to be short-lived.
62. I feel humiliated when I "give in" to the desires of someone else.
63. I have definite reasons for acting in the ways that I do.
64. I am a playful person.
65. I hardly ever get "turned on" to popular new styles.
66. Subjective impressions are usually more important than objective facts.
67. I am almost always vigilant (very aware of everything that's going on around me).
68. Just because it's my duty, doesn't mean I'll necessarily do it.
69. I tend to see the advantages of a situation and to ignore the drawbacks and complications.
70. It is very seldom that I slip and reveal something to others that I don't want them to know about me.
71. In general, I feel "driven" by some "invisible force" to perform at my maximum.
72. I am a spontaneous person and occasionally even surprise myself with things that I do.
73. People rarely say that I'm too emotional.
74. I generally don't feel under pressure.
75. I have seldom fallen in love.
76. I occasionally "get lost" in a sensual experience.
77. Friends consider me to be stubborn and usually are unable to change my mind about things.
78. Usually, rather than take a break, I would rather press on and complete whatever I'm doing.
79. I rarely consider morality, logic, and/or social customs when making decisions.

80. I feel somewhat obligated to tell the truth.

81. I am most comfortable when I'm working.

82. When reading the paper, I usually just skim the headlines.

83. I'm often described by my friends as "impulsive."

84. Sometimes people tease me for being so naive.

85. Sometimes I feel like I can't control myself.

86. When I change clothes, I let the ones I take off lay where they fall until I get around to picking them up if I do at all.

87. I really go by first impressions of people.

88. If somebody doesn't like me or is trying to use me, I sometimes don't even notice it until someone else points it out to me.

89. I have few interests, values, and goals.

90. Most people consider me to be quite open minded.

91. Sometimes I'll think about a problem for hours or days, trying to come up with the right decision.

92. I really enjoy unpredictability in people and am often pleasantly surprised when someone does something I don't expect.

93. Sometimes I just run my mouth and say everything that comes into my head.

94. Sometimes, it seems that if you allow yourself to care for somebody they will use this against you.

95. My train of thought is easily interrupted or distracted.

96. I dislike fads.

97. I find it easy to lie, especially when it's in my best interest to do so.

98. Maintaining your independence from the designs and desires of those around you requires perpetual alertness.
99. I generally say, "I want..." rather than "I should...."

100. I'm a sentimental fool.
APPENDIX B

Items Belonging To The Impulsive Scale Of The Neurotic Styles Inventory With The Keyed Direction
Items Belonging To The Impulsive Scale Of The Neurotic Styles Inventory With The Keyed Direction

3. I am generally aware of several alternatives in a situation and am able to make a choice between them. (F)

4. I often end up doing things that I really don't want to do. (T)

12. Irresistible temptation is no excuse for quick unthinking actions. (F)

19. I am usually described as having "good judgment." (F)

21. I usually plan my day ahead, rather than do what comes up. (F)

22. I rarely do things without knowing why. (F)

26. I can usually be counted on to stir up some excitement. (T)

29. I critically examine different aspects of a situation. (F)

33. I often act on hunches or first impressions. (T)

36. I am generally concerned about the moral significance of my behavior. (F)

38. I have often gone ahead with plans that I knew would probably not work out. (T)

41. I can generally postpone immediate satisfaction when it would interfere with long-term goals. (F)

43. I have frequently done things that I didn't really mean to do. (T)

46. I often find myself in trouble. (T)

50. The course of my life has seemingly been determined by accidental or external circumstances. (T)

53. Other people have a tendency to get me into trouble. (T)

58. I'm good at making and carrying through with long-term plans. (F)
61. My interests and goals tend to be short-lived. (T)
63. I have definite reasons for acting in the ways that I do. (F)
69. I tend to see the advantages of a situation and to ignore the drawbacks and complications. (T)
80. I feel somewhat obligated to tell the truth. (F)
83. I'm often described by my friends as "impulsive." (T)
85. Sometimes I feel like I can't control myself. (T)
89. I have few interests, values, and goals. (T)
97. I find it easy to lie, especially when it's in my best interest to do so. (T)
VITA

Richard Keith Franklin was born in Hickory, North Carolina on April 11, 1953. He attended elementary school in Hudson, North Carolina and was graduated from Hudson High School in June 1971. The following July he enlisted in the United States Army. After serving a three-year tour of duty in the Army, he began study toward an associate degree in liberal arts in September of 1974. This degree was awarded in June of 1978. The following August he entered Appalachian State University and began work on a Bachelor of Arts degree in Psychology. This degree was awarded in May 1980. The following August he began work on a Master's degree in clinical psychology. This degree will be completed in December 1982 after the requirement of a six-month internship is met. After graduation he will be employed with the North Carolina Department of Corrections at McCain, North Carolina.

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