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ABSTRACT

The present study was designed to test hypotheses derived from Horner's theory concerning the effect of the sex-role orientation of the situation on the arousal of the motive to avoid success in women. The study compared the performance of women high and low in the motive to avoid success in a male-oriented and a female-oriented situation. It was found that women performed significantly better (p.01) in the male-oriented than in the female-oriented situation, with this difference between conditions being greater for those women scoring high rather than low in the motive to avoid success (p.05). These results are inconsistent with an inhibitory anxiety explanation of motive to avoid success. The possibility that the measure of this motive may in part be a measure of ability is discussed. (Author)

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Performance in women as a function of fear of
success and sex-role orientation¹

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Short title: Fear of success and performance

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The concept of a fear of success was proposed by Horner (1968) in order to account for why differences in achievement-related motives--the motive to succeed and the motive to avoid failure--do not predict performance as well for females as they do for males (cf. Atkinson, 1958, p. 77). Horner suggests that females are hampered by the presence of an additional inhibitory anxiety variable--the motive to avoid success--which is aroused in those achievement-oriented situations where success may imply a loss of femininity and/or negative social consequences.

In order to test her theory, Horner (1968) developed a measure of individual differences in the motive to avoid success which involves having subjects write a story to the verbal lead, "After first term finals, Anne finds herself at the top of her medical school class." The written protocols are then scored for evidence of fear of success imagery. Using this measure, Horner (1968) found evidence that females have higher motive to avoid success scores than do males. Also, females high in the motive were found to perform worse in a mixed-sex competitive situation than in a noncompetitive situation, while the reverse held for women low in the motive. Recently, some correlational evidence which appears to corroborate Horner's theory concerning fear of success has been reported (cf. Horner, 1972). Schwenn (1970), for example, found that low motive to avoid success scoring women indicated a greater degree of willingness to report high grades to a male friend than did high scoring women. She also found that women high in the motive changed their career aspirations toward a more traditionally feminine direction during their college years more often than did women low in the motive. Horner (1972) reports a somewhat similar finding regarding work orientations for the subjects tested in her original study (Horner, 1968). While 89 percent of the women scoring high in the motive to avoid success were majoring in the

traditionally feminine humanities, 56 percent of the women scoring low in the motive were majoring in the less traditional natural sciences. These findings tend to support both Horner's theory and the validity of her measure.

The present study attempted to test a further prediction derived from Horner's (1968) theory. The theory suggests that male-oriented performance situations should arouse the motive to avoid success more than female-oriented performance situations because success at male-oriented activities may imply "behaviour unbecoming to a lady" and may arouse the anticipation of negative social consequences. Success at female-oriented activities, on the other hand, is less likely to arouse the expectation of negative consequences, either social or to self-esteem, since the negative incentive value of success should be greater for performance tasks which are generally considered masculine than for those which are generally considered feminine (Horner, 1968, p. 24).

Hence, the present study examined theory-derived hypotheses concerning the effects of the sex-role orientation of the situation and the motive to avoid success on performance. It was predicted that (a) women high in motive to avoid success would perform worse in a male-oriented than in a female-oriented situation, and (b) the decrement from a female-oriented to a male-oriented situation observed for high motive to avoid success women would be greater than any corresponding decrement that might be observed for low motive to avoid success women.

METHOD

Subjects

The subjects were 164 female undergraduate students enrolled in summer session courses at the University of Western Ontario. One hundred

subjects participated in the experiment during the course of one of their regular introductory psychology classes. Their participation in the study partially fulfilled a course requirement for four hours of experimental participation. The other 64 subjects were paid volunteers, who were recruited by means of sign-up sheets posted on campus. The two samples were combined since subsequent analyses showed similar patterns of results in both.

Procedure

All 10 experimental sessions were conducted in classrooms at the University, with 8 to 40 subjects per session. Subjects were led to believe that they were participating in two separate research projects conducted by two different experimenters. The first experimenter, a female graduate student, administered two questionnaires from which motive to avoid success scores as well as other motive scores, obtained for exploratory purposes, could be derived. The first questionnaire was administered according to standard procedures recommended for assessing the projective measures of n Achievement, n Affiliation (Atkinson, 1958, Appendix III) and motive to avoid success (Horner, 1968, p. 105). Descriptive sentences rather than pictures were used to elicit stories (cf. Veroff, Atkinson, Feld & Gurin, 1960; Raynor, 1968). The first four sentences, along with numbers to identify corresponding pictures (Atkinson, 1958, Appendix III) were presented in the following order: (2) Two people are working in a laboratory on a piece of equipment, (48) A person is working with a typewriter and books, (1) An older person is talking to a younger person, (7) A young person is standing; a vague operation scene is in the background. These stories were scored for n Achievement and n Affiliation by persons who established themselves as "expert"

scorers by correlating above .90 with the practice materials (Smith & Feld, 1958) and above .90 with another "expert" scorer.

The fifth descriptive sentence in the first questionnaire was that advocated by Horner (1968) for assessing the motive to avoid success--namely, "After first term finals, Anne finds herself at the top of her medical school class." The protocols written to this lead were scored for motive to avoid success according to Horner's criteria (Horner, 1968, p. 105) by two raters whose interater scoring reliability was .71. Final motive to avoid success scores were obtained by having the two raters reach agreement where differences had occurred. Those subjects who showed any evidence of fear of success in their responses to the Anne lead were designated as the High motive to avoid success group. Those who showed no evidence of fear of success were designated as the Low motive to avoid success group.

A measure of Test Anxiety was obtained by administration of the first third of the Mandler & Sarason (1952) Test Anxiety Questionnaire. Scores on the first third of this questionnaire have correlated between .84 and .90 with total scores (Smith, 1964).

Following the collection of the above questionnaires, the first experimenter indicated to the subjects that her experiment was completed and a second experimenter, also a female graduate student, ostensibly began her experiment. An ability group norm procedure was employed in order to maximize the achievement-orientation of the situation (cf. Moulton, 1965). Subjects received a questionnaire labelled, "Ability Group Transformation Procedure," which consisted of two parts. In the first part, subjects were asked to indicate their score on the Canadian Scholastic Aptitude test. Those who had never taken this test were asked to indicate either (a) their reported IQ, or (b) their combined Mathematics and English average for their final high school year.

Both of these alternate choices also involved checking a labelled five point interval scale. In the second part, subjects were asked to indicate on a five point scale their overall grade average for their last academic year. The ability questionnaires were then collected and scored at the front of the room by the experimenters. A subject's ability score was obtained by averaging her score on the two parts. Noninteger averages were rounded to the nearest higher whole number. The ability scores derived from this procedure ranged from 1 to 5, with 1 indicating lowest ability and 5 indicating highest ability.

Following this procedure, each subject was given a questionnaire which included her ability score. It was explained to the subjects that the ability information they had provided had been used to assign them to one of five ability groups. They were told that the questionnaire they had just been given was the main questionnaire to be used in the research project, and it was explained that each subject had been given the copy of this questionnaire which was appropriate to the ability group to which she had been assigned.

The questionnaire also contained the performance task which was initially used by Bird (1972) and entailed rapid tracing of geometric designs. This task was chosen because it could be presented as either a female-oriented activity or a male-oriented activity without changing the actual responses. Half the subjects received the Test of Domestic Ability: Form A: Pattern and Design which consisted of three parts: Pattern and Design Tracing, Test of Color and Dress Design, and Critical Evaluation. The other half received the Test of Drafting Ability: Form A: Architectural Forms which also consisted of three parts: Tracing Architectural Forms, Geometry Problems, and Critical Evaluation. For both experimental groups, however,

the performance task (labelled as either "Pattern and Design Tracing" or "Tracing Architectural Forms") was identical (the same geometric forms were used in both) with the measure of performance for all subjects being the number of designs attempted at the tracing task. Bird (1972) has presented data indicating that the Test of Domestic Ability was perceived by her subjects as being more female-oriented than was the Test of Drafting Ability.

Because the rationale of the task differed across the two experimental conditions (male-oriented situation and female-oriented situation), the subjects read the instructions. The instructions for the tracing task explained that the number of items that must be traced in order to succeed in the 2 1/2 minutes allowed, varied across ability groups but the critical number within each group had been chosen so that the task would be of intermediate difficulty (every person would have a 50-50 chance of completing the critical number of tracings required for her ability group). The critical number of designs to be traced was handwritten in blue ink on each questionnaire. Subjects in every ability group found that the critical number for their ability group was 60 tracings. There were 84 designs in all.

After reading the above instructions for the tracing task, the subjects were asked to fill out a Pre-experimental Questionnaire which consisted of two questions. Subjects were first asked to indicate on a ten point interval scale ranging from 0 to 100, what they thought were their chances of success on all parts of the test. They were also asked to indicate on a five point scale how interesting the task appeared to them. Following completion of the Pre-experimental Questionnaire, subjects performed the tracing task.

The experimenter then explained to the subjects that they would not complete the final two parts of the test, since the session was scheduled to last only one hour. She asked the subjects instead to fill out a post-experimental questionnaire, which asked the subjects a number of questions about the task they had just completed. These questions were intended to check for suspicion, efficacy of the experimental manipulation (sex-role orientation), and included other items for exploratory purposes.

RESULTS

As a check on the experimental manipulation, subjects were asked to indicate on a scale from one to five whether the task was more relevant for males (1) or females (5). Table I presents the means for these ratings across Motive to Avoid Success (M_{AS}) x Conditions combinations. As can be seen in the table, subjects in the Male-Oriented condition perceived the situation as more relevant for males than females and the reverse was true for subjects in the Female-Oriented condition. While this result is in the predicted direction, note that the High M_{AS} group shows greater differences across conditions than the Low M_{AS} group. This pattern of interaction across M_{AS} Conditions combinations was not expected.

Insert Table I about here

Analysis of variance³ revealed a significant main effect for Conditions ($F = 26.70$, d.f. = 1/156, $p < .0001$) and an interaction of borderline significance between M_{AS} and Conditions combinations ($F = 3.48$, d.f. = 1/156, $p < .07$). No significant main effect was found for M_{AS} groups ($F < 1$).

Table 2 presents the results on the primary dependent measure, the mean number of designs attempted, for each of the four experimental groups. Not only did subjects high in motive to avoid success

score significantly higher in the Male-oriented condition than in the Female-oriented condition ($t = 2.93$, d.f. = 160, $p < .01$) but they also showed significantly greater between-conditions differences than subjects low in motive to avoid success ($t = 1.97$, d.f. = 160, $p < .05$). This pattern of interaction obtained within motive groups and conditions is exactly opposite to predictions based on Horner's theory.

Insert Table 2 about here

Analysis of variance revealed a significant main effect for conditions ($F = 5.85$, d.f. = 1, 160, $p < .02$). Subjects performed better, on the average, in the male-oriented situation than in the female-oriented situation. The effect of the interaction between motive groups and conditions was also significant ($F = 3.99$, d.f. = 1/160, $p < .05$). No significant main effect was found for M_{AS} groups ($F < 1$).

DISCUSSION

The results of the present study clearly failed to support the hypotheses derived from Horner's theory (Horner, 1968). Although a significant interaction on performance scores was observed between motive groups and conditions, the pattern of differences comprising this interaction was the exact reverse of theoretical predictions. Women high in motive to avoid success performed better in the male-oriented than in the female-oriented condition, and this difference was greater than for women low in motive to avoid success. These results are indeed puzzling if one were to accept an anxiety interpretation of motive to avoid success scores. If male-oriented situations are arousing inhibitory anxiety due to motive to avoid success, why then are females who score high on this motive performing best in this situation

and worse than any other group in the female-oriented situation?

A possible interpretation of these results is suggested by the manipulation check shown in Table I. Note that while both females High and Low in motive to avoid success perceived the Female-Oriented condition as more relevant for females and the Male-Oriented condition as more relevant for males, this difference is greater for females high in the motive to avoid success ($t = 1.82$, d.f. = 156, $p < .01$) yielding an interaction of borderline significance ($t = 1.82$, d.f. = 156, $p < .07$) between Motive to Avoid Success and Sex-Role Orientation. The striking parallel between the pattern of interaction of these results and those on the performance measure (see Table 2), leads to the conjecture that the motive to avoid success score might be tapping something other than, or in addition to, anxiety. That is, the measure of motive to avoid success might be picking up other factors which lead the females who score high on this measure to be either more sensitive to the demand characteristics of the situation or to perceive the sex-role cues as more salient than those who score low on this measure.

Since the motive to avoid success scores did not correlate significantly with any of the other motive measures in the present study,⁴ the authors looked to a possible ability interpretation of the results. It was felt that perhaps the motive to avoid success measure may in fact be a measure of ability, with high motive to avoid success equal to high ability and low motive to avoid success equal to low ability. If this conjecture were correct, then one could account for the interaction between motive to avoid success and sex-role orientation on performance. For example, females high in ability (and also high in M_{AS}) may find male-oriented situations more attractive relative to female-oriented situations than females low in ability (and also low in M_{AS}); hence they performed better in Male-Oriented situations and worse in Female-

Oriented situations than females low in ability. This possibility will be reexamined following a discussion of the motive to avoid success score as a measure of ability.

Horner (1968, p. 22) does argue that high motive to avoid success females should also be higher in ability than low motive to avoid success females due to the fact that females high in ability are more likely to be successful in achievement-oriented activity and hence have a greater past history of negative consequences associated with success in competitive and/or male-oriented situations than do those lower in ability. She is by no means implying, however, that her measure of motive to avoid success might in fact be a measure of ability rather than a measure of inhibitory anxiety.

In pursuit of an ability interpretation of the results, the ability index scores, which were calculated for each subject on the basis of self-report information obtained from the subjects on the "Ability Group Transformation Procedure" Questionnaire, were analyzed. Analysis of variance testing the effects of motive groups and experimental conditions on these ability scores, revealed a significant main effect for motive groups ($F = 6.12$, $d.f. = 1/160$, $p < .02$). Subjects high in motive to avoid success had higher ability scores than those low in motive to avoid success. Neither the main effect for conditions ($F = 2.32$, $d.f. = 1/160$, ns) nor the interaction between motive groups and conditions ($F = 1.55$, $d.f. = 1/160$, ns) was significant.

This result, in itself does not corroborate an ability interpretation of the results, as Horner would also argue that this difference should hold. It does, however, permit the authors to speculate on the nature of the scoring criteria for motive to avoid success, in terms of an ability measure. There are two general types of stories written to the Anne lead that are scored for

motive to avoid success (Horner, 1968, p. 105). First, any mention of conflict over success, negative consequences arising from success, or instrumental activity away from success, is considered as evidence of the motive. In addition, bizarre, unrealistic or non-adaptive responses to the cue are scored positively. Given this method of assessing the motive to avoid success, there are at least three possible ways by which the measure might be tapping ability differences.

Women high in ability, for example, may be more sensitive to the demand characteristics of the "Anne lead" than those lower in ability, and therefore would be more likely to satisfy one of the "negative consequences" criteria for fear of success. The possibility that those subjects scoring high in motive to avoid success may be higher in susceptibility to experimental demand characteristics than those scoring low in motive to avoid success, perhaps as a result of their higher ability level, is suggested from the data concerning the perceived sex-role relevancy of the task shown in Table I where those high in motive to avoid success perceived the male and female-oriented situation as more masculine and feminine than those low in motive to avoid success. If this conjecture from the data were correct, then one could indeed speculate that the primary reason why high motive to avoid success women write stories with more negative consequences may be that their higher ability makes them more sensitive than low motive to avoid success women to the demand characteristics of the descriptive lead sentence. Morgan and Mausner (1972) have pointed out that the "Anne" lead is "none too subtle".

A second possibility for how the measure might be tapping ability differences is that women high in ability may be writing more creative and unusual stories than those lower in ability, and therefore would be more

likely to satisfy the "bizarre response" criterion for fear of success. Some recently reported evidence concerning motive to avoid success is consistent with this notion. Horner (1972) found that women high and low in motive to avoid success (as classified by their responses to the medical school cue) differ in their responses to another cue--"Anne is sitting in a chair with a smile on her face". She reports that while more than 90 percent of the women low in motive to avoid success wrote positive affiliative stories in response to this lead, more than 80 percent of the women high in motive to avoid success wrote stories that, if not bizarre, were replete with negative imagery centering on hostility toward or manipulation of others.

Horner interprets these findings as indicating that the cultural processes that produce the motive to avoid success also produce feelings of frustration and hostility (Horner, 1972, p. 171). An examination of the example responses to the "smile cue" which Horner (1972, p. 172) cites, however, suggests an alternative explanation. The following stories are cited as characteristic of women low in motive to avoid success:

Her boyfriend has just called her...Oh boy. I'm so excited, what shall I wear...Will he like me? I am so excited. Anne is very happy. Anne will have a marvelous time.

Anne is happy--she's happy with the world because it is so beautiful. It's snowing, and nice outside--she's happy to be alive and this gives her a good warm feeling. Well, Anne did well on one of her tests.

In comparison, the following stories are cited as typical responses of the high motive to avoid success women:

Anne is recollecting her conquest of the day. She has just stolen her ex-friend's boyfriend away, right before the High School Senior Prom because she wanted to get back at her friend.

She is sitting in a chair smiling smugly because she has just achieved great satisfaction from the fact that she hurt somebody's feelings.

Gun in hand, she is waiting for her stepmother to return home.

It is clear that the stories cited for the high motive group are more creative, interesting, and less traditional than those cited for the low motive group. Indeed, almost by definition, a negative imagery response (i.e. hostility, smugness) to the smile lead is a more creative response than is a positive imagery response (i.e. pleasure in affiliation). If high ability women are writing more creative and unusual stories to sentence leads, they are more likely to be classified as High in motive to avoid success by Horner's "bizarre" category criterion. Bizarre responses to the Anne lead, then, may be reflecting high ability rather than high anxiety.

Finally, women high in ability may be writing longer stories in response to the Anne lead than those lower in ability, and therefore would have a higher probability of emitting some response that would satisfy one of the criteria for fear of success (c.f. Murstein, 1963, p. 137). Some support for this explanation was found with our sample. Analysis of variance conducted to test the effect of motive groups on the number of words written in response to the Anne lead revealed that women high in the motive to avoid success had written stories that were significantly longer than those written by the low motive group ($F = 5.55$, d.f. = 1/162, $p < .02$).

The above examination of the measure of motive to avoid success suggests a number of ways by which the measure might be simply tapping ability

rather than anxiety over success. If this were the case, the pattern of differences observed between experimental groups on performance in the present study would become easier to understand. For in the past, the performance of challenging and prestigious achievement-oriented activities has been more typically associated with the male sex-role than with the female sex-role. Over time, this may have resulted in masculine accomplishments coming to be viewed as better and harder-to-achieve than feminine accomplishments. Recent evidence presented by Deaux and Emswiller (1972) supports this assumption. These authors had their subjects listen to tape recordings to another person performing on either a female-oriented or a male-oriented test. Despite the fact that pretesting had shown the two tests to be rated equivalent in difficulty and that the score obtained by stimulus persons was identical vis-a-vis an identical norm for masculine and feminine tasks, it was found that performance on the masculine task was seen as better by subjects of both sexes.

If masculine accomplishments are seen as better accomplishments, there would be more extrinsic incentives of a self-esteem nature for success at male-oriented tasks than for success at female-oriented tasks. Women at all ability levels, might be expected to perform somewhat better in a male-oriented than in female-oriented situation. Further, this between-conditions difference should be greater for women higher in ability, since success at a male-oriented task would be much more consistent with their own self-conceptions regarding their high ability level than would success at a female-oriented task. The pattern of results obtained in the present study, then, could be explained if the motive to avoid success measure is separating women on level of ability rather than anxiety.

A close re-examination of the previous correlational evidence cited by Horner (1972) as supportive of an anxiety interpretation of motive to avoid

success scores leads to the conclusion that these results could have been obtained equally well if the motive to avoid success measure were simply tapping ability differences. Consider, for example, Horner's own finding that 89 percent of her subjects scoring high in motive to avoid success were majoring in the traditionally feminine humanities, while 56 percent of the women scoring low in the motive were majoring in the less traditional natural sciences. It may well be that women majoring in the humanities have greater verbal skills than those in the sciences, and would thereby be more likely to write longer and more creative stories to the projective sentence lead. This would increase their chances of being classified as high in motive to avoid success by Horner's measure. The other correlational data cited by Horner (1972) is similarly amenable to an ability explanation of motive to avoid success scores (c.f. Short, 1973).

It should be pointed out, however, that the authors of the present study were careful not to include any implication to the subjects that they were in fact in competition with males. Rather, they were testing that part of Horner's theory which speaks exclusively to sex-role orientation. It is possible, therefore, that motive to avoid success is a measure of inhibitory anxiety when in competition with males.⁵ Hence in the present study, where competition with a standard of excellence, rather than competition with males took place, that part of the motive to avoid success score which actually assesses ability may have played the dominant role, but the reverse may occur when competition with males is the salient factor. This possibility would, of course, limit the generalizability of Horner's theory to situations where females are actually in competition with males, and would necessitate a re-

evaluation of the possible interaction between motive to avoid success and sex-role orientation.

In conclusion, the results of the present study did not lend support to a priori predictions concerning the effects of motive to avoid success and sex-role orientation on performance. In fact, the results were exactly opposite to what Horner's theory would predict. There appear to be more positive extrinsic incentives of a self-esteem nature for success at male-oriented activities than for success at female-oriented activities and these additional incentives available in male-oriented situations seem to be pursued more by women scoring high in the motive to avoid success than by those scoring low in the motive. The results cast some doubt on the validity of the motive to avoid success score as a measure of an additional anxiety variable present in women, and suggest the possibility that Horner's measure may, at least in some part, be a measure of ability. Further research to determine whether motive to avoid success scores are really tapping anxiety over success or are simply tapping ability differences or both, would clearly seem warranted. Should subsequent research reveal that the measure actually reflects an inhibitory type of motivation that is correlated with ability, the present results indicate that the measure's ability to predict performance for females is bound to be low unless the sex-role orientation of the performance situation, and the extrinsic incentives associated with it, are considered.

REFERENCES

- Atkinson, J. W. Motives in fantasy, action and society. Princeton: Van Nostrand, 1958.
- Bird, B. J. Differences in achievement motivation in women: The sex-role orientation of the situation. Unpublished masters thesis, University of Western Ontario, 1972.
- Deaux, K. & Emswiller, T. Explanations of successful performance on sex-linked tasks: What's skill for the male is luck for the female. Unpublished manuscript, 1972.
- Horner, M. S. The psychological significance of success in competitive achievement situations: A threat as well as promise. Unpublished manuscript, 1970.
- Horner, M. S. Toward an understanding of achievement-related conflicts in women. Journal of Social Issues, 1972, 28, 157-175.
- Mandler, G. & Sarason, S. B. A study of anxiety and learning. Journal of Abnormal and Social Psychology, 1952, 47, 166-173.
- Meyers, J. L. Fundamentals of experimental design (2nd edition). Boston: Allyn & Bacon, 1973.
- Morgan, S. W. & Mausner, B. Behavioural and fantasied indicators of avoidance of success in men and women. Paper presented at the Eastern Psychological Association, Boston, 1972.
- Moulton, R. W. Effects of success and failure on level of aspiration as related to achievement motives. Journal of Personality and Social Psychology, 1965, 1, 399-406.
- Murstein, B. I. Theory and research in projective techniques. New York: John Wiley & Sons, Inc., 1963.

- Raynor, J. O. Achievement motivation, grades, and instrumentality. Paper presented at the meeting of the American Psychological Association, San Francisco, September, 1968.
- Schwenn, M. Arousal of the motive to avoid success. Unpublished junior honours thesis, Harvard University, 1970. Cited in Horner, 1972.
- Short, J. C. The effect of the sex-role orientation of the situation on the arousal of the motive to avoid success. Unpublished masters thesis, University of Western Ontario, 1973.
- Smith, C. P. The influence of testing conditions on need for achievement scores and their relationship to performance scores. Unpublished doctoral dissertation, University of Michigan, 1961.
- Smith, C. P. Relationship between achievement-related motives and intelligence, performance level, and persistence. Journal of Abnormal and Social Psychology, 1964, 68, 523-532.
- Smith, C. P. & Feld, S. How to learn the method of content analysis for n Achievement, n Affiliation and n Power. In J. W. Atkinson (Ed.), Motives in fantasy, action, and society. Princeton: Van Nostrand, 1958.
- Veroff, J., Atkinson, J. W., Feld, S., & Gurin, G. The use of thematic apperception to access motivation in a nationwide interview study. Psychological Monographs, 1960, 74, whole no. 499.

Footnotes

1

Parts of this paper under the title of, "The arousal of fear of success as a function of male vs. female role orientation", were presented with the authorship reversed at the annual meeting of the Eastern Psychological Association, Washington, D.C., 1973. This research was supported in part by Canada Council grant (#S72-0639) and a U.W.O. University Research grant (#1305 258 000) to the first author. Our thanks to Barbara J. Bird for her help in the initial stages of planning and running the experiment.

2

Three subjects did not complete this item and were deleted from this analysis.

3

All analyses of variance reported in this study used a least squares solution for unequal cell frequencies advocated by Meyers (1973, p. 121). Two tailed t tests, where reported, were based upon the within cell error term of analysis of variance.

4

Motive to avoid success did not correlate significantly with n Affiliation ($r = .01$), Test Anxiety ($r = -.09$) or n Achievement ($r = -.01$) scores. The other motive measures also did not contribute significantly to performance when in combination with motive to avoid success scores. A significant two factor interaction on performance, however, was obtained with n Affiliation scores (High, Moderate, Low) and Sex-Role orientation (Male vs. Female) such that subjects High or Low in n Affiliation performed better in the Male than the Female Oriented condition, while the reverse was true for subject's Moderate in n Affiliation ($F = 4.40$, $d.f. = 2/152$, $p < .05$). These results, however,

are uninterpretable, given our present knowledge concerning the affiliation motive (c.f. Sorrentino, R. M. Considerations for extending initial and elaborated theory of achievement motivation to the study of group processes. In J. O. Raynor and J. W. Atkinson (Eds.), Motivation and Achievement, Washington, D.C.: V. H. Winston & Sons, in press, 1973).

5

Although Horner (1968, p. 205) found no differences in the predicted direction due to experimental conditions (Mixed-sex competitive vs. same-sex competitive vs. Noncompetitive situations) for women High in the motive to avoid success on performance, she did find that females High in the motive to avoid success performed significantly better in the Noncompetitive condition than they did in a mass testing session from which performance data was also obtained. The reverse was true for females low in the motive to avoid success. Since males were also present in the mass testing session, Horner felt that the session could be considered a "Mixed-sex competitive" situation (Horner, 1968, p. 112). Therefore, there is some evidence that motive to avoid success is inhibitory when in competition with males.

TABLE I
MEAN PERCEIVED SEX-ROLE RELEVANCY
FOR MOTIVE GROUP X CONDITIONS COMBINATIONS

Motive to Avoid Success Group	Experimental Condition			
	Male-Oriented		Female-Oriented	
	M	n	M	n
High	2.84	25	3.44	16
Low	2.96	56	3.25	63

TABLE 2
 MEAN NUMBER OF DESIGNS ATTEMPTED
 FOR MOTIVE GROUP X CONDITIONS COMBINATIONS

Motive to Avoid Success Group	Experimental Condition			
	Male-Oriented		Female-Oriented	
	M	n	M	n
High	44.08	25	33.25	16
Low	39.56	57	37.32	66