THE RELATIONSHIP OF THE SEATING CHOICE OF COLLEGE STUDENTS TO ACADEMIC ACHIEVEMENT AND CERTAIN PERSONALITY FACTORS

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THE RELATIONSHIP OF THE SEATING CHOICE OF COLLEGE STUDENTS TO ACADEMIC ACHIEVEMENT AND CERTAIN PERSONALITY FACTORS

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CHAPTER I

INTRODUCTION

Background and Significance of the Study

The research described herein has its origin in a basic behavior pattern manifested by humans in numerous social situations. It is a common observation that some individuals make their way readily to the center of a group activity and take an active part, while other individuals, under the same external conditions, tend to remain on the periphery of the group and make relatively passive overt responses. Although this behavior may be more obvious in some of the more spontaneous, unstructured behavior of loosely-knit groups, it can be observed also in more formal groups, providing there is the element of choice in locating oneself in the group. It appears that the choice is made on the basis of the individual's perception of the external situation, his evaluation of himself, and the combination of attracting and repelling forces that impinge on him as he compares self with situation. For example, if he perceives the situation as being attractive, yet somewhat threatening, and himself as incapable of coping with the threat, he will likely choose a position that is far enough away to reduce the threat to a tolerable level and yet leave him within the field of attraction.
On the other hand, if, under identical conditions of attraction and threat, he conceives of himself as being fully capable, then threat may be perceived as challenge, with the net result being his attraction to the center of the activity.

When this phenomenon is observed in the free choice of seats in the college classroom, it is found that students who sit near the front of the room (the center of activity) tend to receive higher grades than those at the rear, and vice versa. The college classroom, then, presents itself as one example of a social situation which allows the operation of attraction-repulsion characteristics of group situations in general, but provides also unique opportunities for the assessment of the individual in ways which may help explain his placement of himself in the group.

As common as this observation of relationship between grades and seating choice is, no serious studies of the phenomenon were found, except a brief popular article by Willey (41: 42, p. 73). In a four-year study involving more than 500 students from sophomore to graduate level, it was determined by the use of correlation and chi-square techniques that there exists a significant relationship between the front-back position of the student in class and his marks, the correlations having been as high as +.87 in some cases. These findings were supported in a pilot study (25), using 66 students in two classes. In this case, the differences
among the mean scores of students in five rows were significant at the .05 level, again with the mean scores becoming progressively lower from the front of the room to the rear.

In the lower school grades considerable emphasis is placed on the physical factors of classroom arrangement, such as the increased difficulty in seeing the chalkboard or seeing and hearing the teacher from the back of the room. Also, the farther back a student sits, the more likelihood there is of distracting stimuli occurring between him and the teacher. With these variables in mind, another pilot study (24) was conducted in which the seating arrangement of students in freshman psychology classes was systematically varied from the pattern originally chosen by the students, the purpose being to determine whether position in the room was, of itself, a significant factor in determining one's achievement. If so, there should have appeared a tendency for the grades to be higher in the front rows, lower toward the rear, as was the case when students sat where they chose. However, since no clear pattern emerged, it appears that the student's physical location is not, by itself, a significant factor in the determination of academic achievement. It is likely, rather, that both academic achievement and choice of position in the room are related to the student's perception of the attraction-repulsion aspects of classroom activity and his perception of his own capability for effectively coping with such a situation.
From Mowrer's point of view, the classroom may be referred to as an approach-avoidance situation for the student. Regarding such a valence theory of behavior, he writes,

Here we may note especially the positive and negative "valences" which Lewin attributed to objects in psychological space and the positive and negative "cathexes" of which Freud often spoke. A positive "valence" or "cathexis," it seems, is simply that attribute ("hope" in our terms) which a stimulus acquires by virtue of its conjunction with important satisfactions; and a negative valence or cathexis, by the same token, is simply that attribute ("fear") which a stimulus acquires by virtue of its conjunction with discomfort or pain. Revised two-factor theory likewise is congruent with common-sense (and social-psychological) notions about positive and negative "interests" and "attitudes" (23, p. 25).

In the same manner, a student, who for any one of several reasons, has come to attribute both positive and negative "valences" to the classroom and its dominant figure, the teacher, may well make an appropriate approach through choosing a seat in keeping with the perceived "valences."

Authors in the area of sociometry (13, 35) typically view the classroom as a "living sociogram," taking for granted that students at the lower levels of schooling will indicate by their attraction and repulsion the worth of others as they see them. Dit tes (6), in an experimental study of college freshmen, measured the attractiveness of a discussion group to various members on the basis of the degree of acceptance they had encountered in the group. Not only did those who were made to feel most well accepted show
a greater attraction to the group, but this difference was significantly greater among persons with low self-esteem than among persons with high self-esteem. "Some support was given to the additional predictions that attractiveness of membership in a group varies directly with need for acceptance when a group is accepting and inversely when a group is nonaccepting." That is, when the group is nonaccepting, or perceived to be so, the greater one's need for acceptance the less attractive the group is to him, since it has not met his need for acceptance in the past. These forces at work in the classroom would tend to make the situation increasingly more attractive to the good students and less attractive to the poorer students if it can be assumed that success in school bears a positive relationship to acceptance in the group. The person least attracted to the group would be the one who perceives the group as nonaccepting, yet has a strong need to be accepted. On the basis of attraction to the group, then, he would be expected to choose a seat near the back of the classroom.

The significance of such attraction-repulsion patterns on a long-term basis is drawn from Moreno's work in a study by Amidon and Hoffman:

In his early work, Jacob Moreno, the father of sociometry, developed a "law of the social atom" which is concerned with the relationships existing among people. According to the law, patterns of attraction and repulsion become very stable for a particular individual
early in his social development. This implies that a child who is socially isolated in the early grades is likely to remain isolated throughout his school years, and perhaps throughout his life (2, pp. 75-76).

When such behavior is present in a degree which could be said to constitute a neurosis Horney sees it as the need for detachment, for moving away from people.

Like any other neurotic trend, the need for independence is compulsive and indiscriminate. It manifests itself in a hypersensitivity to everything in any way resembling coercion, influence, obligation (all of which are present in the classroom), and so on. The degree of the sensitivity is a good gauge of the intensity of the detachment (15, p. 77).

At a more normal level of adjustment, isolation is considered a habit, an adjustment to tension resulting from the generalization of simple withdrawal responses. However, in the school situation such withdrawal, when found in an extreme degree, is frequently considered to be more insidious than the more aggressive behavior, since it indicates the existence of a problem that is not shared and thus is less likely to be solved (31, p. 190).

Obviously, not everyone who sits toward the rear of a college classroom is expressing extreme withdrawal. For one thing, only the first student to arrive is actually expressing perfectly the choice of any seat he desires. As more students arrive and take seats, there is increasingly less freedom of choice for each person. Also, the location of one's friends is occasionally a primary determining factor.
However, since it seems fairly certain that seating position alone is not sufficient cause to produce the observed grade decrement by rows, the answer must be sought in what the student brings to class within himself as a person. Whether this variable is a totally unconscious habit pattern or a choice made with a relatively high degree of awareness, it is not unreasonable to assume that, in either case, the choice is to some degree an expression of such personality factors as the student's concept of himself and his ability, as well as his perception of the classroom situation with regard to difficulty and interest-value. For this reason, an effort has been made in the present study to determine more accurately the relationships existing between self-concept and choice of seat in the classroom.

The findings are primarily of significance to the instructor of the class and those of theoretical bent who may wish to carry the matter to other areas of research, rather than to the student for direct application to his own situation. As a practical application, for example, the instructor, in the belief that the classroom situation apparently holds relatively more threat and less attraction for some, at least, who choose to sit farther from the front, might give particular attention to identifying and reducing the threatening elements, while making an attempt to increase appropriate stimuli of attractive nature. Either his own
presence as an authority figure at the front of the room or his practice of calling more often on students in rows near the front may pose a threat to some students.

The discovery of a general pattern of differences in academic achievement and self-concept in the classroom would also make it possible for the instructor to make more favorable division of students into groups for group work. Thus he could lessen the likelihood of having some groups composed primarily of the more aggressive, high-achievement type persons and others composed of the more recessive, low-achievement type individuals. Some measure of success in this respect would hardly be expected to result in a significant and permanent personality change, but it would at least represent one situation where the withdrawn student would be included in a meaningful experience with a group somewhat more likely than himself to succeed. Likewise the success of the group would be for him to share.

Probably more significant, in the long run, than the college teacher's application of such findings is the matter of emphasizing with elementary school teachers the relationship of the student's self-concept to expressions of ascendancy and belongingness in the classroom. The long-lasting nature of sociometric patterns, once formed in early classroom experiences, stresses the importance of including in the group, wherever possible, those who may otherwise become
isolates and rejectees. Perhaps this is particularly true in the light of the present trend toward more mobility and less structuring in classroom seating in the lower grades. Thus the instructor should be able to better direct his efforts at encouraging acceptance of self among those students who need it most. Regardless of the reasons for academic potential being somewhat lower toward the rear of the room, self-acceptance would, in this case, mean acceptance in the face of greater limitations than are generally found in students near the front.

As regards theoretical work in personality measurement, confirmation of the seating-choice-self-concept hypothesis would serve as one means of validating a subject's verbal self-report by his overt behavior, giving assurance that his self-report approximates his actual self-concept rather closely in this situation. This type of credence has been persistently deficient in personality measurement in general.

The relationship between seating choice and academic achievement does not have a high enough correlation coefficient to allow meaningful prediction of academic achievement from seating choice in individual cases, but it is anticipated that further research will be done with regard to the students who provide notable exceptions to the observed rule. These exceptions should also draw the attention of the
instructor to some other motivating forces that run counter to the rule with regard to seating choice.

The possibility of fruitful research is also indicated with regard to one's choice of position around individuals, groups, or situations in other life experiences. For example, what facets of personality are involved in one's choice of seat in a lecture auditorium or union meeting hall? Why does he choose to rent or buy a house where he does? These suggestions illustrate to some extent the breadth of application of the findings of the present study. Further study may determine more accurately the personality dynamics and etiology of such choice behavior.

Statement of the Problem

The overall purpose of the investigation was to determine the existence and extent of several relationships regarding the college student's seating position in the classroom.

1. The study was designed to determine the relationship between experimental seating arrangements and mean academic achievement in successive rows.

The design also included provisions for determining the relationships between the student's choice of seat and the following:

2. Academic achievement as indicated by his final score in the course.
3. Academic ability as indicated by the **American College Test (ACT)** scores or converted **College Entrance Examination Board (CEEB)** scores on file with the University.

4. Self-Concept (S-C) scores on **Bills' Index of Adjustment and Values** (IAV).

5. Self-Acceptance (S-A) scores on **Bills' Index of Adjustment and Values**.

6. Self-Actualizing Values (SAV) scores on the **Personal Orientation Inventory (POI)**.

7. Self Regard (Sr) scores on the **Personal Orientation Inventory**.

8. Self-Acceptance (Sa) scores on the **Personal Orientation Inventory**.

9. His initial expression of interest in the course.

10. His initial estimate of difficulty expected in the course.

11. His initial estimate of his final grade in the course.

**Hypotheses**

The general hypothesis was that students choosing to sit near the front of the room would have higher average scores in both academic achievement and self-concept than those choosing seats near the back in classes used in this study. The following working hypotheses were advanced.
1. The mean final achievement scores of those students assigned to seats in (a) random rows or (b) rows that are the opposite of their original choice with respect to nearness to the front of the room will not be significantly different from the mean final scores of those students who are allowed to remain in the row of their choice.

With reference to the student's original choice of seat, it is hypothesized that there will be a significant difference between the mean scores of the following variables by rows (the higher scores occurring toward the front of the room except as indicated):

2. Final achievement scores.
3. ACT scores.
4. Self-Concept scores obtained from the IAV.
5. Self-Acceptance scores obtained from the IAV.
6. Self-Actualizing Values scores obtained from the POI.
7. Self Regard scores obtained from the POI.
8. Self-Acceptance scores obtained from the POI.
9. The estimate of interest in the course, expressed prior to the first lecture period.
10. The estimate of difficulty of the course, made prior to the first lecture period, the scores being higher toward the rear of the room.
11. The final grade estimate, made prior to the first lecture period.
Definition of Terms

Choice group: the total group of students from all classes who were selected to remain in the rows they originally chose.

Random group: the total group of students from all classes who were randomly assigned to rows.

Reverse group: the total group of students from all classes who were assigned to rows that were the reverse of their original choice with respect to front-back location.

Final semester score: the score on which the instructor based the student's final grade, having been converted to a percentage score in order to make scores from different classes comparable.

American College Test (ACT) score: unless specified, refers either to the composite ACT score or the College Entrance Examination Board (CEEB) score converted to the equivalent composite ACT score, the conversion having been made by means of a table provided by the publishers of the American College Testing Program.

Self-Concept score: unless specified, refers to either the Self-Concept (S-C) score obtained from Bills' Index of Adjustment and Values (IAV) or the Self Regard (Sr) score of the Personal Orientation Inventory (POI).

Self-Acceptance score: unless specified, a measure of self-acceptance obtained from either the IAV or the POI.
Self-Actualizing Values score: a measure of the degree to which one possesses values attributed by clinicians to self-actualizing persons, a subscale score of the POI.

Estimate of interest: an estimate by the student of the interest he expected the course to have for him. This estimate was made on his first day in class, using the "First Day Student Estimate Sheet" (see Appendix).

Estimate of difficulty: an estimate of the difficulty the student expected to encounter in the course, as registered on the "First Day Student Estimate Sheet."

Final grade estimate: the letter grade marked by the student on the "First Day Student Estimate Sheet" as the final grade he expected to receive in the course.

Limitations of the Study

Since this study dealt specifically with college students in first-year psychology classes, generalizations cannot be made from the results to all situations where there is a choice of seating. One's choice would be influenced in each case by the nature of the meeting, the significance of the individual's personal participation, the type of people involved, and numerous other variables. Even an attempt to apply the results to other college classes may be inappropriate because of the likelihood that there are consistent differences in the types of people who select
certain fields of study. Thus it would be well to limit specific conclusions to the circumstances of this study.

Review of Related Literature

Many studies have been made regarding some phase of personality and its relationship to specific elements of human behavior. The extreme complexity of human behavior has made it difficult to validate personality measures and thus to apply the results of one situation to another. Since it is beyond reason to hope to study every facet of behavior, the most logical practice has been to focus attention on those actions which are of significance and which are performed by a large enough group of people to make comparison meaningful.

The choice of a position in the classroom is an act performed by college students in nearly every class each semester. While many expressions of behavior in the classroom are undoubtedly significant manifestations of the student's reaction to this perceptual field, his seating choice has been chosen as one which meets the criterion of being clearly and quantitatively measurable. In the absence of known reports of similar studies, however, the literature reviewed has to do with areas from which tentative inferences can be ventured with regard to self-concept and seating choice, namely the phenomenal self, involuntary expressive
behavior, self-concept and academic achievement, and self-estimates of achievement and interest.

**The Concept of Phenomenal Self**

The phenomenal self is described by Combs and Snygg (5, p. 145) as the individual's basic frame of reference. All of his behavior, in any place, under any circumstances, is seen as an effort to preserve and enhance this self as it appears to him. The self serves as an index point from which judgment is passed on its perceptual field.

Several of Rogers' (28, pp. 483-524) propositions in his theory of personality and behavior elaborate on this concept. He proposes that the individual reacts to his environment as he experiences and perceives it. This perception is, for him, "reality." The self that is formed in this interaction, particularly as the interaction involves evaluational relationships with other people, is a consistent conceptual pattern of the "I" or "me." The resultant behavior, then, is an effort to meet the needs of the self in the light of such perceived reality. When behavior and experiences are consistent with the self-concept, the person is said to be in a state of adjustment. As an example taken from the situation with which the present study deals, perhaps psychological adjustment is expedited and tension reduced when such an act as choosing a position in the classroom is consistent with one's concept of self.
The healthiest state of the phenomenal self, self-actualization, is described loosely by Maslow (20, p. 200) as "the full use and exploitation of talents, capacities, potentialities, etc." It involves the more efficient perception of reality and less defensiveness toward it. Self-actualizing people not only tolerate the ambiguous and unstructured; they actually enjoy it. In keeping with their self-concept, their behavior can be expected to be more spontaneous and natural, their thoughts even more so (20, p. 208). In a subsequent work, and after several more years of searching for examples of self-actualizing people, Maslow (21, p. 90) states, "Though, in principle, self-actualization is easy, in practice it rarely happens (by my criteria, certainly in less than one per cent of the adult population)."

Rogers (29, p. 119) notes a progressive change in the individual who is "in this process of becoming a person" with regard to the source of his choice behavior. "The individual increasingly comes to feel that this locus of evaluation lies within himself. Less and less does he look to others for approval or disapproval; for standards to live by; for decisions and choices." Such self-actualization implies a degree of consciousness in choice-making, an awareness of the significant and insignificant elements involved, that is largely repressed and unrecognized by the more highly restricted choice-maker.
A limitation of the self-actualization concept is pointed out by Wylie (42) in her unusually comprehensive survey of research regarding the self-concept. In comparison with the relatively molar concept of self-actualization,

it appears that more molecular inferred variables may have greater research utility. That is, such characteristics as self-actualization, self-differentiation, and self-consistency have not led to enlightened research. By contrast, such constructs as self-acceptance or self-esteem, especially when referring to specific attributes, have yielded more manageable and fruitful research procedures (42, p. 319).

Such a judgment does not exclude the self-actualization concept from a place of usefulness, but does serve as a caution against employing it in research on exactly the same basis as more molecular concepts such as self-acceptance.

**Involuntary Expressive Behavior**

The matter of involuntary expressive behavior is no newcomer to the study of personality. Some three decades ago Allport (1, p. 466) specified the difference between two kinds of behavior. Adaptive or coping behavior, on the one hand, has as its end the completion of a task, while the expressive element of behavior, on the other hand, reveals by its style something of the motivation and conflict within the individual as follows:

The expressive portion of conduct results, then, from deep-lying determinants, functioning, as a rule, unconsciously and without effort. The adaptive portion, on the other hand, is a more limited system, circumscribed by the purpose of the moment, closely dependent upon the
stimulus and upon voluntary effort or upon habits of skill. The reason for a present act of conduct is to be sought in the present desires and intentions of the individual (though these in turn may arise from deep-lying personality traits and interests); but the style of execution is always guided directly and without interference by deep and lasting personal dispositions (1, p. 466).

Hall (14, p. 281) comments regarding Allport's view that "if all of the individual's behavior is congruent and interrelated, then even the most trivial of individual acts must be related to central aspects of the individual's make-up," that is, the self. The link between self and behavior appears also in Brummer and Shostrom's (3, p. 37) definition of self as "the individual's dynamic organization of concepts, values, goals, and ideals which determine the ways in which he should behave." Realizing that one's statements about himself may often fail to represent the self accurately, Goffman (11, p. 71) says regarding the self which a person presents to the group that "the 'true' or 'real' attitudes, beliefs, and emotions of the individual can be ascertained only indirectly, through his avowals or through what appears to be involuntary expressive behavior." Choosing a seat in the classroom appears to be one example of a behavioral situation in which involuntary expressive behavior can operate freely and be satisfactorily measured.

The importance of the influence of feelings toward other persons in locating one's self in group situations is
pointed out by Helen Jennings (16), who worked closely with Moreno in the early days of the development of the "sociometric test." She treats the individual's social behavior in terms of the "social space" in which he lives. This social space both attracts him and repels him on the basis of his affinity for others within the group. Some sections are more sharply defined than others and, of course, with increasing maturity on his part the underlying dynamics of his preferences and choices become more a part of his conscious awareness.

Jennings describes a person's movement within the group as follows:

Each individual early begins a differentiating process in selective affinity with others. He may approach those who respond to him or whom he wishes would respond to him; he may keep away from those whom he feels he cannot interest or who repel him. This reaching out of the individual to other individuals may be said to be a projection of the self, a seeking for a fulfillment of a need of the individual for other persons to whom he responds, drawing him to them and causing him to want to include them in his life situation (16, pp. 6-7).

It is clear that Lewin (19) also was thinking of a social situation in his concept of "life space," for the behavior which he referred to as "psychological movements" or "locomotions" arose not just from tensions within the person, but also from relationships between personal tensions and valences of the environment. In the case of the classroom, it would appear difficult to overestimate the social influence which pertains from the first day of school. Among those who hypothesize a strong external influence is Brookover.
Appropriateness of behavior is defined by each person through the internalization of the expectations of significant others. This hypothesizes the process through which each person defines his own motives or self-image. Each individual develops a definition of appropriate behavior for himself in each significant situation. He acquires this definition by interacting with other people who are important in his life space. He refers himself to others, takes the attitude of others, and looks upon himself and judges his performance, his behavior, in the light of his conception of what others see in him (4, p. 86).

Among other authors (12, 26) who have observed relationships between personality variables and behavior in group situations is Sommer (36, p. 258), who maintains that "as long as men must live in a world of walls, furniture, doors, and fences, there is good reason to study how they influence his behavior." Observations were made of normal subjects seated in the cafeteria of a large mental hospital during meals. As might be expected, those who were seated in neighboring chairs interacted more than those in distant chairs. Also, those in corner positions interacted more than those seated side-by-side or facing each other. When pairs of normal subjects or groups of three were asked to come to the cafeteria at other times to discuss various topics, the same preference for corner positions was observed. Schizophrenic patients, however, often chose "distant" arrangements and would face away from their partners. While this is an extreme situation, it does serve to illustrate the phenomenon of self-placement with respect to personality variables.
Another relationship of particular significance is the extent to which this response to others affects one's attitude toward learning. Leoky (18, pp. 178-187) maintained that many cases of students achieving below their capabilities were nothing more than examples of being true to the self-concept they had gained from others. A student's resistance toward learning a certain type of material meant only that to learn it would not be consistent with his perceived self.

Leoky used a group of poor spellers as an example of people who he felt lacked neither ability nor practice, but at some time in the past had been exposed to and had accepted the suggestion that they were poor spellers. A study of these students indicated a consistent pattern of poor spelling in their native language, which, oddly enough, did not carry over into their work in foreign languages. This points rather strongly to an unconsciously accepted level of performance in their native language which was consistent with their self-concept. Since no such standard had been proposed for their performance in the foreign languages, it was more in keeping with their actual ability. The observed decrement toward the rear of the classroom may likewise be primarily a matter of the student's being consistent with his perception of self.

Variation in attraction to the group is demonstrated in a setting common to preadolescent boys in a study by Keisler (17).
One dollar each was given to 110 seventh-grade boys to participate in discussion groups in which they were to rank baseball teams according to merit. As a part of their instructions, the boys were impressed with the importance of agreeing in their decisions. They were also asked to rate each other as to the desirability of retaining each person in the group. Fictitious ratings of desirability were returned to the boys as an apparent indication to each individual of his acceptance in the group. It was found, as in many other studies, that subsequent attraction to the group was in proportion to the degree of acceptance felt by the individual.

University students showed a similar phenomenon in a study by Festinger (7, p. 173) concerning the effects of having one's abilities compared with those of others under varying levels of attraction to the group. It was determined that the stronger the attraction of the members to the group, the stronger were the feelings of inadequacy on the part of those scoring less well than others and the stronger were the feelings of adequacy on the part of those scoring well. Attraction to the group seemed to serve to amplify both the positive and negative emotional reactions of those involved, depending on their particular circumstance. In these two studies, then, group attraction can be seen to serve as both the effect of perceived acceptance and as the cause of
varying levels of perceived adequacy or inadequacy.

Generalizing from these studies, one's attraction to a group and its activities might be expressed in either "participating" or "fringe" behavior, depending on his perception of the situation.

Self-Concept and Academic Achievement

Numerous studies (8, 27, 32, 33, 34) pertaining to the relationship between self-concept and academic achievement have produced results that give support to the general findings of a positive correlation between the two. Though intelligence may be a factor in some of the studies, the results have been the same when intelligence has been controlled by using pairs of students matched for intelligence, but differing in self-concept. Indications are also that where sex has been considered (8, 32) the relationship has been more pronounced among males than among females.

Travers (39) warns, however, against the tempting conclusion of a cause and effect relationship between self-concept and achievement:

When educators state that the self-concept influences learning behavior, they are saying that the concept is more than a set of beliefs. They are ascribing to it many of the properties commonly ascribed to motives, such as those of energizing and giving direction to behavior. This is an assumption that goes way beyond the facts (39, p. 460).

Yet the relationship which does exist between self-concept and achievement, plus the relationship found in preliminary
studies between seating choice and achievement, does make it feasible to hypothesize and search for a relationship between seating choice and self-concept, perhaps hypothesizing also the motivational role of the self-concept until the facts indicate otherwise.

**Self-Estimates of Achievement and Interest**

Perhaps one reason for the ready assumption that self-concept "causes" variation in achievement is the close relationship between self-concept and one's estimate of his probable performance. As stated by Shaffer and Shoben, an attitude of inferiority is a chronic and permeating concept of one's self as incapable or unworthy; its possessor has an expectation of being unsuccessful and defeated in competitive situations, either in one restricted sphere such as physical effort, or in broader areas of his life activities (31, p. 165).

Stevens (37) demonstrated rather effectively the relationship between self-insight and estimates of intellectual abilities in two groups of college sophomores. While all subjects were above the 75th percentile on the Henmon-Nelson Test of Mental Ability, fifty-two were on the honor roll and forty-nine were on academic probation because of poor grades. The latter group showed significantly less accurate insight into their performance on the American Council of Education Psychological Examination than did the former, and also expressed a lower degree of self-acceptance.
Using a different approach to attain a similar end, Moses (22) predicted that persons with a high self-ideal discrepancy would underestimate their performance on a guessing task, while persons with a low self-ideal discrepancy would tend to estimate their performance more accurately. The self-ideal discrepancy scores were obtained for 250 psychology students at the University of Texas by use of the Worchel Self-Activity Inventory. When the upper and lower 10 per cent were compared on a guessing task, there was no significant difference in their actual performance. However, the low self-ideal discrepancy group was significantly more accurate in estimating its performance, as had been predicted. Thus while numerous studies support the positive correlation of academic achievement with self-concept, the two preceding studies indicate also that the accuracy with which one estimates his achievement is likewise positively related to the self-concept.

Another kind of estimate, that of interest-value of a task, is often taken for granted as a correlate of performance. Teachers are sometimes surprised at the failure of their prediction that a student will always do well at something he is interested in, and they find it difficult to abandon such a plausible belief. A part of the explanation may be found in a study by Rychlak (30) in which it was determined that interest-value or task attractiveness may be related to
estimated, rather than actual, ability to succeed at the
task. More light regarding these two factors comes from a
study by Frandsen and Sessions (10), who suggest that the
interest-achievement relationship is often masked by other
variables as, for instance, when a student finds a course
to be dull, but finishes it with his normal level of
achievement, yet vowing (unbeknown to the experimenter who
is recording his interest and achievement) that he will
never enroll for another course of that kind.

Strong's (38, p. 18) years of experience in working with
interest inventories led him to hypothesize that "interests
may not correlate to any great degree with achievement over
a short period of time and yet may correlate significantly
when achievement involves performance over a considerable
period of time." Support for this view was forthcoming in a
study by Frandsen (9) in which a correlation of .50 was
obtained between scientific interest, as measured by the
Kuder Preference Record, and long-range achievement in
science, as measured by the General Educational Development
Test in Natural Science. Short term studies, such as the
present investigation, then, may not reflect accurately the
true relationship between interest-value and other variables.

Summary

Literature describing the phenomenal self portrays a
fairly consistent, yet fluid, self being shaped by both
internal and external forces, but primarily through associations with others. The classroom is considered to be one important arena of self-perception and evaluation where the student interacts with these significant others. Only those people who are able to attain the uninhibited expression of a high degree of their potentialities are considered to be among the minority called self-actualizing. While self-actualization is a convenient descriptive term, the more molecular constructs of self-esteem and self-acceptance are held to be more valuable for research.

Involuntary expressive behavior is seen by many as a meaningful and unconscious element of all behavior. It is often difficult to quantify, but, when measured, shows itself to be consistent with the individual's self-concept. Of particular concern here are modifications of this behavior in social situations which are referred to as the individual's social space or life space.

There is broad acceptance of a positive correlation between self-concept and academic achievement; however, a conservative warning is still appropriate, to be cautious in regarding self-concept as some kind of energizing force within itself which gives impetus to learning.

Regarding self-estimates of achievement, there were seen to exist dependency relationships with self-insight and self-ideal discrepancy. Self-estimates of interest were
also reliably related to achievement under conditions which gave opportunity for the operation of choice over an extended period of time.

From an organismic point of view, all of these facets of human behavior, whether primarily external and observable or internal and unseen, are related to the concept of self. Every act is considered an expression of the phenomenal self under the stimulation of the moment as interpreted by the perceiver. On this basis, the student's choice of a seat in the classroom, a measurable segment of involuntary expressive behavior, can be expected to bear some relationship to his achievement, ability, and self-concept, as well as to his estimates of task interest, task difficulty, and final grade. It is these relationships that the present investigation attempted to determine.
CHAPTER BIBLIOGRAPHY


CHAPTER II

METHOD

Research Setting

In providing, as nearly as possible, the same physical conditions for all students, five classrooms in the same building, of the same general architectural pattern, and with the same type of seats were selected for use in the study. The seating arrangement was essentially the same in each case, there being four rows of chairs, with eight to eleven chairs in each row. All instructors having classes in the rooms were contacted to be sure the seating arrangement could be left as it was for the duration of the semester.

Subjects were the students of twelve first-year psychology classes, all using the same text. This provided a total N of 386. Since the students of each row were to be divided into three sub-groups, it was necessary to have a large enough number to guarantee an adequate sample in each of the sub-groups for later statistical handling by complex analysis of variance.

The use of these classes not only made it possible to have comparable classrooms, but also provided some degree of uniformity in the teaching staff. The classes were taught
by a total of eight teaching fellows, each on a one-year contract. The primary value of this arrangement was that the students, in completing the "First Day Student Estimate Sheet," had, in most cases, no prior knowledge of the teacher's reputation which would in any way influence their estimates of the interest level or difficulty of the course, or their estimated final grades.

Description of the Measuring Instruments

Four types of measures, in all, were employed in making assessments of the students: the teacher-made achievement tests over the course material, an ability test (either the American College Test or the College Entrance Examination Board), two personality inventories (Bills' Index of Adjustment and Values and the Personal Orientation Inventory), and a brief self-estimate form ("First Day Student Estimate Sheet").

The teacher-made tests of achievement were primarily of the objective type. It was required that at least three tests be given in the course of the semester to insure adequate sampling of achievement. At the end of the semester the total number of points earned on all the tests was converted to a percentage score for each student, based on the highest score obtained in his class. This percentage score rather than the instructor's final letter grade, was used in order to obtain a more finely graduated scale of
scores and to avoid the use of letter grades from different instructors, assigned on the basis of different cut-off points.

ACT scores (or CEEB scores converted to the ACT equivalent) were used as indicators of student ability, both because of their accessibility and because of their wide acceptance by universities as highly valid predictors of subsequent achievement in college work. Davis (5, p. 28) states that "the selection tests used by the College Entrance Examination Board and The American College Testing Program have predictive validity coefficients of about .50 to .60 for the criterion of individual grade point average in the freshman year." The user of such scores is also assured that the tests have been given under well-controlled conditions and with the highest degree of test security possible.

The first of the two personality inventories used, Bills' Index of Adjustment and Values (2, 3) was developed from a sample of 124 words taken from Allport's (1) list of 17,953 trait-names. An item analysis, used to eliminate unreliable items, reduced the list to forty-nine adjectives (see Appendix). In taking the test, the subject produces Self-Concept, Self-Acceptance, and Ideal Self scores by expressing himself on a scale of five points as to how he sees himself, how he accepts himself, and how he would like
to be with respect to each of the forty-nine adjectives. A fourth (Discrepancy) score is derived by summing, without regard to sign, the differences between the Self-Concept and Ideal Self scores. Only the Self-Concept and Self-Acceptance scores, however. were used in the present study.

Wylie (12), in her critical survey of research literature pertinent to the self-concept, cites eleven studies supporting in various ways the validity of the IAV. Perhaps her strongest negative criticism is regarding a correlation of +.90 between Self-Concept and Self-Acceptance scores. "This implies that these two indices do not have discriminant validity for inferring different aspects of self-regard, but must be measuring essentially the same construct" (12, p. 71). Therefore, they were used in this study in the sense of supplementary measures, expecting to show the same relationship to seating choice.

Appropriate caution is advised by Combs, Soper, and Courson (4) against accepting the self-report from this type of instrument as the unquestioned equivalent of the actual self-concept. He did not find significant agreement between the self-report of fifty-nine sixth-grade students and the inferred self-concept reported by trained observers after three one-half hour observations of each subject. However, there are likewise some points of caution regarding the ready acceptance of their conclusions. (1) It would be well
to avoid assuming that the report of trained observers is genuinely synonymous with the self-concept, since the authors attest only to "statistical evidence of the reliability" of the observers' reports, but give no evidence of validity, which is, after all, the primary point in question. (2) The self-report instrument given to the children was a brief, eighteen-item scale constructed for that specific study and with no previous validation tests. (3) It is likely that the ability of sixth-grade students to make the semantic discriminations required in a self-concept inventory is not comparable to that of college students or adults. Therefore, the use of such measures should be evaluated with regard to the group under study. Perhaps the most useful word of warning from their study is for the researcher to be cognizant of the fact that the self-concept, as reported by the individual, is always some function of his awareness, freedom from threat, and other factors, as well as his actual concept of self.

The other personality inventory used, the Personal Orientation Inventory by Shostrom (9, 10), was introduced by its author three years ago and thus has hardly been available long enough for wide use in research. It was designed not as a measure of pathology, but as an indicator of positive mental health or self-actualization. It consists of 150 two-choice (paired opposites) comparative value judgments which
are scored first for two basic scales of self-actualization, support (127 items) and time competence (23 items). "The support scale was developed to measure whether reactivity is basically 'other' oriented or 'self' oriented. The time competence scale was developed to measure the degree to which the individual effectively uses his time" (9, p. 3).

The items were chosen from significant value judgment problems seen by therapists at the Institute of Therapeutic Psychology (of which Shostrom is director) over a five-year period.

Items were also derived from the research and theoretical formulations of many writers in Humanistic, Existential, or Gestalt Therapy. The latter include Maslow's concept of self-actualization, Reisman's system of inner- and other-directedness, and May's and Perls' concepts of time orientation (9, p. 3).

Items in the FOI are stated both positively and negatively to avoid confusion that sometimes occurs on inventories in which the end-poles of the dichotomy in question are not expressed.

Authors of most other inventories have assumed that the reader knows the "opposite" of the statement in question, and that it is implicit in the question. Perls, following Roget, has made it very clear that such is often not the case. Instead, opposites are dictated not by words but by their contexts. Thus, the same word often has several correlative terms, according to the different relations in which it is considered. For example, both "receiving" and "taking" are opposed to the word "giving." The first correlative term refers to the persons concerned in the transfer, while the second term relates to the mode of transfer. "Old" has both "new" and "young" as opposites, depending on whether it applies to living beings or to things (9, p. 5).
Reliability of the POI was established for the two basic scales of support and time competence by testing, then retesting within eleven to fifteen weeks, 158 adults attending lecture series and group training programs. Reliability coefficients were +.93 and +.91, respectively, for the Support Ratio scores and the Time Ratio scores.

As measure of its statistical validity the POI was administered to twenty-nine relatively self-actualized and thirty-four relatively non-self-actualized persons who were identified as such by members of the Los Angeles Society of Clinical Psychologists and The Orange County Society of Clinical Psychologists. The differences between the mean scores of the two groups were significant not only for the basic scales, but also for each of the ten sub-scales except one. The level of confidence was .01 in all cases but one, which was .05.

Some measure of validity is also indicated by the fact that 150 patients in various stages of therapy showed a progressive change in their scores. New patients tend to score high on other-directedness, then swing in the direction of high inner-directedness before reaching a more favorable balance between the two extremes. Freshman college students also display the high other-directed scores one would expect in such a peer-oriented group.

One of the three POI scores used was that of Self-Actualizing Values. The SAV scale, derived from Maslow's
concept of self-actualizing people, represents key values held by such people. Some of the terms which are thought by psychologists to describe these persons are energetic, involved, creative, generous, confident, warm, self-directing, conscientious, non-defensive, spontaneous, still-learning, flexible, tolerant, and integrated.

The Self Regard and Self-Acceptance scales of the P01 were both chosen for use, since they bear a close relationship to each other.

$S_r$ is a measure of ability to like oneself because of recognized strengths. . . . $S_a$ is a measure of acceptance of oneself in spite of one's weaknesses or deficiencies. . . . Self-actualization would seem to require both $S_a$ and $S_r$, not just one or the other (9, p. 14).

The "First Day Student Estimate Sheet" (see Appendix) employed in the present study consisted of three unidimensional scales on which the student was asked to make estimates of his expected interest in the course, the level of difficulty of the course for him, and his expected final grade. The first two scales had nine steps ranging from "extremely dull" to "highly interesting" and from "extremely easy" to "highly difficult." The third scale presented thirteen letter grades from "A+" to "F." The student indicated his choice in each case by circling the appropriate number or letter.

Regarding student interest, Rychlak (8) found that the influence of interest value on one's self-estimated ability
to perform a task was significantly greater for low confidence groups than for high confidence groups. It was postulated in the present study that low self-concept subjects would compare roughly to Rychlak's low confidence group, showing both a low level of interest and low estimate of achievement. Murstein (7) did find an appropriate difference in the grade expectations of seventy-six Educational Psychology students who subsequently earned low and high grades, but the accuracy of their estimates was not the same for both groups. His "high" students predicted high grades and earned them, while the "low" students predicted somewhat lower grades, but still seldom earned grades as high as their predictions. The most popular grade predicted was "B," with 80 per cent of the total group stating that they deserved an "A" or a "B"—hardly representative of what was found to be their actual grade distribution.

Procedure for Collecting Data

Prior to the beginning of the semester all instructors involved in the classes to be used were contacted and the general procedure discussed. Identical typewritten instructions for data collection in the classroom (see Appendix) were given each one. The instructions followed specifically the schedule outlined below and excellent cooperation was received from each teacher throughout the semester. Weekly contacts were maintained with the instructors throughout the experiment.
In each of the twelve classes, the students were asked at the first meeting to fill out the "First Day Student Estimate Sheet." Any who appeared in class for the first time on subsequent days, but prior to the experimental seating arrangement, were asked to complete the form on their first day in class.

On the third meeting day, having been permitted to choose their seats all three days with no comment from the instructor, students were asked to take the seats of their choice at the next meeting so a seating chart could be made. Specific wording was suggested to the instructors to standardize the procedure and to avoid promising that students would be allowed to retain their chosen seats. Anyone who felt that he must have a certain seat in the room was invited to inform the instructor after class. (These instructions were given on the second meeting day to Tuesday-Thursday classes, since the Monday-Wednesday-Friday classes had met twice already before their first meeting. The third meeting of the Tuesday-Thursday classes would not occur until the third week of classes.)

At the fourth class period (the third for Tuesday-Thursday classes) a record of the seating pattern was made by having each student sign his name to a numbered sheet of paper passed down the row. This position was taken to be his choice, ample announcement having been made.
At the fifth class period (the fourth for Tuesday-Thursday classes) students were asked if they would mind taking assigned seats in cooperation with a study which could be discussed at the end of the semester. Specific wording was suggested for each instructor. Only one student asked not to be moved. She was, of course, allowed to remain where she had chosen to sit and was not included in the study.

In making the seating assignments, one-third of the students from each row were assigned seats in the rows of their choice and were thus designated the "choice group." Another third of the students were given random row placement, using a table of random numbers for their selection. It was assumed that the appearance of a significant trend by rows in the grades of the "random group" would be the result of their placement alone. The remaining third of the students were arranged in the reverse order of their row choice to test the effect on their achievement of seating which was the opposite of their choice. Thus if sitting near the front of the room tends in some way to produce higher grades, these people in the "reverse group" who were assigned seats at the front were given the strongest treatment, and vice versa. All three groups were given random lateral placement to disguise the pattern of the changes that were made, thereby preventing any tendency to "cooperate" on the part of students
who may have guessed the significance of the three different types of treatment.

Although timing was not considered to be a critical variable, since the reliability of both scales is high, the classes were given the POI and the IAV at the earliest convenience of the instructors, most of them within the first three weeks of the semester. Before each inventory was given, the students were told that they would be treated anonymously and that their scores would be returned to them with some interpretation of their meaning as soon as scoring was completed. It was felt that the latter statement, more than any exhortation to cooperate for the sake of the person making the study, would encourage an effort toward accurate self-evaluation.

Although only three of the POI scores were employed in the present study, all fourteen scores were tallied and reported to the students, along with the IAV scores, both for their personal benefit and because of the relationship of the personality scales to their psychology courses. A profile sheet was projected on a screen in the classroom, norms were given, and a brief explanation made regarding each scale. (Several students with very low scores were thereby prompted to seek help from the University Guidance Office. Subsequent conferences confirmed the implied need for counseling.)
In the course of the semester ability test scores were obtained from the bound lists of ACT scores made available by the Department of Education and Psychology and by the Guidance Office of the University. In cases where only CEEB scores were listed, the English and Mathematics scores were converted to the equivalent composite standard score of the ACT, using the conversion table provided for that purpose by the publishers of the American College Testing Program.

The last data to be collected were the semester scores on which the final grades were based. As mentioned earlier, the total score for each student was transformed into a percentage score, based on the highest score earned in that class, which was taken to be 100 per cent.

The number of scores for variables treated in Hypotheses II through XI varies, because it was impossible to obtain scores in a few cases. A small number of those students who were absent when their classes completed the personality inventories failed to return the inventories after several inquiries. It was felt that more would be lost than gained by applying pressure to get their responses. Also, there were some who dropped the course during the semester and, therefore, had no final score, but left usable data prior to that time. The greatest deficiency occurred in the ACT and CEEB scores. In this case 275 scores, 71.2 per cent of the total of 386 subjects used, were listed in the ACT list
of scores. In all other cases more than 95 per cent of the total were secured. The omissions were spread rather evenly over the four rows and did not seem to follow a pattern which would distort the results of the investigation.

Procedure for Treating Data

The pertinent scores for each student (as described above on page thirty-five) were entered on data worksheets, grouped according to seating choice. These data were then punched on IBM cards and processed at the Computer Center of the University.

Two basic statistical procedures were used. The two-way classification of students by seating choice and seating placement required the use of complex analysis of variance to determine the significance of the differences between mean achievement scores for the groups. The fact that the groups were of unequal size necessitated the use of a $p \times 2$ factorial design for unequal cell frequencies (11, pp. 241-244).

The ten treatments required to test the remaining hypotheses were all tests of significance which made use of the simple analysis of variance formulas for groups of unequal size (6, p. 269). In each case it was a matter of comparing seating choice, by rows, with one of the following: academic achievement scores; academic ability scores; Self-Concept and Self-Acceptance scores on the IAV; Self-Actualizing
Values, Self Regard, and Self-Acceptance scores on the POI; and the student's estimates of interest, difficulty, and final grade in the course. Where significant F's were found, it was used to determine the location of the significant differences.

In accepting the CEEB scores as the equivalent of the ACT scores, there was some possibility that the scores represented two populations which might differ with respect to some variable of significance to the present study. As a precautionary measure, aside from the treatment of the hypotheses, a simple analysis of variance between seating choice and ability scores was computed with each of the two groups separately. The .05 level of confidence was used in all statistical treatments.


7. Murstein, Bernard I., "Relationship of Grade Expectation and Grades Believed to be Deserved to Actual Grades Received," Journal of Experimental Education, XXXIII (Summer, 1965), 357-362.


CHAPTER III

ANALYSIS OF DATA

This study dealt with the student's choice of seat in the college classroom as one act in which the involuntary expressive element of behavior could be identified and so treated statistically. A significant relationship was predicted between seating choice and academic achievement, as well as between seating choice and certain personality variables. In addition, the effect of experimental seating placement on academic achievement was investigated. Analysis of the data here follows the order in which the hypotheses were presented, grouped as to the type of measure involved.

Experimental Seating

It was stated in Hypothesis I that the mean final achievement scores of students assigned to seats in (a) random rows or (b) rows that were the opposite of their original choice with respect to nearness to the front of the room would not show a significant difference as compared to those left in the row of their original choice. A test of this hypothesis, using complex analysis of variance (9, pp. 241-244) revealed that the relationship between
experimental seating arrangements and achievement was not significant, as shown in Table I. Thus the null hypothesis

**TABLE I**

**ANALYSIS OF VARIANCE OF SEMESTER SCORES WITH REGARD TO SEATING CHOICE AND EXPERIMENTAL SEATING**

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean of Squares</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Row (seat choice)</td>
<td>3444.517</td>
<td>3</td>
<td>1148.172</td>
<td>5.67</td>
<td>.001</td>
</tr>
<tr>
<td>Column (placement)</td>
<td>183.221</td>
<td>2</td>
<td>91.610</td>
<td>.45</td>
<td>N.S.*</td>
</tr>
<tr>
<td>Row by column</td>
<td>951.350</td>
<td>6</td>
<td>158.558</td>
<td>.78</td>
<td>N.S.</td>
</tr>
<tr>
<td>Within</td>
<td>72243.730</td>
<td>357</td>
<td>202.363</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Not significant.

of no difference in achievement scores caused by experimental changes in seating position was accepted, since the F for interaction was not significant.

This being the case, there was no need to test for significant differences between means. If the pattern of achievement scores which was found when students sat where they chose had been influenced significantly by physical location in the classroom, then the group which had been reversed would have been expected to experience a decline in the scores of those moved to the back row and an increase in the scores of those moved to the front. The effect on the group which was placed randomly would have been expected to lie between that of the reverse group and the choice group.
Such influences would have been revealed by a significant interaction between original choice of seat and seating placement.

The support of Hypothesis I rules out the influence of seating position alone as a significant determinant of achievement. While most students have some degree of preference regarding their location in the classroom, they are apparently able to adjust to various locations without their grade being noticeably changed in either direction. This is not surprising, at the college level at least, since their past experience in many classrooms has for years been primarily that of being placed by the teacher or having only a relative degree of choice as one student among many in a room with a limited number of seats. Since achievement does not appear to be a function of location in the classroom, the way is left open for the search for other variables related to seating choice.

Semester Scores

It was predicted in Hypothesis II that when final semester achievement scores were arranged according to rows originally chosen by the students, there would be significant differences among mean scores of rows. Support for this prediction is found both in Table I, where an $F$ ratio of 5.67 indicates differences significant at the .001 level of confidence, and in Table II, where an $F$ ratio of 4.93 indicates
a significance level of .01. While Table I presents data from the complex analysis of variance of the semester scores under the conditions of both row choice and experimental seating placement, Table II represents a simple analysis of variance (2, p. 269) of the semester scores with respect to seating choice alone. The difference in the levels of significance found is due to the difference in error term of the two statistical treatments. These findings are consistent with observations made in two pilot studies (4, 5) referred to on pages two and three, and with the unpublished research of Willey (7; 8, p. 73) covering several semesters.

The means and standard deviations of the semester scores by rows, as originally chosen by the students, can be seen in Table III. This table includes also the number of students in each group, since the number varies from row to row. Such variation was an inevitable result of the students' freedom to

### TABLE II

**ANALYSIS OF VARIANCE OF SEMESTER SCORES WITH REGARD TO SEATING CHOICE**

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Variance Estimate</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>2989.100</td>
<td>3</td>
<td>996.367</td>
<td>4.93</td>
<td>.01</td>
</tr>
<tr>
<td>Within</td>
<td>74012.000</td>
<td>366</td>
<td>202.219</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>77001.100</td>
<td>369</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Variable</td>
<td>Row 1</td>
<td></td>
<td></td>
<td></td>
<td>Row 2</td>
</tr>
<tr>
<td>------------------</td>
<td>-------</td>
<td>----------</td>
<td>----------</td>
<td>----------</td>
<td>-------</td>
</tr>
<tr>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>n*</td>
<td>Mean</td>
<td>SD</td>
</tr>
<tr>
<td>Semester scores</td>
<td>79.29</td>
<td>12.19</td>
<td>94</td>
<td>73.40</td>
<td>14.20</td>
</tr>
<tr>
<td>ACT scores</td>
<td>19.84</td>
<td>4.03</td>
<td>70</td>
<td>20.16</td>
<td>4.64</td>
</tr>
<tr>
<td>IAV scores</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S-C</td>
<td>136.79</td>
<td>21.27</td>
<td>95</td>
<td>182.61</td>
<td>16.51</td>
</tr>
<tr>
<td>S-A</td>
<td>172.39</td>
<td>24.95</td>
<td>95</td>
<td>163.54</td>
<td>18.79</td>
</tr>
<tr>
<td>POI scores</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SAV</td>
<td>15.61</td>
<td>2.66</td>
<td>98</td>
<td>18.70</td>
<td>2.73</td>
</tr>
<tr>
<td>Sr</td>
<td>11.54</td>
<td>2.46</td>
<td>96</td>
<td>11.14</td>
<td>2.48</td>
</tr>
<tr>
<td>Sa</td>
<td>14.50</td>
<td>3.18</td>
<td>93</td>
<td>15.11</td>
<td>3.35</td>
</tr>
<tr>
<td>Self-estimates</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interest</td>
<td>7.19</td>
<td>1.32</td>
<td>94</td>
<td>7.22</td>
<td>1.21</td>
</tr>
<tr>
<td>Difficulty</td>
<td>5.13</td>
<td>0.99</td>
<td>94</td>
<td>5.03</td>
<td>0.84</td>
</tr>
<tr>
<td>Final grade</td>
<td>9.74</td>
<td>1.66</td>
<td>94</td>
<td>9.29</td>
<td>1.69</td>
</tr>
</tbody>
</table>

*Number of cases.
choose, as nearly as possible, the seats they desired when more seats were available than were used.

It will be noted in Table III that, although there was a consistent row-by-row decline in semester grades, as was expected, 66 per cent of the total difference between the means of rows one and four occurred between rows three and four, producing a Fisher $t$ of 2.36, which was significant at the .05 level. This difference, being more than three times the average difference between the means of the other two pairs of adjacent rows, is interpreted as signifying that in relatively shallow rooms of four rows, as were used in this study, it is the fourth row that is particularly significant in allowing a manifestation of expressive behavior of the more negative type on the attraction-repulsion continuum. The $t$ scores for other pairs of adjacent rows (one and two, two and three) did not reach significance. For this reason, Hypothesis II is only partially supported.

The combined import of the confirmation of Hypothesis I and the partial support of Hypothesis II is that there is a statistically significant tendency for class grades to decline toward the rear of the room and that the decline is due to something other than the student's physical location within the room.
Ability Test Scores

It was predicted in Hypothesis III that scores on the ACT and CEEB would also show a significant difference by rows, becoming lower toward the rear of the class, when arranged in keeping with the students' original choice of seats. Simple analysis of variance was used to determine the relationship between these two variables. The F ratio of .19 shown in Table IV did not approach significance. Therefore, the hypothesis was not supported.

TABLE IV
ANALYSIS OF VARIANCE OF ACT AND CEEB SCORES WITH REGARD TO SEATING CHOICE

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Variance Estimate</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>9,600</td>
<td>3</td>
<td>3.200</td>
<td>.19</td>
<td>N.S.*</td>
</tr>
<tr>
<td>Within</td>
<td>4687.130</td>
<td>271</td>
<td>17.296</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>Total</td>
<td>4696.730</td>
<td>274</td>
<td></td>
<td>*</td>
<td>*</td>
</tr>
</tbody>
</table>

*Not significant.

While validation research (1, p. 28) has shown a correlation of .50 or .60 between ACT scores and freshman achievement, and while the partial confirmation of Hypothesis II

1 Apart from the hypothesis, a simple analysis of variance was performed for the ACT and CEEB scores separately to give assurance that the two groups did not differ in some way related to seating choice. There was no indication that they represented separate populations.
indicates a significant relationship between achievement and seating choice, this in no way guarantees that one could work backwards, predicting a relationship between ability test scores and seating choice. The possibility of such a relationship was suggested, but not corroborated.

Personality Inventory Scores

Hypotheses IV through VIII have to do with closely related personality variables and are for this reason treated under one heading. Table V accordingly presents the data for each of the five simple analysis of variance computations in a composite variance table.

The prediction stated in Hypothesis IV, for example, was that the Self-Concept scores on the IAV would show significant differences between means of successive rows with reference to original seating choice. While the F ratio for this score was higher than that of any of the other personality scores and there was a slight progressive decrement in row means from front to back, the ratio did not approach significance. This decrement can be observed in Table III, page fifty-five.

Hypotheses V, VI, VII, and VIII contained the same prediction of a significant difference among means of rows with regard to Self-Acceptance on the IAV, as well as Self-Actualizing Values, Self Regard, and Self-Acceptance on the POI. In each case the simple analysis of variance did not
**TABLE V**

ANALYSIS OF VARIANCE OF IAV AND POI SCORES
WITH REGARD TO SEATING CHOICE

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Variance Estimate</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Self-Concept (IAV)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between</td>
<td>1714.000</td>
<td>3</td>
<td>571.333</td>
<td>1.52</td>
<td>N.S.*</td>
</tr>
<tr>
<td>Within</td>
<td>140594.000</td>
<td>373</td>
<td>376.928</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>142308.000</td>
<td>376</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Self-Acceptance (IAV)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between</td>
<td>1411.000</td>
<td>3</td>
<td>470.333</td>
<td>.92</td>
<td>N.S.</td>
</tr>
<tr>
<td>Within</td>
<td>191657.000</td>
<td>373</td>
<td>513.826</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>193088.000</td>
<td>376</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Self-Actualizing Values (POI)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between</td>
<td>1850.010</td>
<td>3</td>
<td>.617</td>
<td>.09</td>
<td>N.S.</td>
</tr>
<tr>
<td>Within</td>
<td>2719.890</td>
<td>380</td>
<td>7.158</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>2721.740</td>
<td>383</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Self Regard (POI)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between</td>
<td>12.282</td>
<td>3</td>
<td>4.094</td>
<td>.66</td>
<td>N.S.</td>
</tr>
<tr>
<td>Within</td>
<td>2364.445</td>
<td>380</td>
<td>6.222</td>
<td></td>
<td></td>
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<tr>
<td>Total</td>
<td>2376.727</td>
<td>383</td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Self-Acceptance (POI)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between</td>
<td>21.563</td>
<td>3</td>
<td>7.188</td>
<td>.63</td>
<td>N.S.</td>
</tr>
<tr>
<td>Within</td>
<td>4319.810</td>
<td>380</td>
<td>11.368</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>4341.373</td>
<td>383</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Not significant.

reveal a significant F ratio. Thus the five hypotheses regarding the relationship between seating choice and the
respective personality inventory scores cannot be accepted within the circumstances of this study.

These findings are interpreted to mean that, if there are personality factors significantly related to seating choice behavior, they are not closely enough related to self-concept, self-acceptance, and self-actualization as measured by the IAV and POI to reveal the relationship. It is likely that the measures used are not sufficiently related to the academic classroom situation to isolate the factor or factors accounting for the observed relationship between seating choice and academic achievement.

Self-Estimates

On the "First Day Student Estimate Sheet" each student was asked to register on rating scales an estimate of the interest he expected the course to hold for him, the expected difficulty of the course, and the final grade he anticipated. It was postulated in Hypothesis IX that a significant relationship between estimated interest in the course and seating choice would express itself in the differences of the mean scores by rows. Simple analysis of variance did not, however, reveal such a relationship, as can be seen in Table VI. Therefore, Hypothesis IX was not accepted.

Since seating choice is an act which takes place at the beginning of the semester and yet shows a relationship to subsequent achievement, it was not thought to be unreasonable
that one's interest in a course, expressed on his first day in class, might be a significantly valid demonstration of the same type of expressive behavior manifested in choosing a seat. One possible interpretation of the absence of a measured relationship between seating choice and expressed interest in the course is that the findings have reflected the difference between the student's conscious response to a straightforward query into his interest, on the one hand, and his unconscious response to the stimulus situation that prompts his choice of seat, on the other hand, which choice, in itself, has been postulated in the present study to be involuntary expressive behavior. The situation would be comparable to the contrast between one's conscious evaluation and declaration of his mental health and his unwitting, but revealing, responses when confronted with a projective technique. It is likely that responses to the question of

**TABLE VI**

ANALYSIS OF VARIANCE OF ESTIMATED INTEREST WITH REGARD TO SEATING CHOICE

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Variance Estimate</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>2.333</td>
<td>3</td>
<td>.778</td>
<td>.50</td>
<td>N.S.*</td>
</tr>
<tr>
<td>Within</td>
<td>565.259</td>
<td>366</td>
<td>1.544</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>567.592</td>
<td>369</td>
<td>. . .</td>
<td>. .</td>
<td>. .</td>
</tr>
</tbody>
</table>

*Not significant.*
the students' interest were greatly influenced by a consideration of what would be judged to be proper, even though they were assured that the response would neither be used by their instructor nor would in any way influence their grade.

The prediction expressed in Hypothesis X was that scores indicating the estimated difficulty of the course would show significant differences among rows, with the higher scores occurring toward the rear of the room. This hypothesis was based on the premise that the student's estimate of the difficulty of the course would be an aversive factor which would tend to correlate with his tendency to avoid the front of the room.

Table VII presents the data resulting from simple analysis of variance treatment of Hypothesis X. Since the findings do not provide a sufficient F ratio, the hypothesis is not upheld.

TABLE VII
ANALYSIS OF VARIANCE OF ESTIMATED DIFFICULTY WITH REGARD TO SEATING CHOICE

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Variance Estimate</th>
<th>F</th>
<th>p</th>
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</thead>
<tbody>
<tr>
<td>Between</td>
<td>2.424</td>
<td>3</td>
<td>.808</td>
<td>1.02</td>
<td>N.S.*</td>
</tr>
<tr>
<td>Within</td>
<td>290.087</td>
<td>366</td>
<td>.793</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>292.511</td>
<td>369</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Not significant.
In interpreting the implications of this finding, it is important in this case, as in the one preceding, to be cognizant of the possibility for discrepancies between reported estimate and actual estimate. This is particularly true when a measure is constructed for the study in which it is used without having had some external check on its validity.

Moses (3) and Stevens (6) both demonstrated a positive relationship between achievement and the ability to assess one’s self accurately. It is possible that in the present study the diminution of grades toward the rear of the room was accompanied by a diminishing ability for accurate assessment which would void any efforts toward measurement of meaningful self-report.

It was maintained in Hypothesis XI that there would be significant differences among mean grade estimates of the rows when they were arranged according to original choice of seat, the higher estimates occurring toward the front. Testing this hypothesis by simple analysis of variance yielded an F ratio of 2.72, as presented in Table VIII, which is significant at the .05 level of confidence. The hypothesis is only partly supported, however, since t tests indicated significant differences between rows one and three (t = 1.98) and rows one and four (t = 2.72), but not between adjacent rows.
TABLE VIII
ANALYSIS OF VARIANCE OF ESTIMATED FINAL GRADE
WITH REGARD TO SEATING CHOICE

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Variance Estimate</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>22.727</td>
<td>3</td>
<td>7.576</td>
<td>2.72</td>
<td>.05</td>
</tr>
<tr>
<td>Within</td>
<td>1019.298</td>
<td>366</td>
<td>2.785</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1042.025</td>
<td>369</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The significant F ratio is interpreted to mean that one's estimate of achievement is related to his choice of seat and thus quite possibly to the factor or factors which determine that choice. It is significant, too, that estimated achievement corresponds to the pattern of actual achievement as found in the complex analysis of variance and also in the simple analysis of variance used to test Hypothesis II, for, if only the estimates showed the row-by-row increase toward the front, they would appear to be hollow aspirations, not closely related to the facts and calling for different theoretical interpretation.

An interesting relationship is seen in comparing the means of the grade estimates given in Table III on page fifty-five. It will be recalled that in comparing means of actual achievement, as shown by semester scores, 66 per cent of the difference between row one and row four was between rows three and four. In the case of estimated achievement,
however, 65 per cent of the difference between row one and row four is found to be between rows one and two. Whereas in the earlier situation the fourth row was seen as possibly reflecting the strongest negative manifestation of attraction-repulsion behavior, it seems in this instance that the first row reveals an extreme tendency in the opposite direction. That is, the person who sits on the front row may consciously or unconsciously see himself as having a markedly greater likelihood of receiving a higher grade than those on succeeding rows. His actual superiority in achievement over people on row two is not as great, however, as the difference between his expectation and theirs.

Summary

The concern of this study was centered around the expressive act, believed to be largely involuntary, of the college student’s choice of location in the classroom. In the analysis of the data the hypotheses were set forth under headings indicating the type of measure being related to the choice of seat.

Hypothesis I pertained to the possible influence of experimental seating arrangements on achievement in the course. The null hypothesis, that no significant differences would appear in the mean achievement scores of persons seated in random rows or in positions that were the opposite of their choice, was accepted. The results of the complex
analysis of variance treatment used to test Hypothesis I also supported Hypothesis II in that a difference between seating choice and final semester scores, in the direction predicted, was found to be significant at the .001 level of confidence.

Hypothesis II, which dealt specifically with seating choice and final semester scores, was tested also by simple analysis of variance and proved to have differences significant at the .01 level of confidence which partially supported the prediction of the hypothesis.

The relationship between the ACT or CEEB ability test scores and seating choice was treated by Hypothesis III, using simple analysis of variance. The F ratio obtained was not great enough to support the hypothesis. A separate analysis for ACT and CEEB scores did not indicate significantly different performance for students submitting one score as opposed to the other.

Hypotheses IV through VIII had to do with the relationship between seating choice and the following personality inventory scores: Self-Concept and Self-Acceptance on both the IAV and the POI, and Self-Actualizing Values on the POI. Using simple analysis of variance, none of the F ratios reached significance.

In Hypotheses IX, X, and XI predictions were made regarding the students' first-day estimates of expected
interest in the course, expected difficulty, and expected semester grade. The first two were not supported, since significant differences did not appear when the mean scores of the rows were compared by simple analysis of variance. Hypothesis XI, however, which postulated significant differences in the students' estimates of semester grades by rows, was partially upheld, since differences significant at the .05 level of confidence were found among rows, but not between adjacent rows.

Attention was also called to the means of the final semester scores in Table III, in which 66 per cent of the total difference between row one and row four was found between rows three and four, indicating an increased effect in row four with regard to lower achievement. The means of estimated achievement revealed the opposite effect. In this case 65 per cent of the total difference among means was concentrated between rows one and two, suggesting a heightened effect in the front row regarding the self-estimate of achievement.


5. ________________, unpublished notes, Department of Education and Psychology, North Texas State University, Denton, Texas, 1965.


CHAPTER IV

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The present study was an investigation of the variables surrounding the college student's choice of seat in the classroom. This situation was considered to be only one example of many instances in which individual behavior in group situations reflects the individual's perception of himself, the group, and the group's activities. Preliminary studies had indicated that achievement in the class was related to the choice of seat and that changing the location of the student did not result in a systematic change in achievement. For this reason, it was postulated that some measurable relationship existed between the location chosen and personality factors related to achievement, rather than between achievement and the physical environment alone.

The subjects were 386 members of twelve first-year psychology classes, taught by teaching fellows and using the same textbook. Five classrooms of comparable size and shape were used. Each had four rows of seats with from eight to eleven seats to the row. Without their knowing the purpose of the study, students were divided into three groups to test the effects of experimental seating arrangements.
Data gathered from and about the subjects included a "First Day Student Estimate Sheet"; Self-Concept and Self-Acceptance scores on the IAV; Self-Actualizing Values, Self Regard, and Self-Acceptance scores on the POI; ACT and CEEB ability test scores; and final semester grades. Simple analysis of variance was used to determine the relationship between each of these variables and the student's original choice of seat, while complex analysis of variance was used to determine the relationship between final semester score, seating choice, and location in the room as determined by the experimental seating pattern. All computations were performed at the University's Computer Center. The .05 level of confidence was considered to be the criterion of significance in each case.

The general hypothesis advanced was that students who chose to sit near the front of the room would have higher average scores both in achievement in the course and in the measures of self-concept than those choosing to sit near the back. The working hypotheses proposed to test this general hypothesis were as follows.

Hypothesis I stated that students placed in rows randomly or placed in rows opposite their choice would not show significant differences in their final scores. That is, that their physical location in the classroom would not have a significant systematic effect on their achievement.
This hypothesis was supported by the failure of the F ratios to approach significance, indicating that there had been no significant change in achievement because of placement. The same two-factor analysis, however, revealed that differences in achievement were related to initial seat choice and these differences were significant at the .001 level of confidence, the lower scores occurring toward the back of the room.

This latter finding thus partially supported Hypothesis II, which was that significant differences in achievement would appear among rows. Tests with Fisher's $t$ indicated that those choosing row one did not differ significantly from row two and row two did not differ from row three. However, the scores of those choosing row four did differ significantly from all other rows, resulting in an F ratio significant at the .01 level of confidence.

In Hypothesis III the prediction was advanced that significant differences in ability scores (ACT and CEEB) would occur among rows. Failure to obtain a satisfactory F ratio did not permit acceptance of this hypothesis. Separate treatment of ACT and CEEB scores did not indicate that any noticeable distortion had occurred by converting the latter to the ACT equivalent.

Since other research had shown a positive relationship between self-concept and achievement, it was predicted in Hypotheses IV through VIII that there would be significant
differences among rows with respect to five personality inventory scores involving self-concept, self-acceptance, and self-actualization. The differences were not significant, however, and no hypothesis with regard to the personality variables was accepted.

Hypotheses IX, X, and XI postulated relationships between seating choice and the students' estimates of interest, difficulty, and final grade in the course. Estimates of interest and difficulty did not show significant differences among rows and thus Hypotheses IX and X were not accepted. Estimates of the final grade, however, did show differences among rows which were great enough to support Hypothesis XI, the differences being significant at the .05 level of confidence.

It was found that the grade estimates of the students on the front row showed a far greater than average lead over succeeding rows, while, on the other hand, the actual grades of students on the back row showed a far greater than average deficiency with regard to row three than rows three and two do with regard to rows two and one, respectively.

Conclusions

The findings of the present study would seem to allow the following conclusions within the framework of the investigation.
1. Seating choice and classroom achievement are significantly related, the better students tending to choose the front of the room and/or the poorer students tending to choose the rear. It is likely also that similar habits of choice behavior can be identified in individuals meeting in such social situations as church gatherings, P. T. A. meetings, and theaters.

2. The location of one's seat in the college classroom does not, within itself, significantly affect achievement in that class. The frequent seating changes made by elementary school teachers may, as a part of a larger program of help, benefit the students who would tend to gravitate toward the rear if given their choice. However, the seating change alone should not, without further investigation for that particular circumstance, be depended on to make any substantial change in achievement.

3. Although ability test scores are among the best predictors of achievement, and achievement, in turn, was found to be significantly related to seating choice, there appears to be no significant relationship between scores on standardized ability tests and one's choice of seat.

4. Personality factors as measured by the scales employed in this study are not significantly related to seating choice. However, it is difficult to conceive of such a clear behavior pattern being unrelated to some measurable
aspect of personality. It is felt, rather, that the measures employed in the present study were too general to isolate the specific elements of personality having a direct bearing on behavior under competitive academic conditions.

5. Personal estimates of course interest and course difficulty as reported in the present study do not reflect a significant degree of attraction or repulsion toward the classroom situation which can be measured by one's choice of row. In this case the estimate of expected interest was asked for on the first day in class. Perhaps in other social situations where the individual has had enough prior interaction with the group to develop a conscious assessment of his interest before he is asked to register an estimate of it he would be able to give a more meaningful report, one which would be consistent with his long-term interests and be more likely to correlate with involuntary manifestations of expressive behavior.

6. There is a significant relationship between the student's estimated grade and his seating choice. It appears that both of these samples of behavior are closely related to the student's concept of himself as a competitor in an academic setting. Therefore, while not labeled as such, the grade estimate is considered to be a more accurate expression of self-concept, specific to this academic situation, than the more general self-concept scales which were employed.
7. The front row seems to attract those students with an uncommonly high estimate of achievement, an estimate which is not as closely related to actual achievement as the grade estimates of those people in subsequent rows. It is theorized that in other social organizations one would also find "front row" participants whose level of aspiration shows a greater element of error over actual achievement or productiveness than those members of the group who are less prone to hold themselves in high esteem.

3. The back row seems to attract those (or the front rows repel them) who have a level of achievement that is markedly lower than that of preceding rows. Since ability test scores (which do have a relatively high correlation with freshman achievement scores as a whole) did not show a significant relationship to seating choice, it appears that the back row may attract a preponderance of those students who are responsible for the correlation of .50 to .60 between ability test scores and achievement not being higher than it is.

Recommendations

On the basis of the positive and negative findings of the present investigation several recommendations are offered.

1. In an effort to identify personality variables which are related to seating choice, it is recommended that
similar studies be continued and that they be directed toward personality measures which are more specifically related to academic achievement than those employed herein. For example, measures of ascendance and level of aspiration, or more extensive estimates of academic success might be used. The fact that grade estimates were related to seating choice should lend some guidance in the search, since it was the only variable significantly related to seating choice which was an introspective report from the subjects.

2. The use of classrooms with more than four rows is recommended in continuing the study of seating choice in order to give opportunity for greater range in the selection of a seat, thereby making more accurate choice possible. Likewise consideration could be given to lateral seating choice, proximity to the exit, or any other factor which would present opportunity for individuals to avoid the center of the group's activity.

3. While it would not be the same as actually claiming a seat in the presence of others, letting students make their choice of seat on paper would theoretically allow every student to express his choice of all the seats in the room, rather than his choice of those remaining at the time of his arrival, perhaps expressing his true choice more accurately.

4. Further study is recommended into the notable exceptions to the rules; namely, those who sit on the back
row, yet earn or predict "A's" for themselves, and those who choose to sit in the front, yet do poorly.

5. Since the average achievement of those choosing the back row is definitely below the average for the group, but their ability scores have not indicated a corresponding deficiency, the instructor who is interested in helping students achieve in keeping with their ability is encouraged to give particular attention to this group.

6. It is recommended that practical application be made of the knowledge that a high level of aspiration exists on the front row and a low level of achievement exists on the back row. In grouping a class for group projects, for example, the instructor would obtain more heterogeneous groupings by dividing the class by columns rather than by rows. Sociometric studies suggest that such grouping would tend to result in higher group acceptance for those who would otherwise seek separation from the group. It is also possible that it would tend to result in achievement more in keeping with ability for those who choose the back row.

7. Since this study investigated only one example of involuntary expressive behavior out of the many patterns which might have been selected for study, the recommendation is also given that similar studies be carried on in other social situations where there is the possibility of quantifying a person's attraction to or repulsion from a group and
relating it to variables pertinent to those situations, such as social status, occupation, and income. A research approach comparing the general pattern of involuntary expressive behavioral responses of individuals in a number of specified social situations, rather than just one, would provide a much more comprehensive picture of the dynamics involved in one's placement of himself in group situations.

8. In the continuation of research in self-placement, whether in the classroom or in other social situations, it is recommended that particular attention be given to the individual's degree of involvement in the specific social situation under study. It seems quite likely that the individual's approach to the center of group activity is in proportion to the level of his identification with that group and that he avoids a position that would imply a closer identification than he actually feels.
APPENDIX

FIRST DAY STUDENT ESTIMATE SHEET

Please make the following estimates as honestly as you can. Your responses will have nothing to do with the way you will be graded by the instructor in this class and will not be a reflection of your attitude toward the instructor, since you have not yet had the first lecture.

1. Circle one of the following numbers to indicate the degree of interest you expect this course to have for you.

   1 2 3 4 5 6 7 8 9
   Extreme- Very Qua About Quite Highly
dull dull average interesting interesting

2. Circle one of the following numbers to indicate the degree of difficulty you expect this course to hold for you.

   1 2 3 4 5 6 7 8 9
   Extreme- Very Qua About Quite Highly
difficult easy easy average difficult difficult

3. Considering your own ability, past performance, your evaluation of the course, etc., circle the final grade you expect to earn in this course.

   A+ A A- B+ B B- C+ C C- D+ D D- F
LIST OF FORTY-NINE ADJECTIVES FROM BILLS

INDEX OF ADJUSTMENT AND VALUES

<p>| | | |</p>
<table>
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</thead>
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<td>1.</td>
<td>acceptable</td>
<td>17.</td>
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<td>fault-finding</td>
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PROCEDURE FOR COLLECTING DATA IN THE CLASSROOM

Your willingness to participate in this study is very much appreciated. We hope it will also be of value both to you and your class. In order to standardize the procedure and thus make the study as meaningful as possible, the following instructions and information are given. Please ask about situations where the instructions are not clear to you.

As you know, the purpose of the study is to determine the relationship between seating choice, seating placement, academic achievement, and certain personality variables. However, to avoid the possibility of influencing the subjects' behavior they should not be told the purpose of the study or even that the several parts are related to the same study.

First Class Period

In giving out the "First Day Student Estimate Sheets" at the beginning of the first class period, the instructor may say, for example, "Students in psychology classes are often asked to participate in surveys or experiments to provide information that can be obtained in no other way. Whenever possible, they are given the results of the study so it can be a learning situation for them as well. We would appreciate your frank response to this brief questionnaires. In any such case you can be sure that individual responses will be kept confidential and will in no way influence the grade given you by the instructor."

Students not in class the first day, but who begin attending before the experimental change in seating, should also be asked to complete the "First Day Student Estimate Sheet" on their first day in class.

Third Class Period
(Second Period for T-Th Classes)

Taking care not to promise that students will be allowed to retain the seats they chose, the instructor states, "If you feel by this time that you know where you would like to sit in the class, would you take the seat of your choice next time, so I can make a seating chart? If there is anyone who must sit in a certain place, please see me after class."
Fourth Class Period
(Third Period for T-Th Classes)

Take attendance by passing a numbered sheet down each row for each student to sign. For example, the sheet for the front row will be marked "Row A," that for the second row will be marked "Row B," and so on. For accuracy in charting the seating choice, they should be passed from the instructor's left to his right as he faces the class. This will give a record of seating choice on that day as mentioned to the students at the previous meeting. Circle the name of anyone who has told you he must sit in the front row or any other particular place.

Please make sure that I receive these sheets as soon as you have secured your attendance record from them so that the experimental seating pattern can be prepared for your next class meeting.

Fifth Class Period
(Fourth Period for T-Th Classes)

Ask students to move to assigned seats according to the seating chart provided. A request such as the following has drawn cooperation in the past: "I usually don't assign seats, but would like for you to take seats according to the chart I have here for this semester. This is in connection with a study that I can discuss with you at the end of the semester."

The least confusion will probably result from having only Row A vacated, then calling the name of each person assigned to that row, making sure that each finds the correct seat. Then call Row B, and so on.

Personality Inventories

Arrangements will be made with each instructor individually for administering the two personality inventories at a time convenient for him. Individual scores and normative data will be presented to the class as soon as possible.
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