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Wish, expectation and group performance as factors influencing level of aspiration

Leon Festinger

University of Iowa

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WISH, EXPECTATION AND GROUP PERFORMANCE AS FACTORS INFLUENCING LEVEL OF ASPIRATION

by

Leon Festinger

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Arts, in the Department of Child Welfare, in the Graduate College of the State University of Iowa

August, 1940
The writer wishes to express his appreciation to Dr. Kurt Lewin who directed the research. He would also like to thank Dr. Tamara Dembo and Dr. Walter A. Varvel, Jr. for their aid and suggestions, and Dr. Ronald Lippitt for his aid in rating the interviews.
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CHAPTER I
GENESIS OF THE PROBLEM

The following is by no means meant to be a complete survey of the field of Level of Aspiration. For more thorough reports of the experimental work on the subject the reader might refer to Gould (14), Anderson (1), or Escalona (5). All we mean to do here is to trace the development of the specific question under investigation.

The concept of Level of Aspiration, that is, the idea that feelings of success and failure were felt solely in relation to the individual's momentary goal strivings appeared almost simultaneously in the articles of Dembo (4) and Hoppe (18). The Dembo study was a study of anger while the experiment by Hoppe was specifically oriented towards studying feelings of success and failure. It was found, however, that objectively identical or similar achievement were interpreted by the subjects in very different ways and that any feelings of success or failure which did ensue were more or less irrelevant to what the subject actually accomplished on the task. Such feelings were almost entirely dependent upon his specific psychological goals and his standards. To be more specific, the relation between the subject's goal and what he actually accomplished was the
determinant of whether success or failure would be experienced. Thus, two subjects, each scoring objectively the same on a test, one having his goal beneath the level of his accomplishment and the other placing his goal above this level, might experience success and failure respectively in spite of the fact that objectively their scores were the same.

Hoppe's study was suggestive in many respects as regards clarification of the concept of level of aspiration and of the laws governing its dynamics but left many questions open for further investigations. The major objection is that Hoppe had only qualitative results from his experiment. His measures of the height of the level of aspiration were based entirely upon spontaneous remarks made by the subjects during the progress of the experiment. However, quantitative results and thorough interview data proved to be necessary for a valid attack on the problem of level of aspiration. We must however recognize the value of the experiment in opening up the field of level of aspiration to Psychology.

From this early work to the next work in the field we may detect very great improvements. A necessary improvement in technique was accomplished, but an even more important theoretical improvement may be noticed. The early work
of Dembo defined level of aspiration as that point below which the subject felt failure and above which he experienced success. This operational definition of the concept was necessary if any measure of level of aspiration was to be obtained from the data. The data on hand merely gave indications of feelings of success or failure on the part of the subject and did not yield any direct measure of the momentary goal strivings. Thus we find that the level of aspiration for Dembo was a measure derived from data on feelings of success and failure assuming a certain relationship between the feelings of success or failure and the level of aspiration.

Hoppe, however, omits an adequate operation definition of level of aspiration. It became obvious that in order to raise the hypothesis that success and failure are felt in relation to the level of aspiration to the status where it could be regarded as a fact, a direct measure of the level of aspiration would have to be obtained or at least a measure independent from assumptions involving success and failure.

These improvements appear in the work on level of aspiration by Frank. Frank accepted the three laws operating to determine the aspiration level of an individual as set down by Hoppe. These were, namely, the need to keep
the level of aspiration as high as possible, the need to achieve success and the need to avoid failure. On this basis Frank (7, 8, 9) set out to determine whether the level of aspiration was "general", that is, whether it was relatively the same for the same individuals in different situations. Frank improved the technique for studying level of aspiration in that he was able to obtain quantitative results. By giving his subjects a series of the same tasks, and after each task asking them what they intended to do next time, Frank managed to get a quantitative measure of the level of aspiration of the subject. The measure obtained was the difference between the average performance of the subject and the average of the estimates of future performance. The estimate which the subject gave in response to the question of what he intended to do next time was taken as a measure of the subject's goal and the obtained difference was taken as a measure of the discrepancy between the goal and the performance level and was called the average difference score. From these experiments Frank concludes that there is a generality of level of aspiration. That is, if a subject has a high difference score, or what is now called "discrepancy score", in one situation he will tend to have a high difference score in other situations, and if he has a low difference score in one situation this will tend to persist in other situations. In other words, Frank
concluded that the level of aspiration was a fairly stable personality characteristic.

Frank’s conclusions of the "generality" of the level of aspiration involve certain assumptions which should limit the scope of the conclusions. The major assumption was that the estimate is a valid measure of the level of aspiration of an individual and really is an indication of his momentary goal strivings. Frank's experimental technique afforded him no way of checking the validity of this assumption. One would tend to suspect that what a subject gave as an estimate of what he intended to do next time in an already familiar task would give little indication of the actual strivings or of what his actual goals were. It would therefore be much safer to limit Frank's conclusions, if we care to accept them at all, to the average difference score rather than to the level of aspiration which Frank says is a "relatively permanent characteristic of personality . . . which permanence can be demonstrated regardless of the ability which the task requires" (7, p. 123).

It was with these objections in mind that Gould (14) approached the subject of level of aspiration and set out to rectify some of the faults of the experiments by Frank. Some further objections to Frank's experiments as stated by Gould are: the failure of Frank to consider either
the possible effect of the level of performance on the range of aspiration estimates or the possible distorting influence of the relationship of performance ability in different tasks to one another, and the use of a small number of tasks and subjects.

In her experiment Gould used a larger number of subjects, namely, eighty-two. A battery of six tasks was given to each subject in two separate sessions, three tasks in each session. After each part of each task the subject was asked, "What will you do next time?" In addition to the greater number of tasks and the greater number of subjects, Gould's technique was further improved by the introduction of an intensive interview with each subject at the conclusion of the second session. In this interview the following major points were covered: the interpretation of the experimental question, the meaning of the estimate to the individual, the chief factors influencing estimation, the explicit goal strivings in the experimental situation, the cause for feelings of failure, the reaction when the performance score was below the preceding estimate, reactions to feelings of failure and causes and reactions to feelings of success. In short the interviews attempted to cover almost everything that could not be found out by the average difference score.
Gould's conclusions are somewhat at variance with those of Frank. First of all, Gould does not find any marked generality of the average difference score as Frank did. Secondly, Gould finds that "this situation chiefly elicits not the level of momentary strivings, nor the level of expectation though these enter in differentially, but the resources of the individual to establish himself and avoid failure" (14, p. 113). In other words, the average difference score obtained in such experiments represent not the height of the level of momentary strivings but a kind of protective response consistent with the subject's past experience and personality structure. It was found that many different types of protections were used. In addition to this, it was found by examining the meaning that the estimates had for the subjects that "quantitative differences in the size of the difference scores cannot yield an accurate picture of possible difference in true aspiration level since the actual level of momentary strivings may be of the same magnitude in individuals widely divergent in difference scores" (14, p. 111). In other words, different subjects interpret the meaning of the estimates in different ways. In addition, the multitude of defenses which the subject employs to guard against feelings of failure remove almost all relation between the average difference score
and the true level of aspiration. What the subject's true goals are, although they contribute to some extent to the obtained average difference score, can only be arrived at by an interview technique as employed by Gould.

In spite of all this, or better, because of all this, Gould's study determines and clarifies the field considerably and points out a likely path for future experimentation to follow in order to get at the crucial factors influencing and influenced by the true level of aspiration or momentary goal strivings. The problem is obviously to get at the true level of aspiration of the individual. Since a study of the average difference scores, even supplemented by a very thorough interview, could not determine what the true momentary goals were, the problem must obviously be attacked from another angle. Gould suggests one possibly fruitful line for such research. This suggested line of research is a study of the change in average difference scores in relation to certain experimentally introduced variables which can be controlled. The problem which is now facing us in order to get to the core of the situation "is not to study changes in estimates per se . . . but to study the subject in the light of the changes in estimate which are brought about . . . by a genuine change in the relationship established between the organism and his immediate
environment" (14, p. 113). By doing this we can possibly determine what changes are due to what environmental conditions. Although the estimate of the subject is to a large extent protective, the very changes in these protective devices, or their abandonment or adoption, may provide fruitful material whereby we can determine true changes that have occurred due to the changed conditions.

It is from these considerations that the present study derives its motivation. Since we have seen that the true level of aspiration is determined by several conflicting tendencies, we can assume that the actual existing level of aspiration is an individual in any given situation is an equilibrium of the several forces which are acting. This equilibrium may be displaced very easily. A series of low scores, for example, might strengthen the need to avoid failure and the equilibrium would be displaced in a downward direction. Similarly a series of high scores might strengthen the need to keep the aspiration level as high as possible and the equilibrium would thus be displaced upwards. These are two examples of psychological factors within the individual which can displace this equilibrium. It is also conceivable that there may be factors in the social environment or factors in the relation between the individual and his social environment which would displace the equilibrium
in one or the other direction. One such possible disequilibrating factor might be found in a situation where the subject is put in competition with other subjects or where the tendency on the part of the other subjects is to estimate differently from the individual under study.

Some hints as to what might possibly happen in a situation where the subject is aware of the results of other people on the same tests have been thrown out here and there by Frank. In regard to one subject who after hearing about the scores made by another subject on the task changed his average difference score so as to make his estimates approximate his performance level more closely, Frank says, "The fact that S begins to measure his level of performance against others seems to have a sobering influence" (8, p. 289). Again in regard to another similar situation he states, "... a possible explanation for this difference, assuming it to be significant, may be that hearing the score of someone else has a sobering effect, resulting in a tendency to keep the level of aspiration closer to the level of performance" (10, p. 48). It may or may not be that this suggested explanation for the observed change in the difference score is correct, but we still see that such a change may occur in response to such a semi-social situation.

The question of what influence a tendency on the
part of other individuals to estimate differently from the subject might have on the level of aspiration has been experimentally studied by Hertzman and Festinger (17). Using essentially the same technique employed in the present study the subjects were compared in the second situation to a group of college students. The scores for this group were fictitious and were arranged so that the individual would be scoring at about the same level as the group, but the direction of the estimates of the group in relation to their performance would be four points in the direction opposite to that shown by the subject in the first experimental session. The authors found that having the estimates reported for the group in the opposite direction from the tendency evidenced by the subject in the first session caused the estimates of the subjects to shift significantly in the direction of the group estimates. It also became apparent from this study that in such a social situation the main motivating force was competition with the group.

Another experimental study attempting to throw some light on the matter is the one by Chapman and Volkman (3). In this experiment tests were given to a group, one per day. The tests were marked overnight and the next day the subject was made privately acquainted with his score by the simple method of handing out cards. He was then asked
to write on the card an estimate of what he intended to do on the test that day. They were then given another test. On the third day the cards handed to the subjects in addition to telling the individual his score also carried the information that he had scored either 5.2 points above or below the mean for the group. The subject was then again asked to estimate what he would do on the test that day. They found that there were no consistent or significant differences between the way the subjects estimated on the second and third days.

Sears (25, 26), reporting in two articles on young school children throws much light on what will happen to the level of aspiration when feelings of success or failure are experimentally induced in the subjects. Half of her children on returning for a second session were told that their performance on the first session had been very poor and remarks of the same sort were made throughout the second session. This group was called the failure group. The other half were told that their previous performance had been good. This group was called the success group. She finds that the failure group showed larger discrepancy scores and greater variability of the discrepancy as contrasted with the success group. With regard to the change from the first situation to the second situation
she finds that in ten out of twelve subjects an increase occurred in the mean size of the discrepancy scores in the failure group while in the success group ten out of twelve subjects showed a lowered discrepancy score.

Gardner (11) attacked the problem from an entirely different angle, not comparing the subjects with others or inducing feelings of success or failure socially, but by comparing the discrepancy scores for the same subjects on different parts of a performance series, the scores for which were prearranged, each subject being told exactly the same scores. Gardner finds that the discrepancy scores varied on different parts of the performance curve. He reports as a finding "incidental" to his investigation the "the discrepancy scores decreased during the period when the performance was improving rapidly and increased during the period when the performance was falling off" (11, p. 620). This finding may have some significance for the problem which we have been discussing or it may be simply due to the often observed and reported fact that it is usually easier for the subjects to raise their level of aspiration than it is for them to lower it. Now keeping pace with a series of rapidly improving scores would mean raising the level of aspiration consistently and rapidly and even if this is accomplished the estimates will certainly not be much above the performance level which might
account for the lowered discrepancy scores on this portion of the curve. When the series of performances is falling, however, the estimates will not fall with it since it is more difficult to lower the estimates since such lowering of the estimates involves an admission of failure on the part of the subject. The estimates will therefore come down slowly and the discrepancy score will increase.

The present experiment is oriented towards the same problem which we have now been discussing for some time, namely, the problem of inducing changes in the level of aspiration of the subjects by placing them in comparison with the performance of a group.
CHAPTER II
PROCEDURE

The Problem

The experiment involves essentially two problems:

(a) How will the level of aspiration be affected if an individual is compared to a group of which he is a member, to a group which he considers beneath him in educational achievement and to a group which he considers above himself in educational achievement? In other words, what effect will knowing the performance of others on the tasks which the individual is now performing have upon his level of aspiration, how will it affect his goal strivings and how will it affect his feelings of success and failure? The importance which this question has for a thorough understanding of the dynamics of level of aspiration has been brought out in the previous section. Generally stated the problem is, how will the level of aspiration change in a social setting?

(b) How will the level of aspiration on a more wishful level differ from the level of aspiration on a realistic level? The importance of this problem goes back to the early experiment of Hoppe (18) although no work directly attacking the problem has as yet been done. Hoppe
indicated that there might be two goals for an individual: a realistic goal and what he called an ideal goal. The ideal goal, he said, would be higher than the realistic goal. He further indicated that during the individuals progress in a task his momentary goal strivings might shift from being realistic to being more wishful and vice versa in response to feelings of failure and success respectively. Although not attacking the problem directly, Escalona's (5) analysis of the level of aspiration situation in terms of what the individual's idea is of the probability of success or failure at a certain level of performance and the potency which success and which failure has for him are strongly suggestive of variability of the level of aspiration within a region between reality and irreality. The determination of the difference in the setting and the functioning of the level of aspiration on these two different levels therefore becomes important.

Sampling

The subjects used in the experiment were all undergraduates of the State University of Iowa. The students were selected on a purely voluntary basis from sections in Introductory Psychology and Introductory Sociology. Since these two courses are taken usually by students in many different fields of study we believe our sample constitutes
a representative sample of the student body. Since these courses are usually taken at about the sophomore year in college we would naturally expect to have a preponderance of second year students in our group. Eighty subjects in all were used, and the percentage of the various class groupings in the sample are given below:

<table>
<thead>
<tr>
<th>Class</th>
<th>Cases</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshmen</td>
<td>6</td>
<td>7.5%</td>
</tr>
<tr>
<td>Sophomores</td>
<td>48</td>
<td>60.0%</td>
</tr>
<tr>
<td>Juniors</td>
<td>21</td>
<td>26.25%</td>
</tr>
<tr>
<td>Seniors</td>
<td>5</td>
<td>6.25%</td>
</tr>
</tbody>
</table>

The mode of the distribution with respect to age is at nineteen with twenty-eight cases in that interval from nineteen to twenty years. The mean age of the group is 20.6 years with a standard deviation of 1.7 years.

We might summarize our sampling as follows: a fairly homogeneous group of college students, over 85% of which were in their second or third years of college, with an average age of about twenty years.

Up to the end of the experiment the subjects knew nothing of the purpose of the investigation. They were asked not to discuss the experiment with anyone until it was completed.

Materials

Two tasks which satisfied our requirements were
chosen for the experiment. It was of course necessary that
they be tasks where performance could vary and where the
range of possible points for placing the level of aspiration
be considerable. Another requisite of the tasks to be used
was that performance on the tasks should remain on essen­
tially the same level throughout the experiment, that is,
tasks where a minimum of learning would occur. Since
learning would have been a complicating factor it was desir­
able to eliminate the learning problem from the experiment.
As Gardner has so effectively shown the obtained measure of
level of aspiration will differ for different parts of the
performance curve. When the performance is rising the mea­
sures will be radically different from when the performance
is falling. Thus, by holding the performance essentially
constant throughout the experiment we may control this com­
plicating factor. The two tasks selected are:

(a) Synonym tests - Fifteen lists of twenty-four
words each, examples of which may be found in the appendix,
were used. These tests are identical with the ones used by
Hertzman and Festinger (17). One of the lists was used for
a practice trial and each of the other lists was treated as
a separate trial. The subjects were asked to write after
as many of the words in the list as they could, one other
word meaning the same as the printed word on the sheet.
For five of the lists the subjects were instructed to write synonyms beginning with the letter A. For another five lists the synonyms had to begin with the letter B, and for the other five lists, C was the letter to start with. The A, B and C lists were presented alternately. The subjects were allowed one and one-half minutes to complete the list. At the conclusion of each list it was scored immediately. The subject would then be told his score and a measure of his level of aspiration for the next test in the series would then be elicited.

(b) Information tests - Seventeen lists of twenty-two questions each, examples of which may be found in the appendix, were used. These lists are also identical with those used by Hertzman and Festinger. As before one of the lists was used as a practice trial and each of the others was taken as a separate trial. The subject was told to answer as many questions as he could in the two minutes allowed for the completion of the list. The procedure followed in these tests was identical with the procedure used in the synonym tests.

In both series each list was approximately as difficult as the others of that series. The experiment was divided into two sessions. In the first session the practice list and the first seven synonym lists were given to the
subjects and then the practice test and the first eight information tests were administered. The second session took place about a week after the first session. This time the subjects were given the last seven synonym tests and the final eight information tests.

The subjects were kept very much at ease during the experiment and the situation was rather informal. The subjects were all very much interested in the tests as was shown by their eagerness to know what some of the correct answers were. At the beginning of the experiment the nature of the tasks was explained to the subject and thereafter the experimenter merely corrected the tests, told the subject the score and elicited the estimate of performance on the next test. No extraneous remarks were made by the experimenter unless they were necessary to keep the subject at ease or unless in response to a direct question on the part of the subject.

The involvement of the subjects in the tasks was shown adequately by spontaneous remarks during the test which showed that the subjects were feeling success and failure acutely and by the physical behavior of the subjects most of whom after failure would turn red and look embarrassed and would work very hard on the next test.
Variables Introduced

The experiment was divided into two experimental sessions. During the first session the subject knew nothing about the performance of anyone but himself on the tests. This session will be referred to as Situation I or the non-social situation. In the second session the subject was told what a group of others had done on the tests. This session will be referred to as Situation II or the social situation. There were a total of three variables which were systematically varied as follows in the present experiment:

(a) Reality-irreality variable – This variable was introduced in the first session by varying the form of the experimental question by which the level of aspiration was elicited. Half of the subjects were asked after each trial in the series, "What score do you think you will get next time, that is, what score do you expect on the next test?" The other half of the subjects were asked, "What score would you like to get next time, that is, what score do you intend to get on the next test." The first of these groups we will call the reality group, while the second we shall call the irreality group. The phrasing of the questions was calculated to produce a difference in the degree to which the subject would be realistic in the placing of his estimates. One group was to be kept strictly on the reality
level and so the words "think" and "expect" were stressed. These subjects should be very much influenced by their actual performance and the possibilities of their performance going up or down. The other group was to be allowed to be more wishful in their estimates. Thus the first word "like" which may have produced too much of a departure into irreality, was followed by the word "intend" which did not allow the flight into irreality to go too far. In short, the first group was supposedly tied down to reality in their estimates by the way the experimental question was put. In other words they were forced to make their estimates realistic. The second group could, if they wanted to, become unreal in their estimates or estimate on the level of irreality. The second of these groups could become more wishful or more hopeful in their estimates if they so desired. We might summarize the difference between these two groups by saying that the psychological space of free movement within which the estimates could be varied was greater for the irreality group than it was for the reality group.

(b) Group variable - This and the following variable were introduced in the second session. At this time, in addition to telling the individual his own score on the preceding test, he was told the average scores and average estimates of a group of fifty other students on the next
test which he was going to take. He was told this before he was asked what his estimate would be for that test. One fourth of the subjects in the reality group and one fourth of the subjects in the irreality group were compared to a group of high school students; one fourth were compared to a group of college students of their own classification; one fourth were compared to a group of graduate students who were candidates for their Ph.D., and the last fourth were merely given the retest without being compared to any group at all. This latter group constitutes a control.

(c) Position variable – Our group of subjects has already been divided into eight groups by the two preceding variables. These eight groups are: reality – high school, reality – college, reality – Ph.D., reality – control, and the same four for irreality. Now the two control groups were left intact while the other six groups were further split in half. Half were put in the situation where they were scoring above the group with which they were being compared, and the remaining half were put in the situation where they were scoring below the group which they were being compared to.

The scores attributed to the groups were fictitious and were arranged on the basis of the individual's performance in the first session, so that the subject would
on the average, either be scoring two points above the group or two points below the group. In every case where the individual was scoring above the group, the estimates of the group were arranged so that they would be two points below their performance level on the average. In every case where the individual was scoring below the group, the group was said to have placed their estimates two points above their performance level on the average.

The arrangement of these three variables into the 14 categories of the experiment is shown in Figure 1.

Factors Controlled

The performance of the subjects, that is, the scores they made on the tests was controlled throughout the experiment. Although the subjects were told what the time limit on the tests was, the experimenter varied this time limit so as to control the performance of the subject. If by the end of the time limit the subject had not scored as much as the experimenter wanted him to, the time was not called until the subject had. If the subject had scored as much as the experimenter wanted him to before the time limit was up, then the time was called at that point. Throughout the experiment the time never had to be varied more than twenty seconds from the true performance. None of the subjects
<table>
<thead>
<tr>
<th>&quot;Like&quot;</th>
<th>&quot;Expect&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>N=5</td>
<td>N=5</td>
</tr>
<tr>
<td>Above High School</td>
<td>Above High School</td>
</tr>
<tr>
<td>&quot;Like&quot;</td>
<td>&quot;Expect&quot;</td>
</tr>
<tr>
<td>N=5</td>
<td>N=5</td>
</tr>
<tr>
<td>Below High School</td>
<td>Below High School</td>
</tr>
<tr>
<td>&quot;Like&quot;</td>
<td>&quot;Expect&quot;</td>
</tr>
<tr>
<td>N=5</td>
<td>N=5</td>
</tr>
<tr>
<td>Above College</td>
<td>Above College</td>
</tr>
<tr>
<td>&quot;Like&quot;</td>
<td>&quot;Expect&quot;</td>
</tr>
<tr>
<td>N=5</td>
<td>N=5</td>
</tr>
<tr>
<td>Below College</td>
<td>Below College</td>
</tr>
<tr>
<td>&quot;Like&quot;</td>
<td>&quot;Expect&quot;</td>
</tr>
<tr>
<td>N=5</td>
<td>N=5</td>
</tr>
<tr>
<td>Above Ph.D.</td>
<td>Above Ph.D.</td>
</tr>
<tr>
<td>&quot;Like&quot;</td>
<td>&quot;Expect&quot;</td>
</tr>
<tr>
<td>N=5</td>
<td>N=5</td>
</tr>
<tr>
<td>Below Ph.D.</td>
<td>Below Ph.D.</td>
</tr>
<tr>
<td>&quot;Like&quot;</td>
<td>&quot;Expect&quot;</td>
</tr>
<tr>
<td>N=10</td>
<td>N=10</td>
</tr>
<tr>
<td>Control</td>
<td>Control</td>
</tr>
</tbody>
</table>

**Figure 1**

DIAGRAM OF EXPERIMENTAL DESIGN
ever voiced any suspicion that the time was being varied.

By the means described above, frequency of objective success or failure which the subject had in the first situation could be controlled. This was done in the following manner. In the information series, in the first session, there were eight trials and the subject was allowed to reach or pass his estimate four times and was made to fall below his estimate four times. In the synonym series there were seven trials in the first session and three or four times the subject was allowed to reach or pass his estimate and the remainder of the trials his performance was made to fall short of his estimates. This factor was controlled so that each subject would enter the second session with an equal background of success and failure experience on the tests. That is, it would be as nearly equal as we could make it.

In the second session the performance of the individual was also controlled but to a lesser degree than was done in the first session. Here if the individual was to be scoring below a group his performance was controlled to the extent of ensuring that he did score below the group, and the same type of control was exercised for those who were to score above the group. With regard to the control individuals it was ensured that their performance in the second session remained at approximately the same
level as in the first session.

**Interview Technique**

Each subject was given the tests individually, and after the end of the second session he was given an interview lasting about an hour. During this interview the following main points were covered:

1) On what did the individual base his estimate in the first session? On what did he base his estimates in the second session?

2) Meaning of the estimate to the subject in the first session; meaning of the estimate to the subject in the second session.

3) Feelings and reactions of the subject when his score fell below or went above his estimate in the first session and in the second session; feelings and reactions of the subject to his position relative to the group in the second session.

4) Extent to which the subject was guided by the group scores and by the group estimates in the second situation.

5) General feeling of satisfaction or dissatisfaction with performance in the first situation.
and in the second situation.

6) Reasons for changes in estimate from the first to the second session, whenever such changes occurred.

The interviews all covered these major items and were standardized as well as they could be. Thorough standardization was impossible since each subject differed and had items peculiar to his own personality which had to be investigated. Thus each interview had to be more or less adapted to the individual subject.

Quantitative Measures Obtained

**Discrepancy score** - This was taken as a quantitative measure of the height of the individual's level of aspiration above his performance level. It was obtained in the following manner. The differences between the individual's performance on one trial and his estimate for the next trial were averaged, taking direction into consideration, and the average of these differences was called the discrepancy score. If the estimate for the next trial was higher than the preceding performance it was given a positive sign and if it was lower, it was given a negative sign. A discrepancy score was calculated separately for the information series and the synonym series in each session, so that for every
subject we have two discrepancy scores for the first session and two discrepancy scores for the second session.

**Change score** - This was taken as an estimate of the change in the level of aspiration of the individual from Situation I to Situation II. The difference between the discrepancy score of the individual on the information series from the first session to the second session was calculated, and a similar score calculated for the synonym series. If the discrepancy score went up the change score was given a positive sign; if the discrepancy score went down it was given a negative sign.

**Interview data** - The data from the interviews was analyzed quantitatively into three indices. These are:

(a) Extent of influence of the group upon the individual in the second situation—the interviews were rated on a scale from zero to ten where zero represented no influence of the group and ten represented a maximum of influence of the group.

(b) Feelings of success—failure in the first session—the interviews were rated on a scale from minus five to plus five, where minus five represented extreme failure, plus five represented extreme success and
zero represented neither success nor failure feelings.

(c) Feelings of success-failure in the second session—the index here is on a scale identical to the scale for success-failure feelings in Situation I.

The written interviews were rated independently by three people. (See page 65.) The ratings of these three independent observers were averaged for each subject to obtain the final rating for the subject on each of the indices.
CHAPTER III
THEORETICAL DISCUSSION
OF THE EXPERIMENTAL SITUATION

A. Group Comparison Problem

Admittedly there are a number of forces acting to determine the level of aspiration of an individual in a given situation. Since we are measuring shifts in two directions only, up or down, we need treat only two general forces in our discussion. We might guess that the chief factor represented in the force acting to raise the level of aspiration is the need to achieve success at a high level and that the chief factor represented in the opposing force is the need to avoid failure.

We can find a simplified schematic representation of this situation in Figure 2. The first diagram on this figure represents a possible subject in the first or non-social situation. In this theoretical subject the need to achieve success at a high level is a bit stronger than the need to avoid failure and so the level of aspiration is placed slightly above the performance level. Of course, the different magnitudes which these forces will have will vary from individual to individual but since we obviously cannot represent all possible situations, and since
Figure 2

CHANGE IN MAGNITUDE OF FORCES IN RESPONSE TO DIFFERENT EXPERIMENTAL SITUATIONS
theoretically the changes induced in the second or social situation will be in the same direction regardless of the relative magnitude of these two original forces, we may confine ourselves to the situation diagrammed.

If our hypothetical subject be placed above a college group of which he considers himself a member he will feel successful. The individual has achieved what he has been striving for and his aim is now to maintain his position above the group. Therefore the force acting to raise the level of aspiration will be considerably weakened. The tendency to lower the level of aspiration depends on his feelings of security in regard to his future performance. If the individual's position above the group is secure this tendency will not undergo any change. Usually, however, the subject feels there is a danger of falling below the group. This will further increase the tendency to lower the level of aspiration. This situation is diagrammatically represented in the center of Figure 2. The resultant of these two forces now shifts the level of aspiration downwards. This conclusion may seem contradictory to the often observed fact that upon achievement of a goal an individual will raise his level of aspiration even higher. What we have to deal with here, however, are changes in the attractiveness of different levels of performance due to a new (social)
frame of reference. (See Chapter V.)

If the individual, in the second situation, be placed below a group of college students he will experience failure. This will greatly increase the desire to reach the group performance which means that the force toward raising the level of aspiration will increase. There is no reason to assume that the probability of expecting of failure on the various levels of performance has changed considerably. Therefore the need to avoid failure acting to lower the level of aspiration will have about the same strength as it had in Situation I. Since the need to achieve success at a high level has been strengthened, the resultant of the two forces is now greater than it was in the non-social situation and the level of aspiration will be shifted upwards as we have diagrammed in the last part of Figure 3.

A comparison of the second and third diagrams in Figure 3 might suggest that the shifts in level of aspiration will be greater when the individual is scoring above a group than when he is scoring below a group.

Along the same lines of reasoning, a person scoring below a high school group will raise his level of aspiration if he feels failure, but will not change his level of aspiration if he does not feel failure. Whether he does or does not feel failure depends upon how he regards the relationship
Figure 3
DISTRIBUTION OF ABSOLUTE DISCREPANCY SCORES FOR EXPECT AND INTEND DISTRIBUTIONS IN SITUATION I

Figure 4
DISTRIBUTION OF ABSOLUTE CHANGES IN DISCREPANCY SCORES FOR EXPECT AND INTEND DISTRIBUTIONS
between his own group and the high school group.

Being above a high school group will not result in any change in the level of aspiration if scoring above this group is regarded as a matter of course, thus bringing neither feelings of success nor feelings of failure. If this position above the group is regarded as a success then the level of aspiration will shift downwards.

Scoring above a group of Ph.D. students should result in feelings of success with a corresponding lowering of the level of aspiration. Scoring below a group of Ph.D. students should not result in any change in the level of aspiration if this is accepted as a matter of course.

All these comparisons with groups inferior or superior to the individual's own group depend upon the frame of reference according to which the individual judges the status of his own group in relation to the comparison group.

The control group of individuals should, of course, show no change in level of aspiration since they are not acquainted with the scores of anyone else on the tests, and for them the second situation is simply a repetition of the first situation.

Additional information in regard to the estimates which the group was reported to have made was also given to
the subject. The role of these group estimates was a facilitating one. They were included to induce as much change in the level of aspiration as possible. As was shown by Hertzman and Festinger (17), individuals, being compared to a group of which they were members, and scoring about on the same level of performance as was the group, would shift their estimates significantly in the direction of the estimates of the group. The reason for this seemed to be a tendency toward conforming with the group. Thus we might say that the direction of the group estimates sets the atmosphere within which the subject would more easily shift his level of aspiration in the direction anticipated.

B. Reality-Irreality Problem

The main characteristic of the level of irreality is its greater fluidity. That means that smaller forces are necessary to create the same amount of change on the level of irreality than are necessary on the level of reality. Therefore the level of aspiration on the "wish" level should be higher than the level of aspiration on the "expect" level. However, the "like" group is composed not only of individuals on the level of irreality but also of individuals on the level of reality, since the form of the experimental question allowed them some latitude in the
placing of their level of aspiration. Therefore, in addition to the higher level of aspiration, we would also anticipate greater variance of the distribution of discrepancy scores for the "like" group.

The change of forces induced in Situation II, the social situation, if equal on the average for the "expect" and "like" groups, would produce greater changes in the "like" group. Thus, following the same line of reasoning, we would also anticipate a greater variance of the distribution of change scores for the "like" group than we would for the "expect" group.

There is one other way in which the degree of reality may affect the level of aspiration. By getting unrealistic about the actual relation between the subject's own group and other groups, he might be able to forestall failure. The acceptance of the social status position will be facilitated when such action would bring success; rejection of the actual social status position will be facilitated when acceptance would have meant failure. Thus with the irrealism group better able to accept or reject the group situation in accordance with whether it brings success or failure we would probably find significant differences between the two groups on changes in level of aspiration where there is the possibility of achieving success or avoiding failure by such manipulation.
CHAPTER IV
RESULTS

Quantitative Data

Let us first examine to what extent our hypotheses concerning the differences between the "expect" or reality group and the "like" or irreality group are supported by our results. In Table Ia we find the "expect" and "like" categories compared with respect to the Discrepancy Score in Situation I. It is immediately apparent from the table that our distribution of Discrepancy Scores for the intend group differs very much from the distribution for the expect group. In accordance with the predictions based on our hypotheses we see that the variance of the distribution for the intend group is significantly greater than the variance of the distribution for the expect group as tested by the F test (Lindquist, 23). We will remember that we expected this to occur because while the expect group was tied down to reality, the like group had a much greater range from reality to irreality within which they could place their estimates.

We also expected from our theoretical considerations of the reality and irreality levels that the mean discrepancy score in Situation I would be higher for the
TABLE Ia
DIFFERENCE BETWEEN TOTAL EXPECT AND INTEND DISTRIBUTIONS FOR ORIGINAL DISCREPANCY SCORE

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Variance</th>
<th>&quot;F&quot;</th>
<th>Level of Significance</th>
<th>&quot;t&quot;</th>
<th>Level of Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intend</td>
<td>2.194</td>
<td>3.469</td>
<td>3.11</td>
<td>1%</td>
<td>9.60</td>
<td>1%</td>
</tr>
<tr>
<td>Expect</td>
<td>-0.102</td>
<td>1.114</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: The F test is for 79 and 79 degrees of freedom; the "t" test is for 79 degrees of freedom.

TABLE Ib
DIFFERENCE BETWEEN TOTAL EXPECT AND INTEND DISTRIBUTIONS FOR ABSOLUTE CHANGE SCORES (Control Group Being Omitted)

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Variance</th>
<th>&quot;F&quot;</th>
<th>Level of Significance</th>
<th>&quot;t&quot;</th>
<th>Level of Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intend</td>
<td>2.090</td>
<td>3.571</td>
<td>2.843</td>
<td>1%</td>
<td>3.176</td>
<td>1%</td>
</tr>
<tr>
<td>Expect</td>
<td>1.169</td>
<td>1.256</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: The F test is for 59 and 59 degrees of freedom; the "t" test is for 59 degrees of freedom.
"like" group than for the "expect" group. We may observe that this is the case and the difference, as tested by the "t" test, is significant. However, the "t" test in this instance is not a valid test of the hypothesis that the means of the two populations are equal since such a test assumes homogeneous variance of the distributions which we are comparing. Since we have demonstrated that the variances differ, we have obviously violated this assumption. We can, however, state that the mean obtained for the "like" group is larger than the mean obtained for the "expect" group and it is probable that this is a true difference. At any rate, we can be fairly certain that the hypothetical populations from which these two distributions were drawn are truly different populations.

In Table Ib the "like" and "expect" categories are compared with respect to the changes in discrepancy score from Situation I to Situation II. On the basis of the same theoretical considerations involved in the comparison of these two groups concerning the discrepancy score in Situation I, it was also expected that the intend group would have a greater mean change and greater variance of the distribution of change scores than would the expect group. We again find that this is the case in our results. The F test testing the significance of the difference in
variance is again significant. Although the obtained difference in means is again in the predicted direction, we again have the same difficulties in applying the "t" test. When this "t" test is applied it yields a significant value, but its application is questionable. We may again, however, state that our populations from which the two samples were drawn are different.

Figures 3 and 4 compare the "like" and "expect" distributions with regard to the discrepancy score in Situation I and with regard to the change score, respectively. An examination of these graphs shows clearly the greater spread and higher means of the "like" distribution as contrasted with the "expect" distributions.

We must conclude from this that there is a real difference between the "expect" and "like" categories and that we have made a valid distinction between them. Our explanation of the difference between these two categories may be disputed by some readers, but the fact remains that the different phrasing of the experimental question produced a real difference in the responses of our subjects. Since all other factors in the experiment were the same for both the "like" and the "expect" categories this difference is almost certainly due to what we call the reality-irreality variable which was introduced by varying the
experimental question. Evidence in favor of the explanation given here is, of course, the corroborative nature of the results obtained. Since this distinction between reality and irreality is also an important factor in the rest of our results, let us proceed to them and see whether our hypotheses will be further substantiated.

The changes in Discrepancy Score from Situation I to Situation II for each of the groups in the experiment are shown in Table II, page 44. The control group has been split again for statistical analysis into a high group, that is, high in terms of the discrepancy score in Situation I, and a low group. The reason for this distinction will be made clear shortly. The first column of figures gives the mean performance in Situation I. The second column gives the mean discrepancy score for each of these groups in Situation I. It will be noticed that those groups which were placed above a group in the second situation had higher discrepancy scores in the first situation than did those which were placed below a group for comparison in the second situation. The reason for this may be found in our previous statement that the experiment was designed to produce the maximum possible shifts in the level of aspiration. Since placing the individual above a group would, according to our set of hypotheses, induce a shift
### TABLE II

**CHANGE IN DISCREPANCY SCORE FROM SITUATION I TO SITUATION II**

<table>
<thead>
<tr>
<th>Intend, Above H.S.</th>
<th>Mean Perf. in Sit. I</th>
<th>Mean Disc. Score in Sit. I</th>
<th>Mean Diff. Between Disc. Score Exp.-Int. Sit. II</th>
<th>Mean Change Score</th>
<th>&quot;t&quot; Test Level of Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>6.84</td>
<td>3.051</td>
<td>2.757</td>
<td>-.357</td>
<td>-2.674</td>
<td>3.66 1%</td>
</tr>
<tr>
<td>Expect, Above H.S.</td>
<td>6.03</td>
<td>.274</td>
<td>1.009</td>
<td>.329</td>
<td>1.78 11%</td>
</tr>
<tr>
<td>Intend, Below H.S.</td>
<td>5.54</td>
<td>-.821</td>
<td>1.251</td>
<td>1.763</td>
<td>5.07 1%</td>
</tr>
<tr>
<td>Expect, Below H.S.</td>
<td>6.57</td>
<td>-.532</td>
<td>1.251</td>
<td>1.763</td>
<td>5.07 1%</td>
</tr>
<tr>
<td>Intend, Above Coll.</td>
<td>7.55</td>
<td>2.525</td>
<td>-1.008</td>
<td>-3.133</td>
<td>9.36 1%</td>
</tr>
<tr>
<td>Expect, Above Coll.</td>
<td>7.55</td>
<td>.037</td>
<td>1.008</td>
<td>1.143</td>
<td>4.16 1%</td>
</tr>
<tr>
<td>Intend, Below Coll.</td>
<td>6.94</td>
<td>-.064</td>
<td>1.008</td>
<td>1.143</td>
<td>4.16 1%</td>
</tr>
<tr>
<td>Expect, Below Coll.</td>
<td>6.75</td>
<td>-.241</td>
<td>1.010</td>
<td>1.010</td>
<td>4.59 1%</td>
</tr>
<tr>
<td>Intend, Above Ph.D.</td>
<td>8.95</td>
<td>3.175</td>
<td>-1.034</td>
<td>-3.601</td>
<td>4.77 1%</td>
</tr>
<tr>
<td>Expect, Above Ph.D.</td>
<td>8.52</td>
<td>1.135</td>
<td>.000</td>
<td>.000</td>
<td>.00 1%</td>
</tr>
<tr>
<td>Intend, Below Ph.D.</td>
<td>6.33</td>
<td>2.632</td>
<td>-1.455</td>
<td>3.59</td>
<td>1.59 1%</td>
</tr>
<tr>
<td>Expect, Below Ph.D.</td>
<td>7.45</td>
<td>1.647</td>
<td>-1.455</td>
<td>3.59</td>
<td>1.59 1%</td>
</tr>
</tbody>
</table>

Intend, Control High: 6.75 4.116 3.550 3.610 2.06 9%
Expect, Control High: 6.48 .566 1.050 2.100 1.85 10%
Intend, Control Low: 7.23 1.858 2.316 1.784 .074 .52 75%
Expect, Control Low: 6.97 -.588 2.316 -.267 .191 .98 45%

**Note:** All "t" tests beyond the 1% level of significance are simply marked 1%. All the "t" test in the above table are for nine degrees of freedom and a value of 3.250 is necessary for significance at the 1% level. All those which do not reach the 5% level are not regarded as significant.
downwards in the level of aspiration, we chose subjects with high discrepancy scores in Situation I for these experimental groups. Since placing the individual below a group would, according to our hypothesis, induce an upward shift in the level of aspiration, subjects with originally relatively low discrepancy scores were chosen for these categories. Because of this procedure the question arises as to whether the observed shifts in level of aspiration may not simply be explained as a regression to the performance level of the individual and so there would be necessity for bringing the concept of the group into the picture at all. It was for this reason that the control groups were split into groups with a high discrepancy score in Situation and groups with a low discrepancy score in Situation I. If the regression theory is to be at all tenable, then these control groups should shift towards their performance level. If no significant shifts are observed in these control groups, then we have no alternative but to discard the regression hypothesis. In column three are given the differences between the discrepancy score in Situation I between the "expect" and "like" groups. We may see that the differences between these two are consistently in the same direction. That is, for every subdivision, the "intend" group had a larger original discrepancy score on
the average than did the expect group. We shall speak more of this difference between the "like" and "expect" categories later.

The fourth column in the table gives the mean discrepancy scores for the different groups in Situation II. The status of the individual's estimates with respect to the performance of the group with which he is being compared, that is, the discrepancy between the individual's estimate and the scores of the group to which he is being compared may be read directly from this column by simply adding or subtracting 2, which was the distance on the average between the performance of the individual and the performance of the group. The quantity of 2 would be added to the figure in the fourth column for this purpose whenever the individuals making up the category were scoring above a group in the second situation, and the same quantity would be subtracted from those categories which were below. It must be remembered that throughout the table a minus sign is indicative of the downward direction, and no sign, which means a positive sign, is indicative of the upwards direction.

The fifth column is the difference between the second column and the fourth column, that is, the change in the discrepancy score from Situation I to Situation II which we call the Change Score. The sixth and seventh columns
give the value of "t" for these changes and the level of significance of these "t" tests. Throughout the table the hypothesis being tested by means of the "t" test is that the change is not significantly greater than zero change. In other words, on the assumption that in the total population no change occurs, what would be the probabilities of getting a change of the observed magnitude in a random sampling from the population.

Let us examine column five carefully while recalling the predictions which we made as to what should occur. Of those subjects who in the second situation were placed above a high school group, the discrepancy score of the "expect" group does not change significantly while the "like" group does go down significantly, specifically, a downward shift of 2.7 points. Our prediction for this category was that if the accepted status of college students being above high school students was recognized then no shift would occur, but if it was rejected, then scoring above this group might be regarded as success and the level of aspiration would go down. As far as the question of under what circumstances would such status be accepted and under what circumstances would it be rejected, it was stated that when acceptance would mean success it would tend to be accepted but when acceptance would mean failure it
would tend to be rejected. The reality group, however, would not be able to reject such normal status easily because of the fact that they were tied down to reality. On the irreal level, however, the hypothesis was that such manipulation would be easier. Thus we find the results thus far in accordance with our predictions. The expect or reality group cannot succeed in ignoring the normal status and so, being above the high school group does not change the meaning of the situation for them and their level of aspiration remains essentially on the same level. The intend or irreality group, however, can succeed in rejecting or ignoring the normal status and their level of aspiration does go down significantly.

We find an analogous situation in the opposite direction among those subjects placed below a high school group. Here, in accordance with our predictions, the expect group changes significantly, their level of aspiration goes up since they feel failure in scoring below the group and want to reach the group level of performance. Here of course the "expect" group accepted the normal status of what should be. The "like" group, however, does not change significantly. To understand this it must first be realized that in this situation acceptance of the normal status inevitably means a feeling of failure for
while normally the college student should be above the high school group, here he is scoring below them. Therefore, the tendency would be to avoid such acceptance and the like group is able to accomplish this and thus avoid the feelings of failure and their level of aspiration does not change significantly.

Let us now examine the "above college" group. Here, as would be anticipated, both the "expect" and the "like" groups shift their level of aspiration downwards significantly. Here the individuals are scoring above a group of which they consider themselves members and so feel success and the downward shift of the level of aspiration is observed. Just as we found, in the comparison between the total "expect" and total "like" categories, and in accordance with the hypothesis that a force acting on the level of irreality will produce a greater change than an equal force on the level of reality, so we find here that the "intend" group shifts downward to a much greater degree than does the "expect" group. Although in both cases the shift is significant statistically, the magnitude of the shift for the "like" group is much greater.

Correspondingly, in the "below college" category both the "like" and the "expect" groups shift their level of aspiration significantly upwards. One might well ask
at this point why the "like" group shifts at all. Since accepting the identification with the group means failure, why does the individual on the level of irreality not reject this identification and thus avoid the ensuing feelings of failure. The answer is that this tendency to reject the identification does operate. Since the individuals here are being compared to a group of which they are obviously members, such rejection cannot be accomplished as easily as it might be in other cases. We do have some evidence, however, which might be interpreted as showing that there is a partial rejection. We found from Table Ib that our hypothesis of equal forces producing more shift on the level of irreality than on the level of reality was more or less substantiated. The "like" group on the whole had a greater average absolute shift than did the "expect" group. We also saw this phenomenon in evidence in the results of the "above college" category. Yet we find, comparing the magnitude of the shifts in level of aspiration of the "expect" and "like" groups in the "below college" category that there is not much difference between the two. If our hypothesis is correct, then this same magnitude of change would indicate that the force acting on the level of irreality was weaker than the force acting on the level of reality. Now to what are we to attribute this difference
in strength of induced forces since the situation was identical for both the "expect" and "like" groups except for the different experimental question used to elicit their estimates of future performance. A possible interpretation is, of course, that the intend group did to a certain extent succeed in rejecting the group and therefore the force was not so strong as it would be if the identification with the group was complete.

In the "above Ph.D." category we find a situation analogous to the "above college" category. Here acceptance of normal status means success and the acceptance is made, the "like" group again changing more than the "expect" group in response to the same forces. The results for this category seem clear enough and corroborative of our theory.

The "below Ph.D.", however, presents results which do not seem to fit readily into the hypotheses which we have formulated. The normal status obviously places the college student below the Ph.D. group and so scoring below this group should mean neither success nor failure and should not produce any change in the level of aspiration of the individual. In the "expect" group which we have found is more or less compelled to accept ideas of normal social status, we find there is no significant change in the level of aspiration. The "like" group, however, shifts
significantly in a downward direction. Obviously the "like" group has not rejected the normal status because such rejection would mean feelings of failure since they are scoring below the group and their level of aspiration would have gone up if such were the case, which it does not. On the contrary, it goes down. Then we cannot very well explain this result on the basis of rejection of normal status. Then if the intend group does accept the status, why the shift and how are we to explain it? This specific case involves another factor which we have not found necessary for any of the other instances. There is the possibility that the Ph.D. group performance level may have set a limit beyond which they could not raise their goals. Since they should not be scoring as much as the Ph.D. group, since that group represents a higher level of achievement, than obviously their previous goals had been placed too high and they were now satisfied with a position only two points below the Ph.D. group. Their estimates thus came down as observed.

The four sets of control individuals may be surveyed together since none of them give any indications of significant changes in the discrepancy score. Neither the "like" control nor the "expect" control, neither those with originally low discrepancy scores nor those with originally high discrepancy scores, show significant change. We may
thus be fairly certain that the observed changes in the experimental groups were due to the altered situation, that is, they were directly due to the fact that in the second situation they knew what a group of others had scored on the tests. Because of the control group, we may now rule out the hypothesis that the change in the discrepancy scores was merely the phenomenon of regression. We may rule out the hypothesis that it was due to the subjects' having more experience with the tests in the second situation than they had in the first situation, and we may rule out the suggestion that the lapse of a week changed their attitudes towards the tests. We must accept the conclusion that the observed changes were due to the experimentally changed situation and were made as responses to these changes in the behavioral field.

In Figure 5 the change scores for these different experimental groups has been diagrammatically represented. The control group has been omitted from this figure since the changes of the control groups are consistently insignificant. Several trends and comparisons which are not readily discernible from Table II become very apparent as we examine the bar graph. In our discussion involving Figure 1, it will be remembered, we came to the conclusion that if our theories were correct as to the nature and
Figure 5
CHANGE IN DISCREPANCY SCORE
FROM FIRST TO SECOND SITUATION
dynamics of level of aspiration, then the changes in discrepancy scores in a downward direction should be of greater magnitude than the changes in an upward direction. An inspection of Figure 5 clearly shows this to be the case thus lending support to the theories which were the basis for our prediction in this case. In the figure we can also see in graphic form the result which was already discussed of the "like" group changing more than the "expect" group. This relationship is very clear in the case of the downward shifts. In the case of the upward shifts, however, this relationship is not present at all. We remember that the upward shifts came in response to induced feelings of failure, and since the "like" group could avoid this failure by rejecting the group we should certainly expect this relationship to disappear when the shifts were in the upward direction. There also exists a relation between the magnitude of the obtained change scores and the status of the group with which the subjects were compared. Thus for both the "expect" and "intend" groups the magnitude of the change score increases when the shifts are downwards as we go from comparison with a high school group to comparison with a Ph.D. group. This is understandable since scoring above a Ph.D. group is better than scoring above a college group which in turn is better than scoring above a high school
group. For the upward changes there is a consistent trend for the "expect" group. Here the magnitude of the changes decreases as we go from comparison with a high school group to comparison with a Ph.D. group. And in this case it is also understandable since scoring below a group of high school students is worse than scoring below a group of college students which is in turn worse than scoring below a group of Ph.D. students.

These trends suggest that these changes in discrepancy score which we have observed and graphed are really responses to changes in the forces entering the situation. The greater the force, it seems, the greater is the magnitude of the change. It would even seem that these changes can be used as an indirect measure of the force exerted.

These trends, however, suggestive as they may appear on a graph, may or may not be significant. The significance of the various comparisons observed in Figure 5 may be tested by the method of analysis of variance which was devised by Fisher (6) and adapted to psychological and educational research by Lindquist (23).

In Table III, page 57, the results of the analysis of variance for the "like" category is presented. The analysis is done by the presented two way table so that all of the experimental categories are included. The analysis
### TABLE III

**ANALYSIS OF VARIANCE FOR INTEND CATEGORY GROUPS BY POSITION**

**ABSOLUTE CHANGES IN DISCREPANCY SCORES**

<table>
<thead>
<tr>
<th></th>
<th>High School</th>
<th>College</th>
<th>Ph.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above</td>
<td>2.674</td>
<td>3.133</td>
<td>3.601</td>
</tr>
<tr>
<td>Below</td>
<td>.528</td>
<td>1.148</td>
<td>1.455</td>
</tr>
<tr>
<td>Total</td>
<td>32.02</td>
<td>42.69</td>
<td>50.56</td>
</tr>
<tr>
<td>Mean</td>
<td>1.601</td>
<td>2.141</td>
<td>2.528</td>
</tr>
</tbody>
</table>

\[ \text{GT} \times \text{GM} = 262.04 \]

<table>
<thead>
<tr>
<th>SS</th>
<th>df</th>
<th>( V )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Positions</td>
<td>65.68</td>
<td>1</td>
</tr>
<tr>
<td>Between Groups</td>
<td>8.89</td>
<td>2</td>
</tr>
<tr>
<td>Remainder</td>
<td>.06</td>
<td>2</td>
</tr>
<tr>
<td>Between Cells</td>
<td>74.43</td>
<td>5</td>
</tr>
<tr>
<td>Within Cells</td>
<td>136.26</td>
<td>54</td>
</tr>
<tr>
<td>Total</td>
<td>210.69</td>
<td>59</td>
</tr>
</tbody>
</table>

Between Groups Variance divided by Within Cells Variance = \( \frac{4.35}{2.52} = 1.726 \) for 2 and 54 df, significant at 20% level.

Between Positions Variance divided by Within Cells (error) Variance = \( \frac{65.68}{26.07} = 26.07 \) for 1 and 54 df, significant beyond 1% level.

The Interaction (Remainder) Variance is not significant.
is in terms of absolute change in the discrepancy scores. This type of analysis in this specific situation has three possibilities. Firstly we can test the significance of the difference in absolute change scores between those who were placed above a group and those who placed below a group. Secondly we may test the significance of the difference in absolute change scores between those compared to a high school group, those compared to a college group, and those compared to a Ph.D. group. Thirdly we may test the significance of any interaction between the position the subjects were in relation to the group and type of group they were compared with. The question of interaction might perhaps best be explained by giving examples of the extreme cases. If the relative proportion of the responses of the "above" and "below" categories to the different types of comparison groups were exactly the same for all the comparison groups there would be no interaction. If the relative proportion changed radically from comparison group to comparison group, then there would be a high interaction.

The results of the analysis in Table III are: The between positions variance is significant, which means that in the "like" category those who were placed above a group changed more than those who were placed below a group. The between comparison groups variance is significant
only at the twenty per cent level. Our interpretation of this is that there is a suggestive trend of greater changes in the level of aspiration as the subjects are compared to high school, college and Ph.D. groups, the least change occurring in the high school group and the greatest in the Ph.D. group. Making a definite conclusion on the basis of this is questionable though since the level of significance is very low. We would prefer not to state it definitely but leave it more or less of an open question. The trend though is consistent not only for the group as a whole but also for the "above" and "below" categories separately. The interaction variance is not significant which means that the responses of the "above" and "below" categories to the different comparison groups is essentially the same from comparison group to comparison group. In Table IV, page 60, is presented a similar analysis for the "expect" category. Here the results of the analysis are quite different. The between positions variance is not significant which means that for the "expect" group the amount of change is the same whether they are placed above or below a group. The between groups variance is not significant which means that the amount of change is essentially the same for each comparison group. The interaction variance is, however, significant which means that the above and below categories
### TABLE IV

**ANALYSIS OF VARIANCE OF EXPECT CATEGORY GROUPS BY POSITION**

**ABSOLUTE CHANGES IN DISCREPANCY SCORES**

<table>
<thead>
<tr>
<th></th>
<th>High School</th>
<th>College</th>
<th>Ph.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above</td>
<td>0.529</td>
<td>1.375</td>
<td>2.019</td>
</tr>
<tr>
<td>Below</td>
<td>1.763</td>
<td>1.01</td>
<td>0.640</td>
</tr>
<tr>
<td>Total</td>
<td>20.92</td>
<td>25.85</td>
<td>26.59</td>
</tr>
<tr>
<td>Mean</td>
<td>1.046</td>
<td>1.195</td>
<td>1.329</td>
</tr>
</tbody>
</table>

\(GT \times GM = 84.847\)

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Positions</td>
<td>0.195</td>
<td>1</td>
<td>.195</td>
</tr>
<tr>
<td>Between Groups</td>
<td>0.826</td>
<td>2</td>
<td>.415</td>
</tr>
<tr>
<td>Remainder</td>
<td>20.26</td>
<td>2</td>
<td>10.15</td>
</tr>
<tr>
<td>Between Cells</td>
<td>21.28</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Within Cells</td>
<td>52.84</td>
<td>54</td>
<td>.9785</td>
</tr>
<tr>
<td>Total</td>
<td>74.12</td>
<td>59</td>
<td></td>
</tr>
</tbody>
</table>

Interaction Variance = 10.15 = 10.35 for 2 and 54 df, significant at 1% level.

Within Cells Variance = .9785

Between Positions and Between Groups Variance are not significant.
act differentially on the different comparison groups. We can see the meaning of this interaction clearly if we notice that the "above" category increases in change score as we go from high school to Ph.D. while the "below" group decreases.

We can probably discuss these results most adequately by a comparison of the analyses for the "expect" and "like" categories. We may remember that we predicted that those who were placed above a group would change more than those who were placed below a group. Now we see, that while the results for the "like" group are consistent with this prediction, the results for the "expect" group are not. It seems that our predictions on this point have been incorrect and that there is actually no difference between the amount of change in the level of aspiration between those placed below a group and those placed above a group. The explanation of the difference shown by the "like" group may be found in the much discussed idea that on the level of irreality failure may be avoided by rejection of the group situation. In other words the "like" group responded less to the failure situations because they were able to avoid the failure feelings to a large extent. This bit of non-corroborative data does not, however, affect our theory as a whole since the bases of this
prediction were more or less independent of the rest of our theories, simply involving a guess as to what would be the extent of the changes of forces acting on the level of aspiration.

Now we come to the difference in the responses to the different groups. This time we again have differences between the "expect" and "like" categories but here they are not contradictory in terms of our theory. Here we find that the differences between the responses to the different comparison groups for the "like" category, while not being significant at an acceptable statistical level, is yet very suggestive and the consistency lends strength to this interpretation. Here it seems that regardless of the position in relation to the comparison group, the subjects change in proportion to amount of prestige which the group has for them. Thus the high school group with the least amount of prestige induced the least amount of change, and the Ph.D. group with the greatest amount of prestige induced the greatest change, the college group falling between the other two. The "expect" group on the other hand does not show this at all. This does not mean that the "expect" group responded in the same way to all the comparison. We can see that this is not so by our significant interaction variance. With the "expect" group, however, as we would
anticipate if a person were behaving realistically, the response to the comparison group depended to a great extent on the position of the individual in relation to the group. Thus being above high school and below Ph.D. both induce no significant change for the "expect" group. This different pattern of response of the "like" and "expect" categories lends weight to the explanation of the differences between these two in terms of the reality-irreality distinction.

Our results have thus far given a fairly adequate picture of how shifts in level of aspiration may be induced and of the direction which these shifts will take. As to the extent or magnitude of the shift our evidence is at present meager. Reviewing our evidence on this point we see that the hypothesis that shifts downwards will be of greater magnitude than shifts upwards has been discarded. We have found, however, that the magnitude of the shift depends for the reality category upon the position they hold in relation to the comparison group while for the irreality category it depends probably to some extent upon the prestige of the comparison group. We have also found that the irreality category shifted to a greater degree than did the reality category. The question is, can this be stated in the form—the more irreal the level of aspiration, the greater will be the magnitude of the shift in response to altered forces.
We can answer this question simply by correlational techniques. If we define reality as the placing of the level of aspiration precisely at the performance level then any departure the level of aspiration may take from the level of performance may be looked upon as a step towards irreality. Then by correlating the absolute deviation from zero of the discrepancy score in Situation I with the absolute change score we may get a measure of the relational interdependence of these two items. This correlation for the "like" group for 60 cases is .666. For the "expect" group the correlation drops to .421 which is still significantly greater than zero. This difference in the correlation from the expect to the intend group is quite understandable since the "expect" group represents a more homogeneous group with respect to the reality factor whereas the "like" group contains individuals ranging from reality to irreality. These two correlations are fairly high and we should not expect them to be higher considering that this is only one of the many possible factors which influence the extent of the shift in level of aspiration. What some other factors are and their influence upon the magnitude of the shift will be concretely discussed later.

Interview Data

Up to this point we have been dealing only with
the observed changes in the overt estimates of the subjects taking these overt estimates as measures of the level of aspiration. The meaning which these estimates had for the subjects in the experiment and the meaning which the situations had for them are as yet unknown to us. We do not know whether or not a change in the observed estimate also meant a change in the momentary goal strivings of the individual. We do not know whether the situations had different meanings for the reality group than they had for the irreality group. We may possibly find out something about these questions from an analysis of the interview data for each subject.

For this purpose the interviews were analyzed into three different sections. These were: (1) the original aim of the estimate and how the estimate changed in Situation II, (2) reaction of the subject to the scores and estimates of the group and to their position in relation to the group, (3) feelings of success and failure in Situation I and in Situation II.

The first of these would give us some idea of whether the observed changes in the discrepancy scores of the subjects was actually a change in the meaning of the estimates to them. That is, whether the situation was really different for the subject. Let us examine these
interviews with respect to the changes in the meaning of the estimate from Situation I to Situation II. Of the five subjects in the "like - above high school" group, four reported that their estimates had changed in meaning from representing a goal in Situation I to not representing a goal in Situation II. It will be remembered that the mean discrepancy score for this group shifted downwards significantly. Typical of the reported changes are the following taken from the interviews:

(First situation) "The estimate was a challenge to me to do what I thought I could do. It was something to strive for." (Placed above high school group) "I didn't care how high I scored today as long as I was doing better than the group. There was no striving at all in the estimates today."

(First situation) "The estimate was what I thought I ought to get and I was trying hard to reach the estimate I set for myself." (Placed above high school group) "The estimates today were just a method of competing with the high school group. I wasn't trying for a high goal today at all."

The one subject in this group who did not report his estimate changed in meaning actually did not change his discrepancy score either, whereas the others did. His statements were:

(First situation) "My estimates represented a very high goal which I was trying to reach although I probably couldn't." (Placed above high school group) "The estimates meant about the same to me today as they did last week."
In the "expect - above high school" group, which did not shift their level of aspiration significantly, four of the subjects did not report any change in the meaning of the estimate. They were of the type of the last example given, or:

(First situation) "My estimate was made on the basis of what I had scored before. I tried to hit an average and tried to make it an impartial estimate." (Placed above high school group) "I thought I should do a bit better than the high school group and so estimated one or two points above their performance. The estimate meant about the same as it did last week."

The one subject who did not follow this pattern actually did change his discrepancy score downwards and reported:

(First situation) "The estimate was what I wanted to get on the next test. The estimate represented my idea of what a 'good' score would be." (Placed above high school group) "The estimate today was what I thought I would get. There was less striving today than last week because I felt a certain measure of satisfaction in being above the high school group."

Of the "like - below high school" subjects three did not change the meaning of the estimates. This group, it will be recalled, did not shift significantly. Two of the subjects did, however, as:

(First situation) "Estimate was what I thought I ought to be able to get." (Placed below high school) "Today I was determined to do better and I think my estimates went up a little because I was trying harder today. The estimates today were a more definite goal."
In the "like - above college" group, which shifted their level of aspiration down significantly and in the "expect - above college" group, which did likewise, all of the subjects reported shifts in the meaning of their estimates from being a goal in the first situation to not being a goal in the second. Some examples are:

(First situation) "I kept my estimates above my scores. The estimate was a goal to reach." (Placed above college group) "Today my own scores didn't enter into my estimates. I didn't try to do better than last week. My goal today was simply to stay above the group."

(First situation) "I based the estimates on my previous scores and tried to keep them a little above the average." (Placed above college group) "My estimates today were a minimum and I actually expected to do better than my estimates."

The examples thus far given are sufficient to show the type of changes in the meaning of the estimates which occur.

The changes in meaning of the estimates for the rest of our experimental groups were: for the "like - below college" group, four reported that their estimates changed from being a low goal to being a high goal, or from being an average of what they were actually doing to being a goal. The other subject reported no change in the meaning of the estimate. This subject actually did not change his discrepancy score. For the "expect - below
college" group three reported shifts in meaning in the upwards direction while two reported no change in the meaning of the estimate. One of these latter two actually did shift his discrepancy score appreciably. For both the "like - and "expect - above Ph.D" groups all the subjects reported changes in the meaning of the estimates which indicated a downward direction. For the "like - below Ph.D" group all of the subjects again reported changing the meaning of the estimates in a downward direction. Since the results of this group were rather difficult to interpret, an example of the type of change taking place here might be helpful:

(First situation) "My estimates in the information tests fluctuated between an ideal impractical goal and what I thought I could get. In the synonyms the estimates remained a high ideal goal which I knew I would not reach."
(Placed below Ph.D.) "Today my estimates took the position of a goal only slightly above my own scores. I was satisfied with scoring below the Ph.D. group."

In the "expect - below Ph.D." group all the subjects retained essentially the same meaning in their estimates from Situation I to Situation II.

From this we can see that the observed shifts in discrepancy score were not meaningless shifts but were accompanied by real changes in the meaning of the situation for the subjects.

The second item in the analysis amounts to an
estimate of how much the group influenced the individual in the placing of his estimates in the second situation. There are several factors concerned in this analysis. The individual subject might be influenced by the scores which he was told the group had made, he might be influenced by the estimates he was told the group had given, he might be influenced by the difference between the group's scores and their own performance, and he might be influenced by the relation between his own scores and the scores of the group. All of these factors, none of them, or any combination of some of them might influence the subject. All of the subjects who reported that the group to which they were compared did influence them in any way reported that the main influence was the group scores and the relation between the individual's performance and the group scores. Very few individuals admitted being influenced by the estimates of the group, but when such influence was reported it was in the nature of a tendency to conform to the group way of estimating, that is, a desire not to behave differently from the group.

It seems that the amount of influence the comparison with the group had upon the individual would have much to do with the extent of the change in discrepancy score if this change were at all due to comparison with the group.
In order to determine the degree of relationship between these two variables some quantitative measure of the extent of group influence felt by the subject was necessary. For this reason statements from the interviews for each subject were rated by three persons on a scale from 0 to 10, where zero represented no influence of the group at all and ten represented a maximum amount of influence. Examples of statements getting a rating of ten are:

"I though I should be able to do about two better than the group. My own performance didn't enter into my estimates at all. I felt bad or good about my scores only in relation to the scores of the group. The low estimates of the group helped me to lower my estimates."

"The fact that I was below the group made me raise my estimates up between my own performance and the scores of the group. I wanted to reach the group. The group overestimation made it easy for me to raise my estimates. The fact that the group never reached their estimates rather justifies my overestimation."

Some examples of statements receiving a rating of zero are:

"The scores and estimates of the group had nothing to do with my estimates because the group didn't mean anything to me."

"The estimates meant absolutely nothing to me today, and the group had no influence on them. My estimates were completely divorced from anything but my own scores."

Some examples of statements lying in between these two extremes are:

"I didn't think I was scoring as much above
the high school students as I should be and so I put my estimates 2 or 3 points above their scores. The underestimation of the group didn't influence me."

"I based my estimates partly on my own scores and partly on the group averages. I felt pretty about being above the group. The fact that the group estimated too low didn't mean much to me."

Intercorrelations were calculated between the ratings of the three different persons to get some idea of the reliability of the ratings. The three intercorrelations are .81, .922 and .831. These reliability coefficients were regarded as sufficiently high and the ratings of the three persons were averaged to the nearest whole number for each subject to get the final rating for that subject. The correlation between these ratings of how much the individual was influenced by the group and the amount of change in the discrepancy score from Situation I to Situation II was then computed. For the "expect" category this correlation is equal to .755, and for the "intend" category it is equal to .582. Thus we see that the amount of group pressure felt by the subject does have an appreciable relation to the amount of change in his level of aspiration.

The third item of analysis obviously involves two factors, the feelings of success or failure in Situation I and the feelings of success or failure in Situation II. The changes in feelings of success or failure from Situation
I to Situation II might also have some relation to the amount of change in the discrepancy score. The total interviews were therefore rated for success and failure feelings in Situation I and then again for Situation II by the same three persons. The ratings for both situation were done on a scale of from 5 to -5, 5 representing an extreme amount of success feelings, -5 representing an extreme amount of failure feelings and zero representing rather neutral feelings, neither success nor failure. The interreliabilities for the three raters for Situation I are .929, .935 and .940. The interreliabilities of the ratings for Situation II are .931, .895 and .856. The ratings of the three persons were again averaged to give the final rating for each individual. The absolute difference between the amount of success-failure feelings in Situation I and Situation II as determined by these ratings was then calculated. Thus a quantitative measure of the change in feelings of success and failure for each subject was obtained. These changes in success-failure feelings, regardless of direction were then correlated with the absolute change in discrepancy score. This correlation for the "expect" category is equal to .171, and for the "intend" category it is equal to .456. We thus see that although the relation is rather small there is some positive relation between these two variables. In
other words, the more feelings of success and failure were changed, the more the tendency was for a greater change in the discrepancy score.

Thus far we have encountered three factors which are all related positively to the extent of the change in discrepancy score. These three factors are: the deviation from zero of the discrepancy score in Situation I which was taken as a measure of the deviation from the level of reality, the change in feelings of success and failure from Situation I to Situation II and the amount of influence which the group had on the individual. In order to determine to what extent these three factors combined determine the magnitude of the change in discrepancy score, multiple correlations were computed between these three factors on the one hand and the absolute change in discrepancy score on the other hand. Table V, page 75, shows the computation of this multiple correlation for the "expect" group and Table VI, page 76, for the "like" group. The multiple correlations as may be seen in the tables are .882 and .781 respectively for the expect and intend categories. These rather high correlations give us a rather good indication of what factors are influential in determining the magnitude of shift in level of aspiration. We have succeeded in isolating three of these factors. There are undoubtedly
<table>
<thead>
<tr>
<th></th>
<th>(1) Absolute Change in Discrepancy Score</th>
<th>(2) Absolute Discrepancy Score in Situation I</th>
<th>(3) Change in Success-Failure Feelings</th>
<th>(4) Amount of Group Influence</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1</td>
<td>1.189</td>
<td>M2 = .893</td>
<td>M3 = 2.80</td>
<td>M4 = 5.467</td>
</tr>
<tr>
<td>G1</td>
<td>1.12</td>
<td>G2 = .833</td>
<td>G3 = 2.66</td>
<td>G4 = 2.73</td>
</tr>
</tbody>
</table>

\[
\begin{align*}
  r_{12} &= +.421 \\
  r_{13} &= +.171 \\
  r_{14} &= +.755 \\
  r_{23} &= -.124 \\
  r_{24} &= +.031 \\
  r_{34} &= -.0014
\end{align*}
\]

\[R_1(2,3,4) = +.882\]
TABLE VI

MULTIPLE CORRELATION BETWEEN ABSOLUTE CHANGE IN DISCREPANCY SCORE AND ABSOLUTE DISCREPANCY SCORE IN SITUATION I, CHANGE IN SUCCESS-FAILURE FEELINGS FROM SITUATION I, TO SITUATION II, AMOUNT OF GROUP PRESSURE, FOR INTEND CATEGORY

<table>
<thead>
<tr>
<th>(1) Absolute Change in Discrepancy Score</th>
<th>(2) Absolute Discrepancy Score in Situation I</th>
<th>(3) Change in Success-Failure Feelings</th>
<th>(4) Amount of Group Influence</th>
</tr>
</thead>
<tbody>
<tr>
<td>$M_1 = 2.0898$</td>
<td>$M_2 = 2.1303$</td>
<td>$M_3 = 3.30$</td>
<td>$M_4 = 6.03$</td>
</tr>
<tr>
<td>$G_1 = 1.889$</td>
<td>$G_2 = 1.670$</td>
<td>$G_3 = 2.56$</td>
<td>$G_4 = 2.75$</td>
</tr>
<tr>
<td>$r_{12} = +.666$</td>
<td>$r_{23} = +.203$</td>
<td>$r_{34} = +.459$</td>
<td></td>
</tr>
<tr>
<td>$r_{13} = +.456$</td>
<td>$r_{24} = +.361$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$r_{14} = +.582$</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

$R_1(2,3,4) = +.781$
many more which probably accounts for the correlations not being higher than they are. Probably most of these other factors will be found in the personality of the individual and not in the behavioral situation or the environment.
CHAPTER V

TOPOLOGY OF THE EXPERIMENTAL SITUATION

There were two main theoretical predictions: (1) that certain changes in the level of aspiration would result from the knowledge of the performance of others, and (2) that there would be certain differences between the reality and irreality categories.

Success at a high level is more attractive than success at a low level. In addition certain levels of performance possess greater undesirability of failure than others. Failure on scores higher than the individual's present performance level have progressively less negative valence since he would not feel so badly about not reaching a score which he had not reached up to that point. The form of this curve of negative valence of failure for scores below the individual's present performance level is debatable. If one looks at the situation as a relatively permanent one then the individual should feel progressively worse, the lower the attempted score that he fails on. Looking at the momentary situation, however, this is probably not the case. If, for example, the individual has been scoring at eight, the prospect of a failure at a level as low as four on the next test is too far removed from his normal performance to mean much to him. Certainly,
greater attractiveness. Thus the force to achieve success will have most strength where the valence of success is greatest. The undesirability of failure must also be taken into consideration.

Thus certain regions of performance might possess greater undesirability of failure than others. Taking the same individual who has achieved success on score 8, failing on score 8 has a rather large negative valence for him now, or in other words, the undesirability of failing after trying for score 8 is rather high since he has already succeeded on it. Failure on scores higher than 8 have progressively less negative valence since he would not feel so badly about not reaching a score which he has not reached up to that point. The form of this curve of negative valence for scores below 8 for this individual is debatable. If one looks at the situation as a relatively permanent one then the individual should feel progressively worse the lower the attempted score that he fails on. Looking at the momentary situation, however, this is probably not the case. The main point is, in setting the level of aspiration for the next task, how does the individual regard failure at these lower levels of performance. It seems that since he has been scoring 8, a failure at a level as low as 4 is simply too far removed from his ordinary performance to mean much to him. Certainly
there is much evidence in the field that would tend to show that the undesirability of failure reaches a maximum at about the present level of performance of the individual. It is therefore likely that this curve of undesirability of failure falls off progressively from its maximum at the level of present performance.

These curves for a hypothetical individual who has been performing at about 8 are shown in Figure 6a, page 81. Following Lewin (22) and Escalona (5) our individual may now be regarded as being in an overlapping situation, one region being the positive valence of success and the other being the negative valence of failure. The strength of these forces will depend upon the respective potencies of the two situations. Following Escalona (5) we have defined potency in this instance as the probability of achieving success or failure on any particular score. The dotted line in the figure represents this probability of achieving success which would be the potency of the desirability of success region at any point. The potency of the undesirability of failure region would be the value of this subtracted from one which would of course give the probability of failing. The resultant of forces at any point would then be the force towards success as we have here defined it times its potency minus the force to avoid failure times
Figure 6

SHIFTS IN LEVEL OF ASPIRATION RESULTING FROM SHIFTS IN CURVE FOR VALENCE OF SUCCESS
its potency. The lower curve in the figure gives the curve of this resultant of forces. As can be seen this curve reaches its maximum at 9 and so, assuming these curves to correspond to the psychological state of our individual, his level of aspiration for the next task would be at 9.

Now how are these curves changed when the individual is scoring below his own group? This is represented in Figure 6b. Scores which have previously seemed attractive to the individual now are not attractive since the group is scoring more than that. Therefore the curve for the positive valence of success has shifted upwards in the scale and has a sharper rise since the region of success is now rather clearly defined by the group. Let us also assume that the failure curve remains constant. The individual, already being in a failure situation, we can see no reason for the negative valence of failure to increase at any point nor can we see any reason for it to decrease. The probability of achieving success also remains constant if the individual is realistic in his view of the situation. The changing valences of success, however, have now produced a different curve of the resultant of forces which now reaches its maximum at 10 which would be the level of aspiration in this situation. Thus we see that the level of aspiration would go up one point as a result of this comparison with the group.
Likewise we see a shift in the valence of success curve when the individual is scoring above his group as shown in Figure 6c. Here scores which is Situation I were not at all attractive are now fairly attractive since the group is only scoring at that level. Again assuming the failure curve and the potency curve to remain constant the new curve for the resultant of forces reaches its maximum at 8 which represents a shift downwards of one point in the level of aspiration from Situation I to Situation II as a result of the group comparison.

Let us now examine the differences between the reality and the irreality groups. The main point which needs clarification here is the question of exactly how does the irreality group function in the second situation. We have stated that this functioning on the level of irreality takes the form of being able to accept or reject the normal social status in accordance with which procedure will bring success and avoid failure. This will now be more strictly defined. In Figure 7 we have represented what the realistic idea of relative status among high school, college and Ph.D. groups might be. There is, of course, overlapping with the high scorers in a lower group scoring more than the average of the next higher group. It is with this frame of reference that the reality group must view the
Fig. 7: Realistic Idea of Status of Different Groups on a Performance Matrix
situation. Thus if they are scoring above the average college student, they feel that they are in that region of their group designated as high and if they are scoring below the college group they feel they are in that region of their group designated as low. Similarly if they are scoring above the high school group, according to that matrix, they are probably in the region of their own group designated as average. If they are scoring below the high school group they must be in that region of their own group designated as low. Again if they are scoring below the Ph.D. group they are probably in the average region of their group while if they are scoring above the Ph.D. group they must be in the high region of their group.

The irreality category can, however, set up different matrixes at will and do not have to use this realistic matrix as a frame of reference. When these individuals are compared to a college group, however, there is nothing much that they can do. They can not very well disidentify themselves with their group and so here the situation is essentially the same for them cognitively as for the reality group. When the irreality category is placed above a high school group, however, they can be unrealistic in their idea of the distance between their own group and the high school group, conceiving of it as less than it actually is and thus
imagine themselves in the high region of their own group. When they are placed below high school students they may actually reverse the direction of the difference between their own group and the high school group and thus retain their position in the average region of their group. When such an individual is placed above the Ph.D. group he can feel success without altering the matrix, but when he is below the Ph.D. group he may be unrealistic in exaggerating the distance between his group and the Ph.D. group and thus imagine himself in the high region of his own group.
CHAPTER VI
CONCLUSIONS

Two major divisions of the results may be distinguished. These are: results concerning the difference between the reality level and the irreality level, and results concerning the effect of knowledge of the performance of others on the level of aspiration.

I. We must distinguish between the level of aspiration on different levels of reality and irreality, (i.e. expectation, intention, wish, ideal goals).

A. Goals on the level of irreality are considerably and significantly higher than goals on the level of reality.

B. Goals on the level of irreality are affected to a significantly greater degree by knowledge of the performance of others than are goals on the level reality.

C. The person is more ready to maintain his feelings of success and to avoid feelings of failure on the level of irreality by changing the standards according to which he judges his own performance in relation to the performance of a group than on the level of reality.
II. Significant changes in the level of aspiration of the individual may be induced by changing the following factors in relation to the person's performance:

A. Placing an individual above a group of which he considers himself a member results in a lowering of the level of aspiration on both the reality and the irreality levels.

B. Placing an individual below a group of which he considers himself a member results in a raising of the level of aspiration on both the reality and the irreality levels.

C. Placement above a group which the individual considers inferior to his own group results in a lowering of the level of aspiration on the irreality level but results in no change on the reality level.

D. Placement below a group which the individual considers inferior to his own group results in a raising of the level of aspiration on the reality level but results in no change for the irreality level.
E. Placement above a group which the individual considers superior to his own group results in a lowering of the level of aspiration both on the level of reality and irreality.

F. Placement below a group which the individual considers superior to himself results in no change for the reality level but will result in a lowering of the level of aspiration on the irreality level.

Theoretically one may account for these results in the following manner:

Knowledge of being above or below the performance of other individuals will result in shifts in the level of aspiration only in so far as this knowledge induces feelings of success or failure by changing the frame of reference according to which performances are evaluated as success or failure.

When feelings of failure are thus socially induced so that what was previously regarded as success is now regarded as failure, the level of aspiration will shift upwards.
When feelings of success are thus socially induced, the level of aspiration will shift downwards.

III. The extent of the shift in level of aspiration.

A. This extent depends mainly upon three factors, on both the level of reality and the level of irreality.

1. The degree to which the individual is influenced by his wishes (his plane of irreality) in placing his level of aspiration.

2. The amount of influence which the group has upon the individual (determined from ratings of written interviews).

3. The strength of the feelings of success and failure resulting from the knowledge of the performance of the group.

B. On the level of irreality the shifts were least when the comparison was made with a high school group, greater when the individual was compared to a college group and greatest when the comparison group was a Ph.D. group. An explanation
of this is that on the level of irreality, in addition to the above three factors, the prestige of the group with which they are being compared is an important factor. The greater the prestige of the group, the greater will be the magnitude of the shift. This last point has not been conclusively proven.

IV. Methodologically we have shown that the verbal estimate of future performance is more closely related to the real level of aspiration (as determined by the interview data) than some previous investigators have held. We have shown that changes in the discrepancy score are accompanied by real changes in momentary goal strivings and in the feelings of success and failure of the individual.
CHAPTER VII
SUMMARY

In order to study the effect which comparison of the performance of an individual with the performance of groups of other individuals would have upon the level of aspiration, the following procedure was followed:

After having taken an initial series of tests during which a measure of their level of aspiration was elicited, the subjects were given another series of equivalent tests during which they were told the average scores for a high school group, a college group or a Ph.D. group. Since the subjects were all college students there were some individuals compared to a group of which they considered themselves members, others were compared to a group which they considered beneath their status, and still others were compared to a group which they considered above their own status. The group scores were fictitious so that for every comparison half of the subjects would be scoring below the group and half would be scoring above. During this second session a measure of their level of aspiration was again elicited.
In order to study the level of aspiration in this context in relation to different degrees of reality, the question asked to elicit the measure of the level of aspiration was varied so that half of the subjects were tied down to reality in their estimates while the other half could become more wishful in their estimates if they so desired.

After the conclusion of the two experimental sessions, each subject was given an interview during which we endeavored to discover the meaning of the situations to the subject.

We may thus summarize the obtained differences between the level of aspiration on reality and on irreality: the greater the departure of the level of aspiration from reality the higher will be the goal, the more easily will this goal be subject to change and the more easily will feelings of failure be avoided.

We may thus summarize the effects obtained of the comparison with a group upon the level of aspiration of the person: when the comparison induces feelings of success the level of aspiration will go down and when the comparison induces feelings of failure, the level of aspiration will go up.
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APPENDIX

EXAMPLES OF INFORMATION AND SYNONYM TESTS

Information Test

1. Where is the Sudan?
2. What is the capital of Pennsylvania?
3. During what season of the year is the sun closest to earth?
4. What famous Goldsmith was a pupil of Michaelangelo?
5. What is wrong with a person afflicted with strabismus?
6. Who was "never, never sick at sea -- we... hardly ever"?
7. Which of the Roman gods was two-faced?
8. Who first used antiseptics?
9. A rhythmic contraction of muscular walls which mixes food and moves it along is called?
10. What philosopher believed that we should reject all gods, and strive toward the "super-man"?
11. The man whose fourth Symphony was recently recorded, and whose biography was printed as Beloved Friend, is ---?
12. What was the status of Finland before the World War?
13. Who wrote Novum Organum?
14. What race inspired by one of Mark Twain’s stories is still an exciting partime in California?
15. What is the title of a long poem by Tennyson written in memory of a friend?
16. On what river is Rome located?
17. What name was given to the Scandinavian rovers of the sea during the middle ages?
18. The U.S. city famed for its incorruptible police system, low government cost, and socialist mayor, is ——?

19. Where was the U.S. battleship Maine destroyed?

20. What Poet-Laureate of England, dramatist, and novelist put to sea at the age of 13?

21. Who was Queen Elizabeth's mother?

22. Where is Copenhagen?

Information Test

1. Arrange in order of their birth: (a) Plato (b) Socrates (c) Aristotle.

2. What Roman emperor allowed the Christians to worship unmolested?

3. The Democratic candidate of 1928 for President was ——?

4. For what do the Initials G.A.R. stand?

5. What Spanish explorer conquered Mexico?

6. Who wrote Of Mice and Men?

7. Who wrote the Tragedy of Pudd'nhead Wilson?

8. Who wrote Leaves of Grass?


10. What state has frontage on four of the Great Lakes?

11. What is the second largest state in the union?

12. What is the capital of Louisiana?

13. Who was the "henpecked philosopher"?

14. Who searched for the golden fleece?

15. What part of a quart is one gill?
16. What is a cotton-tail?
17. What does simian mean?
18. Who was the wizard of Menlo Park?
19. To determine the chemical content of the sun, scientists have used ——?
20. The planet nearest to the sun is?
21. Who was known as the "Mad Monk"?
22. How many of the seven dwarfs wore beards?

Information Test

1. What American colony was founded by James Edward Oglethorpe?
2. How long has the American flag had 48 stars?
3. Where does "when in the course of human events ..." come from?
4. What American doctrine is known as the hands off policy?
5. Who was Nancy Hanks?
6. Who created the character, George F. Babbitt?
7. Who wrote the poem "The Lorelei"?
8. Caesar's funeral oration was given by ——?
9. Who composed the Second Hungarian Rhapsody?
10. Where is the Atlantic west of the Pacific?
11. What is the National emblem of Canada?
12. What is the capital of Sweden?
13. What does the barometer actually measure?
14. Who endowed over 2,000 public libraries in this country?
15. What is the oldest existing political party in the U.S.?

16. What Chicago utilities magnate was indicted and later acquitted?

17. The pit in the Elizabethan theatre corresponds to what part of our modern theatre?

18. How many shillings are there in a guinea?

19. The Black Death was the ---?

20. Air is composed principally of ---?

21. Quiet is related to sound in the same way darkness is related to ---?

22. If a settlement of a difference is made by mutual concession it is called a ---?

**Synonym Tests**

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