

DEFENSIVE EXTERNALITY AND THE THREAT OF FAILURE

by

JAMES T. LAMIELL

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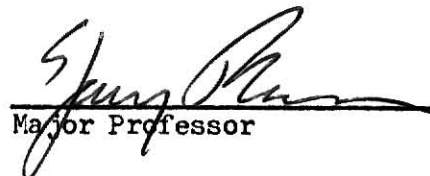
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Major Professor

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## INTRODUCTION AND STATEMENT OF HYPOTHESES

Locus of control (Rotter, 1966) is an individual differences variable which refers to the degree to which an individual sees himself as the causal agent in the occurrence of reinforcement. Individuals manifesting a general belief in a direct relationship between their own behavior and its consequences over a wide variety of situations are referred to as internals. Individuals who, on the other hand, indicate a general belief in the independence of behavior and its consequences are called externals.<sup>1</sup>

The I-E construct itself has developed out of social learning theory (Rotter, 1954; Rotter, Chance, and Phares, 1972). This theory conceptualizes behavior as a function of: 1) an individual's expectancy that a given behavior will have a given consequence (reinforcement), and 2) the value of that consequence, or reinforcement. An individual's expectancy in any given situation is viewed as being comprised both of specific expectancies and generalized expectancies. The former refer to expectancies for the occurrence of reinforcement derived from prior experiences in the same situation. That is, through frequent exposure to a given situation, the individual is assumed to develop beliefs regarding which behaviors lead to which reinforcements. These beliefs, or expectancies, are presumed to be prime determinants of behavior in that situation when it is again encountered.

Regarding generalized expectancies, social learning theory construes two types: 1) generalized expectancies for the occurrence of reinforcement, and 2) generalized expectancies for classes of problem-solving situations.

The first type represents, essentially, an extension of the concept of specific expectancies. That is, in situations where an individual has had

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<sup>1</sup>The labels "internal" and "external" are used for the sake of conversational convenience only. Locus of control is conceptualized not as a dichotomy, but as a continuum, the theoretical endpoints of which are "internality" and "externality."

little or no prior experience, he utilizes expectancies for the occurrence of reinforcement generalized from other, subjectively similar situations. This type of generalized expectancy is quite similar to the concept of generalization used by learning theorists (e.g. Kimble, 1940).

The second type of generalized expectancies refers to problem-solving strategies used by individuals in dealing with a wide variety of situations. This concept evolves from social learning theory's view of man as a "categorizing animal" (Rotter, Chance, and Phares, 1972, p. 39). The theory proposes that individuals construe situations as similar (or dissimilar) not only in terms of the reinforcers occurring in them, but also in terms of the problems presented by them, and consequently, methods for coping with them. Locus of control is viewed as a generalized expectancy of this latter type. The theory thus posits that one dimension along which an individual classifies a situation -- regardless of the behaviors and/or reinforcements associated with that situation -- is the extent to which behavior and reinforcement are causally related. Further, it is held that the locus of control strategy that one adopts will influence behavior across a wide variety of situations.

Given this conceptual structure, it follows that if one can isolate those individuals who have acquired internal locus of control beliefs from those who have acquired external beliefs, differential behaviors in certain situations ought to be predictable. Rotter (1966) describes a means, the I-E Scale (along with the appropriate reliability and validity data), for identifying internally and externally oriented individuals. Since the publication of the I-E Scale, a myriad of investigations centered on the locus of control construct have been conducted. Several reviews of this literature (Joe, 1971; Lefcourt, 1966, 1972; Phares, 1973) vivify the utility of

this construct for predicting behavioral differences in a wide variety of situations. To cite just a few examples, internals have been shown to 1) make more attempts to control the environment than do externals (Davis and Phares, 1967; MacDonald, 1970; Phares, 1965, 1968; Phares, Ritchie, and Davis, 1968; Seeman and Evans, 1962), 2) be more achievement oriented than externals (Chance, 1972; Crandall, Katkovsky, and Crandall, 1965; Crandall, Katkovsky, and Preston, 1962), and 3) show less preference for risk-taking behaviors than externals (Liverant and Scodel, 1960).

Another research area which has received some attention in the literature, and the one which is the focus of the present investigation, centers on the defensive aspects of an external orientation. The term "defensive" is here used to refer to strategies for coping with anxiety and/or threat.

Efran (1963) found that the tendency to forget failures was significantly related to scores falling at the internal end of the I-E Scale. Rotter (1966), on the basis of these results, pointed to the possible defensive aspects of an external orientation. That is, externals, having already accepted the role of fate in their lives, would presumably have less of a need to "repress" failures than would internals, who would be more apt to experience guilt feelings as a consequence of failure. Results conceptually similar to those obtained by Efran (1963) were later reported by Lipp, Kolstoe, James, and Randall (1968) and by Phares, Ritchie, and Davis (1968).

Lipp et al. (1968) presented pictures of physically handicapped persons to internals and externals who were themselves physically impaired. Results indicated that recognition thresholds for these pictures were lower for externals than for internals. Assuming that 1) pictures of disabilities are threatening to disabled people, and 2) that heightened recognition thresholds reflect denial, these results are consistent with Rotter's (1966) interpretation of Efran's (1963) results: externals have less need, by com-

parison with internals, to deny the existence of threat due to their belief that the responsibility for events lies outside their control.

Phares, Ritchie, and Davis (1968) presented internal and external subjects with both positive and negative information regarding their personalities. Results indicated that externals recalled more negative information about themselves than did internals; again, a finding consistent with Rotter's (1966) hypothesis. However, it should be noted that Phares, Ritchie, and Davis reported that externals also recalled significantly more positive information about their personalities than did internals. In any case, although Rotter's interpretation of Efran's data was rather speculative, later research has supported it reasonably well, and the notion of individuals assuming an external orientation as a defense against possible failure remains an intriguing one.

The logic underlying the concept of defensive externality might best be outlined as follows: An external is defined as an individual who indicates on a relatively large proportion of the items on the I-E Scale that forces other than himself are in control of the occurrences of reinforcement. However, responding to the items on the I-E Scale is itself a behavior. It is quite possible, therefore, that an external's responses on the I-E Scale represent 1) a veridical statement of his general view of the relationship between behavior and reinforcement, or 2) a means of avoiding responsibility for anticipated failures. It is likely that responding on the I-E Scale according to the latter strategy is associated with a rather low generalized expectancy for obtaining valued reinforcements (an individual having a high generalized expectancy for success would have little need to protect himself from anticipated failures). This possibility leads to the inconsistency of a presumably externally oriented individual -- and therefore one less likely

to make attempts at controlling the environment (see references cited above) -- anticipating future failures, and preparing to deal with those failures through responses on the I-E Scale. In short, we have an individual whose responses on the I-E Scale indicate an external orientation, but for whom the actual behavior of making those responses is indicative of an internal orientation. Within the context of achievement motivation, Rotter (1966) described the so-called defensive external as one "who (has) arrived at an external view as a defense against failure but who (was) originally highly competitive" (p. 21).

Obviously, knowledge of any given individual's responses on the I-E Scale alone provides few clues as to whether he is stating actual beliefs or engaging in defensiveness. A few attempts have been made, however, to separate "congruent" externals (those whose external responses on the I-E Scale are assumed to be veridical) and "defensive" externals (those who verbalize external locus of control beliefs as a defense against anticipated failures).

A study reported by Hamsher, Geller, and Rotter (1968) has led to the use of the Interpersonal Trust Scale (Rotter, 1967; 1971) for distinguishing defensive externals from congruent externals. In this study, Ss were administered a specially constructed questionnaire designed to assess their beliefs in and attitudes toward the Report of the Warren Commission on the assassination of President John F. Kennedy. They reported that Ss who indicated a general distrust of the Warren Commission's Report could be distinguished by their relatively low Interpersonal Trust scores and relative externality. The authors interpreted their results as follows:

This attitudinal pattern (i.e. low trust, external) is consistent with that of the 'defensive external' previously described by Rotter (1966). More common among males who are actually highly competitive and achievement oriented, this

has been understood as a projection of responsibility for failure. As conceptualized in previous research, these would be males who develop the somewhat suspicious conviction that authority figures are bent on using their positions to thwart attempts at self control of the environment and to undermine efforts toward mastery (Hamsher, Geller, and Rotter, 1968, p. 214).

On the basis of Hamsher, Geller, and Rotter's interpretation of their data, Hochreich (1968) further experimented with the Interpersonal Trust Scale as a tool for distinguishing between defensive and congruent externals. She found that defensive (low trust) externals exhibited greater responsiveness to feedback concerning their performance on a competitive skill task than did congruent externals. This relationship held only for males.

In a later study, Hochreich (1973) presented subjects with a series of stories that varied in theme (achievement versus non achievement) and outcome (success versus failure). Subjects were requested to attribute responsibility for the various outcomes by indicating the extent to which they felt the central figure in each story caused that outcome. Results indicated that, as predicted, defensive externals attributed less responsibility to story heroes under failure conditions than did congruent externals. Moreover, Hochreich found this relationship to be strongest when failures of the story heroes occurred in achievement-type situations. Again, these results held for males, but not for females.

Davis (1970) employed a somewhat different technique for distinguishing between congruent and defensive externals. Previous results (e.g. Davis and Phares, 1967; Phares, 1968; Phares, Ritchie, and Davis, 1968) had

indicated that internals are more likely to actively seek and use various sorts of information than are externals. On the basis of these results, Davis (1970) administered an action-taking questionnaire to male internals and externals on which they could indicate their interest in engaging in various methods by which their study techniques could be improved. Defensive externals were defined as those who scored high on the action-taking questionnaire; a response normally thought more characteristic of internals. As she predicted, Davis observed that defensive externals placed a higher value on academic achievement goals than did congruent externals.

Phares and Lamiell (1973) further investigated the utility of using Interpersonal Trust scores in distinguishing between defensive and congruent externals. In their experiment, subjects were given descriptions of four tests ostensibly designed to measure I.Q., and on which they would later be expected to perform. For two of the tests, descriptions consisted merely of naming them, and describing generally how they work. For the other two, however, in addition to the above information, descriptions included "built-in" rationalizations which potentially could be used by the subjects to account for any subsequent failures. Subjects were next asked to indicate 1) their preference for each of the tests, 2) the score they expected to receive on each of the tests (a measure of expectancy), and 3) the lowest score they would regard as personally satisfying on each of the tests (a measure of minimal goal level).

Results of this study indicated that defensive externals showed the greatest preference for the tests described with the built-in rationalizations (described hereafter as the "rationalizable" tests). With regard to the expectancy and minimal goal statements, no differences between the groups appeared for the rationalizable tests. However, expectancy and minimal goal statements for the non-rationalizable tests provide some interesting clues

as to the precise nature of defensive externality and also a basis for the hypotheses of the present investigation. It was found that expectancy statements of defensive externals were significantly lower than those of internals, while not differing from those given by congruent externals. On the other hand, defensive externals did not differ from internals with respect to minimal goal statements, while the difference between defensive and congruent externals on this measure approached statistical significance ( $p < .10$ , d.f. = 1,62), with defensive externals indicating higher minimal goal levels.

These data suggested, therefore, that defensive externals may differ from congruent externals primarily with respect to their criteria for defining success, while they (defensive externals) differ from internals primarily with respect to their expectancy for success. In other words, defensive externals appear to demand of themselves a level of performance equivalent to that which internals demand of themselves, yet, relative to internals, seem to have a markedly lower expectancy of achieving that level. Obviously, these results also suggest an alternative to the Interpersonal Trust Scale for identifying defensive externals.

On the basis of their results, Phares and Lamiell (1973) attempted to integrate some apparently inconsistent findings reported in the studies cited previously. Hochreich (1968) and Davis (1970) had obtained results indicating that defensive externals might be expected to behave according to their "true" (i.e. internal) locus of control beliefs. That is, responsiveness to feedback concerning performance (Hochreich, 1968) and the expression of high academic need value (Davis, 1970) are behaviors more characteristic of internals than of externals. On the other hand, there is also evidence to indicate that defensive externals may behave in ways consistent with their verbalized (external) locus of control beliefs. Attribution of responsibility for failure to external factors (Hochreich, 1973) and preference for tests which in-

clude "built-in" rationalizations for failure (Phares and Lamiell, 1973) are behaviors more characteristic of externals than of internals.

Phares and Lamiell (1973) hypothesized that this apparent behavioral inconsistency on the part of defensive externals might be resolved by consideration of two crucial variables: 1) the nature of the situation in the sense of whether the behavior in question is one on which a judgment of success or failure is likely to be made, and 2) the expectancy for success of that behavior. It may be helpful to elaborate somewhat on the logic underlying this hypothesis.

The presumed importance of these two considerations for predicting the behavior of defensive externals lies in the fact that they may determine in large part whether or not the threat of failure will be present in a given situation. It is assumed that the threat of failure will not exist in a given situation if: 1) for one reason or another, performance will not be evaluated, and/or 2) expectancy for success of the behavior(s) required in that particular situation is high.

We have already seen that defensive externals appear to have low generalized expectancies for success. Indeed, it has been suggested that defensive externality may result from such low generalized expectancies. However, we have also seen that, within a social learning theory framework, one's expectancy for the occurrence of reinforcement in any given situation is in part determined by specific expectancies acquired from prior experience in that situation. Thus, while the defensive external may have a low expectancy for success on, say, I.Q. tests in general, there may be one or more of these tests on which, through many prior experiences, he has a high expectancy for success. Faced with a situation involving such a test -- regardless of whether or not performance will be evaluated -- it is unlikely that the defensive external will perceive threat of failure. He would thus

be expected to behave in an internal fashion in this situation.

Similarly, in situations where performance, for one reason or another, will not be evaluated -- i.e. labeled "success" or "failure" -- regardless of expectancy for success, the defensive external would be expected to behave in an internal fashion. Such situations would, as in the above case regarding expectancy, also be devoid of the threat of failure, thus obviating the necessity for taking defensive precautions.

Finally, faced with a situation in which performance will be evaluated, and in which expectancy for success is low, it is expected that the defensive external would manifest more characteristically external behaviors due to the existence of the threat of failure in this situation. Indeed, it is presumably just such a situation for which the defensive external's initial verbalization of external beliefs was undertaken.

In summary, Phares and Lamiell (1973) speculated from their data that defensive externals would behave externally in situations where the threat of failure exists and internally in situations where the threat of failure does not exist. The present investigation was designed to test this hypothesis.

The present study will therefore involve the use of two experimental conditions. The first of these will constitute an approximate replication of the Phares and Lamiell (1973) study.<sup>2</sup> That is, subjects will be confronted with a situation involving achievement-related tasks in which the possibility of failure exists (hereafter referred to as the "Risk" condition). The second experimental condition (referred to as the "No Risk" condition) will be identical to the first with the exception that cues relevant to the possibility

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<sup>2</sup>The procedure for the present experiment is, in large part, identical to that used by Phares and Lamiell (in press). However, minor changes in the wording of some of the instructions and test descriptions have been effected in the interest of greater control.

of failure will be eliminated.

In the light of our previous discussion of the hypothesis formulated by Phares and Lamiell, it is predicted that:

I) in the Risk condition, both defensive and congruent externals, relative to internals, will indicate a greater preference for those tasks on which one's score might be attributed to characteristics of the tasks themselves.

II) in the No Risk condition, both defensive externals and internals, relative to congruent externals, will indicate a greater preference for those tasks on which one's score would be more clearly indicative of one's ability.

In connection with Hypothesis I above, it should be noted that there is no basis for predicting a difference between defensive and congruent externals. This follows from the notion that defensive externals are seen as being rendered functionally external in situations where the threat of failure exists. That is, the threat of failure is assumed to be the reason for the defensive external's initial verbalization of external beliefs on the I-E Scale. Thus, in situations where that threat is indeed present, characteristically external behaviors are expected. Stated otherwise, in the Risk condition there should simply be an I-E main effect.

By the same token, with respect to Hypothesis II, removal of the threat of failure from the situation presumably eliminates the defensive external's need for reliance on an external belief system thus rendering him functionally internal in that situation. Consequently, in the No Risk condition there is no basis for predicting a difference between defensive externals and internals. Accordingly, in the No Risk condition the interaction of I-E and

Interpersonal Trust should be necessary to account for preferences.

It was mentioned earlier that, on the basis of post hoc analyses, Phares and Lamiell found that, for the non-rationalizable tests, defensive externals maintained higher level of achievement standards than did congruent externals as reflected in minimal goal level statements. It was further reported that the expectancy statements of defensive externals were significantly lower than those of internals. These data suggest that discrepancy (defined as expectancy minus minimal goal) scores of defensive externals should be different from those of both congruent externals and internals. Specifically, since the expectancies of defensive externals appear to be below their minimal goal levels, it is likely that these individuals will be found to have scores falling on the negative (low) end of the discrepancy dimension. In contrast, the expectancies of congruent externals and internals would appear to be at or above their minimal goal levels, resulting in increasingly positive (high) discrepancies. It is quite possible that such discrepancies are a major factor in the defensive external's apparent need to protect himself from anticipated failures. Accordingly, within the context of the present study it is predicted that:

III) in both the Risk and No Risk conditions, for tests which reflect one's ability (the equivalent of the non-rationalizable tests in the Phares and Lamiell study), defensive externals will show significantly lower (more negative) discrepancies between expectancy and minimal goal than either congruent externals or internals.

It may be seen that, in effect, Hypothesis III proposes an alternative approach to the concept of defensive externality which is directly interpret-

able in social learning theory terms. Rotter (personal communication) has indicated that a conceptualization of defensive externality in terms of expectancy-minimal goal discrepancies would be consistent with social learning theory's perspective on defensive behavior in general (Rotter, Chance, and Phares, 1972) but, as yet, no systematic attempts in this direction have been made.

While the Interpersonal Trust Scale may indeed have some utility for identifying defensive externals, the reason for its utility, as outlined by Hamsher, Geller, and Rotter (1968) is probably less direct with respect to standard social learning theory concepts (e.g. expectancies and minimal goals) than it might be. A demonstration of the utility of defining defensive externality in terms of some relationship between I-E and discrepancy may therefore be quite beneficial from a theoretical point of view. Since, as noted above, there is no published record of prior attempts to deal with the question of defensive externality in this manner, the present effort must, above and beyond Hypothesis III, be regarded as exploratory in nature.

To sum up, the present study is designed to explore further the concept of defensive externality. On the basis of the results of prior investigations, it has been predicted that defensive externals will behave in a characteristically external fashion in a situation where the threat of failure on valued tasks exists (Risk condition) and in an internal fashion in a situation where such threat does not exist (No Risk condition).

Following Phares and Lamiell (in press), "defensive" behavior is here defined as stating a preference in the Risk condition for performing on intelligence tests which will permit the rationalization of failure, while stating in the No Risk condition a preference for more "legitimate" (non-rationalizable) tests.

Based on prior research, an attempt will be made to distinguish defen-

sive from congruent externals on the basis of their responses on the Interpersonal Trust Scale. However, measures of expectancy for success and of minimal goal level will also be obtained and their utility as an alternative method for identifying defensive externals will be investigated on an exploratory basis.

## METHOD

Several large introductory psychology classes at Kansas State University were pretested early in the semester on the I-E Scale (Rotter, 1966) and the Interpersonal Trust Scale (Rotter, 1967). From this population, 143 males were given extra course credit for volunteering to participate in the experiment. The mean and median I-E scores (scored in the internal direction) obtained for this sample were 13.49 and 14, respectively. For the Interpersonal Trust Scale the mean was 68.05 and the median 67.50.

Subjects were run in groups of from one to four. Upon entering the experimental room, they were given the following instructions:

This is a study designed to determine some of the feelings and attitudes students have toward tests which are meant to measure intelligence or I.Q. A great deal of research has been done with intelligence tests; their relationship to grades, their reliability, etc. Very little has been done, however, that tells how people feel about the particular kinds of items that compose these tests. For example, it may be that students want to succeed on certain items or subtests more than others. It is quite possible, therefore, that liking or preferring certain items or subtests more than others actually affects their performance or scores.

I have here four subtests which are included in many standard intelligence or I.Q. tests, such as the Wechsler and the Binet. I will show them to you and describe how they work. I would like you to pay particular attention to these descriptions, as I will be asking you questions per-

taining to the tests later on.

At this point, four I.Q. subtests were described: 1) the Level of Aspiration Board (Rotter, 1942); 2) the Stromberg Dexterity Test (Stromberg, 1947); 3) a symbol substitution test (similar to those appearing in the Wechsler scales); and 4) a geometrical recall test. For two of the tests, descriptions consisted merely of naming them and describing generally how they work. For the other two, however, in addition to the above information, the descriptions included some mention of a defect in the test such that one's score might not be truly reflective of his ability. The test descriptions which included such a disclaimer will be referred to hereafter as the "Rationalizable" tests. It should be noted that the disclaimer was worded in such a way as to imply that both low scores and high scores could be biased. Tests described without the disclaimer will be referred to throughout the remainder of this paper as the "Non-rationalizable" tests. The descriptions and disclaimers for each of the four tests are provided below:

Level of Aspiration Board: This is a measure of psychomotor control. It measures the extent to which one can integrate visual, muscular, and judgmental processes. It also relates to one's capacity to focus attention.

(Disclaimer): However, I should probably tell you that we've been having trouble with this board lately. Either this table or the floor is not exactly level, and it usually creates problems. It may not be grooved just right either. At any rate, any or all of these factors might influence one's score on this test.

Symbol Substitution Test: This test taps the learning process. One must learn to associate and use visual memory. Speed of reaction is important, along with manipulative abilities.

(Disclaimer): Unfortunately, some of the symbols and characters on these sheets did not copy very well -- they are rather dim. This sometimes necessitates guessing, which, of course, could affect the results on the test.

Stromberg Dexterity Test: This measures your capacity to integrate motor skills with psychological ones. It involves hand-eye associative speed and judgmental facility.

(Disclaimer): However, past studies have indicated that scores on this test may be partly due to the particular arrangement of the pegs. Thus, it is not always an accurate measure of intellectual ability per se.

Geometrical Recall Test: This test measures your ability to focus and maintain attention. It also relates to retention or recall and the ability to maintain visual imagery.

(Disclaimer): This test is rather sensitive, however, to past experience with such judgments. Thus, scores on this test do not necessarily reflect true ability.

In an effort to control for possible order of presentation effects, in each experimental session the two rationalizable tests were presented second and fourth in the sequence, while the two non-rationalizable tests were always presented first and third. However, the order of presentation of the four tests from session to session was counterbalanced, so that each of the

tests appeared with and without its disclaimer with approximately equal frequency.<sup>3</sup>

Prior to the description of each test, Ss were provided with a set of norms presumably obtained from test scores of a large population of peers. Following the description of each test, Ss were asked to state, on the basis of the norms provided: 1) the score they expected to obtain on that test (a measure of expectancy), and 2) the lowest score they would regard as personally satisfying on that test (a measure of minimal goal level).

When all Ss had responded to each of these questions, the answer sheets were collected, and the procedure repeated for each of the remaining tests. Following this, Ss in the Risk condition were given the following instructions:

Now, before you actually perform on these tests, I would like to get some idea of each of your preferences. Therefore, would you please list the tests in order, from one to four, starting with the subtest which you would most like to take, and ending with the one which you would least like to take.

Subjects in the No Risk condition were given the following instructions:

Due to time limitations, actual performance on these I.Q. subtests by each of you is not possible. Thus, you will not actually be tested on any of these measures of I.Q. However,

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<sup>3</sup>In order to obtain enough subjects for the experiment, it was necessary to repeat some of the 24 possible test presentation orders. Those repeated were selected at random from among the original 24.

we are still interested in each of your individual preferences for these tests. Therefore, would you please list the tests in order from one to four, starting with the subtest which you would most like to take, and ending with the one which you would least like to take.

When this was completed, Ss in both experimental conditions were told:

Now, while rank ordering, as you have just done, gives us an indication of the order in which you prefer these subtests, it tells us nothing about the relative strengths of those preferences. Therefore, suppose you had 100 points to distribute among the four tests to indicate degree of preference. How many of the 100 points would you give to each of the tests? The total must sum to 100, and there may be no ties.

This procedure thus incorporated two measures of task preference, each of which could be utilized in testing Hypotheses I and II outlined in the previous section.

At this point, Ss were informed that the experiment had been completed and were provided with forms to be filled out in order to receive extra credit in their classes. As the Ss were leaving, E said (to Ss in the Risk condition):

Oh, by the way, did you think that you would actually have to take the tests?

or, to Ss in the No Risk condition:

Oh, by the way, did you believe me when I told you that you would not actually have to take the tests?

Subjects' answers to these questions were recorded to provide a means of monitoring the efficacy of the Risk-No Risk manipulation.

## RESULTS

Scoring and Analysis Procedures

As indicated in the previous section, each S was asked to:

1) indicate the score he expected to receive on each of the 4 tests,

2) indicate the lowest score he would regard as personally satisfying on each of the 4 tests,

3) rank the tests in order from the most to the least preferred, and

4) distribute 100 points across the 4 tests to indicate the degree to which he preferred each test relative to each of the others.

The rank-order preference data was scored according to the following schema (Phares and Lamiell, in press): Each S was given descriptions of 4 tests -- two which indicated that one's performance on them could be rationalized (R), and two which gave no indication that scores could be rationalized (N). Since the descriptions of the tests (R or N), rather than the tests themselves, were of crucial interest, for our purposes Ss could have ranked them in any of 6 ways (RRNN = 1; RNRN = 2; RNNR = 3; NRRN = 4; NRNR = 5; NNRR = 6). Thus, each S was given a score of from 1 to 6 to describe his preferences. For example, a S who ranked the two rationalizable tests first and second, followed by the two non-rationalizable tests (i.e. responded RRNN) was assigned a score of 1, indicating a marked preference for the rationalizable tests. In contrast, a S who ranked the tests NNRR was given a score of 6, indicating a strong preference for the non-rationalizable tests. While such a scoring scheme is admittedly somewhat arbitrary, results obtained with it, as we shall see, were quite similar to those obtained with the more "objective" point-distribution measure. Phares and Lamiell (in press)

also reported consistent results across the two measures of preference.

Regarding the point-distribution measure of preference, the analyses to be reported in this section were conducted on the basis of preference for the non-rationalizable tests. This quantity was defined as the total number of points assigned to those two tests. It should be clear that, since all Ss distributed an equal number of total points to the 4 tests (100), the results of analyses of the points assigned to the rationalizable tests would have been the mirror image of those to be reported.

With respect to the expectancy and minimal goal data, it should be noted that responses on the various tests were expressed in different units (minutes, number correct, etc.). Therefore, for both variables, all scales were transformed to 0 - 100 scales for the sake of comparability.<sup>4</sup> A S's expectancy on the non-rationalizable tests was defined as the sum of his expectancy statements on the two tests so described. Minimal goal responses were scored in an identical fashion. Thus, both expectancy and minimal goal were measured on scales ranging from 0 to 200.

The I-E Scale was scored in the internal direction. That is, the higher the score, the more internal the individual was presumed to be. Similarly, the scoring of the Interpersonal Trust Scale was such that a high score was interpreted as reflecting relatively high trust. The possible range of scores on the I-E Scale is 0 - 23; on the Interpersonal Trust Scale, 25 - 125.

In light of the substantial correlation ( $r = .34$ ) between I-E and Interpersonal Trust (IT), in addition to other evidence which indicates that such a correlation is not idiosyncratic to the present data (Hamsher, Geller, and Rotter, 1968; Hochreich, 1968; Phares and Lamiell 1973), it was decided to

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<sup>4</sup> The endpoints on each of the scales were assigned the values 0 and 100, and the remaining values were determined by linear interpolation.

analyze the data using least squares multiple regression procedures. In addition to providing a means for dealing with correlated predictor (independent)<sup>5</sup> variables, the use of multiple regression also permitted the use of the entire range of I-E and IT scores, as opposed to the conceptually more artificial and statistically less powerful procedure of dichotomizing the respective dimensions into "internals" vs. "externals" and "high trusters vs. low trusters."

It was mentioned above that results obtained with the two measures of preference were found to be quite similar. By this it was meant that, while minor differences were discovered, the overall pattern of the results was found to be the same for both measures. As might be expected, the point-distribution measure appears to have been the more sensitive of the two. Therefore, although the separate analyses for each measure will be provided in the Tables, our discussion will, for the most part, be confined to results obtained with the point-distribution measure. In general, it may be said that what holds for this measure also holds for the rank-order measure.

#### Hypothesis I

It will be recalled that for Ss in the Risk condition, it was predicted that both defensive and congruent externals, relative to internals, would indicate a greater preference for those tests on which one's score might be attributed to characteristics of the tests themselves (i.e. the rationalizable tests). The regression analysis used to test this hypothesis is summarized in Table 1.

As can be seen in Table 1, the F-ratio for I-E after partialing out the

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<sup>5</sup>Since the independent variables in this investigation are not (with the exception of the Risk-No Risk manipulation) truly independent, they will hereafter be referred to as predictor variables, or simply as predictors.

Table 1

## Multiple Regression Summary Table for Hypothesis I

Point Distribution Criterion:

Step Number	Variable Entered	Multiple R	Multiple R <sup>2</sup>	<u>F</u> to enter	p	<u>F</u> to remove	p
1	IT	.1470	.0216	1.37	ns	1.10	ns
2	I-E	.1480	.0219	.02	ns	.02	ns

## Analysis of Variance

<u>Source</u>	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>
Regression	371.527	2	185.764	.683	ns
Residual	16594.820	61	272.046		

Rank Order Criterion:

Step Number	Variable Entered	Multiple R	Multiple R <sup>2</sup>	<u>F</u> to enter	p	<u>F</u> to remove	p
1	IT	.0796	.0063	.40	ns	.33	ns
2	I-E	.0830	.0069	.02	ns	.02	ns

## Analysis of Variance

<u>Source</u>	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>
Regression	1.342	2	.671	.2100	ns
Residual	197.657	61	3.240		

effects of IT was not significant. Table 1 also reveals that neither IT alone, nor the regression of preference for the non-rationalizable tests (hereafter designated PR-N) onto the additive combination of I-E and IT was statistically significant.

Thus, these results offer no evidence that Ss' responses on the I-E Scale, partialled for the influence of IT, were significantly related to PR-N. It is perhaps worth noting here that the zero-order correlation of I-E with PR-N (i.e. the validity of I-E) in the Risk condition was determined to be .065. Thus, even if the effects of IT had not been partialled from I-E responses, it is clear that the latter would not have been significantly related to PR-N. In sum, it must be concluded that, on the basis of these data, the null hypothesis regarding the relationship between I-E and PR-N under conditions where the threat of failure is presumably present cannot be rejected.

### Hypothesis II

Our second hypothesis stated that, in the No Risk condition, both defensive externals and internals, relative to congruent externals, would indicate a greater preference for those tests on which one's score would be more clearly indicative of one's ability. Stated otherwise, it was predicted that a simple additive combination of I-E and IT would be insufficient to account for variation in PR-N, but rather, a configural relationship involving I-E and IT would be necessary to account for the data.<sup>6</sup> The analyses carried out

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<sup>6</sup> The term "configural" is used here because, as Kerlinger and Pedhazur (1973) have pointed out, the cross-product of two continuous variables does not necessarily represent an interaction in the analysis-of-variance sense of the term. Since, with regard to Hypothesis II, the test of such an interaction was desired, the cross-product term, I-E x IT, was desired, the cross-product term, I-E x IT was formed on the basis of

to test this hypothesis are summarized in Table 2.

The analysis of variance summary in Table 2 indicates that the three variables, I-E, IT, and their cross product I-E x IT were insufficient to account significantly for variation in PR-N when appropriately weighted and combined additively.

More importantly with respect to Hypothesis II is the fact that, contrary to prediction, the  $F$ -to-enter for the cross-product term I-E x IT was not significant, indicating that this term did not provide a significant increment in the proportion of variance in PR-N accounted for by I-E and IT alone (which was itself not significant).

Table 3 indicates that the zero-order correlation between PR-N and I-E x IT (i.e. the validity of I-E x IT), .004, was clearly not significant. It is therefore obvious that even had I-E x IT been entered first into the regression equation, it could not have accounted significantly for variation in PR-N. In light of these results, it must be concluded that the null hypothesis regarding the relationship between I-E x IT and PR-N cannot be rejected.

The reader will note that the  $F$ -to-remove values for I-E and IT are higher than their respective  $F$ 's-to-enter, and that for the rank-order criterion, the former exceed the .05 alpha level. These findings indicate that, despite the fact that I-E and IT were correlated, each was more highly related

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6(cont'd)

standardized I-E and IT scores. In this way,  $S_s$  with relatively low (negative) I-E and IT scores (i.e. low trust, or defensive externals) obtained cross-product scores which were both relatively high, and positive. Thus, on the cross-product dimension, they received scores equivalent to  $S_s$  with relatively high trust, internal scores. Since it was predicted that defensive externals would be rendered functionally internal in the No Risk condition, forming the cross-product dimension on the basis of standardized I-E and IT scores was clearly appropriate for testing that prediction. On the other hand, for purposes of testing Hypothesis III (discussed later) it was necessary to maintain the ordinal relationship between defensive externals, congruent externals, and internals. Thus, the cross-product term in this case was calculated on the basis of raw I-E and IT scores.

Table 2

## Multiple Regression Summary Table for Hypothesis II

Point Distribution Criterion:

Step Number	Variable Entered	Multiple R	Multiple R <sup>2</sup>	F to enter	p	F to remove	p
1	I-E	.1466	.0215	1.56	ns	3.42	ns
2	IT	.2355	.0555	2.52	ns	2.72	ns
3	I-E x IT	.2457	.0604	.36	ns	.36	ns

## Analysis of Variance

Source	SS	df	MS	F	p
Regression	1204.793	3	401.598	1.478	ns
Residual	18753.039	69	271.783		

Rank Order Criterion:

Step Number	Variable Entered	Multiple R	Multiple R <sup>2</sup>	F to enter	p	F to remove	p
1	IT	.1901	.0361	2.66	ns	6.09	< .05
2	I-E	.3244	.1052	5.40	< .05	5.65	< .05
3	I-E x IT	.3306	.1093	.32	ns	.32	ns

## Analysis of Variance

Source	SS	df	MS	F	p
Regression	21.852	3	7.284	2.822	ns
Residual	178.093	69	2.581		

Table 3

## Intercorrelation Matrix for Risk and No Risk Conditions

Point Distribution Criterion:

	PR-N	I-E	IT	I-E x IT
PR-N		.065	.147	-.026
I-E	.147		.330	-.152
IT	-.117	.370		-.186
I-E x IT	.004	-.254	.036	

Rank Order Criterion:

	PR-N	I-E	IT	I-E x IT
PR-N		.007	.080	-.058
I-E	.174		.330	-.152
IT	-.190	.370		-.186
I-E x IT	-.022	-.254	.036	

Note: For both matrices, values above the dashed diagonal refer to the Risk condition; values below the diagonal refer to the No Risk condition.

to PR-N when the effect of the other was partialled out.

A clue as to the reason for this may be found by referring to the validity coefficients for IT in Table 3. In the Risk condition, IT is positively (although not significantly) related to PR-N. That is, what trend there is in the data suggests that as IT increases, PR-N increases. Note, however, that in the No Risk condition, the relationship between IT and PR-N is reversed. In this case, as IT increases, PR-N decreases. More importantly, removing the effect of IT augments the usefulness of I-E. Stated otherwise, holding IT constant reduces the errors of prediction of PR-N from I-E. The direction of the relationship between IT and PR-N in the No Risk condition suggests that these errors of prediction (from I-E to PR-N) were associated with relatively low IT scores, which we know are related to relatively low (external) I-E scores.

Thus, these results do lend some measure of support to the notion that low-trust, external individuals would indicate a preference for the non-rationalizable tests in the No Risk condition. Unfortunately, intriguing as these results may be, they do not permit any definitive statements regarding the concept of defensive externality, since neither I-E nor IT could be shown to be significantly related to PR-N in the Risk condition.

### Hypothesis III

Hypothesis III predicted that, in both the Risk and No Risk conditions, defensive externals would be found to have quantitatively lower discrepancies (defined as expectancy minus minimal goal) on the non-rationalizable tests than both congruent externals and internals.

As should be clear to the reader by now, the author does not conceptualize separate groups to which the labels "defensive external", "congruent external", and "internal" may be applied, but rather a dimension (defined in

the present context by the cross product of I-E and IT scores) along which individuals may be ordered as being "more or less" defensive, congruent, etc.

With this in mind, the test of Hypothesis III entailed the regression of discrepancy (DISC) scores onto scores derived by multiplying raw I-E scores by raw IT scores. Scores falling at the lower end of this new dimension were comprised of relatively low scores on both the I-E Scale and the Interpersonal Trust Scale (i.e. external, low trust scores), while scores falling at the upper end of this dimension were comprised of relatively internal, high trust scores. Reference to our earlier discussion of the DISC dimension (see Introduction) will show that Hypothesis III thus predicts a significant positive correlation between I-E x IT and DISC.

In the Risk condition, a correlation of  $-.13$  (ns) was found between DISC and I-E x IT. In the No Risk condition, the correlation was  $-.03$  (ns). Thus, the data offer no evidence that defensive externality, as defined by the multiplicative combination of I-E and IT scores, is significantly related to expectancy-minimal goal discrepancies in the experimental situations used.

It was noted in the first section of this paper that the very formulation of Hypothesis III suggested an alternative approach to the concept of defensive externality. That is, the prediction that expectancy-minimal goal discrepancy should be correlated with some conceptualization of defensive externality (in this case, I-E x IT) is tantamount to predicting that, to the extent of that correlation, discrepancy may be substituted for that conceptualization of defensive externality. Obviously, since the present data offered no support for I-E x IT as a measure of defensive externality, the fact that DISC and I-E x IT were found to be uncorrelated in this sample is immaterial insofar as the utility of DISC for obtaining empirical evidence regarding defensive externality is concerned. This question can only be answered by a direct assessment of the relationship between DISC, I-E, and PR-N.

We have seen that DISC is defined as the difference between expectancy and minimal goal. This may be symbolized as:

$$(E - MG) = DISC \quad (1)$$

where     E = expectancy  
           MG = minimal goal  
           DISC = discrepancy

Defined in this way, DISC thus yields an index of the level at which an individual expects to perform on a given task relative to his own success-failure criterion. On the face of it, this measure would seem to be suitable for identifying potentially defensive individuals: the lower one's standing on this dimension, the more apt he would be to behave in a defensive manner. Inspection of Equation (1) will reveal, however, that, for example, an individual who sets relatively high standards for success (high MG) and happens to have a commensurately high E for meeting those standards, will have a low discrepancy. We would hardly want to predict that such a person would find the need to behave defensively.<sup>7</sup>

It would seem, therefore, that a more precise measure of what we shall hereafter label confidence (C) might be derived by weighting an individual's discrepancy score by his initial expectancy statement. Weighting both sides of Equation (1) by E yields:

$$(E - MG) \times E = DISC \times E \quad (2)$$

and therefore

$$C = DISC \times E \quad (3)$$

The use of the confidence dimension rather than the discrepancy dimension implies that quantitatively similar discrepancy scores may be psycho-

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<sup>7</sup>This statement assumes that measures of expectancy and minimal goal levels may themselves be obtained unconfounded by defensiveness. Later, we shall have reason to call this assumption into question in the context of the present experiment.

logically different, depending upon the particular level of expectancy involved. For example, an individual with an expectancy of 150 and a minimal goal of 130 would receive the same discrepancy score as an individual with an expectancy of 90 and a minimal goal of 70. By weighting one's discrepancy score by one's initial expectancy, we are thus arguing that the individual with the higher expectancy is relatively more confident than the one with the lower expectancy. In any case, it is clear that social learning theory would predict that individuals relatively low on the confidence dimension will be more defensive (i.e. show less of a preference for the non-rationalizable tests) than will persons high on the confidence dimension (but see footnote 7). Moreover, any configural relationships involving this dimension and I-E should reflect the influence of locus of control on defensive behavior.

Of course, the ultimate test of any concept lies neither in the soundness of its theoretical base, nor in its intuitive appeal, but rather in its empirical validity. Accordingly, the analyses summarized in Tables 1 and 2 were repeated, substituting confidence for Interpersonal Trust as one of the predictors.

The analysis of variance summary in Table 4 indicates that, in the Risk condition, the three variables, I-E, C, and I-E x C, combined additively, did not account for a significant portion of the total sum of squares associated with PR-N. However, reference to the top portion of Table 4 indicates that the cross-product term, I-E x C, ignoring both I-E and C, was significantly related to preference for the non-rationalizable tests. The validity coefficient for this term was .26, indicating a positive relationship. That is, as the values of I-E x C increased in size (which occurs as we move from the external to the internal end of the I-E dimension, and from low to high discrepancies) preference for the non-rationalizable tests increased.

Table 4

Summary of Regression Analysis Involving  
PR-N, C, and I-E in the  
Risk Condition

Point Distribution Criterion:

Step Number	Variable Entered	Multiple R	Multiple R <sup>2</sup>	F to enter	p	F to remove	p
1	I-E x C	.2637	.069	4.63	< .05	.69	ns
2	C	.2646	.070	.03	ns	.01	ns
3	I-E	.2646	.070	.00	ns	.00	ns

Analysis of Variance

Source	SS	df	MS	F	p
Regression	1187.72	3	395.90	1.50	ns
Residual	15778.63	60	262.98		

Rank Order Criterion:

Step Number	Variable Entered	Multiple R	Multiple R <sup>2</sup>	F to enter	p	F to remove	p
1	I-E x C	.2340	.0548	3.59	ns	.11	ns
2	C	.2388	.0570	.15	ns	.06	ns
3	I-E	.2388	.0570	.00	ns	.00	ns

Analysis of Variance

Source	SS	df	MS	F	p
Regression	11.35	3	3.78	1.21	ns
Residual	187.647	60	3.13		

It is perhaps somewhat less difficult to grasp the meaning of this relationship if we recast the problem in terms of dichotomous, rather than continuous, variables: internals vs. externals on the one hand, and high confident Ss vs. low confident Ss on the other hand. For expository purposes, we might define "high" on each of the variables as one standard deviation above the mean, and "low" as one standard deviation below the mean.

The final regression equation derived for Ss in the Risk condition was as follows:

$$PR-N = (.01428)(I-E) + (-.00023)(C) + (.00013)(I-E \times C) + 46.22^8$$

If raw scores on the I-E and C dimensions corresponding to z-scores of +1 and -1 are inserted in all possible pairs for I-E and C in the above equation, four PR-N scores may be derived which will constitute least squares estimates of the PR-N scores which would be obtained by internal, high confident; internal, low confident; external, high confident; and external, low confident individuals. This procedure has been carried out, and the four hypothetical preference scores plotted in Figure 1.

Figure 1 permits a relatively straightforward interpretation of the statistical significance of the relationship between PR-N and the cross product term, I-E x C. Among low confident Ss, there appears to be no difference in the preferences of internals and externals. As confidence increases, however, I-E differences are magnified, with internals indicating a greater preference for the non-rationalizable tests.

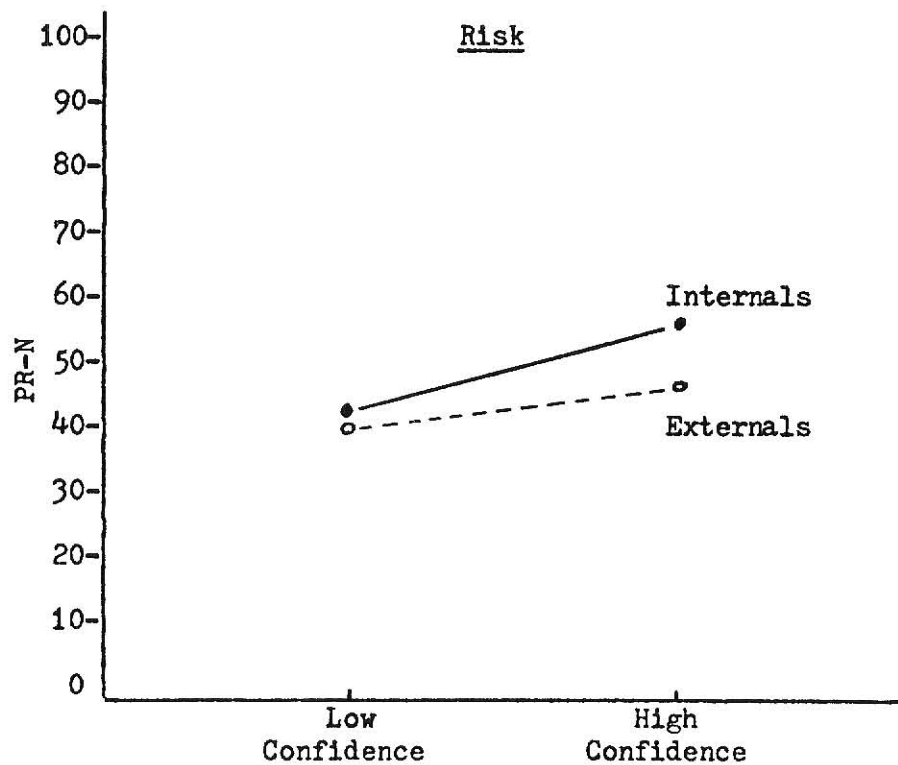
Before turning to the results obtained in the No Risk condition, another aspect of the data under present consideration merits attention. The reader will note that the F-to-remove values in Table 4 are all nonsignificant. Of

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<sup>8</sup>The weights in this equation are partial regression coefficients (not standard partial regression coefficients).

Figure 1

Predicted "Risk" Preferences for Hypothetical Subjects  
Representing All Possible Combinations  
of Dichotomous Confidence and Locus of Control Variables



Note: Predicted points were derived from the complete regression equation obtained in the Risk condition.

particular moment is the nonsignificant  $F$ -to-remove for the cross product term,  $I-E \times C$ . This indicates that had this term been entered last into the regression equation -- instead of first -- it would not have been significantly related to  $PR-N$ . This is due, of course, to the high positive correlation between  $I-E \times C$  and  $C$  ( $r = .87$ ).

This substantial correlation raises the possibility that  $C$  alone could have accounted for a significant portion of  $PR-N$  had it been entered first into the regression equation. However, results of such an analysis indicated that, by itself,  $C$  did not reach statistical significance ( $F = 3.09$ ,  $p < .05$ ). It would thus appear that (at least for this size sample),  $I-E$  differences at high levels of  $C$  must be taken into account in order to account significantly for variation in the criterion. In short, while  $C$  and  $I-E \times C$  are highly related, the latter term is the better single predictor of  $PR-N$ , and, in this case, accounts for a very important portion of the variance in  $PR-N$  which  $C$  by itself leaves to error.

Analyses identical to those discussed above were performed on the data obtained from  $Ss$  in the No Risk condition. The results are summarized in Table 5.

The analysis of variance summary in Table 5 indicates that  $I-E$ ,  $C$ , and their cross product  $I-E \times C$ , when appropriately weighted and combined additively, do account significantly for variation in  $PR-N$ . The importance of this finding will be discussed in more detail later on. For now we will focus on the relative roles played by each of the three variables, an aspect about which the significant  $F$ -ratio obtained for the complete regression tells us nothing.

First, it will be observed that in Step 1 of the regression analysis,  $C$  was entered, as opposed to  $I-E \times C$ . Thus, while the latter term was the best

Table 5

Summary of Regression Analysis Involving  
PR-N, C, and I-E in the  
No Risk Condition

Point Distribution Criterion:

Step Number	Variable Entered	Multiple R	Multiple R <sup>2</sup>	<u>F</u> to enter	<u>p</u>	<u>F</u> to remove	<u>p</u>
1	C	.2936	.0862	6.70	< .05	10.55	< .05
2	I-E	.3262	.1064	1.58	ns	7.83	< .05
3	I-E x C	.4378	.1917	7.28	< .05	7.28	< .05

Analysis of Variance

<u>Source</u>	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>
Regression	3826.13	3	1275.38	5.46	< .05
Residual	16131.70	69	233.79		

Rank Order Criterion:

Step Number	Variable Entered	Multiple R	Multiple R <sup>2</sup>	<u>F</u> to enter	<u>p</u>	<u>F</u> to remove	<u>p</u>
1	C	.1753	.0307	2.25	ns	6.51	< .05
2	I-E	.2450	.0600	2.18	ns	7.02	< .05
3	I-E x C	.3531	.1247	5.10	< .05	5.10	< .05

Analysis of Variance

<u>Source</u>	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>
Regression	24.93	3	8.31	3.28	< .05
Residual	175.02	69	2.54		

single predictor of PR-N in the Risk condition, the present results indicate that C alone is the best single predictor in the No Risk condition. The validity coefficient of C was determined to be .29, indicating a positive relationship. The significant F-to-enter for C indicates that, ignoring both I-E and I-E x C, C accounts for a statistically significant portion of the total variance in PR-N. Specifically, high-confident Ss indicated a greater preference for the non-rationalizable tests than did low-confident Ss.

The validity coefficient of I-E x C was found to be .243. Thus, the relationship between I-E x C and PR-N -- ignoring the other predictor variables -- was in the same direction, and of roughly the same magnitude, in the No Risk as in the Risk condition. It should further be noted that, had I-E x C been entered first into the regression equation, it would have accounted for a significant portion of variance in PR-N ( $F = 4.46$ ;  $p < .05$ ). Thus, the fact that the relative validities of C and I-E x C reversed rank orders across the Risk-No Risk conditions may, in all likelihood, be attributable to chance fluctuations. However, let us follow through the remainder of the regression analysis summarized in Table 5, and observe the dramatic change in the role of I-E x C.

Table 5 indicates that I-E was entered in Step 2 of the analysis. Thus, with C held constant, I-E had a higher first-order semipartial correlation (.15) with PR-N than did I-E x C (-.12). It is clear in Table 5 that I-E did not provide a significant increment in the regression sum of squares. Obviously, the increment attributable to I-E x C at this step would also have been nonsignificant.

At Step 3, however, we see that the increment in the regression sum of squares attributable to I-E x C is substantial, and clearly statistically significant. Moreover, the addition of this term to the regression equation increased the relative importance of both I-E and C. The second-order semi-

partial correlations of these two variables with PR-N were .34 and .39, respectively, as compared with validities of .15 and .29, respectively. It is therefore apparent that I-E x C was systematically related to components of both I-E and C which were unrelated to PR-N.

The final regression equation obtained in the No Risk condition was as follows:

$$PR-N = (1.7065)(I-E) + (.0073)(C) + (-.0004)(I-E \times C) + 23.73$$

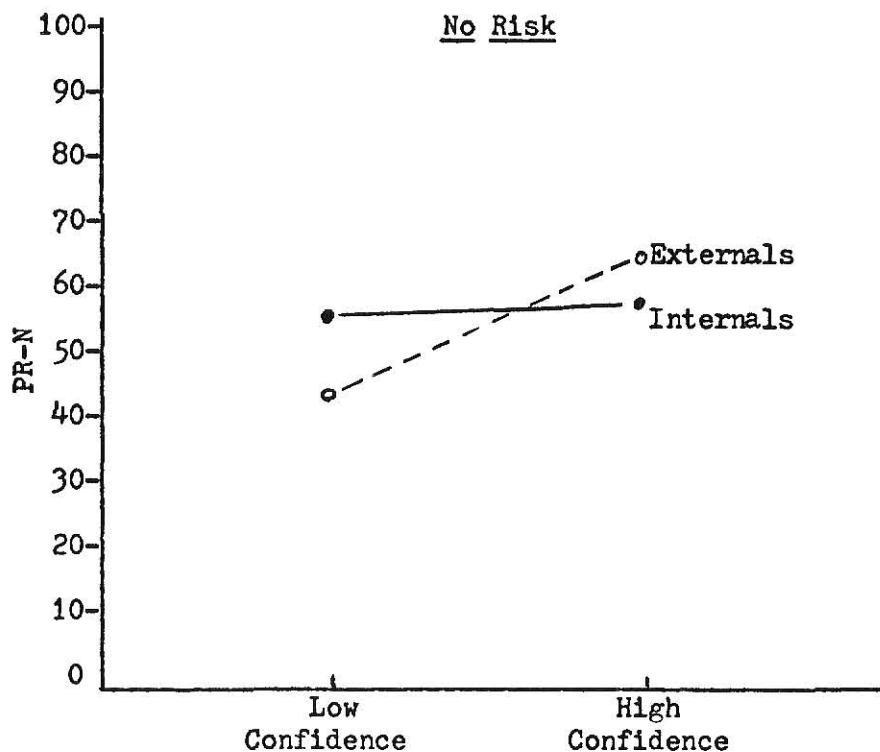
It will be noted in the above equation that I-E x C received a negative partial regression coefficient, despite the fact that, as we saw earlier, its validity was positive. Thus, in the No Risk condition, the utility of I-E x C was as a suppressor variable (Guilford, 1954). This is due to the fact that, as stated above, I-E x C was systematically related to components of both I-E and C which were unrelated to PR-N. It is for this reason that the correlations with PR-N of both I-E and C, partialled for the influence of I-E x C, were higher than the validities of I-E and C.

If, as in our earlier discussion of the Risk data, raw I-E and C scores corresponding to z-scores of +1 and -1 are inserted in all possible pairs for the unknowns in the above equation, predicted PR-N scores may be obtained for hypothetical Ss "high" and "low" on each of the dimensions. Figure 2 provides a plot of these predicted scores.

Figure 2 indicates that results obtained in the No Risk condition appear to be nearly opposite those obtained in the Risk condition. Once again, the presence of an interaction is apparent. However, in this case, it would appear that as we moved upward on the C dimension, I-E differences diminished. It will be remembered that in the Risk condition, as we moved higher along the C dimension, I-E differences increased (see Figure 1). Stated otherwise, these results indicate that in the No Risk condition, when Confidence was relatively low, internals indicated a greater preference for the non-ration-

Figure 2

Predicted "No Risk" Preferences for Hypothetical Subjects  
Representing All Possible Combinations  
of Dichotomous Confidence and Locus of Control Variables



Note: Predicted points were derived from the complete regression equation obtained in the No Risk condition.

alizable tests. However, among Ss with relatively high confidence, I-E differences diminished considerably.

It is obvious that the results obtained in the Risk condition are quite different from those obtained in the No Risk condition. In the former case, I-E x C was the only one of the three predictors which, considered by itself, accounted significantly for variation in PR-N. Moreover, the addition of I-E and C to the regression equation "diluted" the importance of I-E x C. That is, the cost in terms of the degrees of freedom needed to estimate the effects of I-E and C outweighed their contribution to the regression sum of squares. It is for this reason that the F-ratio for the complete regression was not statistically significant.

Quite different results were obtained in the No Risk condition. As noted earlier, the significant F-ratio for the overall regression indicates that the additive combination of I-E, C, and I-E x C accounted significantly for variation in PR-N. More importantly, the F-to-remove values for all three variables were significant, indicating that each of the three variables offered a unique contribution to the regression, when adjusted for the effects of the other two. We have seen that the major reason for this finding was that, in the No Risk condition, I-E x C functioned as a suppressor variable. The importance of these markedly different results will be discussed at length later on.

#### Relative Utilities of the Confidence and Discrepancy Dimensions

Cronbach (1968), among others, has noted that "A complex combination of variables should be invoked to explain a result only if simpler explanations prove inadequate. The burden of proof rests on the elaborate hypothesis" (p. 493).

This statement may be seen to be particularly germane in the present context, with respect to the construction of the confidence dimension as an alternative to the discrepancy dimension. Since confidence is clearly the more complex of the two, the reader may justifiably demand evidence that it provides greater predictive power than discrepancy, a concept more closely allied with the mainstream of social learning theory.

In light of this argument, the data were once again reanalyzed, substituting discrepancy for confidence as one of the predictor variables. The results of separate analyses for the Risk and No Risk conditions are presented in Tables 6 and 7, respectively.

Looking first at results obtained in the Risk condition, it may be seen that the multiple correlation obtained using DISC as a predictor was .2499, as opposed to the multiple correlation of .2646 obtained using C as a predictor (these values are entered under "Multiple R" at Step 3 in Tables 6 and 4, respectively). Of greater importance is the fact that, while the  $F$ -ratio for I-E x C exceeded a commonly accepted significance level, the  $F$ -ratio for I-E x DISC did not. By this standard, then, C is clearly the better predictor of PR-N.

It should be strongly emphasized that, despite the fact that I-E x C reached statistical significance while I-E x DISC did not, the difference in predictive power of the two dimensions was, by any standard, small. I-E x DISC accounted for roughly 5.5% of the variance in PR-N, while I-E x C accounted for roughly 7% of the same variance. Thus, while the notion of weighting a  $S$ 's discrepancy score by his initial expectancy statement would appear to be theoretically meaningful, the data indicate that such a procedure has bought us relatively little in the way of predictive power.

Differences between DISC and C appear to be only slightly more substantial in the No Risk condition. Here, I-E x DISC accounted for approximately

Table 6  
Summary of Regression Analysis Involving  
PR-N, DISC, and I-E in the  
Risk Condition

Point Distribution Criterion:

Step Number	Variable Entered	Multiple R	Multiple R <sup>2</sup>	F to enter	p	F to remove	p
1	I-E x DISC	.2379	.0566	3.72	ns	.00	ns
2	DISC	.2409	.0580	.09	ns	.34	ns
3	I-E	.2499	.0624	.28	ns	.28	ns

Analysis of Variance

Source	SS	df	MS	F	p
Regression	1059.45	3	353.15	1.33	ns
Residual	15906.90	60	265.12		

Rank Order Criterion:

Step Number	Variable Entered	Multiple R	Multiple R <sup>2</sup>	F to enter	p	F to remove	p
1	DISC	.2039	.0416	2.69	ns	.69	ns
2	I-E	.2076	.0431	.10	ns	.18	ns
3	I-E x DISC	.2107	.0444	.08	ns	.08	ns

Analysis of Variance

Source	SS	df	MS	F	p
Regression	8.83	3	2.94	.93	ns
Residual	190.16	60	3.17		

Table 7  
Summary of Regression Analysis Involving  
PR-N, DISC, and I-E in the  
No Risk Condition

Point Distribution Criterion:

Step Number	Variable Entered	Multiple R	Multiple R <sup>2</sup>	<u>F</u> to enter	p	<u>F</u> to remove	p
1	DISC	.2545	.0648	4.92	< .05	8.06	< .05
2	I-E	.3001	.0901	1.94	ns	7.11	< .05
3	I-E x DISC	.3949	.1560	5.39	< .05	5.39	< .05

Analysis of Variance

<u>Source</u>	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>
Regression	3112.98	3	1037.66	4.25	< .05
Residual	16844.85	69	244.13		

Rank Order Criterion:

Step Number	Variable Entered	Multiple R	Multiple R <sup>2</sup>	<u>F</u> to enter	p	<u>F</u> to remove	p
1	I-E	.1741	.0303	2.22	ns	7.66	< .05
2	DISC	.2197	.0483	1.32	ns	6.43	< .05
3	I-E x DISC	.3418	.1168	5.36	< .05	5.36	< .05

Analysis of Variance

<u>Source</u>	<u>SS</u>	<u>df</u>	<u>MS</u>	<u>F</u>	<u>p</u>
Regression	23.36	3	7.78	3.04	< .05
Residual	176.59	69	2.56		

6.5% of the variance in PR-N, while I-E x C accounted for about 8.5% of the same variance. Again, while C unquestionably permitted better prediction than did DISC, the improvement was admittedly slight.

These results, then, are certainly not contradictory to the proposition that confidence would provide a better basis for predicting preference than would discrepancy. However, as we have seen, the improvement in predictive accuracy is indeed slight. It may also be noted that the pattern of results is nearly identical for the two measures. Since in the present sample, C is clearly the more useful dimension, the remainder of our discussion will be based on the findings using C, rather than on those obtained with DISC. However, it must be stressed that the conclusion, based on these data, that the concept of confidence should supplant the concept of discrepancy within social learning theory is certainly unwarranted. Much more research will be needed to answer this question.

## DISCUSSION

It is helpful to view the results presented in the previous section as essentially two separate approaches to the concept of defensive externality. The attempt to identify defensive externals on the basis of their responses on the Interpersonal Trust Scale seems not to have worked out very well. On the other hand, results obtained using the confidence dimension appear to have some general implications for the concept of defensiveness.

In light of the above, the present section will be comprised of two parts. The first will explore possible reasons for the failure to support Hypotheses I and II.<sup>9</sup> We will then turn to a detailed discussion of the results obtained with the confidence dimension.

### Defensive Externality and Interpersonal Trust

To recapitulate briefly, the present investigation has been focused on the concept of defensive externality. Current theorizing with respect to this concept has conceptualized defensive externals as individuals who verbalize external beliefs on the I-E Scale as a defense against anticipated failures in efforts to acquire valued reinforcements.

Previous research has indicated that the Interpersonal Trust Scale has some utility for distinguishing between defensive externals and congruent externals (externals whose responses on the I-E Scale are assumed to be veridical reflections of their locus of control beliefs). On the basis of this research, and in view of the current conceptualization of defensive external-

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<sup>9</sup> Hypothesis III, it will be recalled, was actually predicated on the assumption that defensive externals could indeed be identified by considering the IT responses of Ss. Clearly, the failure to support Hypotheses I and II renders this assumption untenable. Consequently, any further discussion of Hypothesis III would be superfluous with respect to the issue at hand: the identification of defensive externals.

ity as stated above, the present experiment was designed to create variance in the behavior of defensive externals as a function of the degree to which the threat of failure was present in the situation. Confirmation of Hypotheses I and II would at once have: 1) lent further empirical support to the concept of defensive externality, and 2) strengthened existing evidence pertaining to the utility of the Interpersonal Trust Scale for identifying defensive externals. As we have seen, however, no support whatsoever was obtained for Hypothesis I, and only rather marginal evidence supporting Hypothesis II was obtained. These results, therefore, raise a number of important questions regarding the conceptual foundations of the present research.

To begin with, on the basis of these data one might wish to question the utility of the concept of defensive externality itself. In the Risk condition, there was no evidence that relatively externally oriented Ss showed any greater preference for the rationalizable tests than did internally oriented Ss. To the extent that such preferences represent defensiveness we have no evidence that "externals" behaved any more defensively than did "internals." Nor was there any evidence that relatively low-trust Ss were more defensive than relatively high-trust Ss. Although there was some evidence of an increase in the preferences of low-trust Ss for the non-rationalizable tests in the No Risk condition which, when taken into account, increased the magnitude of the expected relationship between I-E and PR-N, the interpretation of such a finding is rendered somewhat equivocal due to the failure of both I-E and IT to predict preferences in the Risk condition. That is, it would be difficult to argue that the No Risk preferences of low-trust externals constituted an abandonment of their usual defense strategy without evidence to show that they indeed had a "usual defense strategy." The absence of an I-E and/or IT main effect in the Risk condition indicates that such

evidence is indeed lacking.

However, the results of the present investigation notwithstanding, an argument against the continued use of the concept of defensive externality would be premature on at least two counts. First, one can never confirm the null hypothesis. Thus, on strictly logical grounds, it would be inappropriate to conclude that there is "no such thing" as defensive externality, based on the present data. Second, studies cited earlier (Davis, 1970; Hamsher, Geller, and Rotter, 1968; Hochreich, 1968, 1973; Phares and Lamiell, 1973) indicate that under certain conditions, the concept of defensive externality has received some empirical support. It would, therefore, seem that despite the lack of support for Hypotheses I and II in this investigation, the conclusion that the concept of defensive externality lacks empirical utility is not yet acceptable.

Granting the tentative utility of the concept of defensive externality, one might then wish to question the appropriateness of the Risk-No Risk manipulation for creating variation in the behavior of defensive externals. As was pointed out in the Introduction, however, the decision to use this manipulation may be traced directly both to current theorizing regarding the concept of defensive externality, and empirical evidence pertinent to it. It has been pointed out several times that defensive externals are viewed as competitive, achievement-oriented individuals who verbalize external beliefs as a defense against anticipated failure. Moreover, there is empirical evidence to indicate that, in certain situations, defensive externals will behave in a way consistent with their verbalized (external) beliefs (Hochreich, 1973; Phares and Lamiell, 1973), while in other situations, they will behave in a fashion more consistent with their "true" (internal) locus of control beliefs (Hochreich, 1968; Davis, 1970). Since defensive externality is viewed

as a defense against anticipated failure, it was reasoned that one variable which was likely to be mediating these different results was the extent to which the threat of failure was present in the situation.

Clearly, then, the notion that variation in the degree to which the threat of failure is present in the situation should produce variation in the behavior of defensive externals is both theoretically and empirically plausible. Thus, any argument challenging the appropriateness of this manipulation must include 1) a redefinition of the concept of defensive externality, and 2) some other, equally plausible interpretation of the discrepancies in the results of the studies cited above.

Without questioning the appropriateness, in principle, of the manipulation, one might still question whether or not it "worked." There are actually two questions relevant here. First, were the instructions effective in communicating to the Ss information on whether they would or would not have to perform on the tests? It will be recalled that the last question E asked the Ss prior to their leaving the experimental room was focused directly on this issue. Only six Ss who volunteered to participate in the experiment answered this last question in a way contrary to the instructions they had been given.<sup>10</sup> While there is, of course, no method of determining the veracity of these statements, they at least do not contradict the face validity of the procedure.

The second question is: Does the knowledge that one will not have to perform on the test actually remove the threat of failure? It is possible that some Ss would experience psychological threat regardless of whether or not they were expected to perform in front of someone else. That is, a low expectancy for success on a task the individual regards as important to suc-

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<sup>10</sup> These Ss were discarded.

ceed on could engender threat independent of the possibility that another person would evaluate his performance. While, again, there is no guarantee that such was not the case, the evidence of response variation across the Risk-No Risk conditions, particularly in analyses involving confidence, suggests that the different instructions did, to some extent, create psychologically different situations.

We have seen that, while both questions pertaining to the efficacy of the Risk-No Risk manipulation are legitimate questions, the evidence available would seem to suggest that the manipulation indeed worked. The author is thus inclined to believe that the failure to find evidence in support of the concept of defensive externality through the use of the Interpersonal Trust Scale is not attributable to the failure of this aspect of the experimental manipulation.

To this point, two possible reasons for the failure to confirm Hypotheses I and II in the present experiment have been discussed. If the author's arguments in support of: 1) the usefulness of the concept of defensive externality, and 2) the appropriateness of the Risk-No Risk manipulation for investigating that concept are tentatively accepted, then the failure to find support for Hypotheses I and II leaves us with a suspicion regarding the usefulness of the Interpersonal Trust Scale as a tool for distinguishing between defensive and congruent externals. Stated otherwise, although the concept of defensive externality may indeed be a useful one and the manipulation introduced in the present investigation may well have been appropriate for obtaining empirical support for that concept, it may be that the Interpersonal Trust Scale is simply not a powerful enough tool for identifying defensive externals.

The reader may note the seeming inconsistency of 1) citing studies by Hamsher, Geller, and Rotter (1968), Hochreich (1968, 1973), and Phares and

Lamiell (1973), all of which utilized the Interpersonal Trust Scale, in support of the argument that the concept of defensive externality has some utility, and then 2) suggesting that the Interpersonal Trust Scale may have a very limited utility in this context. However, it must be noted that none of the studies cited above utilized the entire distribution of either I-E or IT in reporting their results as has been done in the present study. Portions of the distributions used ranged from the upper 25% and lower 28% (Phares and Lamiell, 1973) to the upper and lower thirds (Hochreich, 1973).<sup>11</sup> Further, in view of these procedures, the size of the relationships reported by these various authors were quite small indeed. What is being argued here is not that Interpersonal Trust responses are unrelated to defensive externality, only that the degree of that relationship is quite small and not nearly strong enough to manifest itself in a sample representative of the entire distribution of I-E and IT scores.

#### Defensive Externality and Confidence

If the Interpersonal Trust Scale has limited utility for identifying defensive externals, what method might prove useful? As is often the case when empirical ambiguities arise, it is helpful to return to the theoretical orientation which has stimulated the research.

At the outset of this paper, it was noted that social learning theory views behavior as being some function of the expectancy that a given behavior will lead to a given reinforcement, and the value of that reinforcement. The question for our purposes is: "How might such a conceptualization incorporate

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<sup>11</sup>Hamsher, Geller, and Rotter (1968) actually selected extreme subgroups based upon responses to their questionnaire concerning beliefs in the Warren Commissions's Report. Interpersonal Trust scores of these extreme subjects were then compared.

the concept of defensive externality?" In a discussion of the basic concepts of social learning theory, Phares (1972) has noted that "Low expectancy for success (or high expectancy for punishment) in a highly valued need area is correlated with defensiveness" (p. 35). In the present investigation, it was assumed that in the population sampled (college students) success on academic, achievement-related tasks is relatively highly valued. However, it need not be the case that all individuals define success and failure in the same way. Accordingly, a measure of minimal goal level was utilized to allow for individual differences in the establishment of a criterion defining success.

With measures on both expectancy and minimal goal, we then defined discrepancy as the algebraic difference between the two (i.e. expectancy minus minimal goal). Defined in this way, it is clear that individuals with low (particularly negative) discrepancies would be less sure of being successful than would individuals with high discrepancies. Thus, in social learning theory terms, persons with low discrepancies would be expected to behave more in the direction of defensiveness than would persons with relatively high discrepancies.

As noted earlier, however, it was reasoned that a more precise measure of what we decided to label confidence could be obtained by weighting as individual's discrepancy score by his original expectancy. As we saw in the previous section, confidence did indeed allow more (though only slightly more) accurate prediction of preferences than did discrepancy.

It will be recalled that in the Risk condition, confidence itself was not significantly related to PR-N, although the correlation was in the direction predictable on the basis of social learning theory, and did approach statistical significance. However, it was found that by weighting an individual's confidence score by his I-E score (forming I-E x C), significant pre-

diction of PR-N could be obtained. As discussed earlier, among relatively low-confident Ss, locus of control did not appear to influence preferences. However, as confidence increased, internals seemed to manifest an increasingly greater preference for the non-rationalizable tests than did externals. Thus, the relationship between confidence and preference varied as a function of I-E.

Viewed in terms of defensiveness, it would appear that low-confident Ss in general were rather defensive, while increasing confidence reduced defensiveness less among "externals" than among "internals."

When we turn to the No Risk condition, the picture changes dramatically. To begin with, in this condition, confidence alone was the best single predictor of preference. Thus, high-confident Ss were less defensive than were low-confident Ss. Adding I-E did not significantly increase the accuracy in prediction of preferences although, with the effects of confidence held constant, internals did indicate a somewhat greater preference for the non-rationalizable tests than did externals. We then found that the addition of I-E x C increased the accuracy of prediction of PR-N by suppressing sources of error in I-E and C. Let us see where these "sources of error" occurred.

Reference to Figure 2 indicates that there was little variation in the responses of "internals" as a function of confidence, thus attenuating the linear relationship between confidence and PR-N in the No Risk condition. Comparing these predicted responses with those of internals in the Risk condition (see Figure 1), it is clear that low-confident internals indicated a much greater preference for the non-rationalizable tests in the No Risk condition, while there was no appreciable change in the responses of high-confident internals across the two conditions. Stated otherwise, low-confident internals state preferences in the No Risk condition quite similar to those stated by high-confident internals in the Risk condition, and quite dissimilar

to those stated by low-confident internals in the Risk condition.<sup>12</sup>

Figure 2 also indicates that there was little variation in the responses of high-confident Ss as a function of I-E, thus attenuating the linear relationship between I-E and preference in the No Risk condition. Again, comparing the responses of high-confident Ss in the No Risk condition with those of high-confident Ss in the Risk condition, it can be seen that externals indicated a much greater preference for the non-rationalizable tests, while, as seen above, the responses of internals did not appear to vary across the two conditions. That is, the responses of high-confident externals in the No Risk condition were quite similar to those of high-confident internals in the Risk condition, and quite dissimilar to those of high-confident externals in the Risk condition.

In sum, it would appear that, in the No Risk condition: 1) the relatively high preference of low-confident internals for the non-rationalizable tests disrupted to some extent the positive linear relationship between confidence and PR-N, and 2) the relatively high preference of high-confident externals for the non-rationalizable tests attenuated the positive linear relationship between I-E and PR-N. Further, the configural term I-E x C was clearly systematically related to both of the above sources of error. Thus, its inclusion in the multiple regression equation "subtracted out" those sources of error (note its negative partial regression coefficient), thereby increasing the predictive accuracy of both C and I-E.

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<sup>12</sup>Both here and in the discussion immediately following, comparisons are made of responses across the Risk and No Risk conditions. The reader may question this procedure, since the analyses reported were conducted separately for Risk and No Risk Ss. Thus, it should be noted that a complete regression analysis involving all 137 Ss and including Risk-No Risk as a variable did reveal a significant I-E x C x R-N interaction ( $F = 4.75$ , d.f. = 1,121;  $p < .05$ ). That is, the relationship between I-E x C and PR-N did vary significantly across the two conditions.

The present experiment was based to a large extent on the assumption that an increase in preference for the non-rationalizable tests (i.e. those tests on which one's score was not readily attributable to characteristics of the tests themselves) in the No Risk relative to the Risk condition would reflect any defensiveness associated with stated preferences in the latter. If this assumption is tenable, then the data would seem to indicate that defensive preference statements were forthcoming from both relatively high-confident "externals" and from relatively low-confident "internals."

These findings may be seen as contrary on at least two counts to our expectations based both on previous research and on social learning theory itself. In the first place, with respect to relatively externally oriented Ss, both the theory and previous findings (particularly those of Phares and Lamiell, 1973) indicate that defensiveness would more likely be manifested by relatively low-confident individuals. Secondly, with respect to relatively internally oriented Ss, recent research has tended to ignore the defensive possibilities. To the author's knowledge, there has been no published research discussed in terms of defensiveness as manifested by relatively internally oriented individuals.

There would seem to be little question that social learning theory would predict that persons with high confidence in their ability to succeed at a given task will be more likely to engage in the behaviors required by that task than will individuals with relatively low confidence in their ability to succeed on that task (assuming that the value attached to such success is constant across individuals). Therefore, the fact that I-E x C, rather than C itself, was the best single predictor of preferences in the Risk condition raises a question concerning the veracity of the expectancy and/or minimal goal statements themselves. Specifically, why should increasing confidence

have less of an effect on the preferences of externals than it does on those of internals? The significance of I-E x C may well indicate that a given level of confidence means one thing when manifested by a relatively internally oriented person, and something else again when manifested by a relatively externally oriented person.

It is possible that, contrary to our assumption, high-confident externals simply do not value performance on the non-rationalizable tests as much as do high-confident internals. However, if such value differences exist, there is no particular basis for predicting that they should change as a function of the Risk-No Risk manipulation. As we have seen, the preferences of high-confident externals did change markedly across the two conditions. Thus, to the extent that these data are reliable, either the theoretical notion that confidence in achieving success should be negatively related to defensiveness must be modified, or it must be concluded that the confidence statements of some externals were in some way distorted. Since, as stated above, the theoretical notion that confidence and defensiveness should be correlated seems appropriately entrenched, the author is inclined to surmise that, indeed, the high confidence manifested by some externals was not altogether veridical.

The behavior of relatively internally oriented Ss across the two experimental conditions was more consistent with predictions which could readily be generated on the basis of social learning theory. That is, low-confident internals manifested a greater preference for the non-rationalizable tests when the threat of failure was removed. This could be interpreted as an indication that the stated preferences of low-confident internals in the Risk condition were somewhat defensive in nature.

If our analysis to this point is correct, then the data of the present experiment lead to the conclusion that both relatively externally and relative-

ly internally oriented individuals may be expected to behave defensively in certain situations. However, it would appear that the particular mode of defensiveness used may vary as a function of I-E. Specifically, under conditions where the threat of failure exists, internals appear to devalue academic achievement-related tasks as a function of their confidence in being successful on those tasks. Among relatively externally oriented individuals, on the other hand, there appears to be a subgroup who not only devalue performance on legitimate measures of I.Q., but, concurrently, manifest a high confidence in their ability to succeed on those tests. Thus, the expectancy and minimal goal statements of these individuals may themselves reflect defensive proclivities.

These results suggest, therefore, that recent theorizing regarding locus of control beliefs and defensiveness has been overly simplistic. Specifically, it does not appear to be the case that internals are categorically less defensive (in terms of preferences) than are externals. That is, where the threat of failure exists, internals with low confidence in their ability to succeed do not appear to be any less likely than externals to seize the opportunity to avoid the experience of such failure. However, internals do appear to be more willing to admit to a lack of confidence in their ability to achieve success. The evidence indicates that as locus of control beliefs become increasingly external, certain individuals become less willing to admit to such a lack of confidence. Thus, among such individuals, defensiveness appears to be manifested not only in lesser preferences for activities which provide no obvious means of explaining failure, but also in an apparent desire to appear to be quite capable of success in those activities.

Stated otherwise, when faced with a situation where the threat of failure is present, internals seem to be more content to simply admit their in-

adequacies and avoid the situation. Certain externals, however, not only avoid the situation, but also attempt to create the impression that they are capable of dealing with the situation should they so choose. In the present context, it would be these individuals who would be viewed as defensive externals.

Returning again to Figures 1 and 2, it may be seen that the preferences of relatively low-confident externals did not change appreciably across the two experimental conditions. Thus, not only did such individuals tend to avoid the non-rationalizable tests when the threat of failure was present, but they also manifested relatively little attraction toward those tests when the threat of failure was removed. The conclusion would appear to be that these Ss were simply not interested in performing on legitimate measures of I.Q. This finding may be interpreted as being consistent with current conceptualization of congruent externals. Such individuals, by comparison with both defensive externals and internals, appear to be relatively passive and non-achievement oriented (Davis, 1970; Hochreich, 1968, 1973).

On the basis of the above discussion, it seems clear that once again there is evidence of two relatively distinct subclasses of externals. That is, the high-confident externals of the present investigation behaved in a fashion consistent with our conceptualization of defensive externals, while low-confident externals conformed to our current view of congruent externals. In addition, the results of this experiment indicate that internals also may be expected to behave defensively under certain conditions.

Needless to say, however, the interpretations placed by the author on these data are tentative. In the first place, it must be recalled that the observations involving the confidence dimension are of a post hoc nature. As noted in the Introduction, the author is aware of no prior attempts to approach the concept of defensive externality via expectancy and minimal goal

statements. For this reason, it seems appropriate to view the present results as useful insofar as they may indicate possible directions for future research.

Closely related to the problem of post hoc analyses, the author's interpretation of the data is based on the following assumptions:

- 1) That an increase in preference for the non-rationalizable tests in the No Risk relative to the Risk condition reflects the defensiveness of preferences in the Risk condition.
- 2) That the basic social learning theory view that confidence and defensiveness should be negatively correlated is accurate.
- 3) That the expectancy and minimal goal statements of internals and of low-confident externals were veridical, while those of high-confident externals were not.

Regarding the first of the above assumptions, it has already been argued that, given our current theoretical conceptualization of defensive externality, the Risk-No Risk manipulation seems appropriate for investigating the concept of defensiveness. It is also noteworthy that for none of our hypothetical groups were predicted preferences in the No Risk condition lower than those in the Risk condition. If it is argued that increased preference in the No Risk condition does not reflect any defensiveness in the latter, then any alternative explanation for those preference changes observed should also be able to explain the unidirectionality of those changes.

With respect to the second assumption listed above, little in the way of supportive empirical evidence may be cited. This is in no small part due to the fact that the prediction that (given a highly valued goal) increased expectancy for success will lead to an increased probability of engaging in the relevant behavior would appear to be obvious. To further complicate matters, the dimension constructed for use in this investigation, confidence, reflects

not only expectancy, but minimal goal as well. Thus, while confidence was derived from basic social learning theory concepts, it itself is not one. For this reason, the assumption that it should be negatively related to defensiveness has been based on what appears to the author to be an intuitively obvious derivation from social learning theory principles.

While it is not possible at the present time to cite empirical evidence directly related to the third assumption, early level-of-aspiration research as summarized by Rotter (1954) suggests that this assumption warrants serious consideration. In general, the level-of-aspiration task involves a series of trials on a particular task, in which the subject is required to state the score he expects to receive on a given trial. Then, pursuant to his performance on that trial, the subject states another expectancy for the next trial, and so on. One standard measure of a subject's behavior in such an experimental situation is D, which Rotter (1954) defines as: "the mean of the differences between each estimate and the preceding performance score." (p. 319) Rotter then goes on to describe nine response patterns. Of particular relevance here is Pattern Six, which Rotter refers to as the "Very High Positive D-Score Pattern:

...D-scores are usually above +6.0. In this pattern, the reaction is largely a phantasy response. The subject leaves the reality of the situation and gains his satisfaction merely from the statement of high goals itself or by implying by the statement that he expects to do well and, in fact, is surprised that he is not reaching his goal...The presence of this pattern ...points to the strong tendency toward unreal solutions when they are possible under conditions of frustration." (p. 321)

As Rotter later points out, the estimates of future performance given by subjects in the level-of-aspiration experiments may be viewed as measures of expectancy. Thus, the response pattern described above may be seen to reflect inordinately (given one's actual experiences in the situation) high expectancies. Inasmuch as the confidence dimension used in the present investigation is related to expectancy, it is not unrealistic to extrapolate from the above quotation to the possibility that certain subjects' confidence statements could be the result of a similar response tendency. That is, some subjects could conceivably be inclined to manifest a level of confidence which their actual prior experience belies.

Rotter (1954) goes on to say:

It should be apparent that the level-of-aspiration technique is particularly suited to analysis in terms of social learning theory...However, one obvious difficulty arises in this type of analysis, and that is that the behavior of stating goals in the peculiar social situation of the testing room involves other variables and other potential reinforcements, so that sometimes the verbal statements are far from accurate descriptions of internally held expectancies, representing instead what might be called defenses to avoid expected failure ...Some of the statements would have as their goal not the accurate reporting of an internally held expectation but an impression to be made upon the tester (p. 324).

Assuming for the moment that the high confidence statements of certain relatively externally oriented individuals are indeed defensive in nature, the question then becomes: Why do these individuals utilize that particular

form of defensiveness, while others, notably congruent externals and internals, do not? As discussed above, both the present experiment and prior studies have indicated that congruent externals do not attach the value to achievement-related reinforcements that defensive externals and internals do. Presumably, this relatively low reinforcement value would render defensiveness against anticipated failure unnecessary.

The same cannot be said of internals, however. Again, both the present and earlier studies (Phares and Lamiell, in press; Rotter and Mulry, 1965; Schneider, 1972) indicate that, in general, internals prefer rewards based on skill (the non-rationalizable tests in the present investigation) as opposed to those based on chance (the rationalizable tests in the present investigation). This evidence clearly points to the conclusion that the low preference of some relatively internally oriented Ss for the non-rationalizable tests in the Risk condition is attributable to relatively low confidence, and not to low reinforcement value. This conclusion implies, however, that unlike defensive externals, the confidence statements of these internals were veridical.

Reference to the Method section will reveal that expectancy and minimal goal statements for all four tests were elicited from Ss prior to E's provision of any information relevant to actual performance in the situation (i.e. the Risk or No Risk instructions). That is, at the time expectancy and minimal goal statements were made, it was not clear whether or not performance would be required. Thus, at this point, Ss were free to place their own constructions on the situation, a condition conducive to the influence of generalized expectancies such as I-E. It is quite possible that internals, believing more in a direct relationship between their own behavior and its consequences, were more aware of the vulnerable social position in which one

places oneself when one claims to be more capable than one actually is. By being cognizant of such vulnerability, the internal would thus be viewed as behaving in such a way as to avoid what may be seen by him as an indignity greater than the admission of low confidence: specifically, purporting to be quite capable, and then experiencing failure. Thus, under this interpretation, it is being argued that internals expected, in the absence of information to the contrary, to be held accountable for their expectancy and minimal goal statements while defensive externals were more inclined to take their chances that actual performance would not be required.

This interpretation might be bolstered by evidence to indicate that an internal orientation is less conducive to the behavior of explaining away any subsequent failures (Davis and Davis, 1972; Phares, Wilson, and Klyver, 1971). Stated otherwise, even if the defensive external's "gamble" failed to materialize, his manifestly external orientation would permit him to explain away his failure to perform at a level consistent with his prior confidence statement. Such an option would presumably not be available to one who has already verbalized internal locus of control beliefs.

In light of the above discussion, it would appear that the three assumptions outlined earlier may be reinforced by theoretical considerations and/or prior research. Thus, the relationships observed in this investigation, together with the interpretation placed on them by the author, would seem to constitute legitimate bases for further research in the area of defensiveness in general and defensive externality in particular.

## SUMMARY AND CONCLUSIONS

The primary purpose of the present experiment was to further explore the utility of viewing certain individuals who respond in a relatively external manner on the I-E Scale as defensive externals. Such individuals have been conceptualized in the past (Davis, 1970; Hamsher, Celler, and Rotter, 1968; Hochreich, 1968; 1973; Phares and Lamiell, 1973; Rotter, 1966) as persons who verbalize external beliefs as a defense against anticipated failures in efforts to obtain valued reinforcements, and have been distinguished from congruent externals whose manifestly external locus of control beliefs are assumed to be veridical.

Previous attempts to distinguish defensive from congruent externals have (with the exception of Davis, 1970) utilized the Interpersonal Trust Scale (Rotter, 1967). This procedure was based on the assumption that individuals who responded both externally on the I-E Scale and indicated low interpersonal trust could be utilizing a relatively characteristic verbal defense strategy (Hochreich, 1973). Thus, low-trust externals were viewed as defensive externals, and high-trust externals as congruent externals.

Certain of the previously cited studies had indicated that defensive externals might, under certain conditions, be expected to behave in a manner consistent with their verbalized (external) locus of control beliefs (Hochreich, 1973; Phares and Lamiell, 1973). On the other hand, other studies indicated that defensive externals could at times be expected to behave in a characteristically internal fashion (Hochreich, 1968; Davis, 1970). Phares and Lamiell (1973) had proposed that this variation in the behavior of defensive externals might be accounted for by the extent to which the threat of failure is present in the situation in which the criterion behavior is observed. The present experiment was designed to investigate this possibility.

In addition to utilizing the Interpersonal Trust Scale for distinguish-

ing between congruent and defensive externals, however, the present investigation also obtained from Ss measures on expectancy for success on each of the tasks, as well as each S's criterion for distinguishing between success and failure. The theoretical background of this study suggested that these measures might provide a useful alternative to the Interpersonal Trust Scale for identifying defensive externals.

On the basis of prior findings, it was predicted that:

- 1) In a situation where the threat of failure on academic, achievement-related tasks was present (referred to as the "Risk" condition), both defensive and congruent externals would prefer to perform on tasks which permitted external explanations for failure to a greater extent than would internals who, being less defensive and more achievement oriented, would prefer tasks which they believed to be legitimate measures of intelligence.

- 2) In a situation where the threat of failure was removed, the preference of defensive externals (as defined by low Interpersonal Trust scores) would shift in the direction of the so-called legitimate measures of intelligence. Such a shift in preference would be interpreted as an abandonment of a strategy for defense against anticipated failure in a situation where that strategy was presumably no longer required.

- 3) Assuming that defensive and congruent externals could indeed be distinguished by their responses on the Interpersonal Trust Scale, defensive externals would be found to have quantitatively lower discrepancies between their expectancy for success and their criterion of success than would either congruent externals or internals.

Without qualification, it may be said that very little in the way of support for the above hypotheses was obtained. The predicted I-E main effect in the Risk condition (Hypothesis I) was not obtained. Although there was some evidence of increased preference for the legitimate intelligence tests in the No Risk condition on the part of low-trust Ss, (Hypothesis II), the failure to observe a significant relationship between either I-E or Interpersonal Trust in the Risk condition rendered any interpretation of this finding problematic. Finally, no significant linear relationship was observed between discrepancy scores and multiplicatively combined I-E and IT scores (Hypothesis III).

An attempt was then made to reformulate the concept of defensive externality in terms of the relationship between expectancy and minimal goal. It was argued that such a conceptualization would be more directly interpretable in social learning theory terms (Rotter, 1954; Rotter, Chance, and Phares, 1972) than is the conceptualization based on Interpersonal Trust responses. The dimension of confidence was then constructed by calculating the difference between a given S's expectancy and minimal goal statements, and then weighting that difference by that S's initial expectancy statement. Thus, confidence was designed to reflect the extent to which an individual felt sure of performing successfully on a given task. While no specific hypotheses were made regarding confidence, it was argued that social learning theory would predict that, in general, low-confident Ss would be more inclined to behave defensively than would high-confident Ss. Moreover, it was noted that the observation of a significant configural relationship involving I-E and confidence with respect to preferences would have implications for the relative defensive tendencies of internals as well as externals.

Results indicated that, in the Risk condition, there indeed was a significant relationship between preference for the non-rationalizable tests

(PR-N) and the configural term,  $I-E \times C$ . An analysis of this relationship suggested that, among low-confident Ss,  $I-E$  did not appear to influence preference, while as confidence increased, defensiveness diminished more rapidly among internals than among externals.

In the No Risk condition, it was found that the preferences of low-confident internals and high-confident externals for the non-rationalizable tests increased markedly relative to those stated in the Risk condition, while the preferences of low-confident externals and high-confident internals did not change. These findings were interpreted to indicate that the stated preferences of low-confident internals and high-confident externals in the Risk condition were relatively defensive in nature. Of particular interest was the finding that in the No Risk condition, the configural term  $I-E \times C$  was found to be most useful as a suppressor variable, subtracting out the sources of error in the prediction of PR-N from  $I-E$  and  $C$  alone. These sources of error were discussed in light of the shift in preferences of low-confident internals and high-confident externals discussed above. Such shifts were interpreted as constituting an abandonment of a defense strategy in a situation where it was no longer needed. Thus, the configural term,  $I-E \times C$ , which was most useful as a predictor of PR-N in the Risk condition (where defenses were presumably operative), was determined to be most useful as a suppressor variable in the No Risk condition (where defenses were presumably rendered inoperative).

In light of the novelty of the confidence dimension as a variable in social learning theory, results obtained with it, as discussed above, were then compared with results which could be obtained using the discrepancy dimension (defined simply as expectancy minus minimal goal), a variable more closely aligned with traditional social learning theory approaches. It was demonstra-

ted that, indeed, better prediction of PR-N could be obtained with confidence (in conjunction with I-E) than with discrepancy (also in conjunction with I-E). However, it was also noted that: 1) the pattern of the results was virtually identical for both measures, and 2) the improved prediction obtained using confidence was relatively slight.

These results were taken to indicate that there may be some utility in assuming that quantitatively identical differences between expectancy and minimal goal level may be psychologically different, depending upon the level of expectancy. It was noted, however, that much more research will be needed in order to establish the relative utilities of confidence and discrepancy.

The discussion of the results of the present experiment focused essentially on two issues: 1) the failure to find support for any of the hypotheses stated at the outset, and 2) the implications of the results obtained by implementing the confidence variable.

Concisely stated, it was argued that the failure to confirm any of the three hypotheses of the present investigation may likely be attributable to the relative weakness of the Interpersonal Trust Scale for distinguishing between defensive and congruent externals. It was argued that the results warranted the rejection of neither the concept of defensive externality nor the manipulation used in the present experiment. Instead, it was argued, the fact that prior research using the Interpersonal Trust Scale for the present purposes relied totally on results obtained with subjects falling at the extremes of the distribution of that variable indicated that the scale had relatively little power for identifying defensive externals.

The discussion of the results obtained with the confidence dimension centered primarily on a tentative explanation for the finding that the relationship between confidence and defensiveness varied as a function of I-E.

Specifically, it was found that among individuals relatively high on the I-E dimension (i.e. internals), confidence and defensiveness were negatively correlated, a finding consistent with what would be expected on the basis of social learning theory. However, among individuals relatively low on the I-E dimension (i.e. externals), confidence and defensiveness were positively correlated. That is, low-confident internals showed a much greater increase in PR-N across the Risk-No Risk conditions than did high-confident internals, while the opposite held true for externals; high-confident externals showed a greater shift than did low-confident externals.

The tentative explanation offered by the author for these findings was that while both internals and externals may be expected to manifest preferences in certain situations which may be conceived as defensive in nature, some externals may also be expected to attempt to deceive others regarding their confidence in being able to perform successfully on some given task(s). Reference to the work of Rotter (1954) related to level-of-aspiration research was offered as support for the notion that indeed some individuals may well have stated distorted levels of confidence. Further, prior research by Davis and Davis (1972) and by Phares, Wilson, and Klyver (1971) was cited as a possible explanation for the fact that relatively internally oriented individuals do not appear to distort confidence statements.

The major weakness of the author's interpretation of the results of this study is its post hoc nature. The logic was essentially one of isolating Ss who behaved according to the author's operational definition of defensiveness (i.e. shifted upward from the Risk to the No Risk condition in their preference for the non-rationalizable tests), and then determining the characteristics of such Ss in terms of confidence and I-E. While a concerted attempt has been made to show that the results obtained are not inconsistent with what might have been predicted on the basis of both theoretical and empirical con-

siderations, it is nonetheless the case that in the present experiment, the findings were not predicted before hand.

Obviously, any conclusions drawn on the basis of the present data must be tempered by the above statement. However, should the findings of this investigation find further empirical support, it would appear that:

- 1) The Interpersonal Trust Scale may have very limited utility for distinguishing between defensive and congruent externals.

- 2) Despite this fact, the continued use of the concept of defensive externality is likely to be useful.

- 3) Defensive externals may be distinguished from congruent externals by their inclination to manifest a confidence in achieving success in a highly valued need area which their behavior in light of that confidence belies.

- 4) The notion that relatively internally oriented individuals may be expected to behave in a categorically nondefensive way is fallacious. Whether the preference behavior of low-confident internals in the present study would be more usefully labeled "defensive" or "adaptive" is an empirical matter. However, by the criterion established for this study, it is clear that internals too may employ certain defenses from time to time.

Future research in this area might profitably explore alternative definitions of defensiveness. Since, as noted earlier, the author's interpretation of the present findings is firmly rooted in the definition of defensiveness utilized here, support of these findings with some other measure of defensiveness would considerably enhance the credibility of those interpretations.

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DEFENSIVE EXTERNALITY AND THE THREAT OF FAILURE

by

JAMES T. LAMIELL

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The purpose of this investigation was to further explore the utility of distinguishing between congruent externals (individuals whose external responses on the I-E Scale are assumed to be veridical reflections of their locus of control beliefs) and defensive externals (individuals whose external responses on the I-E Scale are believed to constitute defense against anticipated failure).

Some results of prior research on the concept of defensive externality indicate that defensive externals might be expected to behave in a characteristically external fashion, while other results indicate that defensive externals may behave in a more characteristically internal fashion. The present study constituted an attempt to explain this apparent inconsistency on the basis of the extent to which the threat of failure is present in the situation in which the criterion behavior is observed. Accordingly, it was hypothesized that 1) in an achievement-related situation where the threat of failure is known to exist, defensive externals would behave in a fashion consistent with their verbalized (external) locus of control beliefs, and 2) in an achievement-related situation where the threat of failure is removed, defensive externals would behave in a way more consistent with their "actual" (internal) locus of control beliefs.

On the basis of prior research, it was decided to define defensive externals as those externals who scored low on the Interpersonal Trust (IT) Scale (Rotter, 1967), and congruent externals as those externals who scored high on the Interpersonal Trust Scale. In addition, however, expectancy and minimal goal level measures were also obtained, for the purpose of investigating a possible alternative method for defining defensive externals. A third hypothesis stated that defensive externals (as defined by IT scores) would be found to have significantly lower discrepancy scores (defined as expectancy minus minimal goal level) than would either congruent externals or internals.

One hundred and thirty-seven male subjects participated in the experiment. All subjects were given descriptions of four tests ostensibly designed to measure I.Q. For two of the tests (the nonrationalizable tests), descriptions consisted merely in naming them and describing how they worked. For the other two (rationalizable) tests, however, descriptions included a mention of some defect in the test which might influence one's score on that test. Subjects were asked to indicate the score they expected to receive on each of the tests (a measure of expectancy), together with a statement of the lowest score they would regard as personally satisfying on each of the tests (a measure of minimal goal level). Half of the subjects were then informed that they would be expected to actually take the tests (Risk condition), while the other half were told that they would not have to take the tests (No Risk condition). Pursuant to these instructions, subjects were asked to rank the tests in the order of their preference for each of them. They were also asked to distribute 100 points across the four tests to indicate degree of preference. This procedure thus incorporated two measures of task preference. Defensive behavior was defined as indicating a relatively weak preference for the nonrationalizable tests (i.e. those tests which provided no built-in explanation for failure).

No support was obtained for any of the three hypotheses noted above. It was argued that the Interpersonal Trust Scale may have a very limited utility for the purpose of identifying defensive externals. However, results obtained using the expectancy and minimal goal measures indicated that these variables may prove useful for such a purpose.

The dimension of Confidence (C) was defined as an individual's discrepancy weighted by his expectancy statement. In the Risk condition, it was found that the configural term  $I-E \times C$  was significantly related to preference for the nonrationalizable tests. Specifically, among low-confident subjects, I-E did

not appear to influence preferences. However, as Confidence increased, preference for the nonrationalizable tests increased more among internals than among externals.

In the No Risk condition, nearly the opposite results were obtained. Among low-confident subjects, internals indicated a greater preference for the nonrationalizable tests than did externals. However, as confidence increased, I-E differences diminished.

On the basis of these results, it was argued that it may be useful to view defensive externals as individuals who are likely not only to manifest relatively defensive preferences in situations where the threat of failure exists, but also to distort confidence statements in an attempt to appear to be more capable of achieving success than they in fact are. Thus, in this view, defensive externals would be those externals who indicate a high level of confidence in being successful on achievement-related tests, but whose preferences for such tests in situations where the threat of failure exists belies that confidence.

It was also noted that internals too may, under certain conditions, behave in a rather defensive fashion, although they do not appear to be inclined to distort confidence statements.

While the post hoc nature of these findings precludes any definitive conclusions, it was noted that they do provide a basis for future research into the concept of defensiveness in general, and defensive externality in particular.