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INDEPENDENCY TO SOME FORMAL FEATURES
OF ATTITUDES.

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**THE RELATIONSHIP OF THE PERCEPTUAL
STYLES OF FIELD DEPENDENCY AND FIELD
INDEPENDENCY TO SOME FORMAL FEATURES
OF ATTITUDES**

by

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CHAPTER I

FORMULATION OF THE PROBLEM

This study is concerned with how the perceptual patterns of field dependency and field independency are reflected in some formal features of attitudes. Formal features of attitudes refer to these structural dimensions. Katz and Stotland (1962) differentiate three areas as comprising the structural features of attitudes. These areas are the cognitive, affective, and behavioral components of attitude structure. In this study, some formal features of attitudes, which fall into these three areas, will be studied in relation to field dependent and field-independent styles of perception.

There has been very little work done on the relationships between attitudes and perceptual styles. A pilot study was carried out in which the Rod-and-Frame-Test and the Embedded-Figures-Test measures of field dependency were administered to 144 college students along with attitude scales measuring Ss' attitudes towards a number of vital social issues (the U.S. involvement in Vietnam, capital punishment, etc.). No significant relationships between perceptual styles and the content of attitudes on these issues were uncovered. This work suggested that it would

perhaps be more profitable to look for a relationship between field dependency-independency and the formal features of attitudes.

This alternative line of investigation is supported by Witkin's (1962) summary of perceptual style research.

He states that:

"early studies of adults and children with different ways of perceiving showed clearly that CONTENT features of personality were usually not discriminating with regard to perceptual styles. On the other hand, FORMAL features - that is, characteristic ways of functioning based on given structural arrangements in personality were critical. Thus people who were grouped together on the basis of common perceptual style resembled one-another in particular aspects of HOW they satisfied their needs, resolved their conflicts, handled their aggressions, formed their attitudes. But they differed in WHAT they wanted, were in conflict about, became angry over, believed in, as well as the life themes that ran through their histories (page 8)."

Witkin states that the field dependent person experiences his surroundings in a relatively global fashion and passively conforms to the influences of the prevailing field or context. In contrast, the field independent person is said to perceive analytically, with objects experienced as being discrete from their backgrounds.

In order to study the relationship between field dependency-independency and formal features of attitude

expression, data concerning perceptual style reactions, measured by the Embedded-Figures-Test (EFT), and reasons for Ss' attitudes towards three issues were obtained.

From reasons given by Ss for their attitudes, measures, which will be described in more detail in the METHODOLOGY, were derived. These measures are postulated to be indices of the following factors:

- 1) Cognitive
 - a) Productivity
 - b) Differentiation
 - c) Tolerance for ambiguity
 - d) Need for cognitive clarity
- 2) Affective
 - a) Degree of feeling experienced in relation to the issues
- 3) Behavioral
 - a) Impulsivity

All of the factors except for productivity were chosen because of the likelihood that variation in them would be expressions of variations in global-articulated cognitive orientation. Productivity was studied on an empirical basis because it is the simplest expression of attitude form. In addition to the measures of these factors, data

will be presented bearing on the content of attitudes as they are related to perceptual styles.

The perceptual styles of field dependency and field independency are one of a number of cognitive styles (Leveling-Sharpening, Focusing Control, Constricted-Flexible Control, etc.) described by Gardner et al. (1959). These cognitive styles refer to stylistic differences among people in the emphasis that they give to one or another of the configurational qualities of objects (e.g. figure-ground differentials, etc). These different styles are said to reflect different adaptive approaches to reality. They reflect the coordination between a class of adaptive intentions and a class of environmental situations.

The work on cognitive styles is linked to Hartmann's work in psychoanalytic theory. Hartmann (1951) has said that adaptation pertains to a "conflict-free" sphere of ego functioning as well as a means of conflict resolution (e.g. defense). Thus, the adaptive processes of thinking, perception, and language can develop outside the realm of mental conflicts. Although they are related to drive development (as mediating structures), they are relatively autonomous and are conflict-free processes. These processes describe the characteristic ways in which reality-adaptive

events have become organized in the person.

The perceptual styles of field dependency and field-independency refer to the characteristic individual differences which manifest themselves on perceptual tests calling for the individual to resist the influence of certain cues in the environment. These tests are the Embedded-Figures-Test (EFT), Rod-and-Frame-Test (RFT), Body-Adjustment-Test (BAT), and the Room-Adjustment-Test (RAT). Witkin and his colleagues (1954, 1962) find that Ss tend to be consistent in their perceptual functioning from test to test, with these performances being stable over time.

When individuals expressing a field dependent orientation are faced with situations in which they are called upon to perceive analytically, they have more difficulty than field-independent Ss in separating themselves from the embedding context of a surrounding perceptual field and rely heavily on external cues. In contrast, individuals manifesting a field-independent perceptual orientation perceive analytically, and are more easily able to overcome the effects of an embedding perceptual field than are field dependent Ss.

This interpretation of field independent ability is consistent with the findings reported in a factor analytic study by Karp (Witkin et al., 1962). Karp states that the

ability to perceive analytically - that is, field independency - is related to overcoming the effects of embeddedness.

Gardner (1957) interprets the meaning of perceptual styles differently. He concludes from the findings of his study, which investigated field-dependency as a determinant of susceptibility to certain illusions, that field dependency-independency refers primarily to characteristic individual differences in the ability to attend and respond selectively to relevant as opposed to irrelevant cues. He adds that the field-independent individual is superior in selecting and attending to these relevant cues and is able to articulate, specify, and delineate his experience. In contrast, the field dependent person cannot differentiate the relevant from the irrelevant, and experiences things in a diffuse, ill-defined and uncritical manner.

The conclusions drawn by Karp and Gardner from their respective studies are compatible in that the ability to abstract a relevant perceptual cue from an embedding context corresponds to the ability to select relevant cues from a background of irrelevant ones.

Early work with field dependency focused on exploring the personality correlates of these styles through projective

tests and clinical observation. Hertzman, Machover, and Lewis (Witkin et al., 1954) found that field independent people more actively cope with situations, have a more articulated concept of their bodies, and have more differentiated defenses than field dependent people.

Witkin (1962) now refers to field dependence as being part of a global cognitive style in which one experiences things as being global and diffuse, with the entire field determining the way in which the individual parts are experienced. In contrast, he refers to field independence as being part of an articulated cognitive style in which one's experiences are clearly structured and the parts of the field, including one's relationship to the world around him, are separated from each other.

Central to Witkin's description of the global-articulated cognitive style is his concept of psychological differentiation. He refers to psychological differentiation as an internal state which is inferred from certain postulated indicators of differentiation.

The indicators which Witkin uses to infer differentiation are:

- 1) Field dependency vs. field independency
- 2) The extent of differentiation of one's body concept

- 3) A sense of separate identity
- 4) The degree of specialization of one's controls and defenses

Differentiation is a developmental concept which Witkin states refers to "progress from an initial relatively unstructured state, which has only limited segregation from the environment, to a more structured state, which has relatively definite boundaries, and which is capable of greater specificity of function." Thus, field independency reflects a greater degree of differentiation than does field dependency.

The empirical evidence for the field dependent and field-independent styles of perception rests on the inter-correlations obtained among the perceptual tests used. An examination of the intercorrelations reported by Witkin and his associates (1954, 1962) among populations of college students, hospital patients, and youngsters aged 8 to 17 among the EFT, RFT, BAT, and RAT reveal that except for the RAT, which Witkin later excluded as a measure of perceptual style, the bulk of the intercorrelations fall within the range of $+.39$ to $+.55$, and are significant at the $.01$ level of confidence. Witkin concludes that these findings "give a picture of substantial consistency in individual function-

ing in these situations."

While these intercorrelations do indicate that the EFT, RFT, and BAT reflect a major factor, which Witkin and Karp have referred to as the ability to overcome embeddedness, their moderate degree accounts for only a small portion of the variance. Thus, these tests tap other factors in addition to the ability to overcome embeddedness - factors which depend on the unique set of conditions that each test presents.

The empirical evidence for Witkin's concept of differentiation depends upon intercorrelations obtained among the posited indicators of differentiation. Of the three indicators of differentiation mentioned in addition to field dependency-independency, we will examine the evidence for the "sense of separate identity" concept. This concept is more relevant to the factors being studied here than are the other two. This discussion will illustrate some of the problems encountered in perceptual style research, which were touched on above.

Witkin (1962) states that:

"A sense of separate identity is the result of development of awareness of one's own needs and characteristics distinct from those of others. The self is experienced as segregated and structured; stable internal frames of reference are available for self-definition and for interpret-

ing and reacting to the world. In the absence of such inner frames of reference, definition of characteristics of the self is likely to be determined from without and ability to function independently of external standards limited (page 155)."

Witkin adds that one's susceptibility to influence by external standards in formation and maintenance of attitudes and judgments is one index of a sense of separate identity. In pursuing this line of investigation, Sangiuliano (Witkin et al., 1962) reports that among a population of 85 female psychiatric ward patients, field dependency, as measured by the BAT, correlates $+ .30$ ($p < .01$) with a suggestibility index derived from tests of inkblot suggestion, odor suggestion, and suggestion given on Binet's progressive weights.

In another study, Nakamura (1958) reports a significant intercorrelation of $+ .38$ ($p < .01$) for college men but not for women between extent of conformity in a group pressure situation and ability to solve insight problems requiring restructuring. A significant intercorrelation ($r = .53$, $p < .01$) was also obtained among men but not among women in a study by Jackson (Witkin et al., 1962) between a perceptual index of "stability in resistance to field forces" and a measure of changes in judgments of line length in conformance with

an announced class average.

In a study by Linton (1955), Ss' attitudes towards several attitudinal objects, such as the advisability of selling antihistamines without a doctor's prescription, were measured before and after reading essays presumably written by authorities in fields relevant to the issues in question. Linton found that people with a global field approach adapted their views to conform with views held by others. In contrast, people with an analytical field approach maintained the same views even after reading these essays. The differences between the groups were significant at the .01 level of confidence.

These studies taken as a whole show that while there is a communality among the indicators of sense of separate identity, the low to moderate relationships reported indicate that additional factors other than sense of separate identity are being tapped.

Linton suggests that measures of perception tap a deeper level of susceptibility to external influence than measures of conformity, which may be more subject to conscious control. Witkin (1962) adds that the underlying motivation for the same behavior may differ. One individual may conform because he is strongly influenced by external

pressures. In contrast, another person may conform because the issues may be of little personal significance to him and he may not care.

The findings of Nakamura (1958) and Jackson (Witkin et al., 1962) reported above illustrate the fact that significant results are often obtained for men but not for women in perceptual style research. A review of 8 other relationships uncovered in field-dependency research in which there was a difference in obtaining significant results between sexes shows that significance was obtained for males and not for females in 6 of these investigations. Only 2 studies show significance among women and not among men.

Significance among men and not among women was obtained in studies dealing with the relationship of the RFT to the EFT among populations of college students; and hospital patients; the relationship between perceptual mode and Hertzman's color balance score on the Rorschach test (Witkin et al., 1954); Jackson's study (Witkin et al., 1962) relating the EFT to performance in an auditory situation which requires that words be identified against a background of noise; the relationship between a perceptual index and WISC performance (Witkin et al., 1962); and Iscoe and Carden's study (1961) on the relationship of the EFT to

reading ability.

The two studies in which significant results were obtained among women and not among men were carried out by Witkin et al. (1954), and Gardner et al. (1959). Both studies investigated the relationship between a perceptual index and Hertzman's W sign dealing with the structuring of Rorschach percepts.

The Relationship of field approach
to FORMAL and CONTENT features of
psychological functioning

Two fruitful areas of investigation for studying the relationship between perceptual styles and the FORMAL and CONTENT features of psychological functioning have been intelligence, and psychopathology.

Studies which have reported significant and positive intercorrelations between field independency and general intellectual level (Jackson, 1957; Podell and Phillips, 1959) have led Zigler (1963) to conclude that these tests of perception primarily tap a general factor of intellectual functioning. However, studies by Karp, along with Cohen's studies (1957 and 1959) demonstrate that field independency is related to intelligence only through those intellectual

factors which also reflect one's perceptual orientation.

These researchers report that the relationship between perceptual styles and intelligence is carried by the block-design, picture-completion, and object-assembly tasks of Wechsler scales of intelligence but not by the verbal subtests. In fact, Witkin suggests that these performance subtests on the WISC and WAIS may be considered to be further indicators of field-dependency and field independency. These findings tend to indicate that one's intellectual functioning may be an expression of a number of cognitive styles.

Differences between FORM and CONTENT features of psychological functioning are more clearly visible in research relating perceptual orientation to psychopathology than in studies which relate field dependency to intelligence. Studies by Bound; and Franks (Witkin et al., 1962); and investigations by Witkin et al. (1954); Bennett (1956); Bailey, Hustmeyer, and Kristofferson (1961); and Gruen (1951) show that adequacy of adjustment and presence or absence of psychopathology are not related to mode of field-approach.

There is evidence, however, which indicates that type of pathology is related to field approach, with the nature of the pathology being conceived of by Witkin as a function of a more developed or less developed state of differentiation.

Witkin (1962) reports that his early group of researchers:

"found the disturbances of psychiatric patients with a relatively global field approach often involved severe identity problems without evidence of struggle for clearer self-definition; poorly developed controls, resulting in chaotic functioning; strong uncompensated feelings of inadequacy; passivity; and helplessness. In contrast, patients with an analytical field approach tended to show expansive and euphoric delusions, self-aggrandizement, outward direction of aggression, isolation, overideation, and continuing struggle for the maintenance of identity, however bizarre the attempt (page 206)."

Other studies of clinical groups regarded as having dependency problems, which are related to a poor sense of separate identity, show that these groups are markedly field dependent. Among these groups are ulcer patients (Gordon, in Witkin et al., 1962); alcoholics (Witkin, Karp, and Goodenough, 1959; Bailey, Hustmeyer, and Kristofferson, 1961; and Karp, Poster, and Goodman, in Witkin et al., 1962); and studies by Pardes and Karp with obsessive people, and Fishbein with asthmatic children (in Witkin et al., 1962).

The results of these studies indicate that an investigation of the relationship of perceptual styles to the manner of expression of attitudes (e.g. formal features) is likely to be a more fruitful avenue of research than would be relating these styles to attitude direction.

Factors Mediating Between the Measures
of Formal Features of Attitudes and
Perceptual Styles

As will be explicated in the METHODOLOGY, a number of measures derived from Ss' reasons for their attitudes are postulated to be indices of certain factors. This section will present what literature there is bearing on the relationship between field-dependency and these factors.

Before describing the interrelationships between the factors which I assume to underlie the measures of formal features of attitudes and perceptual styles, it is important to note what are some of the difficulties in formulating these relationships.

The factors of productivity, and a need for cognitive clarity have not been studied directly in perceptual style research. Furthermore, the empirical evidence in support of a relationship between field dependency and a tolerance for ambiguity factor is also largely indirect. In addition, the empirical data bearing on the relationship of mode of field approach to the factors being studied in this research are not conclusively supportive of these relationships.

Despite these difficulties, it is still possible

to delineate interrelationships among our factors and perceptual styles, using conceptual justification where empirical evidence is lacking.

Cognitive

1) Productivity

Witkin (1962) states that there is no conceptual justification for positing a relationship between productivity, or the degree of any behavioral activity and mode of field approach. Witkin's expectation is consistent with Doob's (1958) failure to obtain a significant relationship between field dependency-independency and the number of words written in essays in which undergraduates describe their choice of a major subject in college and their proposed career.

2) Differentiation

Hypothesis 1: Field independency will be associated with greater differentiation than will field dependency.

Katz and Stotland (1962) mention degree of differentiation as one factor relating to the cognitive component of attitude-structure. Studies have already been mentioned (Sangiuliano, in Witkin et al., 1962; Nakamura, 1958; Jackson, in Witkin et al., 1962; Linton, 1955) which indicate that field independency is related to a strong sense of

separate identity, which is one index of high differentiation. However, the most relevant studies to my operational use of the differentiation concept deal with the relationship of perceptual styles to the structuring of experience.

A number of studies (Witkin et al., 1954; Witkin et al., 1962; and Gardner et al., 1959) report that field independent people are more likely than field dependent people to impose organization on the ambiguous stimulus material of the Rorschach-inkblots. Furthermore, Witkin, et al. (1962), in a study using an interview technique as the primary measure of the dependent-variable report that the descriptions of groups of 10-year-old boys with a relatively analytical field approach of their social and physical surroundings, as well as of other people and themselves, tend to be relatively discrete, structured, and assimilated as compared to the impressions of children with a more global approach.

The results of studies by Witkin et al. (1962) concerning the level of organization of TAT stories, and the recall of material in a retroactive inhibition investigation, which were both carried out with groups of 10-year-old boys, are not consistent with these findings. However, the bulk of these studies suggest that field independence is associated

with a high level of differentiation.

3) Tolerance for Ambiguity

Hypotheses 2: Field independency will be associated with a greater tolerance for ambiguity than will field dependency.

There is primarily only indirect empirical evidence in support of a relationship between field dependency and a tolerance for ambiguity. Frenkel-Brunswik (1949) reports that people with authoritarian attitudes show an intolerance for ambiguity in perception. An authoritarian orientation, as measured by the F-scale, has been studied in relation to mode of field approach by Rudin and Stagner (1958); Pollack et al.; Jackson; and Linton (in Witkin et al., 1962). Most of these studies report a positive relationship between authoritarianism and field-dependency. The results of these studies, coupled with Frenkel-Brunswik's results tend to indicate that field dependency is linked with an intolerance for ambiguity.

Fenchel (Witkin et al., 1962) adopted a different method of study in examining this problem. He investigated the relationship between social rigidity, as measured by the RAPH scale, to mode of field approach. RAPH items may be

grouped into five categories-one of which is intolerance of ambiguity. He obtained a low but significant positive inter-correlation of .26 ($p < .05$) in the expected direction between RAPH scores and EFT performance.

The results of these studies considered together are only mildly suggestive of a relationship between perceptual style and a tolerance for ambiguity. However, one would expect a positive relationship between field independency and a high tolerance for ambiguity based on the field independent person's strong sense of separate identity. This sense of separate-identity allows him to expose himself to a variety of situations without a compelling need for external support and guidance, which ambiguous situations tend to create.

4) Need for Cognitive Clarity

Hypotheses 3: Field dependency is hypothesized to be associated with a greater need for cognitive clarity than field independency.

Studies mentioned above (Rudin and Stagner, 1958); Pollack et al.; Jackson; and Linton (in Witkin et al., 1962) which generally report a positive relationship between field dependency and the presence of authoritarian attitudes reflects a tendency of field dependent people to perceive

issues in terms of black and white and to simplify them. This orientation towards simplicity also produces cognitive clarity.

Affective

1) Degree of Feeling Experienced in Relation to the Issues

Hypothesis 4: Field dependency will be associated with greater affect experienced in relation to the issues than field-independency.

Studies by Crutchfield et al.; Crutchfield and Starkweather; Bell (in Witkin et al., 1962); and Witkin et al. (1962) all bear upon the relationship of field approach to affect. These studies were carried-out on a variety of populations (Air Force Captains, college students, and 10-year-old boys) and utilized both behavioral and questionnaire methods of determining affect. These researchers found that field independent people were cold, distant, hard-headed, and markedly overintellectualized. In contrast, field dependent individuals were found to be affectionate, warm, and socially outgoing. In summary, field dependent persons manifested greater affective reactions than field independent persons.

Behavioral

1) Impulsivity

Hypothesis 5: Field dependency will be associated with greater impulsivity than will field independency.

Witkin conceives of the field dependent person as having more specialized controls and defenses than the field dependent individual, as a function of his greater differentiation. Such a defensive structure would limit the expression of impulses. These assumptions are borne out in a study by Zukmann (Witkin et al., 1962) with a group of adult patients in private psychiatric treatment.

In the Witkin et al. study, raters judged field dependent boys to have a low level of defensive structure as reflected by their restlessness and overactivity. In contrast, field independent youngsters were rated as being generally aloof, and over-defended against feeling. Zukmann found his field independent patients to be predominantly hysterical, as indicated by a psychologist's independent ratings of the Ss' Rorschach protocols. The clinical description of the obsessive compulsive defensive system corresponds to the field independent person's highly structured defenses. In contrast, the relatively unstructured controls and defenses

of hysterics, which allows easy expression of impulses, corresponds to Witkin's assumptions about the field dependent person's loosely organized defenses.

CHAPTER II

METHODOLOGY

Subjects

The Ss used in this study were 120 undergraduate students, comprised of 80 males and 40 females, who were enrolled in introductory psychology classes in the summer session of City College. There were a large number of matriculated and non-matriculated evening session students in the sample along with day session students, and some students from other schools. Almost all of the Ss in this study were from 18 to 23 years of age.

Experimental Design

To test the various hypotheses, field dependent and field-independent groups divided at the mean of the EFT, and extreme field dependent and field independent groups will be used to predict responses on the measures of the formal features of attitudes.

Experimental Procedure

The Ss were tested in groups during one regular class period with their instructors not present in the rooms.

The students were told the following:

'My name is Warren Wilner. I'm a graduate student in the doctoral program at City College and would like you to participate in a study that I'm doing. I'll first hand out these booklets (EFT) to you. I would like you to make up a fictitious name and write this name on the cover page of the booklet, along with your sex and year in college. I'll read the directions for this task out loud. Please read along silently."

After the directions for the EFT were read, Ss were told to begin. Exactly 10 minutes were allotted for this test. When the time was up, the booklets were collected and two sets of sheets were distributed to each person.

The Ss were then told the following:

"Two sets of sheets have been passed out to you. On the first page of each, I would like you to write your fictitious name, sex, and year in school. I'll read the directions for the first set of sheets (attitude scales); please read along silently."

After the directions for filling out the attitude scales were read, Ss were asked to look at the second set of sheets (sheets for listing the reasons for their attitudes), and were told:

"On these sheets, list the reasons for your positions on these issues as completely as you can. Take your time and think through your answer, working as carefully as you can. Use the backs of the sheets if you need more room, and remember to list the reasons for your positions as completely as you can. You have plenty of time."

The Ss had from 70 to 80 minutes to work on the three issues.

The order of presentation of the issues for both the attitude-scales and the sheets on which they were to list their reasons were randomized throughout.

Measurement Procedures

Field dependency was measured by form V of the group EFT developed by Jackson, Messick, and Myers (1964), who found that this form correlates + .84 with the individual EFT. My pilot study revealed a significant intercorrelation of + .35 ($p < .001$) between this group test and the RFT for a sample of 120 college students, with males and females combined.

The intercorrelation obtained in the pilot study falls within the range of intercorrelations reported among perceptual tests of field-dependency reported in other studies. These intercorrelations are generally low to moderate. Witkin et al. (1962) report intercorrelations between the RFT and the individual EFT of + .64 for 136 college men, and + .21 among 75 college women. In addition, these researchers report an intercorrelation of + .42 between these two tests for a sample of 48 17-year-olds, with males and females combined.

On form V of the group EFT, S looks at a complicated design, and then a simple design on the following page that is embedded in the complex one. The S is then asked to go back and outline the simple design within the complex one without being able to see the simple design which is on a different page, thus eliminating the simple design from the perceptual field.

The field dependent person has more difficulty than the field-independent individual in overcoming the total effect of the complex design. He shows signs of this difficulty by failing to locate the figure, or by needing considerable amounts of time to do so, as with the individually administered forms for this test.

The following issues were used to elicit Ss' attitudes:

- 1) The Law Allowing Legal Abortions Only in Those Cases in Which There is a Definite Threat to the Life of the Mother.
- 2) The Immediate Withdrawal of United States Troops from South Vietnam.
- 3) Grades of Only Pass or Fail for Elective Courses other than those in your Major in College.

These issues have been selected to measure attitudes because they vary in both controversialness and in current

relevance to the students comprising our sample. Such a variety of issues will be likely to allow the individual's perceptual style to express itself most clearly in the cognitional supports for his attitudes.

Variation in direction of attitude on these issues may be considered to reflect liberal and conservative orientation. Subjects who are in favor of the abortion issue express a conservative orientation in that they are supporting a restricted abortion law which maintains the 'status quo.' Opposition to this issue reflects a liberal posture by favoring additional preconditions for a legal abortion besides a threat to the mother's life. Support of the second and third issues reflects a liberal point of view by indicating that there is a desire for change in the direction advocated by liberal spokesmen in this country. The wish to maintain the current state of affairs is reflected more by an opposition to these proposals. Conservative opinion opposes the immediate withdrawal of United States troops from South Vietnam and also resists the institution of a grading system which departs from the traditional letter or number grading system now in use at most colleges.

Thus, these issues permit the investigation of a relationship between field dependency and direction of

attitudes, along liberal and conservative lines. Measures of formal features of attitudes, which will be explicated later, were obtained from Ss' verbal support of their attitudes. Ss were asked to state as completely as they could the reasons for their attitudes on the three issues.

The attitude scales used in the present research consist of one general 7-point scale, indicating agreement or disagreement with each issue, and a set of five pairs of bipolar adjectives having a high loading on an evaluation factor, which are also arranged in seven point scales. These adjective pairs are: Worthless-Valuable; Fair-Unfair; Just-Unjust; Good-Bad; and Honest-Dishonest. Pretesting revealed that this set of adjective pairs significantly differentiated between opposing groups on the general directional scale. Both the general scale and the evaluation factor scales were used to measure attitudes in this study.

The positions of the positive and negative adjectives on the evaluation scales, and the bipolar positions of strongly in favor and strongly against on the general scale have been randomized so as to eliminate the effects of a position response set.

The Ss were asked to place a check on the line of the 7-step general attitude scale which most closely corresponded to their feelings towards the issue. The

polar positions on each of these scales were Strongly In Favor and Strongly Against.

In addition, Ss were asked to judge each issue on the set of five bipolar adjective scales. They were told to place check marks on either of the extreme lines if they felt that the issue being judged was Very Closely Related to one of the adjectives. They were asked to place their check one line from the end mark if they judged the issue to be Quite Closely Related to one of the adjectives. They were asked to place their check one line from the end mark if they judged the issue to be Quite Closely Related to one of the adjectives; and to place their check one line from the center-line if they felt the issue to be only Slightly Related to either adjective. The Ss were instructed to check the center-line if they judged the issue to be Neutral on the scale, or if both adjective were Equally Associated with both adjectives, or if they felt the scale to be Completely Irrelevant to the issue.

These attitude scales were derived from Osgood et als.' (1957) Semantic Differential, which Brinton (1961) has adapted for attitude measurement. The Semantic Differential was selected for use in this research because of its flexibility in being able to measure attitudes towards a variety

of attitudinal objects.

Osgood and his associates report reliability coefficients ranging from .87 to .91 when using the differential to measure attitudes towards Negroes, the Church, capital punishment, and crop-rotation. Furthermore, the validity of the Semantic Differential as an attitudinal measuring instrument is suggested by many of its adjective pairs having a high loading on an evaluation factor. In addition, Brinton reports substantial intercorrelations between these evaluation scales and other widely used attitudes scales (Thurstone and Guttman-scales).

The ratings of two judges were used on three of the measures of formal features of attitudes - number of themes, the presence of contrary reasons, and affect. Three judges were used in all, with each judge scoring two measures.

The judges were unaware of Ss' fictitious names (which were covered by cards), their mode of field approach, and the nature of the study. The judges familiarized themselves with the measures to be scored by practicing on data gathered in pilot testing.

For the number of themes measure, the judges were requested to indicate how many different major aspects of each issue were touched on by Ss. For example, S giving

4 reasons for his position on the "Vietnam" issue, which all related to economic factors, would be considered to have stated 1 theme. A S who had three reasons which related to the moral, economic and political aspects of the war would be considered to have stated 3 themes.

The presence of contrary reasons on an issue was scored if S acknowledged that there was more than one point of view on the issue. This would be indicated by S stating arguments for the alternative positions, even if he later dismissed the arguments reflecting one viewpoint as being invalid.

Affective involvement with the issues was rated on a scale of 1 to 5. The judges were instructed to be alert to strongly worded statements, and statements closely relating the individual to the issue, as two criteria of high affective involvement.

Interjudge reliabilities for the number of themes and affect measures were based on a randomly selected half of the sample with one of the judges scoring all of the protocols for a particular measure. The two judges for the contrary reasons measure scored all of the cases with the judgments of one of them (selected by the toss of a coin) used in the final results.

The degree of correspondence between the judges on

these measures will be discussed in relation to the individual measures later in this section.

Measures Obtained

Field Dependency-Independency

1) Embedded-Figures-Test

The higher scores on this test reflect field independency, and the lower scores, field dependency. The scores can range from 0 to 16 figures correctly outlined.

Attitude Direction

1) Directional 7-Point Scale

A score of 7 reflects being strongly in favor of the issue, and a score of 1 indicates being strongly against it.

2) Evaluation Factor Scales

A score of 7 was given to a check on the line closes to the positive adjective, and a score of 1 was given to a check in the space closest to the negative adjective. Thus, for any given issue, a score of 35 (on five scale) indicates greatest support for the issue, and a score of 5 reflects greatest opposition to it.

Formal Features of Attitudes

Cognitive

1) Number of Words

This measure was obtained by counting the number of words written. The number of words expresses the productivity of the cognitive supports.

2) Number of Reasons

Number of reasons was obtained by counting the reasons which Ss listed on their protocols. This measure is postulated to be an index of differentiation. A large number of reasons is associated with a high degree of differentiation, and a small number of reasons with a low degree of differentiation.

3) Number of Themes

The number of themes within the cognitional supports was obtained by counting the number of different major aspects of each issue touched on by the individual.

The Pearson-Product-Moment reliability coefficients, which were computed between the judges scores were high, and are indicated in Table 1 at the end of the chapter. These reliability coefficients indicate that the number of themes measure can be used with a high degree of agreement expected between the judges. This measure also reflects the differentiation factor.

Table 1 --

Inter-Judge Correspondence of Agreement Among the Measures of Number of Themes, Affect and Contrary Reasons

	Themes		Affect		Contrary Reasons	
	Males	Females	Males	Females	Males	Females
	N 40	N 20	N 40	N 20	N 80	N 40
Vietnam	.90 ^a	.88 ^a	.56 ^a	.60 ^b	91%	85%
Grades	.86 ^a	.82 ^a	.66 ^a	.50 ^c	89%	90%
Abortions	.81 ^a	.86 ^a	.56 ^a	.54 ^b	89%	88%

(a) $p < .001$; (b) $p < .01$; (c) $p < .05$

4) Contrary Reasons

The presence of contrary reasons is indicated in a protocol by S acknowledging that there is more than one side to the issue.

Table 1 shows that the interjudge reliabilities, which were determined by a score of percentage agreement for the presence of contrary reasons on any given issue, were high. These high reliabilities show that this measure is a stable index of a factor which we assume to reflect a

tolerance for ambiguity. A tolerance of ambiguity is associated with the presence of such contrary reasons.

5) Extreme Ratings

A score for extreme or polarized ratings for Ss on each issue was obtained by counting the number of spaces on the evaluation factor scales from the mid-point of the scale to the point where S placed his check, regardless of the direction. These deviation scores for each of the five scales were then summed. A score of 15 reflects the most extreme ratings, and a score of 0 the most central ratings. High scores on this measure are postulated to reflect a need for cognitive clarity.

Affective

1) Degree of Feeling Experienced in Relation to the Issues (Affect)

The degree of affect was measured by judges' ratings of 1 to 5, with 1 indicating very high affective involvement in relation to the issue in question, and 5 indicating a low degree of affect.

Table 1 shows that this measure yielded a moderate degree of inter-judge correspondence. This was the smallest degree of inter-judge correspondence obtained among the three measures which were scored by judges.

Behavioral

1) Most Important Reason

This measure was scored by simply looking at the number of the reason which S circled as being his most important. The only scores obtained on this measure, which was scored on a 2-point distribution, were 1, and other than 1. Stating one's most important reason first is postulated to reflect a symbolic expression of impulsivity. It is not assumed that impulsivity is the only factor being tapped by this measure, but it is likely to be the major one.

Statistical Treatment

The presence of any relationships between field dependency-independency and attitudes was determined by two comparisons: 1) by comparing extreme field dependent and field independent groups, and 2) by comparing groups divided at the mean of the EFT distribution on each of our measures with Chi-square tests of significance. Male and female results will be analyzed separately. Intercorrelations between the EFT and these measures will also be presented.

A more detailed description of the statistical treatment of the data obtained follows in the Results section.

CHAPTER III

RESULTS

The findings take the form of three sets of measures and their interrelationships: the Embedded-Figures-Test (EFT), direction of attitude on the Semantic Differential, and the formal features of attitudes as reflected primarily in the written statements.

The results will be presented in the following order:

- 1) The statistical properties of the EFT on the samples used.
- 2) The properties of the attitudinal measures, along with the intercorrelations that reflect their consistency over the three issues - Vietnam, Grades, and Abortions.
- 3) The intercorrelations between the EFT and the attitudinal measures.
- 4) The properties of the measures of formal features of attitudes.
- 5) The interrelationships between the EFT and the measures of formal features of attitudes.

The tests related to the main hypotheses of the study are contained in sections II,II, and V.

Statistical Properties of the EFT on the Sample Used

Table 2 shows a sex difference on the EFT. The mean

number of EFT designs correctly outlined is greater for males than for females, with the differences achieving a high level of statistical significance. Jackson, Messick, and Myers (1964) found no sex differences on this form of the group EFT. Their sample of 52 male college students and 60 females achieved higher scores than the present group. The mean EFT scores for their males and females were 14.5 and 13.9 respectively as compared to 9.7 and 6.6 for this sample.

Table 2 --

Mean Embedded-Figures-Test Scores
(Standard Deviations Are Presented
in Parentheses)

Males	Females	t ratio of differences
N 80	N 40	
9.75 (4.54)	6.57 (4.51)	3.53 ^a

a) $p < .001$

The substantial mean EFT score differences between our study and the Jackson et al. study may be due to intellectual differences between the two samples. Their sample was comprised of Penn State University undergraduates who were matriculated day-time students. No other specific information about these students is present. We are therefore in no

position to evaluate whether they are a representative sample of Penn State students or a group specifically selected.

The sample used in the present study was not representative of the full-time matriculated City College undergraduate student body. There were a large number of matriculated and non-matriculated students enrolled in the evening session of the college as well as a number of students from other schools.

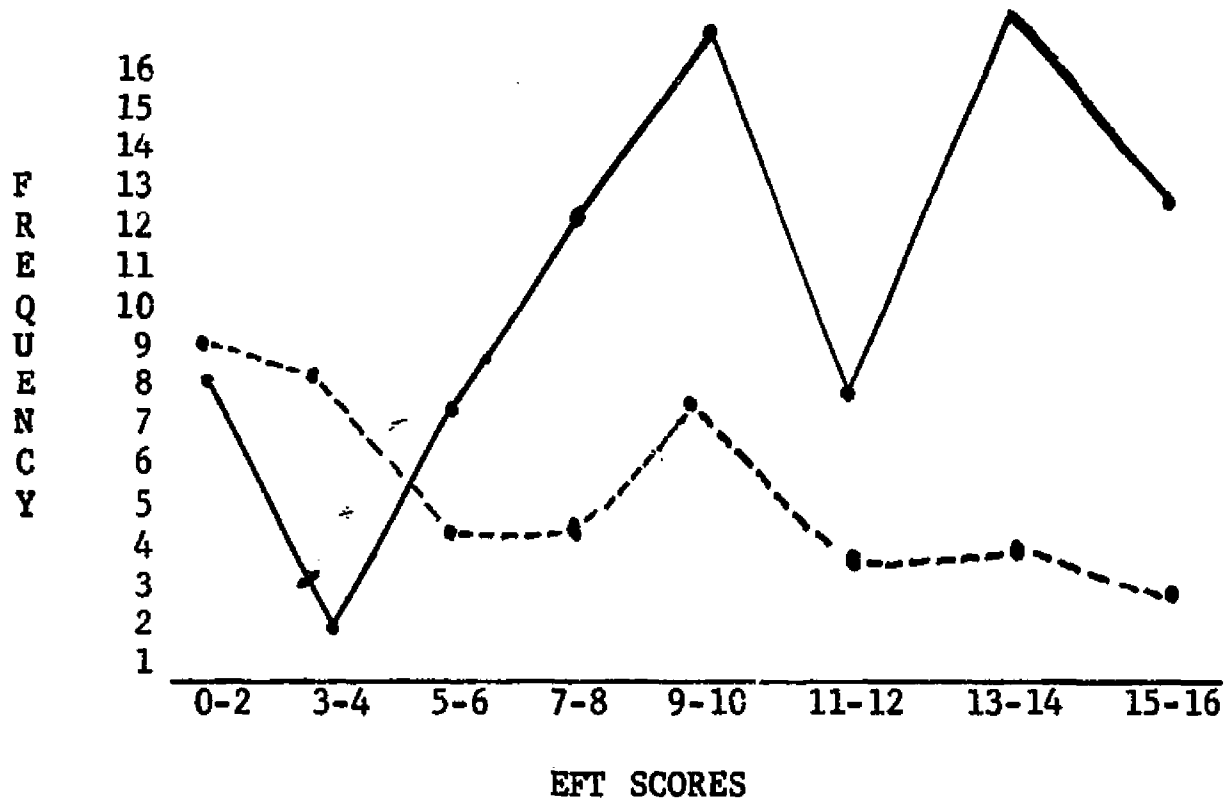
It is possible that the Jackson et al. sample of matriculated day-time students had a higher intellectual level than the present group, which did not have to meet stringent entrance requirements for college. Since Jackson (1957) and Podell and Phillips (1959) found intelligence to be positively related to field independency, I would expect their sample to therefore be more field independent.

The distribution of EFT scores is presented in Figure I. The curve among males is irregular. The incidence of scorers is greatest at points slightly below the mean and midway between the mean and the extreme field independent end of the distribution. The deepest trough occurs slightly after the most extreme field dependent point.

The highest incidence of EFT scorers among females falls in the field dependent range. Except for one rise

occurring at the point of 9 and 10 designs correctly outlined, the curve falls gradually as it moves towards the most field independent point.

FIGURE I DISTRIBUTION OF EFT SCORES



MALES ————●—————●

FEMALES - - - - -●- - - - -●

FIGURE I: Distribution of EFT Scores

The Properties of the Attitude Measures Along with the Intercorrelations that Reflect their Degree of Consistency over the Three Issues-Vietnam, Grades, and Abortions

Table 3 shows that the ratings on the 7-point directional scale among males distribute themselves closely around the mid-point of 4. They reveal a range of attitudes from support of to opposition to the issues. The mean ratings on the evaluation factor scales of the Semantic Differential are all close to the mid-point of 21. Males manifest a slight degree of support for the Grades issue, but show no notable trends in attitude direction towards the Vietnam, and Abortion issues.

Table 3 -- The Mean 7-Point Directional Scale and Evaluation Factor Scale Scores

	Males		Females	
	7-step Scale	Eval. Factor	7-step Scale	Eval. Factor
Vietnam	3.61(2.45)	23.99(8.83)	3.70(2.34)	23.30(8.32)
Grades	4.37(2.37)	25.60(8.07)	4.40(2.18)	23.85(8.51)
Abortions	3.67(2.43)	22.81(9.51)	2.92(2.23)	21.60(9.40)

Among females, the 7-point directional scale reflects moderate opposition to the restricted abortion law issue and slight support for the Grades issue. As among males, the mean evaluation factor scale scores are close to 21.

The only sex difference that approaches significance occurs on the directional 7-point scale for the Abortion issue. Females oppose this proposal more than do males to a degree which is significant at the .07 level of confidence ($t=1.9$). When the ratings of absolute agreement are analyzed for the directional scale, only 28.2% of the female group are shown to be in favor of the restricted abortion law as compared to 44.6% of the males.

The intercorrelations between the directional 7-point scale and the evaluation factor scales are presented in Table 4. The intercorrelations among males for the three issues are moderate.

Table 4 -- Intercorrelations (PPM) Between 7-Point Directional Scale and the Evaluation Factor Scales

	Males	Females
Vietnam	.51 ^a	.58
Grades	.71	.67
Abortions	.62	.60

a) all intercorrelations are significant at .001

The intercorrelations across the issues for direction of attitude are presented in Table 5. For testing purposes, the

Vietnam and Grades issues were worded so that agreement with them reflects a liberal point of view, whereas agreement with the Abortion issue expresses a conservative view. In order to eliminate confusion, the signs involving the Abortion issue on Table 5 have been changed so that (+) indicates a consistent liberal or conservative view and (-) a liberal point of view on one issue and conservative on the other.

Table 5 -- Intercorrelations Among the Attitudinal Issues

		Males	Females
7-step	Vietnam X Grades	.05	.21
scales	Vietnam X Abortions	.08	.04
	Grades X Abortions	.12	.35 ^c
Eval.	Vietnam X Grades	-.35 ^a	.35 ^c
Factor	Vietnam X Abortions	-.06	-.22
Scales	Grades X Abortions	.09	.35 ^c

a) p .01 b) ; c) p .05

Table 5 shows that 5 of the 6 intercorrelations among males are negligible and insignificant. The one significant intercorrelation of -.35 between Vietnam and Grades on the evaluation factor scales is small and reflects contrasting views along a liberal-conservative continuum for these issues.

All intercorrelations among females for direction of attitudes are small, although three are slightly significant. Therefore, women manifest a slightly greater consistency in the direction of their attitudes than do men on these issues. However, the degree of consistency for both groups is small. Direction of attitude appears determined primarily by Ss' reactions to each issue independently and very little by liberal or conservative orientation.

Interrelationships Between the EFT and Direction of Attitude

Consistent with my expectation that there will be no relationship between perceptual style and attitude direction, when male Ss scoring above and below mean on the EFT are compared for direction of attitude on the three issues there are no differences between these groups. Similarly, there are no differences in direction of attitude when extreme groups corresponding roughly to the first and last quartiles of the EFT distribution are compared. In addition, Table 6 shows that the intercorrelations between the EFT and direction of attitudes are negligible and insignificant.

Table 6 -- Intercorrelations Between the EFT and the Direction of Attitudes

	7-step Scale		Eval. Factor Scales	
	Males	Females	Males	Females
Vietnam	.12	-.12	.01	-.19
Grades	.10	-.10	.10	-.15
Abortions	.07	.13	.00	-.30 ^c

c) $p < .05$

There are no differences in direction of attitude when female EFT scorers divided at the mean, and extreme scorers are compared. However, Table 6 indicates a small significant negative correlation between field independency-dependency and support of a restricted abortion law on the evaluation factor scales, thus showing some tendency for field independent women to oppose the restricted abortion law.

Properties of the Measures of Formal Features of Attitudes

Table 7 shows that females write significantly more words than do males on all issues. The greatest difference occurs on the Abortion issue. Females write a mean number of 77.2 words as compared to 61.8 among males. The only other sex difference occurs on the extreme-ratings measure for the Abortion issue, with males having significantly more

extreme ratings on this issue than do females.

Table 7 -- The Mean Scores of the Measures of the Formal Features of Attitudes

		Males	Females	t ratio of differences
Words	Vietnam	81.45(52.61)	84.67(59.14)	9.18 ^a
	Grades	56.95(37.83)	70.83(35.62)	11.76 ^a
	Abortions	61.78(35.26)	77.20(44.12)	13.82 ^a
Reasons	Vietnam	4.05(2.10)	3.70(1.49)	
	Grades	3.00(1.43)	3.23(1.29)	
	Abortions	3.26(1.70)	3.70(1.76)	
Themes	Vietnam	2.75(1.35)	2.55(1.06)	
	Grades	1.91(0.93)	2.23(0.89)	
	Abortions	2.58(1.30)	2.68(1.16)	
Contrary Reasons	Vietnam	19%(39%)	18%(45%)	
	Grades	19%(39%)	30%(46%)	
	Abortions	16%(37%)	20%(41%)	
Affect	Vietnam	3.64(1.28)	4.15(1.05)	
	Grades	3.06(1.36)	3.30(1.18)	
	Abortions	3.35(1.31)	3.95(1.06)	

Table 7 -- (Continued)

		The Mean Scores of the Measures of the Formal Features of Attitudes		
		Males	Females	t ratio of differences
Extreme Ratings	Vietnam	9.05(4.76)	8.58(4.20)	
	Grades	9.11(4.28)	9.00(4.01)	
	Abortions	10.13(3.93)	9.20(3.96)	2.41 ^c
Most Important Reason	Vietnam	1.36(0.48)	1.53(0.51)	
	Grades	1.38(0.45)	1.53(0.51)	
	Abortions	1.26(0.44)	1.45(0.50)	

a) $p < .001$ c) $p < .05$

There is a low incidence of the presence of reasons on both sides of the issues. The range of scorers is from 16% among males on the Abortion issue to 30% among females on the Grades issue. In addition, the Vietnam issue elicits the greatest degree of affect and the Grades issue the least. The differences in affect between these issues are significant at the .01 level of confidence for males ($t \approx 2.9$), and at the .001 level of confidence among females ($t \approx 4.0$).

The most striking finding of Table 8 is that 19 of the 21 intercorrelations among males are significant, and 15 of these beyond the .01 level of confidence. Thus, there

is a substantial degree of consistency of performance on these measures of formal features of attitudes, which suggests that these measures reflect general features of attitude expression. In contrast, Table 5 shows that there is little consistency over our issues with regard to direction of attitude. These findings support the basic hypothesis of there being stylistic features of attitude expression being more consistently expressed than attitude direction, at least on the issue at hand.

Table 8 -- Intercorrelations Among the Three Issues for the Measures of the Formal Features of Attitudes

		Males	Females
	Vietnam X Grades	.33 ^b	.44 ^b
Words	Vietnam X Abortions	.49 ^a	.56 ^a
	Grades X Abortions	.47 ^a	.54 ^a
	Vietnam X Grades	.36 ^a	.33 ^c
Reasons	Vietnam X Abortions	.40 ^a	.31 ^c
	Grades X Abortions	.46 ^a	.43 ^b
	Vietnam X Grades	.20 ^c	.27
Themes	Vietnam X Abortions	.26 ^c	.07
	Grades X Abortions	.31 ^b	.25

Table 8 -- (Continued)

Intercorrelations Among the Three Issues for the Measures of the Formal Features of Attitudes

		Males	Females
Contrary Reasons	Vietnam X Grades	-.07	.24
	Vietnam X Abortions	.22 ^c	.23
	Grades X Abortions	.14	-.05
	Vietnam X Grades	.48 ^a	.31 ^c
Affect	Vietnam X Abortions	.68 ^a	.24
	Grades X Abortions	.58 ^a	.38 ^c
Extreme Ratings	Vietnam X Grades	.61 ^a	.25
	Vietnam X Abortions	.46 ^a	.34 ^c
	Grades X Abortions	.51 ^a	.35 ^c
Most Important Reason	Vietnam X Grades	.29 ^b	.60 ^a
	Vietnam X Abortions	.32 ^a	.36 ^c
	Grades X Abortions	.21 ^c	.16

a) $p < .001$ b) $p < .01$ c) $p < .05$

The degree of consistency among the measures of formal features of attitudes among women is considerably less than that obtained among men. Table 8 shows that 12 of the 21

intercorrelations are significant, with 5 of these being greater than $\pm .43$ and significant beyond the .01 level of confidence. The moderate degree of consistency among women for the measures of formal features of attitudes is only slightly greater than that obtained for attitude direction. Table 5 shows that 3 of the 6 intercorrelations for attitude direction are significant, although none of the intercorrelations are greater than $\pm .35$.

Women therefore show a moderate degree of consistency on attitude direction and among the measures of attitude form for the three issues. Men show a substantial degree of consistency on the attitude form measures and little or no consistency on direction of attitudes.

The low intercorrelations for the number of themes, contrary reasons, and most important reason measures for both sexes indicate that performance on these measures is determined primarily by the person's reaction towards each issue independently. This heterogeneity of performance is true among females for the number of reasons, affect, and position of ratings measures as well. Number of words for both sexes, and number of reasons, affect and extreme ratings among males yield more moderate intercorrelations. This

indicates that these measures are consistent indices of formal features of attitude expression.

The range of intercorrelations from $\pm .62$ to $.82$ between number of reasons and number of themes among both sexes as indicated on tables 9 and 10 are sufficiently high for it to be redundant to use both measures. For predictive purposes the number of reasons measure will be used, since it is objectively scored.

Table 9 -- Intercorrelations Among Measures Derived From Males' Cognitive Supports

		Words	Reasons	Themes	Contrary Reasons	Important Reason
	Vietnam	.54 ^a				
Reasons	Grades	.54 ^a				
	Abortions	.43 ^a				
	Vietnam	.31 ^b	.70 ^a			
Themes	Grades	.40 ^a	.67 ^a			
	Abortions	.27 ^c	.77 ^a			
	Vietnam	.18	-.03	-.10		
Cont. Reasons	Grades	.30 ^b	.09	.22 ^c		
	Abortions	.10	-.03	.09		
	Vietnam	.01	.14	.01	-.03	
Imp. Reason	Grades	.11	.24	.15	-.01	
	Abortions	.13	.21 ^c	.17	.05	
	Vietnam	.45 ^a	.40 ^a	.31 ^b	.06	.11
Affect	Grades	.66 ^a	.53 ^a	.47 ^a	.07	.12
	Abortions	.51 ^a	.48 ^a	.37 ^a	.04	.32 ^b

a) p < .001 b) p < .01 c) p < .05

Table 10 -- Intercorrelations Among Measures Derived From Females' Cognitive Supports

		Words	Reasons	Themes	Contrary Reasons	Important Reason
	Vietnam	.26				
Reasons	Grades	.39 ^c				
	Abortions	.48 ^b				
	Vietnam	.17	.66 ^a			
Themes	Grades	.33 ^c	.62 ^a			
	Abortions	.64 ^a	.82 ^a			
	Vietnam	.40 ^b	.01	-.05		
Cont. Reasons	Grades	.23	-.03	.14		
	Abortions	.02	-.09	.02		
	Vietnam	-.05	.49 ^a	.31 ^c	-.08	
Imp. Reason	Grades	.11	.09	-.21	-.14	
	Abortions	.21	.24	.17	.08	
	Vietnam	.35 ^c	.37 ^c	.36 ^c	.11	.23
Affect	Grades	.37 ^c	.51 ^a	.32 ^c	.11	.12
	Abortions	.55 ^a	.32 ^c	.38 ^c	.08	.14

a) $p < .001$ b) $p < .01$ c) $p < .05$

The low to moderate intercorrelations among the measures of number-of words, number of reasons, and affect indicate that these measures are both interrelated and independent of each other. The negligible to low intercorrelations among the contrary reasons, most important reason, and extreme rating measures as shown by Table 11, and between these measures and the other attitude form measures indicate that these measures are indices of substantially independent factors.

Table 11 -- Intercorrelations Between the Extreme Ratings Measure and the Measures Derived From the Ss' Cognitive Supports

	Males			Females		
	Vietnam	Grades	Abortions	Vietnam	Grades	Abortions
Words	.11	-.04	.15	-.10	.13	-.01
Reasons	.16	.07	.13	.29	.07	.04
Themes	.19	-.01	.05	.29	.19	-.03
Contrary Reasons	-.24 ^c	-.27 ^c	-.07	-.33 ^c	-.23	-.06
Important Reason	-.33 ^a	-.13	.08	.13	-.13	.20
Affect	.32 ^b	.14	.27 ^c	-.08	.18	.11

a) $p < .001$ b) $p < .01$ c) $p < .05$

Among males, two of the three intercorrelations between extreme-ratings and affect, and between extreme ratings and contrary reasons are significant. There is therefore a tendency among males for those with extreme ratings to state reasons on only one side of the issues, and to have high affect ratings as well. This tendency is not present among women.

The Interrelationships Between the EFT and the Measures of Formal Features of Attitudes

The results for females will not be discussed in this section since none are significant. The tests for the hypotheses will be carried out by comparing EFT scorers who are divided at the mean of the distribution, and by comparing extreme EFT scorers, corresponding roughly to the first and last quartiles of the distribution. In addition, the intercorrelations between the EFT and the measures used will be presented.

Cognitive Measures

Consistent with my expectation that there will be no relationship between field approach and productivity, a comparison of EFT scorers divided at the mean of the distribution, and extreme EFT scorers fails to uncover a re-

relationship between the EFT and number of words. This result is in line with the findings of Table 12, which show no significant intercorrelations between the EFT and number of words.

Table 12 -- Intercorrelations Between the EFT and Number of Words

	Males	Females
Vietnam	.05	-.25
Grades	.16	-.16
Abortions	-.10	.02

There is support for my hypothesis concerning the relationship between field independence and differentiation.

Table 13 indicates that when male field independent and field dependent scorers who are divided at the mean are compared for number of reasons for the three issues combined, field independent Ss give significantly more reasons than do field dependent Ss. There are an approximately equal number of field dependent Ss who give a number of reasons which is equal to or greater than the mean, and below the mean. However, 63% of the field independent scorers give a number of reason which is equal to or greater than the mean as compared to only 37% who present a number of reasons which is less than the mean.

Table 13 -- Number of Male EFT Scorers Divided at the Mean Who Give a Number of Reasons Which is Equal to or Greater than the Mean Number of Reasons

	Vietnam		Grades		Abortions		Total	
	=>4	<4	=>3	<3	=>3	<3	=>X	<X
F.I.	24	19	29	14	30	13	83	46
F.D.	14	23	18	19	20	17	52	59

$$\chi^2 = 7.37; p < .01$$

When the male EFT distribution is divided at the mean, there are 43 field independent Ss with EFT scores ranging from 10-16, and 37 field dependent Ss with EFT scores ranging from 10-9.

The fact that this finding achieves significance only when the three issues are combined suggests that the RFT is related to this measure generally and not through any single issue.

The small to moderate degree of this relationship is indicated by the failure of extreme EFT group comparisons to uncover these differences. In addition, Table 14 shows that only the small positive intercorrelation between the EFT and number of reasons on the Vietnam issue approaches statistical significance.

On the number of reasons and extreme ratings measures, on which no differences between perceptual groups were significant for any given issue, pooled scores of observations over the three issues revealed general differences between the groups.

However, it is possible that these pooled scores are not independent observations. Therefore, a separate statistical analysis was carried out based on differences between field dependent and field independent groups of Ss who had more than the mean number of reasons and extreme ratings on all three issues.

This analysis shows that significantly more extreme field-dependent Ss have extreme ratings which are greater than the mean on all three issues than field independent Ss. Furthermore, significantly more field independent Ss divided at the mean of the EFT distribution state a number of reasons which are greater than the mean on all three issues than field dependent Ss. Thus, there is independent confirmation of the original findings.

Table 13A--

A. Mean EFT Group Ss Stating a Number of Reasons which are Greater than the Mean for all Three Issues

	3	3
F.I.	17	26
F.D.	7	30

$$X^2 = 4.02; p < .05$$

B. Extreme EFT Groups Ss Having Extreme Ratings Which are Greater than the Mean for all Three Issues

	3	3
F.I.	6	15
F.D.	11	6

$$X^2=4.98; p < .05$$

Table 14 -- Intercorrelations Between the EFT and Number of Reasons

	Males	Females
Vietnam	.20 ^d	-.17
Grades	.14	-.24
Abortions	.09	.11

d) $p < .07$

There is partial support for my hypothesis of field independent Ss showing a greater tolerance for ambiguity than field dependent Ss.

Tables 15 and 16 show that there is a small positive and significant relationship among males between field independency and the presence of reasons on both sides of the Grades issue. A relationship between the EFT and this measure was uncovered for no other issue.

Table 15 -- Number of Male EFT Scorers Divided at the Mean Presenting Reasons on Both Sides of the Issues

	Vietnam		Grades		Abortions		Total	
	Both	One	Both	One	Both	One	Both	One
F. I.	9	34	13	30	6	37	28	101
F.D.	6	31	2	35	7	30	15	96

$$\chi^2 = 8.23; p < .01$$

Table 16 -- Intercorrelations Between the EFT and Contrary Reasons

	Males	Females
Vietnam	.07	.06
Grades	.26 ^c	-.23
Abortions	.02	.06

c) $p < .05$

When EFT scorers who are divided at the mean of the distribution are compared, there are significantly more field independent Ss presenting reasons on both sides of the Grades issue than field dependent Ss. The small significant positive intercorrelation between the EFT and contrary reasons on this issue supports their relationship. This relationship is not uncovered when extreme EFT scorers are compared.

My hypothesis of field dependence being associated with a greater need for cognitive clarity than field independence receives partial confirmation.

Table 17 shows that when extreme EFT scorers are compared for the three issues combined, there are significantly more field dependent Ss who have ratings which are equal to or

than the mean than field independent Ss. An approximately equal number of field independent scorers are equal to or above the mean, and below the mean. In contrast, 80% of the field dependent group have ratings which are equal to or above the mean, and only 20% below the mean.

Table 17 -- Number of Extreme Male EFT Scorers Having Positional Ratings Which are Equal to or Greater than the Mean on the Evaluation Factor Scales

	Vietnam		Grades		Abortions		Total	
	=>9	<9	=>9	<9	=>10	<10	=>X	<X
F.I.	12	9	11	10	12	9	35	28
F.D.	14	3	13	4	14	3	41	10

$$\chi^2 = 7.82; \quad p < .01$$

The extreme male EFT scorers consist of 21 field independent Ss with EFT scores ranging from 14-16; and 17 field dependent Ss with EFT scores ranging from 0-6. These groups best correspond to the natural groupings of EFT scorers.

As with the number of reasons measure, this relationship does not depend on any single issue. The trends in the expected direction are present for all three issues, but achieve significance only when the issues are combined.

This relationship is not found when EFT scorers divided

at the mean are compared, or when the intercorrelations in Table 18 between the EFT and extreme ratings are examined.

Table 18 -- Intercorrelations Between the EFT and Extreme Ratings

	Males	Females
Vietnam	-.15	-.02
Grades	-.11	-.10
Abortions	-.13	.05

Affective Measure

The findings fail to confirm my hypothesis of field dependence being associated with a greater degree of affect than field independence.

A comparison of EFT scorers divided at the mean, and extreme EFT scorers fails to uncover a relationship between the EFT and ratings of degree of feeling experienced in relation to the issues. The intercorrelations of Table 19 also fail to show such a relationship.

Table 19 -- Intercorrelations Between the EFT and Ratings of Affect

	Males	Females
Vietnam	.03	.06
Grades	.14	-.04
Abortions	.02	-.04

Behavioral Measure

Because of the great range in the number of reasons, and since I am interested in examining the significance of only the first reason, a 2-point distribution of scores is being adopted: the first reason, and a reason other than the first as being the most important. Ss giving only 1 reason will be excluded from group comparisons. In addition, intercorrelations between the EFT and this measure will also be omitted since Ss giving only one reason were included in the computation of these correlation coefficients.

My hypothesis of field dependence being associated with a greater degree of impulsivity than field independence receives strong confirmation.

Table 20 indicates that when EFT scorers are divided at the mean of issues combined, field dependency is significantly associated with stating one's most important reason first. These differences are greater ($p < .001$) when extreme EFT scorers are compared than when the EFT scorers are divided at the mean ($p < .05$). In addition, significantly more extreme field dependent Ss than field independent Ss present their most important reason first on the Vietnam and Grades issues.

Table 20 --

A. Number of Male EFT Scorers Divided at the Mean who State their Most Important Reason First

	Vietnam		Grades		Abortions		Total	
	Other than 1	1	Other than 1	1	Other than 1	1	Other than 1	1
F.I.	20	20	16	27	12	31	48	78
F.D.	9	24	6	24	9	23	24	71
	$\chi^2 = 3.88$				$\chi^2 = 4.44$			
	p < .05				p < .05			

B. Number of Extreme Male EFT Scorers who Indicate who State their Most Important Reason First

	Vietnam		Grades		Abortions		Total	
	Other than 1	1	Other than 1	1	Other than 1	1	Other than 1	1
F.I.	10	8	9	7	7	11	26	26
F.D.	2	14	1	14	4	13	7	41
	$\chi^2 = 7.01$ p < .01		$\chi^2 = 8.46$ p < .01		$\chi^2 = 14.0$ p < .001			

Summary of Results for Relationship of Field Approach to Measures of Formal Features of Attitudes

All significant results are obtained among males. The relationship between field dependency and stating one's most

important reason first is the most significant and consistent finding. The smallest relationship is obtained between field independency and stating reasons on both sides of the issue. This relationship occurs only on the Grades issue and therefore has limited generality.

The relationships between the EFT and the number of reasons, and extreme ratings are not strong. Nevertheless, there are differences between the groups on each issue considered independently. These differences express themselves most clearly, and are significant, only when the three issues are combined. This finding indicates that the relationships between mode of field approach and these measures are independent of any given issue and therefore have generality. My hypothesis of field dependence being associated with a greater degree of affect than field independence was not confirmed.

CHAPTER IV

DISCUSSION

My preliminary study provided the direction for the present research. I found no relationship between field dependency and liberal and conservative points of view on six social issues. However, Ss' reasons for their attitudes suggested that certain formal features of attitudes might provide a more fruitful line of investigation than attitude direction. These measures derived from Ss' cognitive supports are referred to as formal features because they reflect the manner in which the attitudes are expressed rather than the content. This distinction between form and content is consistent with Witkin's discussion of the relationship between perceptual styles and formal and content features of personality in Chapter I. An example of this distinction is provided by the discussion in the first chapter of how mode of field approach is related to the form that psychopathology takes and not to the incidence of it.

The factors postulated to be elicited by the measures of attitude form have been classified according to Katz and Stotland's (1962) schema regarding the cognitive, affective, and behavioral components of attitude structure. This schema is being used to classify the factors because it is a

reasonable formulation of attitude structure. This schema provides a frame of reference in attitude structure for the relationships obtained between mode of field approach and formal features of attitudes.

The classification of the most important reason measure, which is postulated to reflect impulsivity, as a behavioral measure involves a greater inferential step than the inferences made for the other measures. However, I felt that this area was more suitable for this measure than either the cognitive or affective components of attitude structure.

The results provide moderate support for the hypotheses regarding the relationship between field approach and formal features of attitudes, but only among men. These results will be discussed first before discussing the absence of positive findings among women.

An important finding which supports the main results is that there is more consistency in the attitude supports than in the attitude direction measures. This finding indicates that the measures of formal features of attitudes used in this study reflect more consistency in Ss' attitude expression for the issues than does a liberal or conservative point of view, which these issues lend themselves to. The degree

of relationships obtained among these measures fall within the range of degree of relationships uncovered among tests of field dependency. This indicates that these formal features of attitudes reflect stylistic tendencies of attitude expression.

It is important to note, however, that this finding holds only for the present issues. It is possible that these results would not have been obtained had other issues been used which would have lent themselves more easily to division along liberal and conservative points of view than did the issues used here.

The contrary reason and most important reason measures, which had the lowest consistencies, may be modified in future research to allow for greater consistency of performance. A higher incidence of contrary reasons would be obtained if Ss were instructed to state as many pairs of contrary reasons as they could. A high tolerance of ambiguity, which this measure is postulated to express, would be reflected by a large number of such pairs of reasons. Greater consistency in the impulsivity measure would be obtained if Ss were asked to state a specified number of reasons for their attitudes towards each of a number of issues, and were then requested to designate which reasons were

most important. Within this specified range of reasons, degree of consistency could be obtained by comparing the relative positions of the most important reasons.

The factors which I postulated my measures of attitude form to express are not peculiar to attitude research, and have been investigated in the context of other measures in perceptual style research. This research highlights the expression of these factors in certain features of attitudes, as well as using these factors as the nexus between perceptual styles and form of attitude expression.

The strongest relationship obtained in this research is that there is a consistent relationship between field dependency and stating one's most important reason first, which is postulated to reflect impulsivity. The consistently negligible to low intercorrelations between this measure and other measures derived from Ss' cognitive supports indicates that this measure is tapping a factor which is substantially independent from those underlying the other attitude form measures.

The studies of Zukman (Witkin et al., 1962) and Witkin et al. (1962) indicate that the specialized and differentiated defenses and coping-mechanisms of field independent people would enable them to more readily inhibit the expression

of their impulses than would field dependent people. On the most important reason measure, these defenses and coping-mechanisms would increase the likelihood that they would inhibit the expression of this reason and deal with the situation in a more controlled manner.

In contrast, these studies suggest that the more global and diffuse defensive structure of field dependent people lends itself to the ready expression of impulses. Field dependent people would therefore be more likely to express their most important reason first in order to 'get it off their chests.'

The relationship between field independency and a moderate degree of differentiation is consistent with the findings of the bulk of studies reported by Witkin and his colleagues (Witkin et al., 1962; Linton, in Witkin et al. 1962; Witkin et al., 1954; and Gardner et al., 1959) which show that field independent people are more differentiated in their perception of Rorschach inkblots than are field dependent people. These studies deal with differentiation in perception rather than in the structuring of experience.

The positive moderate intercorrelations between the number of reasons and the number of words measures show that both measures are related to productivity. However, the number of reasons measure also deals with how the

cognitive supports are structured, which number of words does not. There are also moderate intercorrelations between number of reasons and affect which will be commented on in the discussion of the affect measure.

The slight support for my hypothesis concerning the relationship between perceptual styles and a tolerance of ambiguity, is consistent with the indirect nature of the empirical evidence available. The findings of studies by Rudin and Stagner, 1958; Pollack et al.; Jackson; and Linton (reported in Witkin et al., 1962) suggest that there is a relationship between field dependency and an authoritarian orientation as measured by the F-scale. Frenkel-Brunswik (1949) has linked authoritarian attitudes to an intolerance of ambiguity in perception. In addition, there is a very small positive relationship reported by Fenchel (Witkin et al., 1962) between field approach and a scale of social rigidity, of which intolerance of ambiguity is one component.

I would conceptually expect there to be a relationship between field independency and a high tolerance of ambiguity based on the ability of people with an analytical field approach to structure their experiences in a differentiated way. This ability would lessen the likelihood that field independent people would be intolerant of or avoid ambiguous situations.

This assumption is supported by the studies mentioned in the previous section concerning the relationship of perceptual styles to the structuring of percepts on Rorschach inkblots.

The polarized ratings of the extremely field dependent Ss are postulated to reflect a need for cognitive clarity from a well structured environment. This need is assumed to be present in this group in order to compensate for a low degree of differentiation. High scores on the F-scale reflect a tendency to perceive things in terms of black or white, which corresponds to a need for cognitive clarity. Therefore, the findings of the studies discussed in the previous section which pointed to a relationship between field dependency and authoritarianism provides indirect empirical support for this relationship. In addition, the low but significant intercorrelations between the measures of extreme ratings and contrary reasons on the Vietnam and Grades issues further suggests that these measures reflect opposing expressions of a similar psychological tendency.

The absence of a relationship between mode of field approach and productivity is consistent with Doob's (1958) failure to uncover a relationship between perceptual styles and the number of words written by college students in describing their choice of a major subject and their

proposed career.

This failure to uncover a relationship between perceptual style and productivity is further supported in another way by the results of a study carried out by League and Jackson (1961). This study shows that productivity, as measured by the degree of participation in a small leaderless discussion group, is unrelated to perceptual orientation, as measured by the EFT.

Based on the results of studies by Crutchfield et al.; Crutchfield and Starkweather; Bell (in Witkin et al., 1962), and Witkin et al. (1962) which indicate that field dependent people are warm and affectionate as compared to the cold, distant, and over-intellectualized manner of field independent people, I hypothesized that field dependency would be associated with a high degree of feeling experienced in relation to our issues. However, no relationship between perceptual styles and affect was uncovered.

The moderate intercorrelations between affect and the measures of number of words, and number of reasons which were obtained suggest that my judges may have used productivity as one index of affect. The failure of this research to have a more independent measure of affect may have also been due to the unsuitability of using cognitive supports for validly determining the strength of Ss' feelings towards the issues.

In addition, there was only a moderate degree of reliability between the ratings of the two judges on the affect measure. This finding further indicates that a highly reliable and independent measure of affect was not obtained in this study. Future research could control productivity by obtaining protocols of cognitive supports for attitudes which are of a standard length.

The significant intercorrelation uncovered on the evaluation factor scales, showing that there is a tendency for field independent women to oppose the restricted abortion law is an interesting finding.

Although this result was not obtained on the 7-point directional scale, or when EFT groups divided at the mean, and extreme groups were compared, it does have conceptual significance.

Witkin and his colleagues (Witkin et al., 1954; 1962) have shown that field independent women have significantly higher ratings of body sophistication and body esteem, as determined by their figure-drawings, than do field dependent females. Hertzman theorizes that field independent women's feelings about their bodies expresses their greater strivings for autonomy than is present among field dependent women.¹

¹ Personal communication from Max Hertzman

These strivings for autonomy and their feelings about their bodies would be adversely affected by an abortion law which severely restricted a woman's ability to obtain an abortion should she want one. One would therefore expect that field independent women would oppose such a restricted abortion law more than would field dependent women.

The failure of this study to uncover significant relationships between field approach and measures of formal features of attitudes among women is consistent with the findings in other research in which the failure to obtain significant relationships between perceptual style and other variables is common. As indicated by the discussion in the Literature section dealing with 10 relationships uncovered in perceptual style research in which there were significant findings reported for one sex and not the other, 8 significant relationships were obtained among males and only 2 among females.

These findings suggest that mode of field approach is not as central a factor among women as it is among men, showing that women have a looser structure of relationships between their perceptual style and other psychological factors than do men.

An interesting finding is the highly significant sex differences obtained for the number of words measure in

which females write more words on all the issues than do males.

This finding is consistent with Tyler's (1956) conclusion concerning sex differences in verbal skills. In summarizing the available evidence on sex differences in verbal skills, she states that "from infancy to adulthood, females express themselves in words more readily and skillfully than do males." In addition, Witkin (1962) suggests that the greater field dependence among women than among men, as indicated in the numerous studies he reports as well as our own, is reflected in a disproportionate investment in verbal skills as compared to analytical functions among women.

Formal features of attitudes express a consistency in style of attitude expression. The relationships obtained between these features of attitude expression and field dependency indicate that there is a communality among these styles.

The findings of this study extend the network of relationships uncovered between field approach and a great variety of psychological variables into the area of attitudes. Future research along this line of investigation should concentrate on developing more refined measures of formal features of attitudes. Some ways in which the measures used in this

study could be refined have been suggested. In addition, these relationships should be explored with respect to a variety of attitudinal objects and populations in order to establish their degree of generality.

APPENDIX

An extensive pilot study was carried out which investigated whether or not there is a relationship between the perceptual styles of field dependence and field independence and liberal or conservative views on some vital social issues.

The issues studied were:

- 1) The United States involvement in the war in Vietnam
- 2) The admission of Red China into the United Nations
- 3) A civilian review board for the police department
- 4) Capital punishment
- 5) The distribution of narcotics and narcotic synthetics to users
- 6) School bussing

The RFT and form V of the group EFT were used as the measures of field dependency-independency. These tests were administered to 82 male and 62 female undergraduate students at City College along with attitude scales derived from the Semantic Differential which measured the Ss' attitudes towards the above issues. The EFT and the attitude scales were administered in groups, and the RFT was individually administered.

Presented below are some representative findings based on the extreme 20% of the field independent and field de-

pendent ends of the EFT distribution.

		Males			Females			
		Sup- port	Op- pose	χ^2	Sup- port	Op- pose	χ^2	p
Vietnam	F.D.	12	5	.15	7	8	2.42	.13
	F.I.	13	4		11	4		
Bussing	F.D.	6	11	.58	7	8	1.36	.25
	F.I.	4	13		4	11		
Civilian Review Board	F.D.	6	11	.13	7	8	.13	
	F.I.	7	10		8	7		

No relationships between either the EFT and the RFT and direction of attitudes on our six issues were uncovered. However, questionnaires later sent to selected Ss asking them to cite the reasons for their attitude judgments suggested that a fruitful area of investigation would be the relationship between field-dependency-independency and some formal features of attitudes as expressed by the reasons given for the attitudes.

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AUTOBIOGRAPHICAL STATEMENT

I was born and raised on the lower East Side of Manhattan. I received A.A.S. and B.A. degrees from Brooklyn College before entering graduate school. For the past two years I have been working as a staff psychologist in Coney Island Hospital in Brooklyn.