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RELATIONSHIPS AMONG LAW SCHOOL EXPERIENCE AND SELECTED PERSONALITY AND COGNITIVE STYLE VARIABLES

The Ohio State University

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Fihla, Priscilla Mandlakazi

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RELATIONSHIPS AMONG LAW SCHOOL EXPERIENCE
AND SELECTED PERSONALITY AND COGNITIVE STYLE
VARIABLES

DISSERTATION

Presented in Partial Fulfillment of the Requirements
for the Degree Doctor of Philosophy in the Graduate
School of the Ohio State University

By


* * * * *

The Ohio State University
1986

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Advisor
Department of Psychology
Dedicated
To My Parents
My Brother and Tom

"Neither the sun by day
Nor the moon by night..."
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CHAPTER I
INTRODUCTION

Our understanding of human functioning and outcomes of human behavior in various situations has been broadened by the shift from narrow perspectives attempting to explain human behavior on the basis of single concepts - as in trait dominated approaches to personality and psychometric approaches in the study of cognitive abilities - to new trends in research and a growing interest which focuses on the interaction among psychological processes, experience and situational variables. This approach to understanding differences between individuals, as well as differences within an individual, promises to be a useful source to understanding subtle nuances in human performance as well as behavioral outcomes. For instance, we would like to know why, all things being equal, an individual's actual performance differs radically from expected performance; why it is that, given very similar circumstances, the same individual performs differently? One possible answer to these questions seems to lie in the influence of these variables on the individual, and his or her response to their impact, and what perceptions, motivations, skills, aptitudes, experiences, and expectations he or she brings to the situation.
Several investigators have noted and emphasized the importance of these interactions among individual characteristics, experience, and the situation. Mischel (1973) advocated and supported this approach in the study of personality. Phares (1976) emphasized that human behavior cannot be understood on the basis of single concepts. Spector (1982) in a vein more closely related to the present study, observed that, in various areas of human functioning, there seems to be an interaction between personality, cognitive variables, and experience; and further underlined that there seems to be an interactive effect between Rotter's (1966) concept of locus of control and experience. That is, locus of control may affect behavior and the consequences of behavior may, in turn, affect locus of control. The thrust of these observations is that the psychological processes responsible for individual differences in performance and the way different characteristics of individuals interact with characteristics of the environment or situation in which the individual operates must be taken into account if we are to obtain an accurate understanding of human behavior.

The present study is an attempt to understand what the impact of experience in a selected learning and professional environment is on a stringently selected, high ability group of students going through a sequenced, structured program in a law school setting. The psychological variables selected in this study for observation in the interaction with law school experience are locus of control
(LOC), a personality variable, and field dependence-independence (FDI), a cognitive style variable. The Law School Admission Test (LSAT) and a student's Undergraduate Grade Point Average (UGPA) are standard measures used by law school in screening students for admission into law school. In this study they are the main predictor variables of achievement on law school tasks. The period covered by this study is five-and-a-half months.

Statement of the Problem

This study examines the impact of law school experience on the locus of control (LOC) and the field dependence-independence cognitive style dimension (FDI) of First Year law students attending a College of Law. The relationship of these personality and cognitive style variables to the LSAT and the students' UGPA is also examined in order to determine whether locus of control (LOC) and field dependence-independence (FDI) can increase the predictive power of the LSAT and the UGPA to achievement on law school tasks. Finally, the variables are interrelated to students' performance scores on an achievement test at the end of the First Semester in law school. Thus, this study examines the impact of law school experience on the locus of control and field dependence-independence variables of law school students and the relationship among these variables and the LSAT, UGPA and performance on law school tasks at the end of the First Semester in law school.
The Conceptual Framework for the Study

Two major psychological constructs provide the conceptual framework for this study and the law school setting provides the psychological situation within which these variables are observed.

The Locus of Control Construct

The locus of control construct is a personality variable that was identified by Rotter (1954) and Phares (1957) within social learning theory to explain the complexity of human behavior. This dimension is based on the notion that individuals differ in the extent to which they attribute the cause of what happens to them either to internal factors, where they perceive themselves as largely responsible for what happens to them and thus feel that they have control over these various experiences; or to external factors such as chance, fate, or others, in which case they perceive themselves as having very little or no control over these situations. Locus of control is a generalized expectancy as opposed to a specific expectancy, being an abstraction developed from a host of experiences where expectancies have met with varying degrees of validation. On the Locus of Control Internal-External Scale (Rotter, 1966), a measure of locus of control individuals are spread along a continuum, at the polar ends of which would be found the extremely externally oriented individuals or the extremely internally oriented. This expectancy aspect, the feeling of being in control or not being in control of reinforcements, as well as the
body of literature that relates locus of control to learning, achievement and performance and which has led to the identification of certain attributes characteristic of internally oriented and externally oriented individuals, are of interest to this study.

The Field Dependence-Independence Cognitive Style

Field dependence-independence is a cognitive style dimension that was first identified by Witkin and associates in the early 1950's. Cognitive styles refer to preferred ways that different individuals have for processing and organizing information and for responding to environmental stimuli (Farley and Gordon, 1981, 2, p. 46). Unlike psychometric measures, which are concerned with the product, cognitive style measures focus on the process — how an individual gets to the product, and here differential methods employed by individuals to reach the end product can be observed.

The field dependence-independence dimension is a style of perceiving, thinking or responding to the general field surrounding a particular stimulus event. Field dependent individuals tend to respond in a global mode with respect to the general field, while field independent people tend to respond in a more analytical or articulated mode. Field dependent people tend to be influenced by the organization of the existing field and rely on external referents as guides in information processing. On the other hand field independent people tend to analyze experiences and structure them in new ways depending on the task at hand; they give greater
credit to internal referents, which helps them to go beyond the information given as they restructure and analyze situations. The attributes of field dependence and field independence have been tested with a variety of perceptual tasks (Goodenough, 1976). Following the bipolar tradition of cognitive styles, one end of the dimension is not necessarily better than the other. This feature distinguishes them from typical mental abilities tests.

The Psychological Environment of the Study

The law school is a professional setting whose defined goal is to prepare students to become members of the legal profession. Thus while a multiplicity of input behaviors occurs within the law school environment, the goals of the training are clearly defined. In this study law school experience is conceptualized as comprising the various influences that have been deliberately designed to impact on the "novice" in order to bring about certain outcomes - ways of thinking, construing the environment, conceptualizing a problem and processing information; as well as other unconsciously perceived influences within that environment that shape the student's perception of this new role.

The relationship between human behavior and the situation in which it occurs is intricate. While human behavior cannot be fully understood outside the psychological situation in which it occurs, situations are also person specific. As Bowers (1983) points out, the impact of particular situations or treatments depends on the
particular people in those treatments. Further it has been noted by various investigators studying the relationship between academic environments and college students that, because of their differing environmental processes, different environments appear to attract students with specific personality and cognitive characteristics. Once these students are in the departmental programs, a somewhat different set of environmental characteristics - the environmental press - including deliberately planned experiences within the program - determine the likelihood of change and tend to shape the student in a particular direction (Adam and Fitch, 1983).

Situations influence behavior by affecting such person processes as the manner in which individuals encode the situation; the outcomes that individuals expect; the subjective value of these outcomes for him or her as well as the ability to generate response patterns (Mischel, 1977; Magnusson and Endler, p. 346). These observations concerning the relationship between the psychological situation and the behavior of individuals in those situations, have important implications for an understanding of the law school psychological environment and its influence on personality and cognitive process variables of first year law students.

In the first instance, it can be speculated that there is congruence between characteristics of students selecting to attend law school and the characteristics of that environment - implying the possibility of self-selection. This possible reciprocal
attraction between an individual's personal and cognitive characteristics with a matching environment, known as template matching (Bem and Funder, 1978) holds some promise for understanding the relationship between individuals and environments in which they select to function.

Secondly, these observations suggest that once these students are in the law school program, the impact of law school experiences, both those deliberately designed to have a direct impact on student characteristics and those which influence a student in indirect ways, may lead to changes in personality self perceptions and cognitive style. This would call for analytical and critical thinking skills. Thus environmental press within the program may determine change. Finally, the manner in which psychological situations influence individual behavior by affecting the manner in which individuals process information and develop certain expectancies and values about situational outcomes has direct implications for locus of control and field dependence-independence as process variables.

Directly Related Research

The two constructs - locus of control and field dependence-independence (FDI) - have received considerable attention independently, and have generated much research in educational settings, especially in the area of cognitive functioning on learning tasks, performance, and achievement. Findley and Cooper
(1983) among others have reviewed the literature on locus of control and achievement; while Witkin, Moore, Goodenough and Cox (1980 have reviewed that on field dependence. A growing area of research has focused on the relationship and interaction between these variables as they influence performance outcomes on the one hand and as they are influenced by situational variables on the other.

It has been noted by those investigating field dependence-independence (Witkin and Goodenough, 1981) and those investigating locus of control (Lefcourt, 1976) that there is a good deal of conceptual overlap between these two constructs. Both consider that they are measuring the extent of reliance on internal and external referents. However, no empirical relationship between the two measures of the constructs has been found (Erickson, 1976; Lefcourt and Telegdi, 1971; McIntyre and Dreyer, 1975). In the researchers' attempts at exploring ways to use what is known about aptitudes and instructional designs to improve school learning, field dependence-independence (FDI) and internal and external locus of control have emerged as two important aptitudes. According to Kietzing (1982), laboratory research has indicated that the interaction of these two constructs may be even more strongly related to cognitive activity and personality adjustment than can be explained by the two separately. However, in his study none of the hypotheses which focused on interactions between congruent cells, field independence x internality and field dependence x externality,
were strongly supported. Kietzing suggested a need for replication and further exploration of these findings.

Forisha-Thiel (1983) studied the relative influence which these personality (locus of control) and cognitive style (field dependence-independence) variables had upon critical thinking among graduate students in educational psychology. She found significant relationships between an internal locus of control and critical thinking ($p < .0001$). Forisha-Thiel concluded that there is a strong common association between predictor variables and a measure of developed ability, the Graduate Record Examination (GRE)-Verbal Component.

In an attempt to identify a set of variables for predicting graduate nurse success on the State Board Test Pool Examination (SBTPE), Sanchez (1983) studied the relationship of locus of control, cognitive style (GEFT), intellectual skills (achievement test performance), and verbal ability measured by the Cornell Critical Thinking Test to the SBTPE. His hypotheses that there would be significant relationships between State Board Test Pool Examination (SBTPE) scores and LOC, FDI (GEFT), convergent thinking ability measured by the Cornell Critical Thinking Test (CCTT), and level of verbal ability were supported in this study. In this study, while determining locus of control was not helpful as a predictive factor, Sanchez concluded that locus of control does add to the understanding of student behavior in the educational
experience. Recognizing a student's inability to disembed may suggest a student's special needs in the development of test taking skills (Sanchez, 1983).

Impact of the Environment on Locus of Control

Shifts in locus of control as a function of experience in selected environments have been demonstrated in several studies. The aim in these studies was not to change locus of control, but the influence of experience in those environments led to locus of control shifts.

Cook, Novaco and Sarason (1982) studying recruits in a Military Recruit Training environment found that expectancy changes were significantly influenced by training unit environments. Recruits in high attrition units became more external while those in low attrition units became more internal. This finding supports similar findings in college environments which indicate that persistors in college tend to become more internal than leavers (c.f. Tonala and Behuniak, 1981).

In another study in a military setting, Vickers and Conway (1984) studied the psychological effects of Basic Training (BT) experience on military recruits preparing for new roles in the military. Subjects became more externally oriented with regard to authority on the Powerful Others scale but significantly more internal on the Internal scale of Levenson's Internal, Powerful Others, and Chance Scales (1971). Adam and Fitch (1983) studied the
effects of psychological environments of university departments on college students' identity status and ego development - a different set of personality variables from locus of control. Their findings, derived from the hypothesis that environments that enhance analytical thought and mind expansion create the conditions necessary for positive change, indicated that academic departments that emphasize scholarship, intellectual awareness, and critical thought, do influence certain personality variables, in this case, identity status. This study has relevance for the present investigation in that the law school emphasizes analytical thinking and mind expansion. What is its influence on selected personality variables, namely locus of control and field dependence-independence?

Pincus and Gross (1984) demonstrated that graduate students who were highly externally oriented upon taking an experientially based course in counseling theory and practice made greater shifts toward internality while the initially internally oriented students made no significant shifts in scores. In a study investigating the relationships between training institutions, teachers; colleges and universities, school level, elementary schools and high schools, and personality traits of teachers at these levels, as independent variables and teachers' deliberations in lesson planning, Kremer (1981) found that locus of control may be influenced and modified by
environmental changes and enrichment programs.

Two studies conducted in Medical Schools with first year medical students as subjects, almost parallel the present investigation. Grover and Smith (1981) in a study of academic anxiety, locus of control and achievement found that first year medical students became increasingly externally oriented in that environment. In Gardner's (1982) study of attribution of control and early medical school experience of first year medical students, results showed that one group of students receiving social support through writing weekly essays became less internal and more external and demonstrated less stress, while the non-supported group became more internal, but demonstrated more correlated stress.

Impact of Experience on Field Dependence-Independence

Field dependence-independence has not been investigated as rigorously as locus of control outside laboratory studies. These studies have attempted to train subjects in cognitive tasks requiring analytical skills in order to determine whether field dependent subjects shift towards field independence after such training. Case (1975) summarized the state of findings in this area of research by stating that there is indication in the literature that the training of field dependent people has never produced any tangible results. MacNeil (1980) in a study examining the relative effect of two different styles - "discovery" and "expository" - on learning performance found that instructional style had a
significant effect on change in the learning performance of students of differing cognitive styles. However, cognitive style itself did not have a significant effect on the change in learning performance.

In an aptitude by treatment interaction study comparing the effect of two teaching strategies and cognitive style on students enrolled in a university introductory course, Provost (1981) found that students with high pretest FDI scores had higher scores in post-tests on an achievement task. In a study evaluating the effectiveness of instructional aids designed to improve test scores of field dependent students enrolled in a community college in an Introductory Course in Geology, field dependent students in the treatment group scored significantly higher on an achievement test than did field dependent students in the control group. Crow and Piper (1985) suggested that the use of additional instructional aids with remedial and field dependent students was more likely to lead to improved scores than a change of learning or teaching styles. From the methods used in these studies as well as the results obtained, it would appear that attempts to study shifts in field dependence-independence require direct cognitive treatment interventions in the specific situation and that changes have been inferred from achievement results of post-test on analytical tasks, rather than on measures of field dependence-independence per se.
The Research Questions

An examination of the literature on the locus of control and field dependence-independence constructs and the law school psychological environment as these variables interact and impinge on the first year law student leads to the following investigation questions:

1. What is the impact of law school experience on the locus of control of First Year law students? Do these students become more internally or externally oriented as a function of this experience?

   On the basis of locus of control theory, it was expected that students making low scores on a law school achievement task would tend to become externally oriented since they might perceive themselves as having no control over reinforcements, irrespective of how hard they worked.

2. What is the effect of law school experience on the field dependence-independence of First Year law students? Do they become more field dependent or field independent as a function of this experience?

   It was expected that, in an environment such as law school that seeks to develop analytical thinking skills in information processing, students would become more field independent and thus analytical in their approach to problem solving situations.

3. Are personality and cognitive style variables of any significance to students' performance on law school tasks?
That is, specifically,

(a) Is there a relationship between a student's locus of control orientation and performance on law school tasks?

(b) Is there a relationship between a student's cognitive style orientation and performance on law school tasks?

4. (a) What, if any, is the nature of the relationship between the scores of the Law School Admission Test (LSAT) and a student's Undergraduate Point Average (UGPA), established predictors of success in law school, and locus of control (LOC)?

(b) What, if any, is the nature of the relationship between LSAT and the UGPA, predictors of success in law school, and field dependence-independence (FDI)?

5. What contribution can locus of control (LOC) and field dependence-independence (FDI), separately or conjointly, make to improve the predictive power of LSAT and UGPA on achievement on law school tasks?

Significance of the Problem for Research

This study explores a number of problems that are of concern to educators in various settings as well as to administrators and researchers. Although a law school setting and First Year law students were selected for this study, the problem and the issues raised have relevance for educators in both legal and non-legal settings. Most educators, researchers, and others providing planned intervention experiences to individuals in organized settings are
interested in the effect of such selected experiences on those for whom the intervention program has been planned. Further, studying the outcomes of the program in relation to those participating in it, helps the planners as well as the executors of it to evaluate the program, and this evaluation may include those aspects of the program which, though not quantifiable, may have far reaching implications for the overall outcomes and development of individuals.

An understanding of the relationship between process variables - personality and cognitive style - and what is already known about a student's mental abilities has implications for differential performance between individuals, student selection, instructional design, and student counseling. Specifically for the law school, would the inclusion and understanding of personality and cognitive style variables enhance the predictive strength of the LSAT and the UGPA? Would an understanding of the role of these variables in student performance help answer some of the questions raised by law school faculty and others regarding students' manner of approach to problems on certain cognitive tasks in law school? Educators and researchers as well as administrators would like to achieve a better understanding of factors that enhance student and employee decisions to persist in school or college or employment rather than drop out. These groups are also interested in developing or identifying measures that possess a high degree of accuracy that can be useful
in the selection and placement of students or employees in appropriate situations. Such measures would lead to economy in the deployment of human resources, energy, and time as well as capital. Above all, educators and employers are interested in measures that can predict with reasonably high validity, success on tasks following planned intervention, treatment, or training. Educators and others are concerned about the often recurring discrepancy between predicted outcomes as determined by standard instruments and performance outcomes. These discrepancies may indicate that the instruments do not measure all the factors that go into the performance of a specific task. These observations suggest that human behavior is complex and cannot be understood on the basis of single concepts. They also justify the attempt to explore variables other than cognitive abilities in the traditional sense, that may explain behavioral outcomes.

A survey of several volumes of the *Journal of Legal Education* and the *Annual Law School Reports* indicates a concern among several law school faculty and others about the dropout rate of law school students in the First Year of law school (Miller, 1968; Patton, 1968). Furthermore, Bryden (1984) drew attention to the problem of students performing in law school at a level considerably below that which might be expected on an actuarial basis.

Focusing on students' ability and level of processing information and conceptualizing a given problem, Bryden directed
attention to the need to examine approaches and methods of delivery that might help students raise their level of performance in task analysis and other specific skills. The problem of the discrepancy between students predicted performance and their actual performance is not unique to the law school situation. It is one of a core of issues to which educators in various disciplines seek answers. Central to the problem is the question "What factors other than measured academic ability affect a student's performance in law school, or any other educational program, such that his/her performance varies significantly from his or her predicted performance?"
CHAPTER II
LITERATURE REVIEW

Overview of Locus of Control and Field Dependence-Independence Research Literature

Research on locus of control and field dependence-independence has led to a voluminous literature. It would be a forbidding task to attempt that review in this paper. Comprehensive reviews of the literature on locus of control have been undertaken by, among others, Joe (1971); Phares (1976); Lefcourt (1982, 1983, 1984); and Findley and Cooper (1983). Witkin and associates have reviewed the research on field dependence and field-independence (1977); and, in Witkin's last work, Witkin and Goodenough traced the historical development of the FDI construct (1981).

The present paper has been selective in its review of literature, focusing mainly on those studies that have relevance for aspects of locus of control and field dependence as they relate to the concepts being examined. Locus of control and field dependence-independence have been studied extensively as separate variables. Most of this research, undertaken in educational settings, has attempted to relate the opposite or polar dimensions of these variables to performance on cognitive tasks in school or college learning situations, using subjects at different levels of
development.

The thrust of the findings, where locus of control has been employed either as an independent or mediating variable, seems to indicate a strong directional influence on performance favoring the internally oriented subjects over the externally oriented. One of the significant observations of these findings that is pertinent to this study is the differential manner in which internals and externals process information.

**Locus of Control and Cognitive Activity, Performance, and Mastery**

In methodologically tightly controlled studies of the relationship between cognitive processing and locus of control, Ducette and Wolk (1973) came up with data that were unequivocal in demonstrating the performance differences between internals and externals on tasks involving cognitive processes. On the impact of locus of control on environmental situations, Ducette and Wolk (1974) suggested that internal subjects tended to be more successful in exerting control over the immediate environment than external subjects are. There is also evidence that internals prefer or even select those situations where they can exert control over their environment (Spector, 1982; Kabanoff and O'Brien, 1980, Kahle, 1980).

The great proliferation of findings since the introduction of the locus of control construct (Rotter, 1966) has led to a view of control as a central personality variable (Joe, 1971). There is the
consistent view in the literature that locus of control relates in some important ways to one’s mastery or lack of mastery over one’s surroundings (Lefcourt, 1976; Phares, 1976). Other studies (Finch, Pezzuti and Nelson, 1975; Foster and Gade, 1973) have shown mixed but mostly positive and moderate relationships between internal locus of control and academic performance. Foster and Gade (1973) showed a significant relationship between incoming college freshmen scores on Rotter's Scale and their first semester performance. Internals achieved significantly higher grades than externals. In a five year longitudinal study, Otten (1977) administered the Rotter Scale (1966) to 45 male graduate students and 45 high ability undergraduate students. Academic data regarding GPA and baccalaureate or doctoral degree attainment were gathered five years later. The hypothesis that internals would perform significantly better than externals was supported, with the strongest relationships found between LOC and graduate degree attainment. Graduate degree internals were more likely to earn the doctorate within a five year period than externals. The Rotter Scale (1966), in combination with other locus of control indices, were all significant predictors of degree attainment for all students taken together.

Nunnally (1975) made the observation that tests of ability become less accurate predictors of performance when ranges are restricted and tend to correlate only slightly with graduate school
performance. This observation has significance for this study where the sample of students entering law school comprises a stringently selected ability group. Does this observation have any relevance to the criticisms that have been made against the predictors of success in law school, and specifically the LSAT (Hathaway, 1984)? Foster and Gade commented that although the relative contribution of personality assessment in predicting such performance is less clearly defined, the possibility of a connection between LOC assessment on the one hand, grounded on concepts of mastery and competence and academic activity on the other, is appealing. These investigators suggested that personality assessments contribute in a significant, though complex manner in the prediction of university level academic performance.

In fact, among restricted ranges of high ability students, it is possible that non ability locus of control measures are relatively better predictors of student performance than conventionally used ability scales (Otten, 1977, p. 648).

Locus of Control as Related to University Experience

Behuniak and Gable (1981) explored differences in locus of control and self concept over time for persisters and changers in six college majors in an attempt to understand the correlations of an individual's choice and successful completion of college major. This was a longitudinal study and the primary hypotheses were examined using a series of Type 1 repeated measures analyses of variance, which allows the researcher to examine subtle changes over
time with the same instruments. Overall the findings of this study support the positive effect of college experience. That is, regardless of major field, the experiences that students undergo while in college appear to enhance feelings of self worth and control over the environment. According to this study, persisters became more internal over time. While persisters were significantly more internally oriented than dropouts in the early stages of the students' college careers, these differences became quite small by the senior year. However, it has been found that the relationship of LOC and performance is quite situation specific. That is, the exact nature of the relationship seems to change for different populations in different circumstances (Behuniak and Gable, 1981).

Investigating the relation between experience and locus of control, Krolick (1979) in an experimental study, found that internals tended to shift their I-E scores in an external direction following an experience of failure, but externals did not shift toward internality following success. Anderson (1977) in a longitudinal study demonstrated that shifts in locus of control can occur for externals as well as for internals. These two studies showed locus of control shifts as a function of experience; but their findings are somewhat conflicting in that Krolick found a shift for internals in an external direction while Anderson found an internal shift, but no external shift. The study by Andrisani and Nestel (1976) provided further evidence for an internality shift in
adult male career mobility (Harvey, 1971). These three studies suggest that locus of control may be sensitive to experience, although two of them do not define the variables that led to shifts.

**Experience and Field Dependence-Independence**

What is the effect of law school experience on the cognitive style of control of these students by the end of the first semester, the end of the first year, and over time, until they are graduated from law school? A review of literature indicated that research has explored the relationship of cognitive style and academic achievement at various grade levels, kindergarten through college (Witkin and Associates, 1977, Cox, 1980).

Brilhart and Brilhart (1971) measured field independence in male college engineering students. They found that FD/FDI-(HFT) scores did not correlate significantly with cumulative grade average or with freshmen aptitude scores. Aptitude scores were a better predictor of success in an engineering program than the field-independence scores. They used the HFT as the measure of field dependence. In another study of undergraduate college students, MacNeil (1980) investigated the relative effect of two different instructional styles - "discovery" and "expository" on the change in learning performance of students of contrasting styles. Findings indicated that instructional style had a significant effect on the change in learning performance of the students; however, cognitive style did not have a significant effect on the change in
learning performance of the students.

Provost (1981) examined the possible interaction of aptitude and treatment between two teaching strategies and cognitive style in students enrolled in a university introductory course. Provost found that students with high scores on cognitive style measures obtained higher scores on all achievement post-tests. No interactions of treatment and cognitive style were found. He suggested that further research is needed in this area.

Witkin, et. al. (1977) studied the role of field dependent-field independent cognitive styles in academic evolution in a longitudinal study. The objective was to assess hypotheses derived from field dependence theory development about the role of cognitive styles in students' academic development. The sample was followed from college entry into graduate or professional school. Findings indicated that in their preliminary choices at college entry, final college majors, and graduate/professional school, field independent students favored impersonal domains which required cognitive restructuring skills and relatively field dependent students favored interpersonal domains which do not emphasize such skills. Further, students whose entry choices were incongruent with their cognitive styles tended to shift to more compatible domains by college graduation or graduate school; students with more congruent styles tended to remain with their choices, and there was a tendency for students to do better in domains compatible with their cognitive
styles. Although the present investigation studies law students only up to the end of the first semester of their First Year in law school, observations gleaned from Witkin's and Associates' study, could have relevance for our sample.

There is some indication in the literature that the training of field dependent people has never produced any tangible results (Case, 1975). Posner (1973); Nebelkopf and Dryer (1973); and Goodenough (1976) describe field dependent people as being passive, intuitive, or having a spectator approach to learning and suggest that to reduce the discrepancy between field dependent and field independent learners, the instructor should provide an environment which would stimulate the learner to interact overtly and actively with the material presented; and, if the learner is intuitive, force him/her to check his/her assumptions or the way he/she structures his/her information. The aim of this approach is to stimulate the learner's processing of information.

Locus of Control as Related to Field Dependence-Independence

Several studies have addressed the complex nature of the relationship between field dependence-independence and locus of control. Lefcourt and Telegdi (1971); Erickson and others (1976); McIntire and Dreyer (1973) categorically state that there is no empirical relationship between these two areas, though there is a good deal of conceptual overlap between them. Vernon (1972) describes the I-E (LOC) Scale as having wide generality and, in his
review of field independence, notes that it does not seem to have been correlated directly with field independence measures. Rotter indicated in some unpublished data that there is no relationship between individual measures of locus of control and the Gottschaldt Figures Test, a test of field orientation. According to McIntire (1973), these two models refer to independent psychological constructs. However it has been noted that both the field independent and the internally oriented groups tend to be analytical, impose structure and organization on the situation, and are less dependent on external cues in the surrounding field; whereas the externals and the field dependent individuals rely on external cues and perform better when cues on cognitive tasks are more salient (c.f. DuCette and Wolk, 1973; Wolk and DuCette, 1974).

In several studies locus of control and field dependence have been found to predict similar criteria. Lefcourt, Telegdi, (1971) explored the extent to which internal and external control subjects differed in their general cognitive activity, using the rod and frame measures of field dependence. Also, they explored the relationship between LOC and the field dependence dimension. On two measures of cognitive activity and two measures of verbal productivity significant interactions between locus of control and field dependence were obtained. Internal, field-independent subjects scored highest on all measures. But the external, field dependent subjects were not the lowest scoring. The incongruent
groups FD - Internal and FI - External scored lowest on each measure. The findings of the study revealed that LOC and FDI measures are unrelated to each other, \( r = -.09 \). However both LOC and FDI provide some prediction of cognitive activity and verbal expressiveness when used conjointly. This study seemed to support Deever's (1967) contention of the potential value of combining these empirically unrelated, but theoretically relevant variables into a battery of tests for predicting independent related behaviors.

Research findings on the relationship of locus of control to performance outcomes and the relationship between locus of control and field dependence are mixed and are difficult to interpret in any specific direction; though certain important trends, however tenuous, seem to emerge. In the light of recent approaches to understanding the relationship between individual differences and performance on cognitive tasks, which emphasize interaction among various variables, the relationship between other psychological processes and performance on cognitive tasks needs to be pursued. Shuell (1981) suggests that:

If we can focus on the similarities in psychological processes as well as on the differences that exist between groups of people defined on the basis of non-psychological criteria, we will be closer not only to understanding the nature of the differences that exist between the groups but also to an adequate understanding of how individual differences are involved in more general processes such as learning. (p. 39)
Further, if we are able to identify the cognitive processes that result in differential performance on mental tests we will be in a better position to interpret the scores that individuals receive and so make appropriate educational decisions. In some cases it may even be possible to provide instruction that compensates for poor performance or to improve performance through training (Farley and Gordon, 1981).

**Personality Variables and Cognitive Styles in Law School**

The question of the effect of personality and cognitive style on student performance in law school appears not to have received much attention in the research literature. Yet concern about students' performance on law school tasks which is not commensurate with the LSAT and UGPA predictions receives more than cursory attention in the literature that has been examined. Also, in the review of literature no studies were found that examined the impact of law school experience on students' locus of control or field dependence.

On the basis of research findings on locus of control as well as previous performance on achievement tasks prior to entering law school, it could be assumed that first year law students would be an internally oriented group. What effect would law school experience have on these students by the end of the first semester; the end of the first year in law school, and over time? What impact would the experience have on their cognitive style-field dependence/field independence dimension?
Patton (1968) tried to identify and investigate some of the various forms of influence upon individual performance of students during the first year of law school and his/her academic achievement. What came out clearly is that the law school is a professionally oriented academic environment that is often experienced as sharply discontinuous in many ways from the experience that preceded it. Considerable pressure is placed upon first year students to adjust to this setting, which emphasizes concepts, attitudes, and values of the world of work as defined by the legal profession (c.f. Kobasa, p. 77). The student's behavior occurs in part as a response to demands that are placed upon him/her in this setting, while he/she brings to it certain predispositions. Thus his/her behavior cannot be considered apart from the situation in which it occurs - that is: The Person x Situation Interaction. In this study Patton (1968) pointed out that the significance of locus of control - the tendency to see oneself as influencing rather than influenced is an important variable that contributes to the student's sense of autonomy.

"If one task of the practising attorney and the law student is to create and defend a 'definition-of-the-situation,' such that it is taken seriously and not easily refuted...then seeing oneself as locus of control for what happens in the situation is likely to be instrumental to accomplishing the task" Patton (1968, p. 44).

In this situation this variable marked the difference between the low achieving student and the high achieving student. These two
different groups of students employed different strategies in approaching problems, with low achieving student preferring a more direct approach to learning and seeking to have more salient cues to the problem. The higher achieving student seemed to have the capacity for critical analysis and could hold in question certain assumptions he/she may previously have taken for granted. The crux of this problem was "Could there be factors other than those identified by the LSAT and the UGPA which might influence performance in the First Year in law school?"

Approaching this same question from a different perspective, the making of a career choice, Miller (1968) examined factors that might account for survival or attrition in law school. He suggested that dropping out of law school is unrelated to academic performance, but rather is related to differences in personality. Hypothesizing that dropping out of school represents for the most part student correction of a perceived inappropriate career choice that is incompatible with the personality of the student, Miller studied differences in personality among law students using the Myers-Briggs Type Indicator (MBTI). Although the results of data analysis were not all clear cut, some significant findings emanated from the study. The hypothesis that dropout from the law school in the first year was not related to academic promise as a law student was supported, for the particular group studied. Also, findings indicated that personality variables in the form of self selection
influenced the choice of law as a career. The greatest difference was defined by the Thinking-Feeling Scale. Seventy-two percent of undergraduates were "Thinkers". The examination of the dropout rates of the different personality types revealed that the Introverted Sense perceptive with Thinking-Judgemental-Types (ISTJ) had a dropout rate of 6.7%. A person of this type is characterized as dependable and practical with a realistic respect for facts, as one who absorbs and remembers great numbers of facts and is able to cite cases to support his evaluations, and who emphasizes analysis, logic, and decisiveness. Students of this type were attracted to law school out of proportion to their representation in college. On the other hand, the Extraverted-Feeling-Judgmental with Sense Perception Type (ESFJ) had a dropout rate of 28.1%. This type is characterized as one who is concerned chiefly with people, who values harmonious human contacts, is friendly, tactful, sympathetic, and loyal, who is warmed by approval and bothered by indifference. Students of this type tend to be underrepresented in law school.

Bryden (1984), in a pilot study, attempted to investigate causes of the discrepancy between students expected performance and actual performance in law school. His focus is how to improve the teaching of analytic skills of thinking in law students. His comments on the problem, though stressing the need to examine instructor's delivery strategies, also point to the need to appreciate what other factors, characteristic of individual students, may be contributing to
performance that is not up to expectation. The absence of research focusing on variables other than students' cognitive abilities in legal education, is manifest in this literature review.

It therefore seemed appropriate to consider in this study which personality or cognitive variables, beyond those represented in such commonly used indices of success as the LSAT and UGPA, might contribute to students' expected performance in law school.
CHAPTER III

METHOD

This study was designed to examine the impact of law school experience on locus of control, a personality variable, and the field dependence-independence cognitive style of First Year law students; explore the relationship of these variables to the LSAT and UGPA, the commonly used predictors of achievement in law school; and, finally, find out whether locus of control and field dependence-independence (FDI) measured by the CFT, can, either individually or conjointly, improve the power of the LSAT and UGPA to predict performance on law school tasks at the end of the First Semester in law school.

This study focused on the first 5½ months of students' experience in law school, and was interested in the direction and magnitude of such changes in locus of control and field dependence-independence (FDI) as might occur. No formal hypotheses were formulated beforehand for this study; the problems under investigation were set out as research questions as follows:

1. What is the impact of law school experience on the locus of control (LOC) orientation of First Year law students?
2. What is the impact of law school experience on the field dependence-independence (FDI) cognitive style dimension of First Year law students?

3. Is there any relationship between locus of control (LOC), field dependence-independence (FDI) and UGPA and LSAT?

4. Is there any relationship between locus of control and field dependence-independence and performance (Achievement) on law school tasks at the end of the First Semester in law school?

5. Can locus of control and field dependence-independence measures employed either individually or conjointly, improve the power of the LSAT and UGPA as predictors of achievement in law school?

The Sample

A sample of the law students admitted to the College of Law at the Ohio State University in the Fall Semester, 1985 were the subjects for this study. First Year law students were approached for voluntary participation in a proposed study in the first week of their entry into the law school program. Permission to implement the study was obtained from the administration of the College of Law. The general purpose of the study was explained, both to the administration and the students. In a large group students were issued copies of the Human Subjects Consent Form which had been modified to include a clause requesting the participants to allow
the investigators access to students' LSAT and UGPA records as well as end of First Semester test scores, (See Appendix A). Subjects were assured of strict confidentiality in the handling of all information regarding their scores as well as personal identity. The subjects had a week in which to decide whether or not they wished to participate in the study. The testing took place during the first two weeks of the Fall Semester. The subjects were tested at appointed times in separate groups according to their class allocation. One group was in the Law of Contracts Course and the other in the Civil Procedures Course.

The final sample for this study which was self-selected was arrived at as follows: From the 214 First Year law students who were admitted at the College of Law at The Ohio State University in the Fall Semester of 1985, 109 students had participated in the pretest sessions. Among these students some did not complete the Consent Form and no returns were received after further requests; thus these protocols were excluded from the pool of data. In some cases important identifying data were either missing or unclear on the pretest protocols, thus these protocols could not be used. At the end of the first semester, prior to post testing, the sample consisted of 81 subjects with useable pretest data. In addition, at that time, two subjects had withdrawn from law school; one subject withdrew from the study; and two subjects were unavailable for the post-tests owing to scheduling difficulties. Thus the final sample
(N = 76) comprising 51 males and 25 females consisted of those students who had voluntarily taken both the pre and post-tests of the study at the scheduled times, completed the important identifying details of the demographic data and voluntarily signed the Consent Form as it appears in Appendix (A) of this study. The mean age of the participating students was 23.32 years, with a standard deviation of 2.98 years. In order to protect the identity of the students participating in the experiment, an identity code was used instead of names as soon as the scores were received from any of the tests. Participants were told that information from the tests would be used for purposes of the research only and that results would be reported in group rather than individual form.

Instruments

In order to study shifts in locus of control from the pretest condition as a function of law school experience, the subjects were administered Rotter's (1966) Internal-External (I-E) Scale. This instrument consists of 29 forced choice items of which six are inserted as fillers. It measures an individual's perceptions of how reinforcements are controlled. These beliefs are based on generalized expectancies from past experiences. The I-E Scale is scored in an external direction; the higher the score, the more external the individual. Internal consistency estimates are acceptable (r = .65 to .79) (Rotter, 1972). Test-retest reliability
was quite consistent in 2 quite different samples ($r = .55 \text{ to } .83$) (Rotter, 1972). On the Questionnaire, the subject selects the one statement of each pair with which he or she agrees strongly. For purposes of this study, the Scale was extended by the addition of three items that focused on legal situations. These items were scored separately from the original scale.

To study the impact of law school experience on cognitive style, the Closure-Flexibility (Concealed Figures Test) (CFT) by Thurstone and Jeffrey (1956) was used as a measurement of field dependence-independence. The Closure-Flexibility Test, in its conception, is one of a series of tests providing scores on various basic perceptual abilities. It measures the ability to hold a configuration in mind despite distractions. This test defined what Thurstone (1944) called the "second closure factor." This ability refers to the individual's capacity to see a given configuration (diagram, drawing or figure) which is "hidden" or "embedded" in a larger, more complex drawing, diagram, or figure. It is a pencil and paper test and can be administered to groups or individuals. The CFT presents a similar task to that required by the Group Embedded Figures Test, Witkin's most commonly used measure of field dependence-independence (GEFT) and both are derived from the Gottschaldt Figures Test. The basic component of the CFT, analytical mental abilities, suggested the CFT as the instrument of choice for this high ability group, whose tasks in law school
emphasize the element of analytical reasoning. The relationship between analytical reasoning and closure flexibility has been widely investigated. Pemberton (1951) found that the Closure Flexibility Factor had a loading of .64 on analytical ability. Yela (1949) reported a correlation ($r = .59$) between a reasoning factor and a perceptual factor which he identified as flexibility of closure, while Thurstone (1951) found a correlation ($r = .63$) between reasoning and flexibility of closure. The test has a practice exercise that takes about two minutes to complete. The actual test takes ten minutes to perform, and it is strictly timed.

**Testing Procedures**

The subjects were tested in two separate groups at different times in two spacious lecture theaters. In the pretest condition subjects completed the Rotter (1966) I-E Locus of Control Scale, together with the special items added to that scale. The task took 10 minutes to complete. The subjects were then administered the CFT. This task also took 10 minutes to complete, excluding the 2 minutes allowed for practice.

A period of 5½ months was allowed to elapse before the retesting session. In the post-test sessions the subjects were administered the same measures - the I-E and the CFT - under similar conditions as in the pretest situation. Intervening between the pre and the post-test were 5½ months of experience in law school and the achievement test as well as the subjects' receipt of knowledge of
Data Collection and Scoring of Protocols

The I-E (Rotter, 1966) Scale is an additive instrument scored in the external direction. Subjects' protocols were scored for externality. The special items were scored separately in the first instance and then added to the I-E Scale total. Thus there was a total for the original Scale and another total for the combined scales. The same procedures were followed for both the pretest and the post-test. The CFT score is the difference between the number of items correct (R) and the number of items wrong (W). The Formula \( R - W \) is used to compute the score on the test. In recording the scores, an Identification Code was used instead of subjects' names. The LSAT scores, the UGPA data, and end of semester achievement scores were obtained from the law school. Thus data at this stage consisted of:

1. Pretest Locus of Control score.
2. Post-test Locus of Control score.
3. Pretest Concealed Figures Test (CFT) scores.
4. Post-test Concealed Figures Test scores.
5. The LSAT scores.
6. The UGPA.
7. Achievement test scores from the end of First Semester law school test.
CHAPTER IV
RESULTS

Research questions investigated in this study fall into three categories and the pattern of data analysis follows these categories closely. The fourth question follows directly from these other questions.

Research questions 1 and 2 examined whether or not law school experience does make a difference in the locus of control and field dependence-independence (FDI) cognitive style dimension of First Year law students in the first six months of participation in a rigorous law school program. The direction and the degree of significance of these changes is studied. Findings are reported in group averages.

Law school experience consists in the various activities in the law school situation that are brought to bear on the student as he or she participates in a structured program aimed at specific goals. Courses of instruction and the form which that instruction takes - that is modes of delivery - constitute part of this law school experience. The study was not designed to measure the precise nature of this experience, but rather examined the effects of this experience on selected personality and cognitive style variables in
Questions in the second category examined whether there is any relationship among the various variables under investigation in an initial attempt to understand their contribution, if any, either individually or conjointly, to an interactive model for the prediction of success in law school. Questions in the third category examined the interaction among all the variables, and the fourth question examined whether locus of control and/or field dependence-independence (FDI) can contribute anything to the predictive power of the LSAT and UGPA, the traditional predictors of success in law school. SAS programs were run to perform the major analyses of these data.

To explore the effect of law school experience on locus of control and on cognitive style, a Repeated Measures Design was employed, and a t-test run for the significance of the difference between pre and post-test scores. The subjects (N = 76) were taken as a single group and their pretest scores compared with their post-test scores. Table 1 shows the first step in this analysis—a comparison of the entire sample on pre and post Locus of Control Scale scores. There was no significant change for the sample as a whole, though the group did move slightly in an internal direction.
TABLE 1
Means and Standard Deviations for Pre- and Post-Test Locus of Control Scores (N = 76)

<table>
<thead>
<tr>
<th></th>
<th>N  =  76</th>
<th>X</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest</td>
<td>9.88</td>
<td>4.15</td>
<td></td>
</tr>
<tr>
<td>Post-Test</td>
<td>9.08</td>
<td>3.39</td>
<td></td>
</tr>
</tbody>
</table>

\[ t = 1.72, \text{n.s.} \]

Locus of control theory suggests that when individuals believe that they are positively rewarded for their efforts on performing a task, they should perceive themselves as being responsible for the outcomes and the contingent reinforcements, and thus tend to become more internally oriented. On the other hand, when individuals believe that, even when they put maximum effort into a task, their efforts are not rewarded, they should tend to become externally oriented, since they may believe that rewards and reinforcements are contingent upon chance, rather than skill and effort.

To test the expectation that low achievers would shift in an external direction on LOC from pre to post test, therefore, the sample was divided into three groups on the basis of performance on the end-of-first-semester achievement test as follows. Group 1, the high achievers, were those who scored beyond 1/2 standard deviation above the means. Group 3, the low achievers, were those who scored below 1/2 standard deviation below the mean. Group 2 were those who
scored between 1/2 standard deviation above and below the mean. Achievement Test means and standard deviations are presented in Table 2. Locus of control shifts from pretest to post-test are reported in Table 3.

**TABLE 2**

Means and Standard Deviations on Achievement Test for High, Medium, and Low Achievers

<table>
<thead>
<tr>
<th>Group</th>
<th>n</th>
<th>(\bar{X})</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>28</td>
<td>96.07</td>
<td>2.45</td>
</tr>
<tr>
<td>Medium</td>
<td>20</td>
<td>90.07</td>
<td>1.08</td>
</tr>
<tr>
<td>Low</td>
<td>28</td>
<td>84.46</td>
<td>4.65</td>
</tr>
</tbody>
</table>

**TABLE 3**

Pre-Post Locus of Control Scores Classified According to Achievement Test Scores

<table>
<thead>
<tr>
<th>Group</th>
<th>1. n = 28</th>
<th>2. n = 20</th>
<th>3. n = 28</th>
</tr>
</thead>
<tbody>
<tr>
<td>(\bar{X})</td>
<td>SD</td>
<td>(\bar{X})</td>
<td>SD</td>
</tr>
<tr>
<td>Pretest</td>
<td>9.82</td>
<td>4.45</td>
<td>9.50</td>
</tr>
<tr>
<td>Post-test</td>
<td>8.28</td>
<td>2.76</td>
<td>9.50</td>
</tr>
</tbody>
</table>

\((t = 2.24, p < .03)\) \((t = 0, n.s.)\) \((t = .13, n.s.)\)
While it had been expected that the group which scored lowest on the midyear achievement test would become more external, the data reported in Table 3 did not indicate such a shift. It is interesting to note, however, that there was a significant shift in an internal direction for the highest achieving group.

To examine the effect of law school experience on the field dependence-independence cognitive style dimension of First Year law students, pretest scores for the group (N = 76) were compared with the group's post-test scores. Table 4 shows pre and post-test Means and Standard Deviations of subjects’ scores on the CFT.

**TABLE 4**

Means and Standard Deviations for the Pre and Post-Field Dependence-Independence (CFT) Scores (N = 76)

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pretest</td>
<td>71.44</td>
<td>23.11</td>
</tr>
<tr>
<td>Post-test</td>
<td>94.80</td>
<td>38.09</td>
</tr>
</tbody>
</table>

\[ \bar{X} = 23.36; \quad t = 6.78, \quad p < .0001 \]

These data show that there was a significant shift from low pretest to high post-test scores. One question addressed in this study was whether or not law school experience would affect the analytical abilities of First Year law students. The data presented here indicate that there was a significant change in CFT scores from pre to post-test. As with locus of control, subjects were divided
into 3 groups on the basis of their First Semester Achievement Test scores in order to assess whether differences in achievement, as measured by the end-of-semester test, influenced this finding. Table 5 presents these data.

Table 5
Pre-Post Test CFT Means and Standard Deviations by Achievement Test Scores

<table>
<thead>
<tr>
<th>Group</th>
<th>1. n = 28</th>
<th>2. n = 20</th>
<th>3. n = 38</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\bar{X}$</td>
<td>SD</td>
<td>$\bar{X}$</td>
</tr>
<tr>
<td>Pretest</td>
<td>73.28</td>
<td>22.02</td>
<td>72.10</td>
</tr>
<tr>
<td>Post-test</td>
<td>90.10</td>
<td>38.89</td>
<td>96.45</td>
</tr>
</tbody>
</table>

(t = 3.22, p<.03). (t = 3.66, p<.002) (t = 4.52, p<.0001)

From this data analysis it is clear that shifts from pre-CFT scores to post-CFT scores are significant in all three achievement groups.

Analysis of these data which focused on the impact of law school experience on the locus of control dimension and the field dependence-independence cognitive style dimension of a First Year law school sample, indicated a strong tendency for scores on the CFT measure to change significantly in a field dependent direction.

The next category of questions examined relationships among the
The next category of questions examined relationships among the various variables. The main focus was on Locus of Control (LOC), Cognitive style (FDI) CFT), LSAT, UGPA and Achievement. First, the variables were cast into a correlational matrix. These data are presented in Table 6.

In this correlational analysis LSAT was positively and significantly related to Achievement ($r = .40, p < .0005$), UGPA was significantly and positively related to Achievement ($r = .41, p < .0005$), and achievement was significantly related to CFT ($t = 26, p < .05$). That LSAT and UGPA are related to Achievement is as would be expected. Other significant relationships were found between Achievement and Sex ($t = .26, p < .05$), in favor of the males; and also between LSAT and CFT2 ($t = .22, p < .05$). No relationship was found between UGPA and pretest scores on the CFT. No relationship was found between pretest Locus of Control scores and any of the other variables.

The third category of questions in this analysis was concerned with the potential of LOC and CFT scores to explain variance in achievement when used with the LSAT and UGPA, the traditional predictors of achievement on law school tasks. To study these interactions, two hierarchical multiple regression analyses were run with achievement as the dependent variable and UGPA, LSAT, LOC1, CFT1 as independent variables. In a hierarchical model the number of independent variables is entered cumulatively in a prespecified sequence and the $R^2$ and partial coefficients are determined as each
TABLE 6
Relationships Among The Main Variables
N = 76

<table>
<thead>
<tr>
<th></th>
<th>Sex</th>
<th>Age</th>
<th>UGPA</th>
<th>LSAT</th>
<th>CFT1</th>
<th>CFT2</th>
<th>LOC1</th>
<th>LOC2</th>
<th>ACH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td>-.28**</td>
<td>.10</td>
<td>.22*</td>
<td>.07</td>
<td>.17</td>
<td>-.09</td>
<td>.18</td>
<td>.26*</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>.21</td>
<td>-.08</td>
<td>-.24*</td>
<td>-.18</td>
<td>.08</td>
<td>.09</td>
<td>.19</td>
<td></td>
<td></td>
</tr>
<tr>
<td>UGPA</td>
<td>-.16</td>
<td>.05</td>
<td>-.21</td>
<td>.11</td>
<td>-.16</td>
<td>.41***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LSAT</td>
<td>.08</td>
<td>.22*</td>
<td>-.12</td>
<td>.02</td>
<td>.40***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CFT1</td>
<td></td>
<td>.66***</td>
<td>-.16</td>
<td>.06</td>
<td>.26*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CFT2</td>
<td></td>
<td></td>
<td>-.12</td>
<td>.02</td>
<td>.17</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LOC1</td>
<td></td>
<td></td>
<td></td>
<td>.56***</td>
<td>.02</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LOC2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-.20</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>ACH</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a51 males, 25 females, * p < .05; ** p < .01; *** p < .0005.

Legend: - UGPA is the Cumulative Undergraduate Point Average
- LSAT is the Law School Admission Test
- CFT1 is the pretest score on the CFT
- CFT2 is the post-test score on the CFT
- LOC1 is the pretest score on the Locus of Control Scale
- LOC2 is the post-test on the Locus of Control Scale
- ACH is the Achievement on the end of first semester test in law school
independent variable joints the others (Cohen and Cohen, 1983 p. 120). In this study a hierarchical model was chosen because the LSAT and the UGPA are known predictors of achievement in law school. The question being investigated was whether FDI (measured by the CFT) or LOC (measured by the IE Scale) could improve the predictive power of LSAT & UGPA. The LSAT and the UGPA were thus entered simultaneously with CFT and LOC entered separately to study the significance of their individual contributions.

Hence, the first hierarchical model employed required that the two traditional predictors (LSAT and GPA) be entered first and that CFT and LOC be added in that order. The analysis related to this model is presented in Table 7.

Inspection of Table 7 reveals that LSAT and UGPA together accounted for 39% of the variance in achievement. When CFT was added, the three variable model accounted for 45% of the variance in achievement. Furthermore, the unique contribution of CFT to the model was significant beyond the .007 level. LOC did not add significantly to prediction of achievement.

The second hierarchical model again required that LSAT and UGPA be entered first and that LOC be entered next in order to determine whether LOC alone would add to the variance accounted for by the traditional predictors. The analysis related to this model is presented in Table 8. As can be seen, LOC did not add significantly to LSAT and UGPA in prediction of law school achievement.
### TABLE 7

Individual Contributions of UGPA, LSAT, LOC1, CFT1, to Achievement

<table>
<thead>
<tr>
<th>Step</th>
<th>Source</th>
<th>$R^2$</th>
<th>$F$</th>
<th>df</th>
<th>p</th>
<th>$F$</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>UGPA</td>
<td>.165</td>
<td>14.66</td>
<td>1,74</td>
<td>.0003</td>
<td>14.66</td>
<td>1,74</td>
<td>.0003</td>
</tr>
<tr>
<td>2</td>
<td>LSAT</td>
<td>.387</td>
<td>23.10</td>
<td>2,73</td>
<td>.0001</td>
<td>26.49</td>
<td>1,73</td>
<td>.0001</td>
</tr>
<tr>
<td>3</td>
<td>CFT</td>
<td>.447</td>
<td>19.46</td>
<td>3,72</td>
<td>.0001</td>
<td>7.83</td>
<td>1,72</td>
<td>.0066</td>
</tr>
<tr>
<td>4</td>
<td>*LOC1</td>
<td>.461</td>
<td>12.01</td>
<td>4,71</td>
<td>.0001</td>
<td>1.59</td>
<td>1,71</td>
<td>.4455</td>
</tr>
</tbody>
</table>

*Locus of Control, a target variable in this study, has been entered in this Table, only to show that it makes a non-significant contribution to the Model.*

### TABLE 8

Individual Contribution of LOC-1 to Achievement

<table>
<thead>
<tr>
<th>Step</th>
<th>Course</th>
<th>$R^2$</th>
<th>$F$</th>
<th>df</th>
<th>p</th>
<th>$F$</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>UGPA</td>
<td>.165</td>
<td>14.66</td>
<td>1,74</td>
<td>.0003</td>
<td>4.66</td>
<td>1,74</td>
<td>.0003</td>
</tr>
<tr>
<td>2</td>
<td>LSAT</td>
<td>.387</td>
<td>23.10</td>
<td>2,73</td>
<td>.0001</td>
<td>26.49</td>
<td>1,73</td>
<td>.0001</td>
</tr>
<tr>
<td>3</td>
<td>LOC-1</td>
<td>.388</td>
<td>15.23</td>
<td>3,72</td>
<td>.0001</td>
<td>0.06</td>
<td>1,72</td>
<td>.8030</td>
</tr>
</tbody>
</table>
In this study, then, CFT made a significant contribution to the prediction of First Semester law school achievement beyond that made by the traditional predictors, LSAT and UGPA.

The original Rotter I-E Scale was expanded in this study by the addition of three specific items relating to legal situations. These three items were designed to assess whether First Year law students perceive success in the practice of law as contingent upon an attorney's skills or upon chance and opportunity factors. The mean difference between pre and post-test scores on these items was .092, n.s. Furthermore no significant correlation was found between these specific items and the original Rotter I-E Scale items. These three specific law related items were eliminated from further consideration.

Summary of the Findings

This chapter has presented the results of the study with respect to the questions investigated.

Question 1.

(a) What is the impact of law school experience on the locus of control orientation of First Year law students?

For the group (N = 76) there was a non-significant shift from higher (more external) scores on the pretest to lower (more internal) scores on the post-test (t = 1.72, n.s.)
When the subjects were classified into three groups according to their end of First Semester Achievement test scores, using \( \frac{1}{3} \) S.D. from the mean to establish the groups, the high-achieving group made a significant shift in internal an direction.

**Question 2.**

What is the impact of law school experience on field dependence-independence cognitive style dimension of First Year law students?

The group (N = 76) made a significant shift in CFT scores in a field independent direction from pretest to post-test (\( t = 6.78, p < .0001 \)). When the subjects were divided into three groups on the basis of the First Semester Achievement test scores, using \( \frac{1}{3} \) S.D. to establish the groups, all three groups changed significantly in a field independent direction.

**Question 3.**

Are there any relationships among the various variables and what is the level of significance of any such relationships?

LSAT was positively and significantly related to Achievement \( (r = .41, p < .0005) \). Achievement was significantly related to CFT \( (r = .25, p < .05) \). Significant relationships were also found between Achievement and Sex \( (r = .26, p < .05) \) and between LSAT and CFT-2 \( (r = .224, p < .05) \). No relationship was found between UGPA and CFT-1. No relationship was found between pre-test locus of control and Field dependence-independence (CFT) nor between pre-test
locus of control and any of the other variables.

Question 4.

This question, following directly upon the previous questions, attempted a further analysis of the relationships among the various variables and sought to understand whether any of these variables could, either separately or conjointly, account for variance in achievement on law schools tasks beyond that accounted for by LSAT and UGPA. Two hierarchical multiple regression models with Achievement as the dependent variable were run. It was found that above and beyond LSAT and UGPA, field dependence-independence (FDI) measured by CFT accounted for a significant amount of variance in achievement on a law school task.
CHAPTER V
DISCUSSION

Results of this study are discussed in the light of the questions raised in this investigation and related to relevant research findings in the literature. The meaning of these findings for this study is analyzed and its limitations pointed out.

On the question exploring the impact of law school experience on the locus of control orientation of First Year law students, results of this study show that for the group as a whole (n = 76), there was a trend, though not significant, for a shift towards an internal orientation. The top 37% of the subjects; that is, those who had received high scores on the end of First Semester achievement test, made a significant shift in an internal direction. The lower 37%; that is, the subjects who made comparatively lower scores on the achievement test, did not become more externally oriented as was expected on the basis of locus of control theory. End of First Semester test scores were high across the board for this sample N = 76. Thus, one reason the lowest achieving group did not shift in an external direction from pre to post test on the I-E Scale may be that they did not perceive their scores as non-commensurate with their effort in law school. Were the shifts observed in locus of
control in an internal direction among the top 37% of high scoring students as well as the non-significant trend towards internality for the group as a whole (N = 76) a function of law school experience, or would these shifts have occurred irrespective of this experience? Or do these shifts reflect test-retest practice effects? Several studies, Krolick (1979); Anderson (1977); Harvey (1971), among others, investigating the relation between experience and locus of control, indicate that locus of control shifts do occur as a function of experience. Thus, even though the variables that lead to shifts were not defined in these studies, these authors concluded that, clearly, locus of control is sensitive to experience. To investigate further the shifts observed in the present study, a post hoc investigation using 25 subjects in an Introductory Course in Psychology was undertaken. In the pretest the subjects were administered the I-E Scale (Rotter, 1966) and four weeks later the same subjects were retested on the LOC. No significant change occurred in these subjects. For the sample (N = 25) the pretest locus of control mean was 10.12 and the post-test mean was 10.24 (t = .16, n.s.).

In the present study, scores on CFT, the measure of FDI increased significantly from pretest to post-test (p < .0001). It was expected that in an environment that seeks to develop analytical and critical thinking in its students, students would tend to shift towards field independence and be more analytical in their approach
to problem solving situations. However, would these shifts towards field independence have occurred irrespective of exposure to the law school environment? Or, do they reflect practice effects? In order to study the possibility that practice effects might have accounted for the significant change in scores, a post hoc study was undertaken, using the same 25 subjects used in the analysis of I-E Scale shifts. The subjects were administered the CFT in the pretest and a period of 4 weeks was allowed to elapse before they were retested on the same measure. The CFT pretest mean score was 58.96, and the post-test mean scores was 60.44, \( (t = .34, n.s.) \).

An examination of the relationship among LOC and FDI, as well as FDI and UGPA and LSAT, led to the following observations:

1. No relationship was found between field dependence-independence and locus of control. This lack of a relationship between these two constructs has been noted in several research studies in the literature. Although FDI and LOC overlap conceptually, no empirical relationship has been found between the two constructs (Lefcourt and Telegdi, 1971). Enquiry continues in this area of research. What seems to appeal to most researchers is the similarity in the manner in which the field independent and the internally oriented individuals are presumed to process information and their reliance on internal references as opposed to the global manner in which the field dependent individual and the externally oriented individual are thought to process information as well as
their reliance on external referents. Research findings in this area of enquiry however, are not clear cut.

2. No direct relationship was found between LSAT and field dependence-independence \( (r = .08, \text{n.s.}) \). However, the LSAT was significantly and positively related to post CFT measures \( (r = .22, p = .05) \). UGPA is not related to FDI in this study. Several studies indicate that significant relationships have not been found between measures of field dependence-independence and overall grade point average (Witkin, Moore, Oltman, Goodenough, Friedman, Owen, Raskin, 1977; Brilhart and Brilhart, 1981), except in rare cases (Anderson, 1972; Glass, 1967; Montgomery, 1972) and recently, McDonald (1984) found significant predictive relationships between UGPA and measures of FDI. Concerning overall academic achievement, GEFT scores (that is, measures of field dependence-independence) show little relation to either high school grade point average or college grade point average. Thus the observation made in this study seems to support findings from other similar studies. No relationship was found between locus of control and UGPA.

3. In the multiple regression analysis relating LSAT, UGPA, LOC, and FDI to Achievement as a dependent variable, FDI uniquely accounted for 6% of the variance in achievement scores, \( (p < .006) \) beyond the 39% that UGPA and LSAT taken together contributed to achievement. When LOC was added to the Model, \( R^2 = 45\% \), \( (\text{LSAT + UGPA + CFT}) \), no increase occurred. LOC failed to explain any of the
variance in achievement on law school tasks whether it was entered after CFT or ahead of CFT. It would appear, then, that CFT can be used reliably with UGPA and LSAT to explain variance in achievement on law school tasks.

Provost (1981), in a study examining the possible interaction of aptitude and treatment between two teaching strategies and cognitive style, found that students with high scores on the field dependence-independence cognitive style obtained high scores on all achievement post-tests. Provost's observations are pertinent to this study. Earlier this study tried to establish that changes in CFT were not due to practice effects by introducing a post hoc study. The relationship between post CFT scores and LSAT (p < .05), where no relationship had been found between LSAT and CFT pretest scores, raises interesting theoretical questions. Since LSAT predicts achievement after intervention (p < .005), what is the significance and the relationship between LSAT and CFT post-test scores? Are they indicative of a particular quality in the nature of the CFT task that may be liable to change as a function of particular type of intervention encountered in the law school situation? The CFT is basically a test of analytical abilities, an important attribute of field dependence-independence. Did these subjects become more analytical as a result of intervention, and does LSAT predict achievement then, on CFT in the same way as it predicts achievement on law school tasks? It is a central
hypothesis of FDI theory which has received ample support in various studies (Witkin, 1962; 1974) that differences in expressions of articulate functioning in one area are related to expressions in other areas and thus people who are analytical in one area tend to be analytical in other perceptual problem solving situations as well. This generalized conception of FDI with the aspect of transfer implicit in the hypothesis may throw light on the nature of the relationship between LSAT and post CFT performance.

Importance of the Findings

Results of this study suggest that locus of control is sensitive to experience and that the 37% of students who obtained high scores on the end of semester achievement test shifted towards an internal orientation after being exposed to a structured program at the law school for five-and-a-half months. According to Rotter's conception of locus of control, when an individual perceives himself or herself as being responsible for the outcomes and reinforcements of a situation, he or she is described as internally oriented. In the light of this conception, it would appear that these students became more internally oriented as a result of being rewarded for their effort. On the other hand, contrary to expectation based on the locus of control theory, subjects who obtained comparatively lower scores on the end of First Semester achievement test, did not shift towards an external orientation in this study. Rather, they tended to remain in the same position.
In a study examining personal characteristics of students that appear to play a substantial part in the student's life in law school, Patton (1968) identified locus of control as one of the particularly relevant characteristics that seemed to make a difference between the higher achieving and the lower achieving student. While the present study provided no support for the notion that locus of control is a predictor of law school performance, the finding that LOC was enhanced by early portions of the law school experience for students who achieved high scores on the law school task, used as a criterion in this study, is of interest. This finding together with Patton's contention that LOC should relate to one's performance in the legal profession, suggests the possibility that the law school experience encourages some attitudinal or non-cognitive characteristics, in at least those students who perform well, which will be of value to them in the ultimate practice of their profession.

It was found in this study that the FDI cognitive style is sensitive to certain types of experience. First Year law students in the structured program at the law school became significantly more field independent and thus more analytical in their approach to problem solving situations. It was expected that law school experience would enhance First Year law students' analytical ways of thinking and processing information as well as the ability to select what is pertinent from a given context. In this respect, the
findings of this study were consistent with expectations.

Also, findings of the present study indicate that FDI measured by the CFT, explains uniquely 6% of the variance in performance on a law school task. This finding points to the fact that CFT has the potential to increase the power of LSAT and UGPA in predicting performance on law school tasks.

The relationship of LSAT to CFT score obtained following intervention raises important theoretical questions on the nature of field dependence-independence measures and the nature of the outcome that is being measured after a specific type of intervention. A replication of this finding may have important implications for research on CFT.

Locus of control made no significant addition to the explanation of variance in achievement; neither did it correlate with any of the other variables in the model. The contribution of locus of control to performance and the prediction of performance is complex. Foster and Gade (1973) suggested that it is better understood in terms of the concepts of mastery and competence (c.f. Bandura, 1977). This need to understand the influence of locus of control on situations by integrating that variable with other theoretical concepts and applying the whole to prediction has been expressed by several investigators, among whom Phares (1976) unequivocally stated that locus of control should be viewed within some complex analysis of the situation if a simplistic view of behavior and a low level of
prediction are to be avoided. Findings of research investigating the role of locus of control in performance and prediction are equivocal, and this observation provides a sound reason for continuing investigations of this construct within complex analyses of situations.

Limitations of this Study

This study covered the first 5½ months during which these students were enrolled in the law school program. The findings were based on the 76 students (35.5% of the total population of First Year students admitted into law school in the Fall of 1985), who voluntarily participated in this study. On the LSAT the mean score for the total population (N = 214) was 37; for the sample (N = 76) the LSAT mean score was 36.60, SD = 4.47. On the UGPA the population mean was 3.4; and for the sample, the UGPA mean = 3.42, SD = .31. (Standard Deviations for the population were not obtainable since the Law School had not computed them and privacy considerations precluded the present author from obtaining individual scores for any students but those who agreed to participate in the study. Although this was a voluntary sample, on the basis of the population and sample means, there was no reason not to believe that the sample is not representative of the total population of First Year law students in the College of Law at The Ohio State University.
Some of the questions that were raised in the context of this study and bearing on the outcomes of this investigation could not be answered at this point because of limitations inherent in this study.

1. Findings of this research were limited to the First Year population of law students at the College of Law at The Ohio State University. The results may not be generalized to other Schools or Colleges of Law until the issues raised in this study have been explored in similar studies in several other schools. The special problems that legal and non-legal educators share must be explored in their specific settings before broader generalizations can be made.

2. Since the study was limited to the first 5½ months only, at this stage its findings cannot be generalized to ultimate retention or possible dropout rate in law school. A follow up of the students to the end of the year and up to the final year in law school would be necessary in order to provide data directly related to these questions.

Questions for Further Investigation

Three significant findings came out of this study, but these findings raise issues for further exploration rather than the immediate formulation of recommendations.

1. Were the changes observed in the top 37% of the students who scored high on the achievement test a function of the impact of
law school experience alone, or could there be other factors that might explain this observation? Students who, by comparison with the top 37%, obtained relatively lower scores were not shattered by this experience. They did not become externally oriented. What were their perceptions of themselves relative to the law school situation? And what role does a support system at the law school play during this formative or developmental phase of these law students in law school?

2. After 5½ months, these students became significantly more field independent or analytical than they had been. What variables of the law school situation contributed to this change? This question and this finding suggest an area of research to analyze the situational variables in the interaction between the law student and the environment in which he operates.

3. The FDI cognitive style measured by CFT accounted for 6% of the variance in achievement on a law school task beyond that accounted for by LSAT and UGPA. Further research should be directed toward exploring whether this finding can be replicated in other similar settings.


APPENDIX A

HUMAN SUBJECTS CONSENT FORM
OHIO STATE UNIVERSITY

CONSENT FOR PARTICIPATION IN
SOCIAL AND BEHAVIORAL RESEARCH

I consent to participating in research entitled:

Relationships among Law School Experience and Selected
Personality and Cognitive Variables.

P.M. Fihla (Principal Investigator) or her authorized representative has explained the purpose of the study, the procedures to be followed, and the expected duration of my participation. Possible benefits of the study have been described, as have alternative procedures, if such procedures are applicable and available.

I understand that the research project will require that the principal investigator will need access to my LSAT scores, my undergraduate grade point average (UGPA), and performance scores from tests taken during my first year in law school.

I also understand that this information will be kept in strictest confidence and that no reports of the research will make it possible to associate scores with individuals. Also, while I may be contacted after my first year in law school for further participation in follow-ups on this research, I reserve the right to refuse such permission.

I acknowledge that I have had the opportunity to obtain additional information regarding the study and that any questions I have raised have been answered to my full satisfaction. Further, I understand that I am free to withdraw consent at any time and to discontinue participation in the study without prejudice to me. The information obtained from me will remain confidential.

Finally, I acknowledge that I have read and fully understand the consent form. I sign it freely and voluntarily. A copy has been given to me.

Date: ........................................ Date: ........................................

Signed: ........................................ Signed: ........................................

(Principal Investigator
or Authorized Representative) (Participant)