ABSTRACT

Perceptual Structurization as a Function of Ego Strength: An Experimental Application of the Rorschach Technique

William E. Thomas

Michigan State University, 1955

The present research was designed to test the general hypothesis that two groups of subjects, composed respectively of normal college students of high and of low ego strength, would show differences in perceptual maturity as measured by the Rorschach technique.

From an analysis of ego strength as described and employed by outstanding proponents of psychoanalytic theory, the concept emerged as referring essentially to the potential for mental health. This potential implies a relative freedom from symptomatology of a non-organic sort, and a capacity for effective, goal-oriented behavior which meets, in general, with social approval. A joint measure of ego strength (1, 2) was employed which appears, on both rational and empirical grounds, to relate closely to this psychoanalytic conception.

Thirty high ego strength and thirty low ego strength subjects were selected from among 336 college students and administered the individual Rorschach procedure. Their protocols were scored by a reliable scale of perceptual maturity designed to implement Werner's (3) theory of genetic development. The responses of the high ego strength group, as compared with those of the low group, showed a general trend toward greater perceptual maturity. The highs tended

to produce more responses of a differentiated and hierarchically integrated sort. They also tended, more than the lows, to produce responses which, while not to be described as hierarchically integrated, were none-the-less discrete, definite, and clearly differentiated. The "lows" exceeded the "highs" in certain of the more primitive types of perception: in amorphous percepts and percepts of only vague form qualities, and in those having form requirements which were but poorly met by the stimulus blots. Both groups produced very few of the more labile and syncretic types of perception.

The general trend of the results thus closely paralleled theoretical predictions, throughout the range of the genetic scoring system. Statistically significant differences between the two groups, however, were obtained only for the "Genetically High" category (consisting of clearly differentiated responses plus hierarchically integrated ones) and the Vague category. The high group exceeded the low group in the former category, while the low group exceeded the high group in the latter category.

The most interesting result was the much greater frequency with which vague percepts were produced by low ego strength subjects. The nature of these percepts is such as to suggest a kind of groping for a solution of inadequately perceived situations. While the study tends clearly to relate vague perception to low ego strength in normal college students, the differences obtained are not sufficiently great to promise much in the way of practical utility.

A suggestion for future research, arising incidentally from the data, is that the implications of Werner's theory of development might profitably be extended beyond the form or structural aspects of perception to such other dimensions as shading and color. Such an extension may afford greater sensitivity in Rorschach evaluations.

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Milton Rokeach

PERCEPTUAL STRUCTURIZATION AS A FUNCTION OF EGO STRENGTH: AN EXPERIMENTAL APPLICATION OF THE RORSCHACH TECHNIQUE

By

WILLIAM ELLSWORTH THOMAS

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I. INTRODUCTION

An aspect of personality which appears to be widely recognized as important, and which is receiving ever more attention, is that of ego strength. While the particular name used to designate the concept here is of psychoanalytic origin, it is one which is employed by psychologists of various theoretical persuasions.

The concept is important to the clinician engaged in diagnosis following the prevailing Kraepelinian taxonomy, but is likely to survive when the latter system is replaced by more fundamental personality variables. The emphasis of the current theoretical climate, both analytic and non-analytic, is on the ego aspects of personality; this again points up the importance of the concept of ego strength.

Despite these facts, the literature reveals little research designed to elucidate the concept. In fact, for all its popularity, ego strength as commonly employed remains most ill- and variously-defined, as will be shown.

A promising area in which to initiate a program of research an ego strength is that of perceptual behavior, an area of study which, in the words of Blake and Ramsey (15, p. iii), "provides a basic approach to an understanding of personality and interpersonal relations."

It will be the principal purpose of this study to relate a conception of ego strength to the theory of perceptual development put forward by Heinz Werner (56), a theory which affirms a certain progressive development in the structure, function, and other characteristics of perception.

II. REVIEW OF THE LITERATURE

A. The Concepts of Ego and Ego Strength

1. The Ego Concept

A full appreciation of the concept of ego strength must be predicated on a consideration of the various ramifications of the basic concept of ego. Freud has stated that ego is "a psychical organization which is interpolated between (one's) sensory stimuli and perception of his bodily needs on the one hand, and his motor activity on the other; and which mediates between them with a certain purpose" (30, p. 62). This single quotation taken by itself might convey an oversimplified notion of ego functions. The latter include mediation between sensory and motor activity, to be sure, but also encompass the control of these processes.

Alexander and French (1) list three main divisions of the ego functions, as follows:

(1) The perceptive faculty: the perception of subjective needs and impulses and perception of the environment.

(2) The executive faculty: the finding of adequate ways and means for gratification of the subjective needs.

(3) The integrative faculty: "the complex harmonious coordination of simultaneously existing, partially conflicting, subjective needs and impulses with each other and with the external conditions upon which their gratification depends" (1,p. ix).

The interdependence of these functions is obvious. One's

integrative capacity is bound to suffer from any diminution of the other two functions, whether such loss comes about, for example, as a result of organic defect or of a functional anesthesia or paralysis. On the other hand, the occurrence of a "functional" disorder is seen as a consequence of failure of the integrative capacity of the ego: the latter, faced with overwhelming or irreconcilable stimuli, defends itself by blocking off areas of stimulation or by immobilizing an instrument of the executive function. Presumably it is because of this essentially Gestalt-like character of the ego functions that the analysts tend to speak exclusively about the integrative function, and to speak of ego strength in terms of the integrative capacity of the ego.[1]

As to the "purpose" of the ego's operations, Waelder's (55) discussion is perhaps most enlightening. He sees the ego as being faced with two general classes of problems. The first of these is meeting the claims of the id, the outside world, the superego, and the tendencies to repeat and continue former actions.[2] The second class includes strivings to assimilate, to incorporate within itself, the outside world as well as these inner agencies (id, superego, and tendencies to repeat). In specifying this second class, Waelder is simply indicating that the ego strives, for example, not only for what Nunberg (45) calls "instinct mastery"

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[1] Cf. Alexander and French (1). Hartmann (36) suggests use of the terms "organizing function" rather than those of "synthetic" or "integrative", since processes of differentiation and division of labor, as well as integration, are involved in the ego function.

[2] It is not clear why Waelder places "tendencies to repeat and continue former actions" in a category separate from the id functions, of which they are generally considered a part.

(i.e., the ability to keep the instinct in a state of tension, and also to sublimate or use the instinct directly), but also for "instinct subjugation" (i.e., to draw the instinct into the harmony of the ego and subject it to the influence of other ego strivings). To further clarify, Loewald says, with respect to the ego's "assimilation" of reality, that "the ego mediates, unifies, integrates because it is of itsessence to maintain, on more and more complex levels of differentiation and objectivation of reality, the original unity (between the psychic structure and the environment)" (44, p. 14).

Waelder, then, sees the ego as being confronted with eight "sets" of problems, four of which are imposed upon it by other agencies, and four of which it sets itself, in order, by combining and simplifying its tasks, to provide for more economical functioning. According to Waelder's principle of multiple function, "no attempted solution of a problem is possible which is not (sic) of such a type that it does not at the same time, in some way or other, represent an attempted solution of other problems." (55,p. 49). The implications of these statements may be elucidated by considering Waelder's view of the act of love, in which:

> fulfillment of the instinctual need, the deepest repetition impulse, a satisfaction of the demand of the superego, and the claims of reality are all contained, as well as the redemption and the self discovery of the ego in the face of all those realities. It appears now that the unique importance of the act of love in the psychic household is to be understood as that psychic act which comes nearest to a complete solution of all of

the contradictory problems of the ego (55, p. 50).

Thus far, we have been considering the ego as an organizational state existing at a given time. It is, of course, a developmental concept as well. Freud (32) conceived of the ego as a product of differentiation of the periphery of the id (i.e., of that portion which comes into direct contact with the environment). Hartmann, Kris, and Lowenstein (39) have more recently proposed that both ego and id are developed from an originally undifferentiated state. From either point of view, the adult ego is gradually evolved out of the experience of the infant, child and adolescent in his social milieu.[1] This process of development is seen as following, in its general outlines, a fairly fixed course, in that the biological structure of the human is so constituted as to prescribe in advance a certain succession of developmental (psychosexual) stages. More recently, these stages have been restated by Erikson (19) in such a way as to place greater emphasis on cultural influences, and have been extended by him to cover the whole life span rather than considering development to be complete at the attainment of "full genitality" some time after puberty.

In particular, Erikson has stressed the importance of the feeling in the growing child that the characteristics of his ego make sense in terms of the values and goals of the larger society. He writes, "The growing child must derive a vitalizing sense of

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[1] Freud did not consider the structure of the ego to be wholly a matter of experience. He wrote, "we have no reason to dispute the existence and importance of primal, congenital ego-variations ... each ego (may be) endowed from the beginning with its own peculiar dispositions and tendencies, though we cannot indicate their nature and conditioning factors." (31, p. 394).

reality from the awareness that his individual way of mastering experience (his ego synthesis) is a successful variant of a group identity and is in accord with its space-time and life plan." (18, p. 362).

2. The Concept of Ego Strength

Turning now to the problem of ego strength per se, we find that, for the analysts, this is largely a matter of the adequacy of the synthesizing or organizing function of the ego (1, 23, 34, 44, 47). It is clear why this is so. The strong ego must have the perceptual capacity to become aware of the needs of the organism, as well as of the related environmental conditions. It must also have the executive capacities required to carry out goal-directed activity. But above all, it must be able to so select and regulate an activity that the latter will be responsive to each of the various sets of internal and external conditions. It is obvious that any diminution of the effectiveness of the other two functions will affect the adequacy of this complex mediational function.

Nunberg (47) speaks of ego strength in terms of the relation of ego energy to that of the id, superego, and the outside world. This is easy to understand in principle, but difficult to apply to the concrete case. In part, ego strength is dependent on instinct strength, for its energies are derived from the id. But an ego with strong instincts may also be weak - that is, overpowered by the instincts. This brings us back to the necessity for "instinct mastery" and "instinct subjugation" and the whole matter of the integrative capacity of the ego.

Integrative capacity is to be judged by past adaptations and the handling of present crises(1). According to French (27), integrative behavior is essentially purposive behavior, that is, behavior which is organized around a single dominant end-goal, to which secondary goals (or means) are successfully subordinated. Disintegration of such an integrated pattern will result when the pressure of the "activating needs" exceeds that of the activated organs. Essentially, this statement seems to be a reiteration that the ego may be overpowered by the instincts. It does suggest, however, that the capacity of the ego to initiate and maintain goal-directed activity (as opposed to the tendency for tensions to seek discharge in diffuse motor activity) might potentially serve as one practical criterion of ego strength.

Another suggestion is implicit in French's comment that "taking responsibility for another person implies an integrative capacity adequate to span not only one's own needs but the needs of another person as well" (26, p. 168).

French (23), in attempting to analyze the dynamics of the integrative process, suggests three sources of the integrative capacity:

(1) temporary reduction of tensions through dreams and fantasies.

(2) activation of fantasy into purpose by means of a fusion of fantasy satisfaction with the tension of the original need, leading to dissatisfaction with mere fantasy.

(3) the <u>hope of success</u> in achieving one's purpose

> can diminish tension of the underlying need. This hope "tends to concentrate the tendency to diffuse motor discharge upon more sharply defined efforts directed toward the goal (and) gives to one's plans the capacity to withstand antagonistic tensions." (23, p. 238)

French indicates that the "hope of success" with respect to a given goal stems in part from the memory of previous successes in achieving similar goals. However, he also has in mind a more generalized attitude: "Sometimes quite generalized moods of optimism or pessimism result from success or failure in quite unrelated spheres or from endogenous physiological factors whose cause may not be easy to discover." (27, p. 238) In this more general conception, the "hope of success" is reminiscent of Erikson's concept of "basic trust" (19).

The most inclusive discussion of the concept of ego strength is that of Glover (34). He discusses ego strength from three standpoints:

> (1) From the dynamic and affective standpoints, it depends on (a) affective balance, (b) elastic adaptation to the demands of instinct, including freedom of relation to the objects of these instincts, (c) optimum freedom from anxiety, guilt and depression.
>
> (2) Interms of unconscious mechanisms, either excess or restriction of these functions contributes to ego weakness. A capacity for harmonious adaptation

through displacement is a sign of strength.

(3) Structurally, the degree of integration of various early nuclear components of the ego (e.g., oral ego) is important. To the degree early nuclei retain energy and are capable of autonomic function, the ego is weak.

The final criterion of ego strength or weakness, however, is "the relation of the total ego to environmental stresses, past and present" (34, p. 13).

In terms of the clinical indications for the above standards, one can say, in Glover's view, that:

> "...where the ego is strong the individual will not present outstanding peculiarities of a symptomatic type (major neuroses, psychoses, sexual perversions, inhibitions or character disorders). He will be elastic in adaptation, labile in mood but with a capacity for happiness or at least tranquillity. He will be comparatively free from the usual signs of unconscious anxiety or guilt and show good working capacity with an elastic response to working stresses. His regressional activities will be regulated by the necessity for psychic recuperation, and not anchored to past phases of development in such a way that his total personality is dominated by a single facetof it. He will be able to make social contacts of a friendly type and to fall in love with an object other than himself, without, however,

> exhausting his store of self-appreciation,
> And, subject to the reasonable claims of
> society, he will be able to exploit his instincts
> of mastery and aggression in order to supplement
> his self-preservative and allo-erotic impulses,
> to support his familial responsibilities and,
> if he should so desire, to give expression to his
> social idealizations" (34, p. 13).

In summary, it appears that for practical purposes ego strength becomes virtually synonymous with the potential for "good adjustment" or mental health", in that a relative freedom from symptoms is implied, together with a capacity for effective, purposeful activity aimed at the solution of problems both of one's own and of others (including the society at large) as well. To focus one's attention exclusively on the adjustment aspect per se, however, would result in the overestimation of the ego strength of some, and underestimation in others, for the ego strength concept refers to a capacity or potentiality, and not to a directly observable aspect of behavior.

3. The Measurement of Ego Strength

In turning our attention to the problem of the measurement of ego strength, we find ourselves looking to the publications of a different kind of investigator - one trained in academic psychology, rather than the highly specialized psychoanalytic practitioner or theorist. Partly as a consequence of this, the meaning of the concept usually changes - quite drastically, if one attends closely to the investigator's operational, as opposed

to conceptual, definition.

The term ego strength is often used by non-analytic psychologists in the clinical setting to designate some hypothetical construct which presumably (from the context in which it is employed) carries much of the significance of the analytic concept. The writer's impression of the common elements of such usage would include the following among the intended characteristics of "ego strength": a relatively high potential for mental health, whether or not the individual is presently characterized by mental salubrity; a fairly high (and objectively warranted) degree of self-esteem; a general acceptance of self, including both "good" and "bad" traits; a tendency to hold with conviction to one's own judgements and values in the face of social pressures toward conformity; the ability to initiate and maintain goal-directed activity, based on a firm sense of reality.

When faced with the problem of measurement, however, the psychologist typically limits the meaning of the concept severely - and variously. In recent years, the methods most frequently employed or suggested for measuring ego strength have involved the use of the Rorschach technique (17, 42, 43). Of these, most have employed the F plus[1] score, or some modification thereof, as the measure. Beck (5) has provided the rationale for such a procedure. He points to the fact that "F plus grows with age, with healthy functioning intelligence, fails to grow in the feebleminded, and declines in mental disorders." He then quotes

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[1] Beck's F plus percent is defined as that percent of all pure form responses which are of "good" form, according to Beck's norms (6).

certain "neurological, clinical, and psychodynamic" opinions with regard to the differences between normal and abnormal persons, and concludes that "F plus is the representative of the unifying core in the personality; that which directs its course and pulls it back to center, to reality, to social canons" (5). One notes immediately, however, that Beck's notion of "The unifying psychological core in the personality" turns out to be essentially a repressive or control factor which, while it might conceivably suffice to differentiate between normal and abnormal groups, might well work in the wrong direction when applied within the normal range.

Eriksen, nevertheless, defines ego strength, similarly to Beck, as "the individual's capacity for appraising the reasonable limits in his interpretations and perceptions of his environment" (17, p. 47). In a study relating ego strength to the recall of completed and incompleted tasks, Eriksen presented his subjects with fifty Rorschach interpretations (half of which were F plus, half F minus, by Beck's tables) for their acceptance or rejections. Ego strength was measured by the degree to which subjects accepted F plus percepts and rejected F minus ones.

Jourard (42, 43) employed the F plus percent score as part of a scale of ego strength. One point was scored for ego strength if the subject's F plus percent was between 80 and 90. Other points could be gained for having an F plus percent for colored cards of from 70 to 100, an F percent (percent of responses determined solely by form) between 30 and 50, M greater than FM, and FC greater

than CF plus C.[1] However, it should be noted that the author selected these measures more because they "have been employed both clinically and experimentally as indices of ego strength" (42, p. 52), than as a result of an analysis of the concept to be measured.

Some empirical evidence that F plus actually works in the wrong direction as a measure of ego strength in normals is furnished by Bills (13). This investigator reports that college students high in "self-acceptance" have lower Rorschach F plus percentages than those low in self-acceptance. The same author (9) found that a high discrepancy between self-perceptions and ideal self concepts (a discrepancy which would be expected to correlate negatively with ego strength) is related to high F plus percentages.

Feldman et al (20) have also noted a tendency of the Beck type of F plus ratio to fail with normal subjects, and have proposed a substitute. They found that "Feldman's F plus percent", (in which popular and vague responses are eliminated from consideration) produced significantly higher scores with normal college students than did Beck's F plus.

An adequate measure of ego strength should be capable of predicting response to psychotherapy. Barron (3), however, found that neither the F plus percent nor any other of the standard Rorschach variables was significantly related to improvement in brief (six months) psychotherapy.

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[1] The symbol M refers to human movement, and FM to animal movement. C indicates a response determined solely by color, while FC and CF refer, respectively, to form-dominant, color-subordinate, and to color-dominant, form subordinate responses.

Tentatively, at least, one may venture the opinion that Beck's notion of the healthy ego may be too biased in favor of conformity to the cultural norms. His conception becomes all the more questionable when one considers a further statement by Beck made elsewhere (7) to the effect that ego strength (again reflected by F plus percent) is an indication of independence of judgement.

Harris' discussion of the measurement problem is of particular interest, since he attempts to stick closely to the psychoanalytical conception of ego strength (35). He cites various lines of evidence which tend to converge in suggesting the existence of a general factor - a kind of general normality factor, from one point of view - which is closely related to the ego strength concept. This evidence, ranging from Rorschach studies to factor analyses of case history, symptomatic, associational, and personality inventory data, suggests, in Harris' view, "a factor which (1) cuts across diagnostic categories; (2) separates normals from psychiatric patients; and (3) arrays the latter in order of response to various kinds of therapy" (35, p. 23). As for the measurement problem itself, Harris writes as follows:

> I think that with each of the continua described, we should get good agreement on the amount of ego strength in the groups defining the extreme points: achieving vs. non-achieving college students; normals vs. schizophrenics; normals vs. patients inaccessible to therapy. The rationale of this is not very complicated. Psychological procedures are pieces of reality to which we ask patients to respond, and in spite of what we tell them about right

> and wrong answers, there are good and bad ways of handling the test materials. This is as true of the Rorschach and the Thematic Apperception Test as of the Wechsler-Bellevue or any other test procedure. Just as there are demandnesses in the situations of everyday living to which a normal person is sensitively aware and able to respond so there are in psychological tests (35, pp. 23-24).

A scale recently developed by Barron (4) follows directly along the lines of Harris' argument. This scale employs 68 items of the Minnesota Multiphasic Personality Inventory (MMPI), and was originally developed to predict response to psychotherapy. The scale was derived from the pre-therapy MMPI responses of a group of patients, half of whom improved and half of whom failed to improve after six months of psychotherapy. Criteria for improvement were provided by the ratings of expert judges who had followed the cases closely from the onset of treatment. Barron then cross-validated the scale on three new samples, obtaining correlations between scale scores and judges' ratings of improvement of .42, .54, and .38. An analysis of the item content of the scale indicates that those who score high on it (and who improve in psychotherapy, as opposed to those who do not) are characterized, in the words of the author, by comparatively "good physical functioning; spontaneity, ability to share emotional experiences; conventional church membership, but nonfundamentalist and undogmatic in religious beliefs; permissive morality; good contact with reality; feelings of personal adequacy and vitality; physical courage and lack of fear" (4, p. 328).

In considering the nature of this item content, it should be kept in mind that the groups employed in the derivation of the scale were composed of diagnosed neurotic patients whose actual psychological distress had been thoroughly established (2, 3). What the scale is measuring, therefor, would seem to be certain latent strengths in the patients which, while not apparent prior to therapy, are brought forth in the therapeutic situation.

These considerations led Barron to designate the scale as the Ego Strength (Es) scale. Further evidence in favor of this interpretation of the scale was found in applying it to normal groups (4). Thus it was found to correlate positively with intelligence, and, in male subjects, with ratings of vitality, persistence and directed energy, self-confidence, poise, and breadth of interest. Negative correlations were found with submissiveness, effeminacy, intraceptiveness, ethnocentrism, and prejudice.

A consideration of these various lines of evidence suggest that the Es scale is the best single measure of the broad, global concept of ego strength that is presently available. A possible deficiency might be anticipated, however, on rational grounds. Since the scale was derived through the item analysis of the responses of two clinical groups, it might prove to be less efficient at differentiating among normals than it appears to be among neurotics. A sizable number of the scale items, for example, are of the somatic complaint variety. Are these likely to have very great differentiating power in an all-normal sample? One cannot answer this question with any great assurance. Barron reports, as already noted, scale correlates for normal samples which argue persuasively for its

validity with such subjects, but one might still anticipate a reduction in sensitivity of the ES scale as a measuring device in moving to a comparison of two or more normal groups.

One aspect of ego strength, as has been seen, is a relatively high level of self-esteem or self-confidence. It would seem therefore, that some measure of the self concept might be helpful in assessing ego strength, particularly when differentiation between normal subjects is desired.

Bills et al (14) have described an instrument, the Index of Adjustment and Values, which provides a measure of "self-acceptance" and a measure of the discrepancy between the perception of self and the ideal self. Scores on the test have been found to correspond closely with interviewers' ratings of subjects (10), with Rorschach signs of distrubance (9,13), and with the reactions of subjects to the word-association technique (12). Since all these findings were derived from the study of normal college student samples, it would appear that, where such subjects are to be employed, the use of the Index of Adjustment and Values in conjunction with the Es scale might improve the differentiation of the latter.

As a partial test of this assumption, the writer administered the Index of Adjustment and Values, together with the Es scale, to fifty undergraduate students, both male and female, who were enrolled in various psychology courses at Michigan State College. The purpose of this was to determine the degree of relationship between the two tests; at least a moderate degree of correspondence was deemed necessary to justify use of the two measures as a joint criterion of ego strength. The relationship between Es and "self-acceptance"

proved not to be statistically significant, but that between Es and the discrepancy score (i.e., discrepancy between self concept and concept of the ideal self) achieved significance beyond the .01 level of confidence (r of -.40). An a priori consideration favoring the discrepancy score is also worth noting. It is probable that the discrepancy score is more valid than the score taken directly from self-approval ratings, since the latter is particularly susceptible to tendencies on the part of the subject to present himself in a favorable light.

4. Summary and Definition

An analysis of the concept of ego strength has revealed it to be very broad and highly complex. Succinctly stated, ego strength refers to the degree of adequacy of ego functioning, where ego embraces the complex of perceptual, executive, and integrative functions of the individual. "Adequacy", of course, must be judged both in terms of subjective self-evaluation and of the evaluation of the individual by society. Usually, it is the psychoanalyst who, serving as agent for both parties, makes the judgement.

Ego strength is no more directly observable to the analyst than to other mortals, however, and it appears that the criteria for ego strength on which he depends in the concrete case may be summarized as follows:

(1) a relative lack of symptoms.

(2) flexibility of adaptive behavior; ability to meet changed circumstances with an appropriate adjustment of behavior.

(3) application of energies in a productive and creative way to the world's work.

(4) minimal evidence of fixation at earlier stages of development.

(5) ability to relate emotionally to others, forming mutually satisfying relationships.

Of this abbreviated list of criteria, perhaps (2) and (4) would tend to outweigh the others, since above all, ego strength implies a potential for good adjustment, more than merely a present absence of symptoms, a present (perhaps narrow, perhaps ephemeral) productivity or creativity, or even a present capacity for emotional rapport.

In the present study, ego strength is operationally defined in terms of the responses of subjects to the Es scale and to the Index of Adjustment and Values. How does this definition relate theoretically to that of the analyst?

From the method of derivation of the Es scale, it appears to measure the capacity for benefitting from psychotherapy. But this capacity, we are told by Rogers (52) as well as by the analyst (46), implies a potential for restructuring one's life experiences and one's perception of self, thus achieving a better articulated personality structure, greater inner harmony, and an improved adjustment to the environment.

Es seems also to be positively associated with adjustment per se. Normals achieve higher scores than do neurotics, and the scale is negatively correlated with most of the MMPI indices of abnormality, seeming to reflect a general factor of normality-abnormality regardless of diagnosis.

The item content of the scale, previously described, suggests a general measure of excellence of ego functioning: physiological stability, a strong sense of reality, a non-rigid, non-punitive morality, ability to share emotional experience, feelings of adequacy.

Finally, certain personality correlates of the scale, determined with normal subjects, tend to fill in the picture. The scale is correlated, to a low but significant degree, with intelligence, with goal-directedness, poise and self-confidence, with breadth of interest, with tolerance and lack of ethnic prejudice.

The relation of the discrepancy score (between actual and ideal self) of the Index of Adjustment and Values to ego strength is much more narrow and less subtle. It rests on the a priori assumption of a negative relationship between the discrepancy score and self-esteem, bolstered by some empirical evidence of a positive relationship between discrepancy scores and various indices of maladjustment. It is probably best used as a supplement to some more general and more subtle measure of ego strength.

B. Perception as a Developmental Function

1. Werner's Theory of Perceptual Development

A developmental theory which appears to offer a conceptualization particularly applicable to research problems in personality is Werner's (56) exposition of the point of view of the Developmental Gestalt School. This theory states that behavior develops from an early stage characterized by undifferentiated reactions to situations as a whole, through an intermediate stage of response to more dis-

crete aspects of situations, to a developmentally mature level characterized by response to a hierarchic integration of the elements of the stimulus situation. According to this theory, then, those persons who are developmentally most mature will whow the greatest tendency to respond to situations in terms of highly differentiated and integrated perceptions.

Werner suggests that the following paired concepts may be employed to differentiate various levels of development: (1) syncretic-discrete, (2) diffuse-articulated, (3) indefinite-definite, (4) rigid-flexible, (5) labile-stabile. Thus, behavior at the more mature levels would be characterized as discrete of function, articulated in formal structure, and as definite, flexible, and stable.

The author feels that this developmental approach is applicable to psychological phenomena of the individual and of the human race; to animal and child psychology; to behavior disorders, dreams, hypnosis. Phillips and Framo (50), in reviewing the research that has been done within this framework, go so far as to suggest that a quantitative scale of perceptual development might eventually displace descriptive psychiatric nosology, serve to evaluate the severity of a disorder, and provide a criterion for therapeutic efficacy. One may adopt a less enthusiastic view and still agree that the approach offers much, particularly in the use of projective methods in personality study.

2. Research Employing Werner's Theory

Werner's affirmation of a certain developmental sequence in perception has been translated into Rorschach terminology by Friedman (33). The latter devised new scoring categories to test

the implications of the theory and applied them to the Rorschach protocols of normal adult, schizophrenic, and normal child samples. He found that in terms of his scoring formulae, schizophrenic perception was similar to that of children in its structural aspects, i.e., that it was characterized by a "primitive globality, syncretism, lability, diffuseness, and rigidity." The schizophrenics did, however, retain some capacity for the integrative responses characteristic of the higher developmental level of the normal adults.

Hemmendinger (40) employed essentially the same techniques to the perception of children ranging in age from three to ten years. He found that three years olds were characterized by undifferentiated responses to the blots as a whole, while children of four and five responded more often to the parts. At six years, a marked increase in response to small, rarely noticed (by adults) details was found, this tendency continuing through seven and eight years. At nine and ten years, a growing trend toward more integrative percepts was observed.

Siegel (54) investigated degree of impairment in three types of schizophrenic samples. He found differences between paranoid schizophrenics, on the one hand, and hebephrenic and catatonic schizophrenics, on the other hand, which parallelled differences observed between six-to-ten year old children and those in the three-to-five age range. That is, the paranoid group showed more differentiation than the other patient groups, although still evidencing little integration of percepts. The perceptions of hebephrenic and catatonic patients, on the other hand, were more global and amorphous.

Similarly, Pena (48) found that the perceptions of cerebrally damaged adults were most like those of older children, but in some

respects (rigidity and impoverishment) like those of younger children.

Rochwarg (51) investigated the perceptual characteristics of normal, aged persons. He found less evidence of organized perceptual activity and also more percepts characteristic of earlier developmental levels with these subjects than with younger adults.

3. The Measurement of Perceptual Level

A genetic scoring system designed to implement, via the Rorschach technique, Werner's (56) developmental theory, was originated by Friedman (33). Subsequent to Friedman's study, other workers have altered the definitions of some of the scoring categories in the interest of greater clarity and objectivity in scoring. Hemmindinger (40) contributed a breakdown of the Rare Detail location scores, and added the Hdx and Adx scores of Beck (6).

The following definitions are recent adaptations of the original system, and are taken from Phillips and Smith (49) and from material provided the author by Dr. Lewis Sherman.

Integrative Responses These are responses in which there is a clearly present organization of blot elements into a unified response. There are two major criteria for inclusion in this category: 1) the elements must be adequately perceived (i.e., must all be F plus), and 2) the organization must be appropriate (i.e., no pars pro toto, fabulized combination, or contamination responses can qualify). There are three types of integrative responses:

1. Functional The essential feature in this case is that of relationship, based either on interaction (two people dancing, two dogs looking at each other) or positional

or geometrical features (totem pole on a mountain, smoke above a volcano). Positional relationships all involve relating two items that are not necessarily related in nature.

2. Structural In these responses, a single content is arrived at by unifying two or more colored areas (including the use of white space as an object color).

3. Collective Here a group of items is unified by subordinating them to some over-all, classifying concept (e.g., aquarium, botanical exhibit, collection of crabs). Sheer enumeration (couple, some, many) does not qualify the response as integrative.

Mediocre Responses These are responses of specific form (not vague or amorphous) and of adequate form level (F plus). They are based on a crude outline of the blot area.

Minus Responses These are like mediocre responses, but of bad form. The content implies a specific, articulated form which is not met by the blot (F minus).

Amorphous Responses These are responses in which no form element is present, and applies to pure color-, shading-, texture-, or vista-determined responses.

Pars Pro Toto Responses These are responses the only basis of which is an area less than half of the total area involved (e.g., card VI, W, as "cat" because of the (Dd) "whiskers").

Fabulized Combinations These involve the inappropriate and arbitrary unification of two or more elements on the basis of sheer

spatial contiguity. (e.g., card VII, W, "couple of baby lambs dancing in the clouds.")

Contaminations In these responses, there is a temporal fusion of percepts (e.g., card II, D3, is seen first as "blood", then as "islands", then as "bloody island").

Vague Responses These are independent of form-level rating. The content implies minimal form (between that of the mediocre and of the amorphous). If not elaborated, the following content categories are vague: Art, Emblem, Stain, Fire, Botany, Clouds, Food, Geography, Mineral, Nature and Smoke (non-columnar). Also included are unspecific anatomy contents like "insides of the body".

Parenthetical Rare Detail Responses. These are responses in which the subject is led to comment in a descriptive, non-interpretive manner about tiny aspects of the blots which are not usually noticed.

Descriptive Rare Detail Responses. These are realistically descriptive, but minimally interpretive responses to tiny aspects of the blots (e.g., "question marks", "a straight line").

Physiognomic Rare Detail Responses. In these responses, a tiny area is interpreted "with an emphasis on their tactual or action qualities or where the subject verbalized the possibility of kinesthetic reaction in relation to the percept." (49, p. 8)

Hdx Responses. These involve the perception of a part only of a person, where this is usually included in perception of a whole person.

Adx Responses. These are like the Hdx response, but with animal content rather than human.

To facilitate the application of the genetic scoring system to various research problems, certain indices have been developed. The

first of these, the percent of genetically high responses, was devised by Friedman (33) and has subsequently been widely employed. It consists of the percentage of all whole (W) and usual detail (D) responses which are classified as integrative (/) or mediocre (m):

$$\frac{W/ \text{ plus } D/ \text{ plus } Wm \text{ plus } Dm}{W \text{ plus } D} \times 100$$

That is, the percentage of genetically high responses provides a measure of the tendency of a subject to respond to the Rorschach with percepts of the two highest levels in the scale of genetic maturity.

In order to measure differences between subjects at the very highest perceptual level, Rochwarg (51) employed the Index of Integration, which consists simply of the percentage of all W and D responses which are classified as integrative:

$$\frac{W/ \text{ plus } D/}{W \text{ plus } D} \times 100$$

III. STATEMENT OF THE PROBLEM

A. The Problem

Werner's theory, in affirming a certain sequence of development in perception, at no time alludes to any concept of ego strength. In his developmental schema, however, Werner seems to be speaking of the very sort of progressive differentiation and integration of function which are seen to constitute ego development. Moreover, the ego is, in psychoanalytic theory, the seat of perception.

Viewed from the present perspective, therefore, the Werner-inspired Rorschach studies previously cited (33, 40, 48, 51, 54) indicate that persons describable as very low in ego strength (schizophrenics, brain injured) show less mature levels of perception than do those high in ego strength (normal adults). The question thus arises as to whether different levels of perceptual development also characterize normal individuals differing in degree of ego strength. It is to this problem that the present investigation is addressed.

B. Hypotheses

The hypotheses stem from Werner's theory of perceptual development, and from the previously-described studies of perceptual structurization on the Rorschach. This theoretical and experimental background suggests that the process of ego development may be viewed as being paralleled by a process of maturation in perceptual organization. This leads to the following general hypothesis:

Persons of high ego strength are characterized by a genetically more mature perception than are persons of low ego strength.

This general hypothesis can be tested more specifically by formulating the following hypotheses:

1. Persons high in ego strength, as measured by the Es scale and the Discrepancy score of the Index of Adjustment and Values, will obtain a higher Index of Integration on the Rorschach than will persons of low ego strength.
2. Persons high in ego strength, as herein measured, will obtain a higher percentage of genetically high responses than will persons low in ego strength.
3. Persons high in ego strength will less often produce the genetically early types of small detail responses (parenthetical, descriptive, and physiognomic Dd) than will those low in ego strength.
4. Persons high in ego strength will less often produce the fractionated Adx and Hdx responses than will those low in ego strength.
5. Persons high in ego strength will less often produce the more primitive types of fusion responses (pars pro toto, fabulized combination, and contamination) than will those low in ego strength.

IV. METHODOLOGY

A. Subjects

The subjects employed were drawn from the General Psychology and Effective Study classes at Michigan State College during the fall quarter, 1954. An initial sample of 334, including 144 females and 190 males, were given the Es scale and the Index of Adjustment and Values[1] during class periods. From this sample was drawn two groups of thirty-one students[2] each, one of which was designated the "high ego strength" group, and the other the "low ego strength" group. Subjects selected for the high group were those having Es scores of 54 or higher together with D scores (discrepancy between self-percepts and ideal self concepts) of 36 or lower. Those selected for the low group has Es scores of 42 or lower, together with D scores of 48 or higher.

B. PROCEDURE

The Index of Adjustment and Values was administered in accordance with the standardized group procedure for the test. The items comprising the Es scale were mixed with 15 "filler" items (those which make up the Lie scale of the MMPI) in order to reduce any tendency to establish a response set and to avoid the juxtaposition of items of similar content. The instrument thus formed was administered with instructions adapted from those specified for use with the group form of the MMPI. The tests were given in

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[1] Samples of these instruments are presented in the appendix.

[2] One subject was subsequently dropped from each group. A Negro girl was dropped from the low group in the interest of maintaining relative homogeneity of cultural background. A man was dropped from the high group who had had the Rorschach previously.

the classrooms, and always in the same sequence, the Es scale first. The following served to introduce the tasks:

> The research problem in which you are asked to participate is designed to investigate an important theory of personality, and I'm sure you'll find it interesting. The last part of the experiment will be administered individually. Since not everybody can be accommodated for this last part, a small group will be selected by taking every fifth person from the larger group. If selected, you will be notified and an appointment will be made.

The subjects were allowed to proceed at their own rates; all completed the task within the class periods.

After administration and scoring of the group tests was completed, a scatter-plot was made of the two sets of scores, and cutting points determined. To prevent the experimenter from knowing which subjects belonged to the high and low groups, another person went through the records and wrote down the names of subjects falling within the established cutting points for the high and low groups. These subjects were then contacted by the examiner and the individual Rorschach procedure prescribed by Beck (6) was administered them by the experimenter.

In scoring the protocols, a variation of Friedman's genetic scoring system, described in pages 23-25 above, was employed.

V. RESULTS

A. The Preliminary Tests

The mean Es scale score for the 336 subjects who took the preliminary tests was 47.71. The standard deviation was 5.59. The range was from 28 to 61. A breakdown of the scores by sex showed a mean of 46.28 for 144 females, with a standard deviation of 3.85, and a mean of 49.04 for 190 males, with a standard deviation of 5.81.[1] The difference in means produced a critical ratio of 5.21; the difference in standard deviations, a critical ratio of 3.69. Both of these t ratios are significant at the .01 level of confidence (Table 1).

TABLE 1
Es SCALE MEANS AND STANDARD DEVIATIONS
FOR MALE AND FEMALE SUBJECTS

Statistic	Males N 190	Females N 144	Critical Ratio
Mean	49.04	46.28	5.21**
Standard deviation	5.81	3.85	3.69**

** significant at the .01 level of confidence

The mean D score for the 336 subjects was 42.23, with a standard deviation of 16.70. The females achieved a mean of 44.17, with a standard deviation of 15.62. For the males, the mean was 40.71, and the standard deviation was 17.39. The difference between means produced a critical ratio of 1.91, that

[1] Two records, unidentifiable as to sex, had to be eliminated from these calculations.

between standard deviations, a critical ratio of 1.38. Neither of these values reaches significance at the .05 level of confidence, as shown in Table 2.

TABLE 2
D SCORE MEANS AND STANDARD DEVIATIONS
FOR MALE AND FEMALE SUBJECTS

Statistic	Males N 190	Females N 144	Critical Ratio
Mean	40.71	44.17	1.91
Standard Dev.	17.39	15.62	1.38

The product-moment coefficient of correlation between Es and D scores was -.35, significant beyond the .01 level of confidence. For the males, the correlation coefficient was -.27, and for the female, -.47. Both are significant at the .01 level.

B. Composition of the High and Low Groups

The high ego strength group was made up of twenty males and ten females, while the low group was composed of eighteen females and twelve males. That such a preponderance of men is found in the high group, and women in the low, is not surprising in view of the overall differences reported above between the sexes on the Es scale, the principal selective device.

To determine the intellectual levels of the subjects, scores on the A.C.E. examinations, taken on admission to the college, were obtained. Almost all of these scores were in the form of

derived[1] scores especially designed for use at Michigan State College. A few, however, were in the form of true decile scores. Since the latter are not comparable to the derived scores, it was necessary to omit them from calculations. Table 3 shows that the remainders of the two groups (26 highs and 28 lows) do not differ significantly with respect to intelligence.

TABLE 3
INTELLIGENCE OF HIGH AND LOW EGO STRENGTH SUBJECTS

Statistic	High Group	Low Group
N	26	28
Mean	5.192	5.143
(S.E.m)[2]	1.208	1.077
S.E.d	1.475	
Dm	0.049	
t	0.033	

Table 4, moreover, indicates that no significant difference exists between the mean ages of the groups.

[1] These scores are so derived as to distribute the students in each class as follows:

Score 10	1%	Score 5	22%
9	3%	4	16%
8	8%	3	8%
7	16%	2	3%
6	22%	1	1%

TABLE 4
AGE OF HIGH AND LOW EGO STRENGTH SUBJECTS

Statistic	High Group	Low Group
N	30	30
Mean	20.8	19.77
$(S.E.m)^2$	6.40	3.01
S.E.d	3.07	
Dm	1.03	
t	0.335	

C. The Rorschach

1. Reliability of the Scoring System

The first step in analyzing the Rorschach data was to determine whether a satisfactory level of inter-rater reliability could be demonstrated for the scoring system employed. Accordingly, verbatim copies of ten records randomly selected from the total were submitted to a second judge[1] for independent scoring. The experimenter was the primary judge, scoring all sixty records. A comparison of the two sets of scores for these ten subjects revealed, for the genetic scoring system, 274 agreements out of 307 judgements, or 89.3% agreement. This degree of reliability, although somewhat lower than has been reported for earlier forms of the scoring system, is still high and was deemed adequate for present purposes.

2. The Hypotheses

Hypothesis 1 is to the effect that persons high in ego strength would obtain higher indices of integration than would those low in ego

[1] The author is indebted to Dr. Lewis Sherman for serving in this capacity.

strength. To test this hypothesis, the index was computed for all subjects, and the median index for the total sample was determined (20.2%). The number of subjects in each group falling above and below this median was then compared by the chi-square method. As shown in Table 5, the trend of the scores was as predicted, 17 "highs" and 13 "lows" falling above the median, these frequencies being reversed below the median, However, this difference is not statistically significant as indicated by the chi-square of 0.6, which reaches only the .30 confidence level.

TABLE 5
DISTRIBUTION OF INTEGRATIVE SCORES OF HIGH AND LOW EGO STRENGTH SUBJECTS ABOUT THEIR COMBINED MEDIAN SCORE

Integrative %	Group		Totals
	High	Low	
Above median	17	13	30
Below median	13	17	30
Totals	30	30	60
	Chi-square	0.60	
	P greater than	.30	

According to hypothesis 2, persons in the high ego strength group should obtain a greater percentage of genetically high responses than those of the low group. This hypothesis was tested in the same manner as hypothesis 1, with the results shown in Table 6. Of the high ego strength group, 21 subjects obtained a percentage of genetically high responses which was above the combined median percentage, while 9 subjects fell below the median. These frequencies were just the reverse for the low ego strength group.

The obtained chi-square of 8.07 is significant beyond the .01 level of confidence. The date thus confirm Hypothesis 2.

TABLE 6
COMPARISON OF PERCENTAGES OF GENETICALLY HIGH RESPONSES IN THE TWO GROUPS

Integrative plus Mediocre percent	Group High	Low	Totals
Above combined Mdn	21	9	30
Below combined Mdn	9	21	30
Totals	30	30	60

Chi-square 8.067
P less than .01

Hypothesis 3 states that persons high in ego strength will produce the genetically early types of rare detail responses less often than those low in ego strength. Since very few subjects actually produced this type of response, the score obtained was simply the presence or absence of the response in each group. As Table 7 shows, there was virtually no difference between the high and low groups. Strictly speaking, two of the theoretical frequencies of this table are too small to justify the computation of chi-square. It is apparent, however, that the application of Yates' correction is sufficient to render the two groups identical. Hypothesis 3 is therefore not supported.

TABLE 7
PRODUCTION OF GENETICALLY EARLY RARE DETAIL RESPONSES IN THE TWO GROUPS

(Dd) / pDd / dDd	Group High	Group Low	Totals
1 or more	2	3	5
none	28	27	55
Totals	30	30	60

Chi-square: not significant

Hypothesis 4 is to the effect that those high in ego strength would produce the fractionated types of responses (Hdx and Adx) less often than those of low ego strength. Table 8 presents the data relevant to this hypothesis.

TABLE 8
THE PRODUCTION OF FRAGMENTED (dx) RESPONSES IN THE TWO GROUPS

Hdx / Adx	Group High	Group Low	Totals
1 or more	4	3	7
none	26	27	53
Totals	30	30	60

Chi-square: not significant

Again there is virtually no difference in the numbers of each group giving this response, and one may consider the chi-square to be zero despite the low theoretical frequencies. Hypothesis 4, therefore, is not supported.

Hypothesis 5 states that persons of high ego strength will produce fewer of the more primitive types of fusion responses (pars Pro Toto, Fabulized Combination, Contamination) than those of low ego strength. This hypothesis also was not confirmed. From the data presented in Table 9, it is apparent that two of the theoretical frequencies are too small to justify computation of chi-square, but it is apparent by inspection that no significant difference exists between the two groups in the production of these responses.

TABLE 9
PRODUCTION OF PRIMITIVE FUSION RESPONSES IN THE TWO GROUPS

Pars Pro Toto / Fabulized Comb. / Contamination	Group High	Low	Totals
1 or more	3	6	9
none	27	24	51
Totals	30	30	60

Chi-square: not significant

An incidental finding of some interest deals with the capacity of Beck's F/% to differentiate the two groups. Table 10 shows the results of comparing the numbers of each group falling above and below the median F/% of the combined groups. The obtained chi-square is 2.403,

TABLE 10
COMPARISON OF FORM QUALITY (F/%) OF RESPONSES
OF THE TWO GROUPS

F/%	Group		Totals
	High	Low	
Above combined mdn	18	11	29
Below combined mdn	12	19	31
Totals	30	30	60
	Chi-square 2.403		
	P greater than .10		

with a probability level of over .10. It may be objected, however, that there is an optimal range of F/%, and that it is in the proportions falling within such an optimal range that significant differences might be expected to occur. The range employed by Jourard as a measure of ego strength for example, was from 80% to 90%. Actually, however, more low ego strength subjects than high ones fell in this range in the present data (16 lows vs. 10 highs). An analysis of the entire range of scores, moreover, revealed that only at the highest levels (from 90% to 100% F/ responses) was there a trend for the highs to outnumber the lows. Scores at this level, however, have traditionally been considered to be evidence of excessive intellectual control, of an overly-strict superego. It is apparent, then, that no statistically significant difference in F/% exists between the two groups. One must note, however, a decided trend in the direction of more accurate form perception on the part of the high ego strength group.

It is well known that many of the Rorschach variables are functions of R, the number of responses produced by the subject.

Furthermore, merely converting the variables to percentages of R has been shown to be an inadequate correction for the productivity factor, for even the percentages often vary with R (16, 22). It is therefore necessary to consider this factor before attempting to interpret the results.

An analysis of the data in the present investigation revealed no difference between the two groups in R. When the R's of each group were distributed about the median R of the combined groups, the breakdown shown in Table 11 was revealed. Virtually no difference exists between the groups in productivity. Any other differences obtained between the two groups, therefore, cannot be attributed to differences in number of responses.

TABLE 11
COMPARISON OF RESPONSE TOTALS IN THE TWO GROUPS

R	Group		Totals
	High	Low	
Above combined mdn	16	15	31
Below combined mdn	14	15	29
Totals	30	30	60
	Chi-square: not significant		

The results pertaining directly to the hypotheses have been presented. The interpretation of these results will be clearer, however, if all the scores of the genetic maturity scale are examined. Table 12 presents the median percentages of the W and D responses of each group which fell into each of the categories. The trend in every case was as expected. The high group exceeded

the low in median integrative and mediocre percentages, but the lowgroup exceeded the high group in all of the "genetically immature" scores. Despite the size of the differences between the medians in several of the categories, however, only the V% showed a significant difference between the distributions of the scores of the two groups about their combined medians. As Table 13 shows, the difference in V% is significant beyond the .05 level of confidence.

TABLE 12
MEDIAN SCORES OF THE TWO GROUPS WITH RESPECT TO EACH OF THE CATEGORIES OF THE GENETIC MATURITY SCALE

Category	Group Medians		Combined Mdn
	High	Low	
Integrative %	21.65	18.90	20.20
Mediocre %	60.08	46.05	49.10
Minus %	9.85	13.75	12.50
Amorphous %	0.00	1.00	0.00
Pars Pro Toto	0.00	0.00	0.00
Fabulized Combination	0.00	0.00	0.00
Contamination	0.00	0.00	0.00
Vague %	6.80	15.10	10.25

TABLE 13
COMPARISON OF THE TWO GROUPS IN THE PRODUCTION OF VAGUE RESPONSES (V)

Vague %	Group		Totals
	High	Low	
Above combined Mdn	10	20	30
Below combined mdn	20	10	30
Totals	30	30	60
	Chi-square	5.400	
	P less than	.05	

Before turning to a discussion of the results, account must be taken of the effect of a possible biasing factor. It was noted earlier that males outnumbered females by two to one in the high ego strength group, while females outnumbered males by three to two in the low group. Could not the observed differences between high and low groups be in part a function of this difference in sex composition? To investigate this possibility, the numbers of male and female subjects obtaining genetically high percentages above and below the median score were compared by the chi-square test. The same was done for the Vague percent score. Table 14 shows that in general, males had only a slight and statistically not significant tendency to exceed the females in the production of genetically high responses. In the case of the Vague percentage, the trend, as shown in Table 15, is actually toward a greater production by males, although again the difference is not statistically significant. To explain the obtained difference between the ego strength groups on the basis of the sex composition of the groups would require, of

course, that the females obtain a significantly greater Vague percentage.

TABLE 14
COMPARISON OF MALE AND FEMALE SUBJECTS IN THE PRODUCTION OF GENETICALLY HIGH RESPONSES

Genetically high %	Group		Totals
	Males	Females	
Above combined median	18	12	30
Below combined median	14	16	30
Totals	32	28	60
	Chi-square	0.603	
	P greater than	.50	

TABLE 15
COMPARISON OF MALE AND FEMALE SUBJECTS IN THE PRODUCTION OF VAGUE RESPONSES

Vague %	Group		Totals
	Males	Females	
Above combined median	19	11	30
Below combined median	13	17	30
Totals	32	28	60
	Chi-square	1.674	
	P greater than	.10	

Neither the production of genetically high responses by the high ego strength group, therefore, nor the production of vague responses by the low group, can be explained by the predominance of males in the high group and females in the low group.

VI. DISCUSSION

An analysis of the concept of ego strength virtually demands that it be related to measures of perceptual maturity. The concept implies ability to adjust to environmental circumstances, to initiate and maintain goal-directed activity representing a fusion and coordination of inner and outer pressures, and to reorganize the experience of self and the outside world in the therapeutic situation.

However, prediction of just where along the scale of perceptual maturity the two groups of the experiment would differ was less apparent. In view of the fact that both groups were composed of normal college students, it seemed most likely that they would differ at the upper end of the scale, with little or no differences at the lower end. In order to more fully explore the range of perceptual behavior, however, hypotheses concerning the more primitive types of perception were formulated for test as well.

In every case where a trend could be said to exist, it has been in the predicted direction. Thus the high group exceeded the low in median integrative and mediocre percentages, while the low group exceeded the high in the "genetically immature" scores.

The failure to find a difference of statistically significant proportions in the case of the integrative category (Hypothesis 1) was rather surprising. In retrospect, this might be due to the nature of the criterion measures. While the latter seem to be generally satisfactory measures of ego strength, it may be that they tend to favor the "solid citizen" - the steady, effective, and

relatively uncomplicated person - over the (presumably) more complex qualities of the person of unusual "synthetic" abilities. The item content of the Es scale, for example, would seem to place a premium on the freedom to use the capacity one has, and does not seem to measure or differentiate between kinds of capacities. The argument, however, is admittedly a tenuous one. Flexibility of behavior is probably a necessary, though not sufficient, condition for synthetic activity. Furthermore, the demonstrated efficiency of the Es scale as a measure of capacity for the perceptual restructuring believed to underlie improvement in psychotherapy is not to be dismissed lightly. Such a capacity seems in itself to imply some synthetic ability. Our data may be most parsimoniously interpreted, therefore, as suggesting that the Rorschach test does not provide a powerful measure of synthetic capacity.

While the two groups do not differ to a significant degree in either integrative or mediocre responses alone, they do differ significantly when these two categories are combined to form the "genetically high" category (Table 6). The majority of the percept responses of the high ego strength subjects fall into the integrative and mediocre categories, whereas low ego strength subjects are more prone to intersperse the less mature types of perception among their responses. All high ego strength people were above the median in either integrative percent, mediocre percent, or both, while eight of the lows were below the median in both categories.

In particular, the low ego strength group has many more Vague percepts. These responses, while including some form element, are sufficiently formless that almost any of the blot areas could ap-

propriately be selected for one of them. "Clouds", for example, fit almost any blot area, insofar as the form element is concerned. Friedman (33) and Siegel (54), from their studies, hold to the view that vague responses are indicative of psychopathology. Such responses were found to be rare in normal adults and infrequent in children, but common in schizophrenics. This led them to the notion that vague responses represent a peculiarly "regressive" phenomenon. This conclusion seems to be a tenuous one, however. The only really marked differences between the various groups in their data were found in the Vague whole category. Whole responses of any kind are too infrequent in young children, however, to yield very reliable percentages. The "normal" adults used, furthermore, were hospital attendants.

Phillips (personal communication) reports that Vague responses have failed to follow a consistent genetic trend in a series of studies dealing with children of increasing age, with groups varying in degree of psychopathology, and with normal adults using increasing tachistoscopic exposure time. Although the Vague response category appears conceptually to belong between the "Mediocre" and "Amorphous" categories, therefore, empirical clarification of the significance of the Vagues has yet to be achieved. Phillips and his collaborators, however, in a study of 60 industrial workers, have derived some interesting interpretive comments from relations obtained between Vague scores and a number of independent experimental variables. They suggest that W Vague scores may be indicative of easy-going, self-effacing, live-and-let-live attitudes, empathy, and intelligence. D Vague

responses, they suggest, indicate less of the easy going quality, and more of a flexibility and resiliency in meeting tasks effectively. Self-effacement in this case becomes emphasized into low self-confidence, dreams of glory, and easy giving up,

Phillips has also found Vague responses to be frequent in the records of persons low in self-seeking aggressiveness and high in awareness of social values, such as college professors and research workers.

The integration of the finding of the present study with the earlier ones remains ambiguous. Alone of the studies to date, the present one tends to place the Vague response between the Mediocre and Amorphous categories of the genetic maturity scale, where it belongs from a rational standpoint. The present writer suspects that qualitative differences within the group of Vague responses may be contributing to the difficulty.[1] An examination of the Vague responses of some of the high and low ego strength subjects suggests that the "vagues" of the former are often not really so indefinite as those of the latter, but that the differentiation is in the shading or textural dimension, rather than in that of form. Consider, for example, the following responses, the first given by a member of the high group, the second by a "low":

> Card III; D3: The red spot has the fold of a flower - a soft, orchid-like fold....the dark shaded areas indicate contour.

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[1] A preliminary attempt to demonstrate such differences in the Vague responses of the high and low ego strength subjects failed, however. Each group included non-form differentiae in about one-third of its Vague responses.

Card VIII; D2: This could be a flower. Sort of two-colored flower....the middle is darker.

Both of these responses are flowers, both include verbalization of shading as a determinant, and both are scored Vague. The writer submits, however, that the second response exhibits no such subtle and definitive employment of shading nuances as does the first.

For the present, this suggestion must be left as an untested hypothesis arising incidentally from the data. It is a hypothesis which conceivably could account for some, at least, of the diverging experimental results. An "armchair-analysis" of the perceptual processes which might lead to the production of Vague responses suggest three (perhaps indistinct) types. First, the Vague response may result from an incapacity or unwillingness to come to perceptual grips with the stimulus materials and to arrive at a definitive, unambiguous solution. Second, the Vague response may be a product of an active perceptual groping, a visual exploration of material, elements of which attract the attention without supplying cues sufficient to satisfy both the curiosity and the more critical faculties of the observer. In the latter case, one would expect the nature of the perceptual process to be revealed by the verbalization of a greater variety and combination of cues. Third, the production of Vagues may, as Phillips seems to suggest, be a reflection of a style of life characterized by tolerance for ambiguity, by flexibility, and by lack of ego-centric ambitiousness.

Hypothesis 3 dealt with rather extreme examples of primitive perception. "Physiognomic" perception, according to Werner, consists of perceiving, not discrete objects, but "things-of-action",

in which the "signal properties" of the object dominate the mental activity. This represented in the scoring system by the "physiognomic" rare detail (pDd) category. Further syncretic types of perception are the parenthetical and descriptive rare detail responses, representing, at two different levels, tendencies to comment in a descriptive way about certain of the qualities of a form's outline with a minimum of interpretive activity. It is not surprising that of the present sample only five subjects produced any of these three types of response. All of the subjects are, after all, normal college students by any practical criterion. The genetically early Dd responses are frequent only among young children and schizophrenics, according to present knowledge about them.

Fragmented responses of the kind represented by the Hdx and Adx scores (Hypothesis 4) on the other hand, are frequently produced by adults exhibiting much less serious pathology. Nevertheless, only seven subjects in all produced these scores. Beck (6) considers the dx score to be a product of anxiety. If this be so, then it appears that neither group, with a very few exceptions, included persons sufficiently anxious to have their perceptions of the usual animals and humans disrupted in this way.

The Fabulized Combinations and Contaminations (Hypothesis 5) represent a kind of spatio-temporal fusion of perceptions, Pars Pro Toto responses have a similar labile, syncretic quality in that the characteristics of a small part of a larger blot area are allowed to determine the content ascribed to the whole, as if by a kind of perceptual analogy. There is a tendency for the "lows" to

exceed the "highs" in the production of these responses, but only six of the former and three of the latter group gave them. Again no reliable difference appears between the two groups when they are compared with respect to the production of more primitive types of perception.

An incidental finding was that Beck's F plus percent failed to differentiate between the two groups to a significant degree. This result was anticipated by the writer because of the belief that the F plus score is too biased in favor of conformity to social norms, that it places too high a premium on seeing what others see in the blots, for a significant difference to appear between the two groups. While the high group might have greater "perceptual accuracy", in some sense than the lows, it was also felt that the highs would not be bound too strictly by such a consideration, but would respond with a degree of spontaneity and freedom such that several of their responses would fail to meet the criteria of Beck's norms. The second tendency would tend to counteract the first, resulting in a non-significant difference between the two groups. The hypothesis was confirmed by the results. The reasoning behind it, however, is rather confounded by the fact that the median F% for the "highs" (88.9%) is so high as to leave fully half of this group with scores in the range traditionally associated with overcontrol, indicating an overly strict superego. The median for the "low" group (85.3%) is slightly above the mean (79.25) for the normal group of Beck et al (8).

The most likely explanation for these generally high form-

quality scores is that the subjects in both groups, being college students, approach the Rorschach much as they do any test situation. They try to respond with "good" answers (and not without justification, despite what they are told about there being no "right" or "wrong" answers). Being rather intelligent people with an adequate adjustment, on the whole, to their social millieu, they tend to succeed in this endeavor. It has been seen, however, that the low ego strength subjects owe a substantial proportion of their "successes" to perceptions which make so little demands on the characteristics of the stimulus blot as to be scarcely subject to challenge on the grounds of form adequacy.

VII. SUMMARY AND CONCLUSIONS

The present research was designed to test the general hypothesis that two groups of subjects, composed respectively of normal college students of high and of low ego strength, would show differences in perceptual maturity as measured by the Rorschach technique.

From an analysis of ego strength as described and employed by outstanding proponents of psychoanalytic theory, the concept emerged as referring essentially to the potential for mental health. This potential implies a relative freedom from symptomatology of a non-organic sort, and a capacity for effective, goal-oriented behavior which meets, in general, with social approval. A joint measure of ego strength was employed which appears, on both rational and empirical grounds, to relate closely to this psychoanalytic conception.

Thirty high ego strength and thirty low ego strength subjects were selected from among 336 subjects and administered the individual Rorschach procedure. Their protocols were scored by a reliable scale of perceptual maturity designed to implement Werner's theory of genetic development. The responses of the high ego strength group, as compared with those of the low group, showed a general trend toward greater perceptual maturity. The highs tended to produce more responses of a differentiated and hierarchically integrated sort. They also tended, more than the lows, to produce responses which, while not to be described as hierarchically integrated, were none-the-less discrete, definite, and clearly

differentiated. The "lows" exceeded the "highs" in certain of the more primitive types of perception: in amorphous percepts and percepts of only vague form qualities, and in those having form requirements which were but poorly met by the stimulus blots. Both groups produced very few of the more labile and syncretic types of perception.

The general trend of the results thus closely paralleled theoretical predictions, throughout the range of the genetic scoring system. Statistically significant differences between the two groups, however, were obtained only for the "genetically high" category (in which the high group exceeded the low group) and the Vague category (in which the low group exceeded the high group).

The most interesting result was the much greater frequency with which vague percepts were produced by low ego strength subjects. The nature of these percepts is such as to suggest a kind of groping for a solution of inadequately perceived situations. The finding tends to place the vague category empirically where it would seem to belong rationally - i.e., between the mediocre and amorphous categories. The present research tends clearly to relate vague perception, at least in college students, to low ego strength in persons within the normal range.

A word of caution may be in order for those interested in the practical implications of the research findings. In view of the extreme groups employed (consisting of the upper and lower tenths of the total distribution of ego strength scores), the differences found are not such as to recommend employment of the genetic scoring

system as a measure of ego strength. Had Rorschach been obtained for the total sample, it is apparent that a great deal of overlap of persons of higher and lower ego strength would have been obtained on the various scores of the scale.

A suggestion for future research, arising incidentally from the data, is that the implications of Werner's theory of development might profitably be extended beyond the form or structural aspects of perception to such other dimensions as shading and color. Such an extension may afford greater sensitivity in Rorschach evaluations.

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APPENDICES

APPENDIX A

The Ego Strength Scale

Questionnaire LE_s

Directions: Read each numbered statement and decide whether it is true or false, as applied to you. If the statement is true, or usually true, place a T in the margin by the number. If it is false, or usually false, place an F by the number. Try to answer every statement T or F.

___1. I have a good appetite.

___2. Once in a while I think of things too bad to talk about.

___3. I have diarrhea once a month or more.

___4. At times I have fits of laughing and crying that I cannot control.

___5. I find it hard to keep my mind on a task or job.

___6. I do not always tell the truth.

___7. I have had very peculiar and strange experiences.

___8. I have a cough most of the time.

___9. I seldom worry about my health.

___10. My sleep is fitful and disturbed.

___11. I get angry sometimes.

___12. When I am with people I am bothered by hearing very queer things.

___13. I am in just as good physical health as most of my friends.

___14. Everything is turning out just like the prophets of the Bible said it would.

___15. Parts of my body often have feelings like burning, tingling, crawling, or like "going to sleep."

___16. If I could get into a movie without paying and be sure I was not seen I would probably do it.

___17. I am easily downed in an argument.

___18. I do many things which I regret afterwards (I regret things more or more often than others seem to).

___19. I go to church almost every week.

___20. I have met problems so full of possibilities that I have been unable to make up my mind about them.

___21. I like to know some important people because it makes me feel important.

___22. Some people are so bossy that I feel like doing the opposite of what they request, even though I know they are right.

___23. I like collecting flowers or growing house plants.

___24. I like to cook.

___25. During the past few years I have been well most of the time.

___26. I do not like everyone I know.

___27. I have never had a fainting spell.

___28. When I get bored I like to stir up some excitement.

___29. My hands have not become clumsy or awkward.

___30. I feel weak all over much of the time.

___31. I gossip a little at times.

___32. I have had no difficulty in keeping my balance in walking.

___33. I like to flirt.

___34. I believe my sins are unpardonable.

___35. Sometimes when I am not feeling well I am cross.

___36. I frequently find myself worrying about something.

___37. I like science.

___38. I like to talk about sex.

___39. I get mad easily and then get over it soon.

___40. I brood a great deal.

___41. Sometimes at elections I vote for men about whom I know very little.

___42. I dream frequently about things that are best kept to myself.

___43. My way of doing things is apt to be misunderstood by others.

___44. I have had blank spells in which my activities were interrupted and I did not know what was going on around me.

___45. I can be friendly with people who do things which I consider wrong.

___46. If I were an artist, I would like to draw flowers.

___47. When I leave home I do not worry about whether the door is locked and the windows closed.

___48. At times I hear so well it bothers me.

___49. At times I feel like swearing.

___50. Often I cross the street in order not to meet someone I see.

___51. I have strange and peculiar thoughts.

___52. I do not read every editorial in the newspaper every day.

___53. Sometimes I enjoy hurting persons I love.

___54. Sometimes some unimportant thought will run through my mind and bother me for days.

___55. I am not afraid of fire.

___56. I do not like to see women smoke.

___57. Once in a while I laugh at a dirty joke.

___58. When someone says silly or ignorant things about something I know about, I try to set him right.

___59. I feel unable to tell anyone all about myself.

___60. My plans have frequently seemed so full of difficulties that I have had to give them up.

___61. I would certainly enjoy beating a crook at his own game.

___62. I have had some very unusual religious experiences.

___63. One or more members of my family is very nervous.

___64. I am attracted by members of the opposite sex.

___65. The man who had most to do with me when I was a child (such as my father, stepfather, etc.) was very strict with me.

___66. Christ performed miracles such as changing water into wine.

___67. Once in a while I put off until tomorrow what I ought to do today.

___68. I pray several times every week.

___69. I feel sympathetic towards people who tend to hang on to their griefs and troubles.

___70. I am afraid of finding myself in a closet or small closed place.

___71. Dirt frightens or disgusts me.

___72. I think Lincoln was greater than Washington.

___73. In my home we have always had the ordinary necessities (such as enough food, clothing, etc.)

___74. I am made nervous by certain animals.

___75. My table manners are not quite as good at home as when I am out in company.

____76. My skin seems to be unusually sensitive to touch.

____77. I feel tired a good deal of the time.

____78. I never attend a sexy show if I can avoid it.

____79. If I were an artist, I would like to draw children.

____80. I sometimes feel that I am about to go to pieces.

____81. I would rather win than lose in a game.

____82. I have often been frightened in the middle of the night.

____83. I very much like horseback riding.

APPENDIX B

The Index of Adjustment and Values

INSTRUCTIONS

There is a need for each of us to know more about ourselves, but seldom do we have an opportunity to look at ourselves as we are or as we would like to be. On the following page is a list of terms that to a certain degree describe people. Take each term separately and apply it to yourself by completing the following sentence:

I AM A (AN) _____ PERSON.

The first word in the list is academic, so you would substitute this term in the above sentence. It would read--I am an academic person.

Then decide HOW MUCH OF THE TIME this statement is like you, i.e., is typical or characteristic of you as an individual, and rate yourself on a scale from one to five according to the following key.

1. Seldom, is this like me.
2. Occasionally, this is like me.
3. About half of the time, this is like me.
4. A good deal of the time, this is like me.
5. Most of the time, this is like me.

Select the number beside the phrase that tells how much of the time the statement is like you and insert it in Column I on the next page.

EXAMPLE: Beside the term ACADEMIC, number two is inserted to indicate that--occasionally, I am an academic person.

Now go to Column II. Use one of the statements given below to tell HOW YOU FEEL about yourself as described in Column I.

1. I very much dislike being as I am in this respect.
2. I dislike being as I am in this respect.
3. I neither dislike being as I am nor like being as I am in this respect.
4. I like being as I am in this respect.
5. I very much like being as I am in this respect.

You will select the number beside the statement that tells how you feel about the way you are and insert the number in Column II.

EXAMPLE: In Column II beside the term ACADEMIC, number one is inserted to indicate that I dislike very much being as I am in respect to the term, academic. Note that being as I am always refers to the way you described yourself in Column I.

Finally, go to Column III; using the same term, complete the following sentence.

I WOULD LIKE TO BE A (AN) _____ PERSON.

Then decide HOW MUCH OF THE TIME you would like this trait to be characteristic of you and rate yourself on the following five point scale:

1. Seldom, would I like this to be me.
2. Occasionally, I would like this to be me.
3. About half of the time, I would like this to be me.
4. A good deal of the time, I would like this to be me.
5. Most of the time, I would like this to be me.

You will select the number beside the phrase that tells how much of the time you would like to be this kind of a person and insert the number in Column III.

EXAMPLE: In Column III beside the term ACADEMIC, number five is inserted to indicate that most of the time, I would like to be this kind of person.

Start with the word ACCEPTABLE and fill in Columns I, II, and III before going on to the next word. There is no time limit. Be honest with yourself so that your description will be a true measure of how you look at yourself.

		I	II	III
a.	academic	___	___	___
1.	acceptable	___	___	___
2.	accurate	___	___	___
3.	alert	___	___	___
4.	ambitious	___	___	___
5.	annoying	___	___	___
6.	busy	___	___	___
7.	calm	___	___	___
8.	charming	___	___	___
9.	clever	___	___	___
10.	competent	___	___	___
11.	confident	___	___	___
12.	considerate	___	___	___
13.	cruel	___	___	___
14.	democratic	___	___	___
15.	dependable	___	___	___
16.	economical	___	___	___
17.	efficient	___	___	___
18.	fearful	___	___	___
19.	friendly	___	___	___
20.	fashionable	___	___	___
21.	helpful	___	___	___
22.	intellectual	___	___	___
23.	kind	___	___	___
24.	logical	___	___	___
25.	meddlesome	___	___	___
26.	merry	___	___	___
27.	mature	___	___	___
28.	nervous	___	___	___
29.	normal	___	___	___
30.	optimistic	___	___	___
31.	poised	___	___	___
32.	purposeful	___	___	___
33.	reasonable	___	___	___
34.	reckless	___	___	___
35.	responsible	___	___	___
36.	sarcastic	___	___	___
37.	sincere	___	___	___
38.	stable	___	___	___
39.	studious	___	___	___
40.	successful	___	___	___
41.	stubborn	___	___	___
42.	tactful	___	___	___
43.	teachable	___	___	___
44.	useful	___	___	___
45.	worthy	___	___	___
46.	broad-minded	___	___	___
47.	businesslike	___	___	___
48.	competitive	___	___	___
49.	fault-finding	___	___	___