THE RORSCHACH SECONDARY SPACE RESPONSE

THESIS

Presented to the Graduate Council of the North Texas State University in Partial Fulfillment of the Requirements

For the Degree of

MASTER OF ARTS

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Denton, Texas
December, 1973
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CHAPTER I

THE SPACE RESPONSE

When Rorschach (1942) published his systematization and analysis of the responses to his ink blots, one of the scoring categories he used was that of location. Within this category, he observed that, in addition to responses made to the entire blot ("whole" responses), or to a part of it ("detail" responses), some subjects occasionally responded to the white space found between the spots of ink in some of the blots, instead of to the entire mass of ink, or to a part of it. He labeled these responses as "space responses" (Zwischenformantworten), and described them as "those answers in which the white spaces are interpreted rather than the black or colored parts of the figure which surround them [p. 39]." Although he made no specific reference to the perceptual process involved, it is clear from the context, as well as from his published test interpretations (1942, pp. 184-216), that he had in mind the process which has come to be known as reversal of figure and ground.

Since Rorschach's time, however, many workers have taken to classifying as space responses, not only those which Rorschach himself recognized, but also those which incorporate a bit of the white space, merely as part of the percept.
The current practice has been summarized by Fonda (1960):

What Rorschach recognized as space responses are now often called primary or main S responses in order to distinguish them from what are now known as secondary or additional S responses. The latter designation is applied when the white spaces play a more incidental role and no true figure-ground reversal has occurred, the black or colored parts of the ink blot serving as the principal stimulus. Most workers will add an S (or s, depending upon the size of the area) to the main location score whenever the percept is elaborated by the inclusion of some of the white space, but these so-called additional S scores are incorporated into the final summary only by Beck (1950) and his followers [p. 81].

It is in this sense, as described by Fonda, that the secondary space response is considered in this study.

The secondary space response, therefore, is defined as a response made primarily to the black or colored parts of a blot, but which also includes a part of the white space contained within or surrounding the blot, without involving a figure-ground reversal.

The prototype of the secondary space response is the response of "mask" to Card I, in which the white spaces within the blot are seen as eyes, nostrils, teeth, etc. Other examples are the response of "a road divided in two, with one lane going around each side of a lake" to Card II, and that of "a bear stepping over a crevasse" to Card VIII. A special case is that of the interior white space in Card X seen as a face, with the colored details as facial features, and the large lateral details as the hair. In this last example, a case could be made for the response being primarily to the
white space, but there does not appear to be a true reversal of figure and ground, and the response is, therefore, treated in this study as a secondary space response.

The term "secondary" is preferred to "additional" in designating these responses, as it seems better to reserve the latter term for reference to responses made during the inquiry, to distinguish them from those made during the free association period.

Meaning of the Space Response

A considerable amount of research has been done on the meaning of the primary space response, confirming and refining Rorschach's (1942) original interpretation of it as indicative of some kind of oppositional tendency. These findings have been integrated by Fonda (1960), who has refined the interpretation to indicate autonomy or striving for autonomy.

Since Fonda's (1960) work, several other studies have reaffirmed this position. Typical of these is that of Weltman and Wolfson (1964). These authors studied the relationship of primary space responses to oppositional tendencies and mastery strivings in a group of applicants to a nursing school. Behavioral and ideational characteristics were set up as assumptions derived from the constructs of oppositional tendencies and mastery strivings. Measurements of these characteristics were correlated with Rorschach responses. Statistically significant support for taking the primary
space responses as representative of oppositional tendencies was found.

Much less research, however, has been done on the secondary space response. One is puzzled, in searching through the vast amount of literature on the Rorschach technique that has accumulated through the years, to find so little on this response. It may be that most researchers have adopted the position taken by Fonda (1960), that accumulating evidence is "vindicating Rorschach's lack of interest in the secondary S response, since it appears to be unrelated to primary S and of dubious reliability [pp. 82-83]."

Relationship of Primary and Secondary Space Responses

Fonda's statement that secondary space responses seem to be unrelated to primary space responses is well founded. In a study of white space responses and perceptual reversal, Bandura (1954) attempted to establish a relationship between the two types of space responses. He reported the results of his efforts as follows:

Since the space response scores used in this study included both primary and secondary space responses, the question arises as to whether these two types of space responses represent the same process from either a perceptual or behavioral standpoint. In the group of 80 Ss, the product-moment correlation between primary and secondary space responses was .34. The partial correlation between these space responses, with the influence of total responses held constant, was .08 [p. 115].
He further attempted to relate secondary space responses to reversal of Rubin figures and Necker cubes, and reported that

the correlation between reversal rate and the number of secondary space responses was found to be .36. . . .
The partial correlation of .19 between secondary white space responses and rate of perceptual reversal was not statistically significant [p. 115].

The relation of primary white space to rate of perceptual reversal, on the other hand, was significant.

In the same study, Bandura (1954) also attempted to establish a relationship between primary and secondary space responses by measuring the proportion of each occurring in the first two minutes of exposure and the last two minutes. He calculated his results in terms of mean proportions, and found that

practically three times as many primary space responses occurred in the last 2 min. of exposure as in the first 2 min. The mean proportion of secondary space responses occurring in the first 2 min. of exposure (Mp=.10) did not differ significantly from the mean proportion of secondary space responses occurring in the last 2 min. of exposure (Mp=.15) [p. 116].

In an earlier study, Fonda (1951) had found that the correlation between primary and secondary space responses was only .155.

As a preliminary to the present study, the forty-seven protocols reproduced in Beck's (1945) second volume were re-scored for primary and secondary space responses. The product-moment correlation between the two was .165, which was
not significant. The partial correlation, with the total number of responses held constant, was .009.

These investigations serve to confirm Bandura's (1954) statement that "primary and secondary space responses were not found to be related significantly to each other . . . . The practice of using these two types of responses as measures of the same thing seems unwarranted [p. 116]."

It is strange that Beck and his followers combine the primary and secondary space scores in the final summary, and interpret their total as a single measure. It was Beck who stated in the preface to his first volume (1961):

True, the ten ink blots are being employed in ways that deviate far from the Rorschach-Oberholzer discipline. True too that some valid results are so obtained. But these uses are not the Rorschach test. They are in many instances the examiner's qualitative judgments. At times they are the examiner's intuitive free associations to the patient's free associations to the ten ink blots. Many of these qualitative or intuitive interpretations are good, clinically accurate. But they are not the test as quantitative, statistically based instrument. This, as Rorschach explicitly states, is what he wanted to achieve [p. vii].

Although Beck noted that in Cards II and VII, with the large white spaces, and in some other cards, with the small white spaces, a true reversal of figure and ground occurs, and observed that "these reversals are found most frequently in two groups, healthy superior adults and schizophrenics [1961, p. 42]," and recognized that there were also other kinds of space responses, he made no distinction in their scoring. In fact, on the previous page he remarked that he
had "experimented for a time with separate symbols for each of these reactions [p. 41]," but had "found that he was heaping up complexity in the scoring armamentarium without adding to its diagnostic virtues [p. 41]."

One can only speculate as to why, with this dedication to empirical validation, Beck should continue to treat both kinds of space responses in the same way, in face of the evidence against the validity of the practice. Similarly, one can only speculate as to what his experience was that found no diagnostic significance in treating two unrelated test scores as measures of the same thing.

Reliability of Secondary Space Responses

Fonda's (1960) statement that the secondary space response "is of dubious reliability [p. 81]," is less well founded than his statement of its lack of relationship to the primary space response. This statement of unreliability is based on Fonda's own previous research (1951). In this study of 150 undergraduates, he found that the reliability coefficient for secondary space responses, using an alternate set of blots--the Harrower series (Harrower-Erickson, 1945) --after Spearman-Brown correction, was only .209. However, of the response categories measured and reported in the study, only total responses had a reliability coefficient of greater than .606, which accounts for less than half the total variance. This raises the possibility that the use of
these two sets of blots as equivalent, for establishing reliability, may be open to question. Fonda's obtained reliability coefficient may be taken with equal justification to indicate that the two sets of blots are not equivalent in eliciting the secondary space response.

In the previously mentioned preliminary to the present study, in which the forty-seven protocols in Beck's (1945) second volume were rescored for primary and secondary space responses, the range of the number of secondary space responses was from 0 to 7, with one statistically outlying score of 15. Eliminating this one outlier, the mean number of secondary space responses was calculated for odd-numbered and for even-numbered protocols. The mean number of these responses was exactly the same for each group, 1.61. The respective variances were 3.07 and 2.52, which are not significantly different.

In the absence of any agreement as to the method of determining Rorschach reliability, or even as to what constitutes such reliability, these results can be accepted as constituting as much indication of reliability as can be expected at this stage of the science. Further, these same indications were replicated in a split-half analysis of the results of the present study, reported in Chapter III. For these data, the range of the number of secondary space responses was from 0 to 9; the mean number of these responses for both odd-numbered and even-numbered protocols was exactly
the same, 2.12. The respective variances were 4.78 and 3.28, which are not significantly different. The difference between the mean for Beck's protocols and that for the subjects in the present study may reflect the difference between the patients in Beck's study and the students in the present one, as well as differences in administration variables. But the internal consistency for results obtained by the same administrator remains, and it is this consistency which is accepted here as evidence of reliability.
CHAPTER II

MEANING OF THE SECONDARY SPACE RESPONSE

Unlike some of the other determinants and location categories, the secondary space response has been subjected to very little empirical study to determine its meaning. Instead, various authors have applied certain intuitive notions to the response, and assigned its meaning according to these insights.

One such interpretation is that of Halpern (1953). Treating of the responses of children, she wrote:

Space responses are relatively frequent in the records of the preschool child. To a large extent these are space responses in conjunction with all or part of the blot, that is WS or DS answers. From his discussion of these responses, it is easy to perceive that the child is usually aware of the open space, the emptiness of the area. His concern about this and the tensions this emptiness appears to evoke in him seem to be a reflection of his own sense of inadequacy. The greater the number of these responses, the greater the child's tension and preoccupation in connection with his sense of insecurity. However, when these responses come only on the first one or two cards, and then disappear, they may well be expressions of the subject's feelings of inadequacy in the face of the test situation, and give evidence of his negativistic reactions to that situation. When they continue to appear throughout the protocol they reflect a more basic and all pervasive sense of insufficiency [p. 23].

This view, shared by Phillips and Smith (1953) and by Schachtel (1941) appears to make sense on intuitive grounds,
but is supported by no evidence other than the clinical observations of the authors, although the frequency of the response at various developmental levels has been empirically established by Phillips and Smith (1953).

Fonda (1960) has offered a related, though somewhat different suggestion that when the secondary S responses have the appearance of attempts to account for everything on the ink blot, as in the case of the "lakes," "rivers," or "roads" seen on maps or landscapes, the implication seems clear that needs for thoroughness, or pedantic attention to detail, are in evidence [p. 82].

As Fonda explicitly stated, this is an intuitive interpretation, and, although it has intuitive appeal, it remains unvalidated by empirical evidence. Moreover, a useful definition of "needs for thoroughness" or of "pedantic attention to detail" might be hard to come by. Presumably, Fonda was speaking of a kind of obsessive-compulsive personality.

On equally intuitive grounds, Fonda (1960) has also noted that the smaller white spaces are sometimes described as "eyes," and has suggested that "responses with this content always alert the examiner to the probability that projective tendencies or paranoid trends are present in the personality under examination [p. 82]." "Possibility" might have been a better word than "probability." It could be equally probable that the examiner should be alerted to the possibility of a concern with intellectual curiosity and visual activity for its own sake.
Phillips and Smith (1953) have offered the further suggestion that a failure to differentiate the white spaces from the black or gray parts of the blot, in such responses as "black and white smoke," or "black and white butterfly," though rare in adults, may indicate a lack of intellectual activity or of motivation, a variety of dullness or apathy. Here again, without empirical validation, one might equally well theorize on intuitive grounds that such responses indicate an unwillingness to be unduly attentive to details perceived as relatively unimportant.

Schachtel's (1941) interpretation of responses such as "an entrance to a cave" as indicating "either 'need for shelter' or 'fear of enclosure' [p. 87]" is also an intuitive one, based on his own clinical observations, but not subjected to rigorous verification. Moreover, the question of how the same response might indicate both a "need for" and a "fear of" the same thing, or two almost identical things, would require a highly complex answer in terms of psychodynamics.

Murray (1957), referring to Klopfer and Kelley (1946), saw the response in still another way. He stated that "S used additionally in a percept which is primarily a response to the blot is believed to indicate elasticity in the subject's mind, and the occasional ability to look at problems from an unusual angle [p. 49]."
Against this variety of intuitive interpretations, Fonda's (1960) statement that "the personality correlates of secondary or additional S are still poorly understood [p. 82]," seems to be an understatement. No wonder that he felt that the weight of the evidence was "vindicating Rorschach's lack of interest in the secondary S response [p. 82]."

An Empirical Basis for Interpretation

Two sources provide a clue to an empirical base for the meaning of the secondary space response. One of them is a study by Scharmann (1959); the other is the study of the forty-seven protocols in Beck's (1942) second volume, which was a preliminary to the present study, as mentioned in Chapter I.

Scharmann (1959) found, after evaluating the Rorschach protocols of a fairly large group of mentally handicapped subjects, that "a more careful morphological differentiation between the different in-between-space and border interpretations is necessary [p. 519]." He further concluded that the various kinds of space responses, apparently including the secondary space responses, "seemed to indicate increased readiness to change and ability for intellectual adaptation [p. 519]."

In the preliminary study of Beck's (1945) forty-seven protocols, these protocols were rescored for primary and secondary space responses. Since the distributions of most
of the scoring categories departed markedly from normality, transformations were applied before statistical treatment. Using a transformation of $\sqrt{x + .5}$ for the secondary space responses, which had the form of a Poisson distribution with a high frequency of 0 scores, and a transformation of $\sqrt{x}$ for the $Z$ or organizational activity scores as calculated by Beck, which had the form of a positively skewed distribution (Bartlett, 1936), a correlation coefficient was computed for these two scores. The correlation between secondary space and $Z$, with total number of responses (also transformed into $\sqrt{x}$) held constant, was .39, significant at the .01 level ($t=2.812; df=44$) (McNemar, 1969, p. 185).

This significant correlation, together with Scharmann's findings as cited above, indicate further investigation of the meaning of the secondary space response in terms of the Beck $Z$ score.

The Organization Activity Score

Beck (1961) saw the organizational activity measured by his $Z$ score as an indicator of "the vigor and fluidity of intellectual processes that can go on in grasping meaningful relationships [p. 47]." He related this to Rorschach's (1942) description of the organizational activity present in the whole responses, the number of which, according to Rorschach, "is, before all, index to the energy at one's disposal for the organization drive [p. 63]."
What seems to be measured by the $Z$ score is, in view of Scharmann's findings, and of Beck's own interpretation, something closely akin to what is measured by the type of whole response referred to by Klopfer and Kelley (1946) as the "well-organized whole."

The person who makes this type of response is seen as being open to sensory stimulation in a variety of forms, and aware of the multiplicity of the stimulus. There appears to be a relative wealth of associative material, and the person is able to exercise an optimal amount of judgment in integrating all the elements of the stimulus into the final percept. The individual is appraised as being alert and observant, and as being able to exercise some creativity in integrating the visual stimulus parts into a well-organized percept.

In a word, the person is intelligent.

This appears to be a simple enough way of identifying the kind of person who makes the secondary space response. However, intelligence is not so simple. For example, the ability to be well organized is not one of the aspects, or components, of intelligence that is measured by such instruments as the Wechsler tests. At least not directly.

There have, however, been some investigations of the relationship of the kind of intellectual activity measured by the $Z$ score and that measured by intelligence tests.
Goldfarb (1945) was unable to find a reliable relationship between Beck's $Z$ scores and scores on block design and similarities in the Wechsler-Bellevue Intelligence Scale. Similarly, Hertz (1960) was unable to find a significant correlation between Beck's $Z$ scores and either mental age or I.Q. based on the Higher Otis Test and the Stanford-Binet Intelligence Scale.

On the other hand, Wishner (1948) obtained a correlation of .536, which was significant, between Beck's $Z$ and the full weighted scale of the Wechsler-Bellevue. Sisson and Taulbee (1955) reported a correlation of .428 between Beck's weighted $Z$ score and the full scale Wechsler I.Q., and of .52 between Beck's unweighted $Z$ score and the full scale Wechsler I.Q.

These findings indicate that the intellectual activity measured by the $Z$ score is related to the full scale I.Q.; they also indicate that it is not the same thing, as the correlations are so far from perfect. They do indicate that the two kinds of activity, as measured by the $Z$ score and by the I.Q. instrument, are significantly related. Moreover, the well organized person, the person who is able to exercise creativity in organizing the elements of his environment into meaningful relationships, is well nigh universally recognized as intelligent. How, then, do we label, in scientifically and clinically acceptable terms, this particular component of intelligence?
The answer to this question seems to be that the concept involved is what Freud (1958) referred to as secondary process thinking.

Primary and Secondary Process

Although the concepts of the primary and secondary process may well be Freud's most important contribution to psychological knowledge, they are certainly among the most difficult to formulate clearly. One reason for this is that Freud did not write (nor, apparently, think) within the rigid and precisely defined and statistically quantified framework of perception, concept formation, judgmental activity, motivation, learning, and motor behavior, that has come to be the accepted framework of psychological research. In addition, he was less concerned with formulation in precise scientific terms within other frames of reference, than with accurate descriptions, in his own terms, of his own conclusions from his own clinical observations. And, finally, Freud thought and wrote within a developmental framework that was uniquely his own. But whatever the difficulties involved in understanding his concepts of primary and secondary process, and whatever the reasons for these difficulties, the fact remains that he was describing a very basic phenomenon in human activity, possibly the most basic of all.

Freud devoted a good deal more effort to explaining the primary process than he did to the secondary process.
Furthermore, he saw the latter as a developmental outgrowth of the former. Consequently, an understanding of the secondary process best begins with an understanding of its developmental predecessor.

**The Primary Process**

Freud's (1958) descriptions of the primary process are too prolix to permit condensation into a one-sentence definition. Perhaps the most concise and accurate summary of his writing on this concept is that of Eidelberg (1968), in the *Encyclopedia of Psychoanalysis*, under the entry "Primary Process." He describes it as follows:

**PRIMARY PROCESS**, described by Freud as (a) the mechanism of displacement of energy cathecting one idea to another, and (b) the mechanism of condensation of cathexis of several ideas into one, was at first related to the system Ucs., and later, to the id. In addition to the primary process, Freud (1915) stated that the id was also characterized by (c) the "exemption from mutual contradiction," (d) "of timelessness," and (e) of "replacement of external by psychical reality." It would seem that all five mechanisms are also present in the unconscious part of the ego and the superego. Thus, the primary process which controls the life of the embryo appears to remain after birth in the unconscious part of the personality. In this, the primary process is intimately connected with the pure pleasure principle, for its immediate aim is to eliminate unpleasure, while failing to differentiate between external and internal reality.

The condensation and the displacement, the two mechanisms which are characteristic of the primary process, appear to be aimed at the instant discharge and at keeping unconscious the meaning of this discharge. . . . Whereas conscious condensation permits us to save mental energy by blending two concepts into one, and conscious displacement helps us to find an available object, even if inferior, instead of one which cannot be had, unconscious condensation and displacement prevent us from
facing certain problems and dealing with them effectively by means of the secondary process [p. 329].

Freud (1958) thought that the primary process, operating entirely on the pleasure principle, chronologically preceded the development of other processes of thinking, in the history of the individual organism. He seems to have thought that it was also primary, in this sense, in the history of the species. It is important to understand that it was for this reason that he gave it the name of "primary," and not for reasons of relative importance in relation to other kinds of thinking processes.

How primary process thinking shows itself, either in the undeveloped infant (presumably), or in the dreamwork of normal adults, or in the waking processes of those with thought disorders, is described by Holt and Havel (1960):

It disregards considerations of time; logical contradictions abound. When the primary process holds sway, ideas shift about, lose their identities through fusion or fragmentation, become concrete and pictorial, and are combined and associated in seemingly arbitrary or trivial ways. The course of thinking and remembering is dictated by the instinctual drives, while realistic considerations are disregarded and the distinction between wish and reality is lost [p. 265].

Schafer has provided an accurate description of this kind of thinking as it is seen in Rorschach productions (1954):

On the lower levels of performance where the primary process dominates the secondary, concept formation tends to be organized around drives, conflicts, fears and the like rather than around relations that exist in reality among objects and their properties. . . .
Images expressing infantile drives, conflicts, fears, and the like tend to crowd out of consciousness those of relatively integrated, neutral, reality-reflecting character. . . . And attention will be disrupted because the neutralized energy required for sustained attention will be available in very limited quantities at best. On the primitive levels of psychic functioning, most or all energy normally available for the advanced, adaptive thought functions is tied up in aggressive and libidinal urges and conflicts [p. 79].

On the strength of the excessive attention that Freud paid to this kind of thinking and behavior in his various works, there have been those who have felt that he did not attribute a great deal of importance to any other kind of thinking. However, as Holt and Havel (1960) have noted,

Freud did not deny that logical, rational, realistic, and efficient mental processes exist, or even that they make up a great part of conscious mental life, a part which his therapy aimed to enlarge. He grouped them under the conceptual heading secondary process [p. 264].

The Secondary Process

After describing the setting up of the reality principle, stating that "the psychical apparatus had to decide to form a conception of the real circumstances in the external world, and to endeavour to make a real alteration in them [p. 219]," Freud (1958) described the reality principle as a "new principle of mental functioning . . . what was presented in the mind was no longer what was agreeable, but what was real, even if it happened to be disagreeable [p. 219]."

Freud (1958) saw the emergence of this reality principle, and its dominance over the pleasure principle, at
least in the mature person in the conscious state, as resulting in a new kind of thinking, which he called the secondary process:

The increased significance of external reality heightened the importance, too, of the sense-organs that are directed towards that external world, and of the consciousness attached to them. Consciousness now learned to comprehend sensory qualities in addition to the qualities of pleasure and unpleasure which hitherto had alone been of interest to it. A special function was instituted which had periodically to search the external world, in order that its data might be familiar already if an urgent internal need should arise—the function of attention. Its activity meets the sense-impressions half way, instead of awaiting their appearance [p. 220].

He added, a little later, that "a new function was now allotted to motor discharge . . . Motor discharge was now employed in the appropriate alteration of reality [p. 221]." This is about as close as Freud ever came to an explicit formulation of the secondary process. But his frequent references to it, and his lengthy descriptions of its workings leave little doubt as to exactly what he meant.

What he meant has been described in rather concise terms by Schafer (1954):

Secondary process thinking is predicated upon delay of immediate, unmodulated discharge of impulses; it seeks such detours toward gratification as are appropriate to the individual's total prevailing life situation; it is selective and modulating. Also, secondary process thinking is oriented toward reality and logic; it is reflective and forward looking [p. 77].

Schafer (1954) has also described how this kind of thinking shows itself in intellectual activity:
... it may be said that on the advanced levels of psychic functioning the reality principle and the secondary process prevail over the pleasure principle and the primary process; delay, indirectness, and modulation of discharge of tension take precedence over immediate, direct, uncontrolled discharge; logic and reality testing overshadow autistic thought; and clarity and organization of subjective experience replace fluidity and diffuseness of experience ... and minimal reflective and selective capacity [p. 79].

There is no one psychological measurement that can assess the globality of secondary process thinking, as it has been described. Holt and Havel (1960) have made the accurate observation that "for a differentiated account of secondary process functions, we must look to multidimensional tests of abilities and adaptiveness, intelligence tests like those of David Wechsler [p. 264]." And yet, there is some need for a kind of indicator of whether or not the secondary process is functioning, and if so, to what degree, without differentiating its various manifestations. This kind of indicator must be an index of creative ability. Schafer (1954) has observed that "the outstanding place of the Rorschach test and Thematic Apperception Test among personality tests seems to derive to a great extent from the prominence and resulting instructiveness of creative work they require in the response process [p. 81]."

Drawing on the key words in Freud's own description of the secondary process, as quoted above, the following description can be formulated:
It forms "a conception of the real circumstances in the external world," and endeavors "to make a real alteration in them." "A special function was instituted which had periodically to search the external world, in order that its data might be familiar . . . the function of attention." "Motor discharge was now employed in the appropriate alteration of reality."

The secondary process thus described is closely related to what goes on in the organizational activity in the Rorschach, as described by Beck, and to what Scharmann, as cited above, referred to as "increased readiness to change and ability for intellectual adaptation." This secondary process seems to be what is indicated by the secondary space responses.

Measurement of the Secondary Process

If the secondary space responses are, indeed, connected with secondary process thinking, as indicated by Scharmann's findings and by their positive correlation with Beck's Z scores, they must not measure the secondary process in exactly the same aspect as the Z scores, since the correlation of .39 accounts for only about 15 per cent of the variance in each of the two scores.

It would seem, on intuitive grounds, that the secondary space response measures attention to detail that might easily be overlooked, and the ability to integrate this detail realistically into the other parts of external reality in a meaningful way.
Probably the best known method for assessing primary and secondary process thinking in the Rorschach is that presented by Schafer (1954). However, Schafer's method, while based on his own and others' observations, remains to a large extent intuitive. It utilizes content to an extent that some might find objectionable, and consists, as a careful reading of his work reveals, largely in understanding clearly exactly what both primary and secondary process thinking are, to the extent of being able to recognize them when they appear. While this method of assessment is not objectionable, it does not provide objective norms against which to judge other possible measures, such as the secondary space response.

Some efforts have been made, in addition to that described by Schafer, to develop a method specifically designed to measure primary process thinking in the Rorschach (Holt, 1956; Holt and Havel, 1960; Zukowsky, 1962). However, these methods, in spite of their titles which indicate measurement of both primary and secondary process, measure only the primary process. Moreover, they are all based on Holt's (1956) system of using content categories and form for the determination of the presence of primary process thinking, and do not consider location scores, or the secondary space response. And since these methods are based on the Rorschach itself, it is not possible to use them for testing a hypothesis that another scoring category measures primary process, since the validity in such a case would be circular.
It is necessary, therefore, to resort to some other psychological instrument to measure secondary process thinking, against which the validity of the secondary space response as a measure of this process might be validated.

MMPI Scores as a Measure of the Secondary Process

The most widely used instrument for obtaining empirically validated measurements of differentiated facets of personality is the Minnesota Multiphasic Personality Inventory, or MMPI (Hathaway and McKinley, 1967).

Of the ten clinical scales on the MMPI, two are measures of the manner in which the individual deals with the environment, and the extent to which he engages in reality testing, delay of gratification, and the other functions of secondary process thinking in these dealings. These are scale 6 (Pa) and scale 9 (Ma).

**MMPI Scale 6 (Pa)**

Scale 6 was originally developed to measure the clinical pattern of paranoia. The concept of paranoia as applied to this scale has been described by Dahlstrom, Welsh, and Dahlstrom (1972):

The concept of paranoia involves a set of delusional beliefs, frequently including delusions of reference, influence, and grandeur. Although the persons showing these personality features may appear to be well oriented to reality and integrated in the relation of one delusion with another in their belief structure, they may show misperceptions or misinterpretations of their life
situations that are markedly out of keeping with their ability and intelligence. These paranoid characteristics may appear in schizophrenics or those with depressive reactions, more rarely in otherwise intact persons, and may be either temporary and reversible or long-standing and progressively more convoluted and involved [pp. 206-207].

These same authors have noted that Hathaway and Meehl (1952) found that males with high scores on scale 6 were rated by their peers as sensitive, emotional and prone to worry. They were seen to be kind, affectionate, generous, and grateful. In addition, these men were characterized as sentimental and soft-hearted, peaceable, cooperative and courageous, and as having wide interests. This picture of the person with a high scale 6 score in the normal range contrasts sharply with the characteristics of the criterion group against which this scale was derived. These findings add strength to the contention made by Gough (1953) that the correlates of scale 6 change markedly in character as the elevation shifts from moderate values to the higher ranges. The high 6 female was described as being emotional, soft-hearted, and sensitive [p. 210].

In other words, elevations on this scale can be expected, in normals, to indicate some interference with their reality testing, though not so much as to prevent them from functioning. Their handling of reality is still adequate enough for them to survive—to be characterized as kind, affectionate, generous, and grateful—but not good enough to prevent them from being rated as sensitive, emotional, and prone to worry. In abnormals, on the other hand, the strain on reality testing has gotten out of hand. Sensitivity has become suspiciousness, emotionality has become painful and is compensated through reaction formation, and proneness to worry has crystallized into delusions of persecution.
Scale 6 in normals.—It is easy enough to see that in normals, therefore, if the secondary space response as a measure of the secondary process is expected to correlate with MMPI scale 6, this correlation can be expected to be negative. Those normals with no elevation on scale 6 will engage in an optimal amount of observation of details in the environment and of alteration of the environmental reality. Those normals, however, with a moderate elevation (less than T-score of 70) will experience interference in their handling of reality, and will, in consequence of their sensitivity, engage in less observation of sensitivity-provoking details. In consequence of their proneness to worry, they will engage in fewer attempts to alter external reality, lest it prove to be an anxiety-provoking experience. They will be expected, in other words, to make fewer secondary space responses.

Scale 6 in abnormals.—The case of those with abnormal elevations (of T-score of 70 or greater) on scale 6 is less simple. It might seem that these, being more pathological, would have more interference with the secondary process, and hence, their scale 6 scores would also correlate negatively with the secondary space response. However, it is characteristic of the paranoid process that it is compensated in increased intellectual activity, albeit misdirected. As Dahlstrom, Welsh, and Dahlstrom, cited above, have pointed
out, "persons showing these personality features may appear to be well oriented to reality [emphasis added]," and their disorder lies precisely in that they "show misperceptions or misinterpretations of their life situations that are markedly out of keeping with their ability and intelligence," not a loss of that ability or intelligence. The ideational process of the paranoid personality may be said to mask as secondary process thinking.

As every clinician knows from interviews in the consulting room, the paranoid person, whatever else he may be, is not hesitant to perceive details in the environment, nor to make appropriate alterations of reality—appropriate, of course, to his own system. The exaggerated proportions of this activity, in fact, constitute one of the chief symptoms of the disorder. Consequently, abnormals will be expected to make even more secondary space responses. In their case, of course, these responses will be measuring not true secondary process thinking, but the thoroughly rationalized paranoid distortion of it. The correlation of secondary space responses with MMPI scale 6 in the case of abnormals, therefore, is expected to be positive.

**MMPI Scale 9 (Ma)**

Scale 9 was derived to measure the affective disorder of hypomania. The concept of this personality pattern as used
in the derivation of the scale has been described by Dahlstrom, Welsh, and Dahlstrom (1972):

Three features characterize this pattern: overactivity, emotional excitement, and flight of ideas. The activity may lead to a great deal of accomplishment but is frequently inefficient and unproductive. The mood may be good-humored euphoria but may on occasion be irritable, and temper outbursts are frequent. The enthusiasm and overoptimism characteristic of persons with this pattern may lead them into undertaking more than they can handle, although the milder forms of hypomania may be difficult to distinguish from the behavior of ambitious, vigorous, and energetic normals. Some of the behavior resulting from hypomania may be easily confused with psychopathic patterns and there are some important instances of combinations of both patterns in the same person [p. 220].

In describing normals with high scale 9 scores in the group which Hathaway and Meehl (1952) studied, Dahlstrom, Welsh, and Dahlstrom (1972) wrote:

One major theme running through the adjectives characteristic of normal males with high 9 scores centers about their sociability, energy, and openness. They were described as sociable in the sense of forward, talkative and verbal, individualistic, impulsive, enthusiastic, adventurous, and curious, with interests in national, political matters. . . . Another theme is reflected in the description of them as generous, soft-hearted, affectionate, and sentimental. Their acquaintances also described the high 9 males as prone to worry, self-dissatisfied, and conventional [pp. 222-223].

As with scale 6, there is marked contrast between the abnormals used in the derivation of the scale--the classic manics--and the normals with moderately high elevations on scale 9.

Elevations on this scale, also, can be expected, in normals, to indicate some interference with reality testing,
though not so much as to prevent them from functioning. Their handling of reality is still adequate for them to survive--to be characterized as social, energetic, and open--but not good enough to prevent them from being rated as prone to worry, self-dissatisfied, and conventional. In abnormals, on the other hand, the strain on reality testing has gotten out of hand. Worrisomeness has degenerated into flight of ideas, self-dissatisfaction has become too much to tolerate and has given way to a kind of pseudo-self-discovery in emotional excitement, and the tedium of conventionality in behavior has been smothered in overactivity. The self-dissatisfied worrier has run away from the threat of depression and is running furiously, in both body and mind, in what Buss (1966) has called "a 100-yard dash through life [p. 173]."

Scale 9 in normals.--As with scale 6, it is easy enough to see that in normals, if the secondary space response as a measure of secondary process is expected to correlate with MMPI scale 9, this correlation can be expected to be negative. Those normals with no elevation on scale 9 will engage in an optimal amount of observation of details in the environment and of alteration of the environmental reality. Their sociability, energy, and openness will be well under the control of the reality principle. Those normals, however, with a moderate elevation (less than T-score of 70) will experience some interference in their handling of reality. They
will, in consequence of their proneness to worry, engage in less careful scrutiny of worry-provoking details in their environment. If details are carefully scrutinized, they will be worried over instead of used creatively. As a result of their self-dissatisfaction, they will be insecure, and consequently, in agreement with their description in the Hathaway and Meehl (1952) study, impulsive in their dealings with the environment, resulting in interference with reality testing, and in inappropriate alteration of reality. Because of their conventionality, their creative activity will be hampered, resulting again in a failure to utilize perception of details in the environment in a creative fashion. This interference with the secondary process will show itself in fewer secondary space responses.

**Scale 9 in abnormals.** -- As with scale 6, it might at first seem that those with abnormal elevations (of T-score of 70 or greater) on scale 9, being more pathological, would have even more interference with their secondary process, and hence their scale 9 scores would also correlate negatively with secondary space response scores. Here again, however, the nature of the manic process, characterized by overactivity, emotional excitement, and flight of ideas, is such as to result in increased, though misdirected and insufficiently controlled intellectual activity. Although it is inefficient and ultimately unproductive, as Dahlstrom, Welsh, and Dahl-
strom, as cited above, have pointed out, the activity may lead to a great deal of accomplishment. As they have also mentioned, the "enthusiasm and overoptimism characteristic of persons with this pattern may lead them into undertaking more than they can handle." The problem with the manic is precisely not that he undertakes too little perception of detail in the environment, but that he undertakes too much. As with the paranoid personality, the ideational process of the manic personality may be said to mask as secondary process thinking. Consequently, abnormals will be expected to make even more secondary space responses. As is the case with scale 6, these responses will be measuring not true secondary process thinking, but an exaggerated caricature of it. The correlation of secondary space responses with MMPI scale 9 in the case of abnormals, therefore, is expected to be positive.

This proposed rationale for interpretation of the meaning of the secondary space response will be tenable, of course, only if it can be supported through empirical validation.
CHAPTER III

CORRELATES OF THE SECONDARY SPACE
RESPONSE: AN EMPIRICAL STUDY

The rationale presented in Chapter II leads to the formulation of several hypotheses. As was indicated, the hypotheses concerning elevations on scales 6 and 9 of the MMPI, as correlated with the secondary space responses, will not be the same for those with only moderate elevations as for those with elevations of T-score of 70 or greater. However, in the sample available for analysis, only two of the fifty subjects had elevations of T-score of 70 or greater on scale 6, and only thirteen of the fifty on scale 9. But it was further reasoned that deviations from normality as measured by the other MMPI scales would produce some of the interference with the secondary process that was postulated in the previous chapter as showing up most clearly on these two scales, and would be reflected in the relative deviation of these two scales from the mean of T-score of 50, even though the deviation was not enough to bring them up to a T-score of 70.

The following hypotheses were formulated.

Hypothesis 1.—The number of secondary space responses will be negatively correlated with scores on MMPI scale 6,
for individuals showing no MMPI clinical scale elevations of T-score of 70 or greater.

**Hypothesis 2.**--The number of secondary space responses will be negatively correlated with scores on MMPI scale 9, for individuals showing no MMPI clinical scale elevations of T-score of 70 or greater.

**Hypothesis 3.**--The number of secondary space responses will be positively correlated with scores on MMPI scale 6 for individuals showing an elevation of T-score of 70 or greater on at least one MMPI scale.

**Hypothesis 4.**--The number of secondary space responses will be positively correlated with scores on MMPI scale 9 for individuals showing an elevation of T-score of 70 or greater on at least one MMPI clinical scale.

The following experimental study was conducted to test these hypotheses.

**Method**

**Subjects.**--The subjects used in the study were twenty-five males and twenty-five females from undergraduate courses in psychology at the freshman and sophomore levels.

**Procedure.**--Each subject was administered the Rorschach test, in the manner described by Beck (1961), except that the
subject was seated facing the test administrator. Each subject was also administered the MMPI, using Form R.

Fifteen of the subjects were tested by the author. The other thirty-five were tested by graduate students trained in testing procedures, and were administered various other tests in the batteries given by the test administrators for use in other procedures.

The Rorschach protocols were scored for total number of responses (R), for primary space responses (S), for secondary space responses (s), and for Beck's organizational activity score (Z). The protocols of those subjects tested by graduate students were rescored for these four scores.

The MMPI protocols were scored for the three validity scales (L, F, and K) and for the ten clinical scales. None of the MMPI protocols showed omissions of ten per cent or more of the items, and the ? or "cannot say" score was not considered.

Results

The scores of the fifty subjects on the Rorschach and the MMPI are given in the Appendix.

The subjects were divided into two groups, those with no elevations of T-score of 70 or greater on any of the MMPI clinical scales (Group I), and those with at least one clinical scale elevation of T-score of 70 or greater (Group II). There were twenty-four subjects in Group I, and twenty-six in Group II.
None of the subjects showed a significant deviation from the mean of T-score of 50 for any of the MMPI validity scales.

The means and standard deviations for each of the Rorschach scores and for the MMPI scores on scales 6 and 9 are shown in Table I, for all subjects, for Group I, and for Group II.

**TABLE I**

MEANS AND STANDARD DEVIATIONS OF RORSCHACH AND MMPI SCORES

<table>
<thead>
<tr>
<th>Group</th>
<th>Rorschach</th>
<th>MMPI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>R</td>
<td>S</td>
</tr>
<tr>
<td>All Subjects N=50</td>
<td>29.43</td>
<td>.80</td>
</tr>
<tr>
<td>Group I N=24</td>
<td>29.88</td>
<td>.67</td>
</tr>
<tr>
<td>Group II N=26</td>
<td>29.12</td>
<td>.92</td>
</tr>
</tbody>
</table>

The distributions of R and Z were markedly skewed positively. The distributions of S and s were in the form of a Poisson distribution, with a high frequency of 0 scores. Therefore, before computing correlations, a normalizing
transformation was applied to each of these scores (McNemar, 1969, pp. 186-187). For the \( R \) and \( Z \) scores, a transformation of \( \sqrt{x} \) was used, and for the \( S \) and \( s \) scores, a transformation of \( \sqrt{x + 0.5} \). These transformations were chosen as those resulting in the greatest efficiency in retaining information (Bartlett, 1936).

Product-moment correlations between these scores were computed. The correlation matrix for the scores of all fifty subjects is given in Table II.

**TABLE II**

**CORRELATION MATRIX FOR RORSCHACH AND MMPI SCORES—ALL SUBJECTS**

<table>
<thead>
<tr>
<th>Score</th>
<th>( R )</th>
<th>( S )</th>
<th>( s )</th>
<th>( Z )</th>
<th>6</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>( R )</td>
<td>1.000</td>
<td>.560</td>
<td>.439</td>
<td>.158</td>
<td>.078</td>
<td>.018</td>
</tr>
<tr>
<td>( S )</td>
<td>.560</td>
<td>1.000</td>
<td>.256</td>
<td>.040</td>
<td>.071</td>
<td>.229</td>
</tr>
<tr>
<td>( s )</td>
<td>.439</td>
<td>.256</td>
<td>1.000</td>
<td>.361</td>
<td>-.040</td>
<td>.009</td>
</tr>
<tr>
<td>( Z )</td>
<td>.158</td>
<td>.040</td>
<td>.361</td>
<td>1.000</td>
<td>-.140</td>
<td>.029</td>
</tr>
<tr>
<td>6</td>
<td>.078</td>
<td>.071</td>
<td>-.040</td>
<td>-.140</td>
<td>1.000</td>
<td>.205</td>
</tr>
<tr>
<td>9</td>
<td>.018</td>
<td>.229</td>
<td>.009</td>
<td>.029</td>
<td>.205</td>
<td>1.000</td>
</tr>
</tbody>
</table>

For the scores of the subjects in Group I, the correlation matrix is given in Table III.
### TABLE III

CORRELATION MATRIX FOR RORSCHACH AND MMPI SCORES--GROUP I

<table>
<thead>
<tr>
<th>Score</th>
<th>R</th>
<th>S</th>
<th>s</th>
<th>Z</th>
<th>6</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>R</td>
<td>1.000</td>
<td>.426</td>
<td>.533</td>
<td>.138</td>
<td>.127</td>
<td>.028</td>
</tr>
<tr>
<td>S</td>
<td>.426</td>
<td>1.000</td>
<td>.230</td>
<td>-.086</td>
<td>.007</td>
<td>-.104</td>
</tr>
<tr>
<td>s</td>
<td>.533</td>
<td>.230</td>
<td>1.000</td>
<td>.343</td>
<td>-.326</td>
<td>-.093</td>
</tr>
<tr>
<td>T</td>
<td>.138</td>
<td>-.086</td>
<td>.343</td>
<td>1.000</td>
<td>-.234</td>
<td>-.331</td>
</tr>
<tr>
<td>9</td>
<td>.028</td>
<td>-.104</td>
<td>-.331</td>
<td>-.093</td>
<td>1.000</td>
<td>.078</td>
</tr>
</tbody>
</table>

Table IV gives the correlation matrix for the scores of the subjects in Group II.

### TABLE IV

CORRELATION MATRIX FOR RORSCHACH AND MMPI SCORES--GROUP II

<table>
<thead>
<tr>
<th>Score</th>
<th>R</th>
<th>S</th>
<th>s</th>
<th>Z</th>
<th>6</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>R</td>
<td>1.000</td>
<td>.674</td>
<td>.336</td>
<td>.199</td>
<td>.071</td>
<td>-.038</td>
</tr>
<tr>
<td>S</td>
<td>.674</td>
<td>1.000</td>
<td>.295</td>
<td>.161</td>
<td>.076</td>
<td>.376</td>
</tr>
<tr>
<td>s</td>
<td>.336</td>
<td>.295</td>
<td>1.000</td>
<td>.416</td>
<td>.135</td>
<td>.314</td>
</tr>
<tr>
<td>T</td>
<td>.199</td>
<td>.161</td>
<td>.416</td>
<td>1.000</td>
<td>-.075</td>
<td>.067</td>
</tr>
<tr>
<td>6</td>
<td>.071</td>
<td>.076</td>
<td>.135</td>
<td>-.075</td>
<td>1.000</td>
<td>.068</td>
</tr>
<tr>
<td>9</td>
<td>-.038</td>
<td>.376</td>
<td>.314</td>
<td>.067</td>
<td>.068</td>
<td>1.000</td>
</tr>
</tbody>
</table>

Since the number of responses in any of the scoring categories of the Rorschach are a function of the total number of responses, it is not possible to derive a meaningful
interpretation from the product-moment correlations, without further statistical treatment, which takes into consideration the influence of the total number of responses on the correlations between other response categories, or between another response category and other test scores (Cronbach, 1949, pp. 409-411).

Therefore, partial correlations of \( s \) with \( S \) and \( Z \), with the total number of responses held constant (McNemar, 1969, pp. 183-185), were computed for all subjects, and for Groups I and II. These partial correlations are shown in Table V.

**TABLE V**

<table>
<thead>
<tr>
<th>Group</th>
<th>Correlates</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( S )</td>
<td>( Z )</td>
</tr>
<tr>
<td>All subjects (N=50)</td>
<td>.013</td>
<td>.332*</td>
</tr>
<tr>
<td>Group I (N=24)</td>
<td>.005</td>
<td>.321</td>
</tr>
<tr>
<td>Group II (N=26)</td>
<td>.098</td>
<td>.403**</td>
</tr>
</tbody>
</table>

*\( p<.02 \)
**\( p<.05 \)

Similarly, part correlations of Rorschach \( s \) and MMPI scales 6 and 9, with the influence of \( R \) removed from \( s \) (McNemar, 1969, pp. 185-186), were computed for all subjects, and for Groups I and II. These correlations are shown in Table VI.
TABLE VI
PART CORRELATION OF $s$ WITH 6 AND 9 WITH $R$ REMOVED FROM $s$

<table>
<thead>
<tr>
<th>Group</th>
<th>Correlates</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6</td>
</tr>
<tr>
<td>All subjects (N=50)</td>
<td>.082</td>
</tr>
<tr>
<td>Group I (N=24)</td>
<td>-.356*</td>
</tr>
<tr>
<td>Group II (N=26)</td>
<td>.118</td>
</tr>
</tbody>
</table>

*$p<.10$  **$p<.05$  

Part correlations, with the influence of $R$ removed from $s$, were also computed for $s$ and each of the other scales of the MMPI. Significant coefficients were not found for any of these correlations.

Discussion

Before considering these results as they support or fail to support the hypotheses, it is worth noting that a significant relationship between primary and secondary space responses was not obtained, for either of the groups, nor for the entire pool of subjects. This confirms again the findings by Bandura (1954) and Fonda (1951) mentioned in Chapter I, that these two scores do not measure the same thing.
The coefficients of correlation obtained for secondary space responses and Beck's organizational score support the rationale presented in Chapter II. There is enough of a significant relation in the correlation of .332 for all subjects, significant at the .02 level (t=2.146; df=47) (McNemar, 1969, p. 185), to confirm that these two measures are related, and must measure related functions. But the size of the correlation, which accounts for only about 11 per cent of the variance in one score in terms of the other, indicates that the functions measured by the two are sufficiently different to justify using both measures, and not equating them with each other.

Hypotheses 1 and 2, that is, that secondary space responses would be negatively correlated with scores on the MMOI scales 6 and 9, for subjects showing no MMPI elevations of T-score of 70 or greater, were supported. The correlation of -.356 between secondary space and scale 6 is significant at the .10 level (F=3.107; df=2, 21) (McNemar, 1969, pp. 186, 331-332). The correlation of -.409 between secondary space and scale 9 is significant at the .05 level (F=4.227; df=2, 21) (McNemar, 1969, pp. 186, 331-332).

Hypothesis 3, that the number of secondary space responses would be positively correlated with scores on MMPI scale 6 for those showing at least one MMPI scale elevation of T-score of 70 or greater, was not supported, as the obtained part correlation coefficient was not significant.
Hypothesis 4, that the number of secondary space responses would be positively correlated with scores on MMPI scale 9 for those showing at least one MMPI scale elevation of T-score of 70 or greater, was supported by the results presented in Table VI. The correlation of .346 is significant at the .10 level ($F=3.141; df=2, 23$) (McNemar, 1969, pp. 186, 331-332).

Conclusions

Several conclusions are to be drawn from these results.

**Conclusion 1**.--There appears to be no justification for taking primary and secondary space responses as measures of the same thing. Consequently, in whatever system of scoring the Rorschach that may be used, the secondary space responses should not be included in the final tabulation of primary space responses.

**Conclusion 2**.--It appears highly probable that the number of secondary space responses, considered in relation to the total number of responses in the Rorschach protocol, can, as theorized in Chapter II, be taken as an index of secondary process thinking.

**Conclusion 3**.--This index appears to be more sensitive to the presence of this kind of thinking in normals, as defined by absence of MMPI elevations of T-score of 70 or greater, than to its absence in abnormals, as defined by presence of at least one MMPI elevation of T-score of 70 or greater.
For normals, even in the relatively small sample of twenty-four used in this study, the expected negative correlation was found for both scales 6 and 9, while for the abnormals the expected positive correlation was significant only for scale 9, even though that for scale 6, while not significant, was in the expected direction. In the case of scale 9, the obtained correlation coefficient was statistically significant at a higher level of confidence for the normals than for the abnormals.

Conclusion 4.--This index appears to be more sensitive to differences in secondary process thinking as reflected in the characteristics measured by MMPI scale 9 than to those reflected in scale 6. The expected correlations were found for both the normals and abnormals for scale 9, but only for the normals for scale 6. In the case of the normals, the obtained correlation coefficient was statistically significant at a higher level of confidence for scale 9 than for scale 6.

Conclusion 5.--To summarize, the secondary space response score in the Rorschach cannot be taken as an absolute index. It must be considered as a relative index, indicating one thing in normals, and something else in abnormals. This, of course, is not unusual with Rorschach scoring categories.

In the individual who appears, on the basis of test results and clinical impressions, to be normal, the secondary
space response score should be taken as an indication of secondary process thinking in the sense explained in Chapter II.

In the individual, on the other hand, who appears, on the basis of test results and clinical impressions, to be abnormal, the secondary space response should be taken as an indication of the kind of manic activity that masks as secondary process thinking, as explained in Chapter II.

**Further Considerations**

The results obtained in this study are encouraging. In spite of the relatively small and homogeneous sample, significant results were obtained. Thus, it becomes possible to establish an empirical base for norms for the interpretation of the secondary space response.

Still, the sample used in the study was a small one; more importantly, it was highly homogeneous. All the subjects were college students. Dahlstrom, Welsh, and Dahlstrom (1972, pp. 438-448) have shown that college students, as a group, have a greater percentage of elevations on MMPI scale 9 than any other group. They have also noted that "at the college level, 9 peaks are the most frequent high point in women and run second only to scale 5 in men [p. 283]."

Therefore, replication with a larger and more heterogeneous sample is indicated. Also indicated is the addition of another psychometric instrument, such as one of the
Wechsler scales, so that correlates of the response might be identified, not only in individual scales, but in one or the other configurations, and could be used as more valid and useful estimates of population parameters.

Until such time as norms based on a large and truly representative sample of the population are available, each user of the test must be left to his own devices to formulate his own norms.

With an empirically established base to start from, this is not impossible. And the experience of most users of the test in interpreting other scoring categories indicates that it is not necessarily even difficult.
# APPENDIX A

## RORSCHACH AND MMPI SCORES FOR 50 SUBJECTS*

<p>| Subj. | R | S | s | Z | R | S | s | Z | L | F | K | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 0 |
| 1     | 30| 2 | 4 | 28.5| 53| 50| 53| 49| 77| 47| 63| 65| 51| 66| 63| 43| 70|   |   |   |   |
| 2     | 51| 2 | 4 | 26.0| 43| 48| 59| 59| 48| 58| 50| 55| 47| 58| 57| 58| 41|   |   |   |   |   |
| 3     | 15| 0 | 2 | 40.0| 50| 48| 59| 57| 41| 51| 62| 45| 35| 44| 58| 44|   |   |   |   |   |   |
| 4     | 64| 8 | 3 | 45.0| 46| 53| 54| 67| 49| 66| 55| 71| 44| 60| 61| 65| 55|   |   |   |   |   |   |
| 5     | 36| 0 | 1 | 36.5| 50| 58| 55| 49| 65| 53| 60| 80| 47| 69| 61| 45| 77|   |   |   |   |   |   |
| 6     | 14| 1 | 0 | 27.5| 53| 53| 53| 62| 48| 56| 74| 43| 47| 64| 65| 91| 50|   |   |   |   |   |   |
| 7     | 47| 0 | 3 | 35.0| 53| 58| 68| 50| 62| 75| 60| 50| 80| 47| 71| 65| 58| 77|   |   |   |   |   |   |
| 8     | 31| 1 | 4 | 28.0| 46| 60| 51| 77| 40| 57| 74| 49| 59| 62| 67| 73| 48|   |   |   |   |   |   |
| 9     | 23| 1 | 3 | 38.0| 43| 48| 59| 49| 41| 49| 57| 61| 38| 54| 57| 78| 48|   |   |   |   |   |   |
| 10    | 26| 0 | 1 | 42.5| 40| 66| 42| 62| 75| 60| 50| 80| 47| 71| 65| 58| 77|   |   |   |   |   |   |
| 11    | 29| 0 | 3 | 55.5| 36| 50| 62| 54| 51| 58| 55| 55| 41| 58| 59| 58| 29|   |   |   |   |   |   |
| 12    | 33| 2 | 1 | 53.5| 46| 66| 37| 65| 56| 56| 69| 59| 85| 73| 79| 76| 67|   |   |   |   |   |   |
| 13    | 17| 0 | 0 | 40.0| 40| 66| 53| 49| 58| 64| 66| 53| 64| 74| 81| 45|   |   |   |   |   |   |
| 14    | 51| 2 | 3 | 19.5| 43| 48| 59| 59| 48| 58| 50| 55| 48| 58| 57| 58| 41|   |   |   |   |   |   |
| 15    | 35| 1 | 7 | 116.0| 43| 53| 59| 49| 41| 49| 57| 61| 38| 54| 57| 78| 48|   |   |   |   |   |   |
| 16    | 35| 1 | 2 | 37.5| 43| 60| 51| 52| 51| 57| 60| 71| 47| 54| 53| 73| 45|   |   |   |   |   |   |
| 17    | 40| 2 | 2 | 133.0| 50| 62| 53| 42| 51| 36| 48| 49| 41| 48| 57| 53| 61|   |   |   |   |   |   |
| 18    | 22| 0 | 0 | 49.0| 40| 58| 42| 39| 41| 39| 57| 71| 50| 58| 63| 45| 50|   |   |   |   |   |   |
| 19    | 20| 0 | 0 | 23.5| 40| 50| 51| 41| 53| 47| 67| 59| 53| 81| 61| 50| 62|   |   |   |   |   |   |
| 20    | 13| 0 | 0 | 33.5| 43| 68| 48| 49| 48| 47| 34| 55| 38| 62| 57| 63| 63|   |   |   |   |   |   |</p>
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* Nos. 1-25: Males
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BIBLIOGRAPHY


Weltman, R., & Wolfson, W. Rorschach S: Oppositional tendencies or mastery strivings. Perceptual and Motor Skills, 1964, 18, 821-824.
