

Effects of Affiliation-Related Motives on Swimmers in Individual Versus Group Competition: A Field Experiment

Richard M. Sorrentino and Blair H. Sheppard
University of Western Ontario, London, Canada

Seventy-six intercollegiate swimmers from three universities participated in both an individual and group competition 200-yard (182.9 m) freestyle swim. Hypotheses were based on an expectancy-value approach, which emphasizes the negative as well as positive consequences of undertaking an activity. It was found, as predicted, that while approval-oriented swimmers had faster swimming speeds in group than in individual competition ($p < .001$), rejection-threatened swimmers actually had slower swimming speeds in group than in individual competition ($p < .001$). This significant ($p < .001$) Affiliation-Related Motives \times Experimental Conditions pattern of interaction was also greater for success-oriented than failure-threatened swimmers ($p < .03$) and for males than females ($p < .01$). These latter differences, as well as the advantages of the field-experimental situation, are discussed in light of current findings in the motivation area.

The present investigation used experienced varsity swimmers to test a conceptualization of affiliation motivation that parallels theoretical notions concerning achievement motivation (e.g., Atkinson & Raynor, 1974). The early history of the affiliation motive—the concern over establishing, maintaining, or restoring a positive affective relationship with another person (Heyns, Veroff, & Atkinson, 1958)—is similar to that of the achievement motive. For example, Heyns et al. (1958) developed a scoring manual from which the motive could be inferred from need for affiliation (*n* Affiliation) scores on the projective Thematic Apperception Test. Also, measurement of the effects of experimental arousal on *n* Affiliation scores was conducted by Atkinson, Heyns, and Veroff (1954), and tests of the motive on behavioral measures followed (e.g., Atkinson & Walker, 1956; French, 1958).

This study was supported by Canada Council Grant S75-0519 to the first author. Our thanks go to the coaches and swimming teams of Western Ontario, McMaster, and Toronto Universities for their cooperation and participation in the study and to Wesley J. McConnell for his help in conducting the study. Requests for reprints should be sent to Richard M. Sorrentino, Department of Psychology, University of Western Ontario, London, Ontario, Canada N2L 3G1.

Unlike research on achievement motivation, however, the notion of an independent avoidance motive also aroused in affiliation-oriented situations, similar to fear of failure, which is aroused in achievement-oriented situations (e.g., Atkinson, 1964; Atkinson & Feather, 1966), has not been fully developed. Using a Lewinian "expectancy-value" framework, Atkinson (1964) theorized that achievement-oriented activity as defined by McClelland (1961) would not only arouse the motive to succeed (*Ms*), because of positive incentives concerning one's pride in accomplishment, but would also arouse the motive to avoid failure (*Maf*), because of negative incentives concerning shame over failure. Persons in whom $Ms > Maf$ are considered success-oriented; they are positively motivated to engage in the activity. Persons in whom $Maf > Ms$ are negatively motivated. Assuming a linear relationship between strength of motivation and efficiency of performance, it is predicted by the theory that success-oriented persons will perform better at achievement-oriented activity than failure-threatened persons. The stronger the achievement incentives in the situation, the greater will be the differences in performance due to achievement-related motives. The theory of achievement

motivation not only goes on to specify mathematically the situational determinants that should arouse or diminish these differences, but has been further elaborated and formalized by Raynor (1969, 1974) to incorporate the relevance of future goals to performance on the immediate activity.

Since the inclusion of the avoidance motive—fear of failure—has been a major impetus to the development of the general theory of achievement motivation (Atkinson & Raynor, 1974), a similar conception may also serve as a springboard for future development of research in affiliation motivation. The notion of positive and negative components of affiliation motivation is not unique. Investigators such as Bechtel and Rosenfeld (1966), Watson and Friend (1969), and Mehrabian and Ksionsky (1974) have made attempts at relating both tendencies to social interaction and conformity. What may be unique, however, is our conceptualization that in the case of achievement-related motives, differences in behavior due to affiliation-related motives will be systematically affected by situational determinants.

Hypotheses

By systematic we mean that approval-oriented persons—those in whom the motive to gain approval (Maff) is greater than the motive to avoid social rejection (Msr)—will be positively motivated, and rejection-threatened persons (i.e., where $Msr > Maff$) will be negatively motivated when facing affiliation-oriented activity, and these differences will be enhanced or diminished by the strength of the affiliative incentives in the situation. As with achievement-related motives, these differences may be expected to carry over into performance situations where affiliative incentives are involved and where there is a linear relationship between strength of motivation and efficiency of performance.

This notion was first suggested by Short (Note 1), when she found that some subjects appeared to have their performance inhibited rather than enhanced by affiliative incentives in the situation. The present study attempts to test this conceptualization directly by examining the performance of experienced

swimmers when faced with individual versus group competition. While there may be affiliative incentives surrounding success or failure when one is competing as an individual (e.g., approval from teammates for success or rejection for failure), it is assumed that there will be even stronger affiliative incentives when a group's success or failure is contingent upon one's performance. That is, the group is likely to give still greater approval for success and rejection for failure when one's performance directly affects the outcome for the group as a whole. The approval-oriented person, who seeks approval and does not fear rejection, will therefore be more positively motivated in the group than in the individual competition. The rejection-threatened person, who does not seek approval but fears rejection, should be more negatively motivated in the group than in the individual competition. Should there be a linear relationship between strength of motivation and efficiency of performance, then it is predicted that approval-oriented persons will increase their swimming speed in the group as compared to the individual situation. The rejection-threatened person, however, should actually have a slower swimming speed in the group than in the individual situation. Just as failure-threatened persons are expected to be inhibited in their performance by the failure incentives of a situation (see Atkinson, 1964, chapter 8), so also should rejection-threatened persons be inhibited by the rejection incentives.

Other Variables

While affiliation-related motives are theoretically independent from achievement-related motives, differences due to the former will be aroused by the affiliative incentives contingent upon one's success or failure. Differences due to the latter will be aroused by the achievement incentives involved in one's success or failure. It is possible that since there are both affiliative as well as achievement incentives in the group competition condition, the two sources of motivation will combine to produce higher performance for the approval-oriented person who is also success-oriented than for other combinations (e.g., approval-oriented person who is also failure-threatened).

There is also the possibility, however, that the relationship between efficiency of performance and motivation may be curvilinear. Several studies (e.g., Atkinson & O'Connor, 1966; Entin, 1974; Horner, 1974b; Sorrentino, 1974) report results which suggest in some cases that where positive situational incentives are strong, persons who are both approval and success oriented may be too positively motivated and experience a performance decrement. This Yerkes and Dodson (1908) notion has been elaborated by Atkinson (1974) and receives a priori support from Short and Sorrentino (Note 2).

It is also possible that overmotivation may occur in situations other than those in which positive achievement and affiliative motives are combined. Approval-oriented persons, independent of their achievement-related motives, might be overmotivated in group competition. In an earlier laboratory study, for example, Sorrentino and Short (1977) found that mere anticipation of group as opposed to individual activity led to an overmotivation effect for subjects high in *n* Affiliation.

In the present context, then, it is possible that all approval-oriented persons, or perhaps only those who are also success-oriented, may be overmotivated in the group situation, leading to a decrease rather than an increase in swimming speed, as opposed to individual competition. For this reason, differences due to achievement-related motives are also included in the present study, and the possibility of overmotivation either in conjunction with achievement-related motives or with affiliation-related motives alone is examined.

It is important to note that no predictions are made for those who score moderate on affiliation-related motives. Conceptually, persons whose approach and avoidance motives are equal should have zero resultant motivation and should not be affected by experimental conditions. The performance of such persons, then, should fall in between that of approach- and avoidance-oriented persons. Sorrentino and Short (1977), however, question this assumption, insofar as persons who score moderate often display behaviors at a higher or lower level than approach- or avoidance-oriented persons. In either case, no predictions can be made for this group.

Finally, differences due to sex are also examined. Achievement research has had difficulty extending its predictions to females (see Horner, 1974a), and it is of interest to see if this problem extends to predictions based on affiliation-related motives.

Method

Subjects

The subjects were male ($n=44$) and female ($n=33$) members of the McMaster University, University of Toronto, and University of Western Ontario varsity swim teams. In order to avoid any perceived connection between assessment of the motivation of the members and the experimental stage of the study, recruitment proceeded in a two-step fashion, with the experimental portion occurring 3 weeks following the assessment. All subjects who participated in the first step also participated in the second. Because of the logistics involved in testing subjects at their own locations, three different experimenters were used to assess the motives of the swimmers. The respective coaches of the three teams conducted the experimental portion of the study.

Assessment of Motivation

Upon completion of a regular practice session, the coach of each university introduced an experimenter and requested the swimmers to complete a number of questionnaires. All swimmers present complied with this request.¹ Following standard procedures (Atkinson, 1958, Appendix III), the projective measure for assessing *n* Achievement and *n* Affiliation was administered first. Descriptive sentences rather than pictures were used to elicit stories. This procedure has been shown to yield a valid measure of *n* Achievement (Entin & Raynor, 1973; Raynor & Rubin, 1971) and *n* Affiliation (Sorrentino, 1973). For male subjects, the sentences (adjusted for a college sample), along with numbers to identify corresponding pictures (Atkinson, 1958, Appendix III), were presented in the following order: (2) "Two men are working in a laboratory on a piece of equipment"; (48) "A man is working with a typewriter and books"; (86) "A group of young people are sitting in a lounge talking"; (7) "A boy is standing; a vague operation scene is in the background." While the order of sentences was the same for females, neutral characters instead of males were substituted (e.g., "young person" for "boy"), since male or female characters have led to equivocal results for females (see

¹ Subjects who were not present at the time but who were present during the experimental stage ($n = 20$) were allowed to participate in the latter in order to preserve the discontinuity between the two steps.

Lesser, Krawitz, & Packard, 1963). The latter procedure has been shown to yield high predictive validity (see Sorrentino & Short, 1977; Short & Sorrentino, Note 2). Protocols were scored for *n* Achievement and *n* Affiliation according to the scoring manuals (Heyns, Veroff, & Atkinson, 1958; McClelland, Atkinson, Clark, & Lowell, 1958) by separate expert scorers. These persons established expertise by correlating above .90 with the practice materials of Smith and Feld (1958).

A measure of test anxiety was next obtained by administration of the first third of the Mandler and Sarason (1952) Test Anxiety Questionnaire. Scores on the first third of this questionnaire have correlated between .84 and .90 with total scores (Smith, 1964). Fear-of-social-rejection scores were than obtained by means of the Interpersonal Opinion Questionnaire (Mehrabian, 1970). Both of the latter questionnaires are self-report graphic rating scales in which the scores for each item are summed to provide a total score. There were no significant correlations between any of the four motive measures.

Subjects were classified high, moderate, or low on both resultant measures of affiliation motivation and achievement motivation by first transforming each of the motive scores into *z* scores and then subtracting fear-of-social-rejection *z* scores from *n* Affiliation *z* scores to form a resultant measure of affiliation motivation. Test anxiety *z* scores were subtracted from *n* Achievement *z* scores to form a resultant measure of achievement motivation. A three-way split of the two resultant motive scores was then performed for purposes of classification. Persons scoring high on the resultant measure of affiliation motivation are assumed to be approval oriented; persons scoring low are assumed to be rejection threatened. Persons scoring high on the resultant measure of achievement motivation are assumed to be success oriented, whereas persons with low scores are assumed to be failure threatened. Moderates on both motive combinations are assumed to be neutral with regard to the resultant strength of motivation. This procedure has been shown in the past to have predictive validity for both resultant measures (see Entin & Raynor, 1973; Sorrentino & Hancock, Note 3). The above classification, then, leads to nine groups differing in levels of the two resultant motive combinations from high-high to low-low.

Procedure

Three weeks after assessment of motives, the swimmers were told by their coaches that they were going to be involved in the first of a series of annual interteam swim competitions involving the three universities. The intent of this competition was to promote interaction amongst the three teams. All swimmers would compete twice—once for a net ranking against all other male/female swimmers and once as a member of a group made up of two same-sex swimmers from each of the three universities. This was to give swimmers a chance to be a member of the same group with people they had often competed against in the past. To allow each swimmer an equal chance of success, handicaps

were to be used in both the individual and group competitions. Group handicaps were to be calculated on the basis of the respective individual handicaps.

Notice of the constituency of each swimmer's group, along with individual handicaps, and the following description of the event were then posted in the respective swimming pool areas:

First Annual Interteam Swim-Off Procedure

1. Each swimmer will swim 200 yards freestyle twice.
 - (a) One swim will be for ranking amongst all other swimmers on the three teams. Note: Each swimmer has a handicap according to the coaches' prediction of his or her fastest time (i.e., everyone has an equal chance of success).
 - (b) The other swim will be as a member of a group chosen from all three teams. This swim will be for ranking of the average group time against all other groups. Again, handicaps will be used to calculate the times (i.e., every swimmer has an equal importance to the final group outcome).
2. The swims will be held on the same day of the week, on 2 consecutive weeks.
3. Results for the first swim will not be given until the second swim has been completed.
4. Results of both individual and group performance will be published the week after the swims have been completed.

Handicaps were used to make each swimmer's and group's chance of succeeding equal. This not only provides a measure of fairness in the competition, but previous evidence suggests that competition on an equal basis may further arouse differences due to achievement-related motives (success-oriented persons have better performance, and interest declines for failure-threatened persons; see O'Connor, Atkinson, & Horner, 1966). It may also further arouse differences due to affiliation-related motives, insofar as equal competition may enhance one's chance of approval for success or rejection for failure.

The handicaps were derived from each of the coaches' estimates of every swimmer's ability,² the criterion being the fastest time they thought each swimmer could swim 200 yards (182.9 m) freestyle, the stroke used in the actual competition. Where coaches disagreed, discussion was held and agreement reached. For composition of the groups, swimmers were first blocked, within sex, with regard to individual handicaps and then randomly assigned from each block to their same-sex group. This was done to give each group a further feeling of equality with other groups. There were eight male groups consisting of six members each and eight female groups of six members each, except for one group with an extra swimmer.

² There exists a high degree of familiarity between swimmers and coaches of all three universities, and this was not a difficult task.

The "joint swim event" took place at all three universities on the same day of the week (Wednesday), with 1 week in between the two sessions. The sessions occurred during swimmers' regular practice hours and at their respective universities. The swimmers were aware that their competitors (individual or group) were also swimming at approximately the same time. Subjects were randomly assigned to either the individual or group competition condition on the first day and the other condition on the second. Following their usual precompetition warm up, subjects engaged in the 200-yard freestyle competition and were timed at this event by their coaches. Both events were run according to standard procedures used for all collegiate swimming competitions.

The week after completion of both sessions of the competition, the results were posted (swimmers were not told their actual times on the first day in order to

prevent success or failure effects), and subjects were completely debriefed as to the full nature of the experiment. Although no written reports were obtained, several swimmers and all coaches demonstrated verbal enthusiasm both for the event itself and the purpose of the project.

Dependent Measure

The dependent measure was the actual time in seconds it took each swimmer to complete 200 yards freestyle in both conditions. Two hundred yards was selected as the distance because it is a middle distance specific to neither distance swimmers nor sprinters. Freestyle, also known as the front crawl, is the one stroke in which all swimmers at these universities are proficient, since it is the standard practice stroke.

Table 1
Mean Swimming Performance (in sec) and Tests of Hypotheses as a Function of Motives \times Conditions Combinations

Motive	Condition				Difference ^a
	Individual competition		Group competition		
	<i>M</i>	<i>n</i>	<i>M</i>	<i>n</i>	
<i>n</i> Affiliation					
High	137.81 _a	19	137.30 _b	19	+.51
Moderate	136.78 _c	26	136.84 _d	26	-.06
Low	136.02 _e	31	136.01 _f	31	+.01
Social rejection					
Low	138.97 _a	25	137.67 _b	25	+1.30
Moderate	135.35 _c	26	135.89 _d	26	-.54
High	134.88 _e	25	135.49 _f	25	-.61
Resultant affiliation motives					
High	139.73 _a	24	138.25 _b	24	+1.48
Moderate	135.98 _c	26	136.60 _d	26	-.62
Low	141.97 _e	26	143.42 _f	26	-1.45
Tests of hypotheses					
<i>t</i> tests		<i>n</i> Affiliation (<i>df</i> = 67)	Social rejection (<i>df</i> = 67)	Resultant affiliation motives (<i>df</i> = 58)	
$t_{(a-b)} =$.883	2.872*	3.753**	
$t_{(e-f)} =$.022	-1.348	-3.817**	
$t_{(a-b)-(e-f)} =$.681	2.984*	5.351**	

Note. The subscript to each cell mean is used in the lower half of the table to identify means being tested. ^a A plus (+) indicates a faster swimming time and a minus (-) a slower one in the group than in the individual condition.

* $p < .01$.

** $p < .001$.

Treatment of the data. The principal test of significance for the present study was an unweighted-means analysis of variance for a $3 \times 3 \times 2 \times 2$ (resultant affiliation motive, resultant achievement motive, conditions, sex) experimental design with repeated measures on the second-to-last factor (see Winer, 1971). Separate analyses were also conducted to determine whether university or order had any significant interaction with the Motives \times Conditions predictions. In addition, one further analysis, dividing coaches' estimates of performance as a three-level variable, was used to determine whether ability might interact with predictions.

Tests of the Affiliation-Related Motives \times Conditions hypotheses were made using two-tailed *t* tests based on the appropriate within-cell error term of analysis of variance (see Winer, 1971, p. 544). Similar tests were to be used should a posteriori tests of unexpected results be deemed necessary. Separate analyses and tests of hypotheses were also conducted for *n* Affiliation and fear of social rejection for purposes of comparison with the resultant measure of affiliation motivation.

Results

Tests of Hypotheses

Table 1 presents mean performance scores for Affiliation-Related Motives \times Conditions combinations along with tests of the hypotheses of the present study. The means for *n* Affiliation \times Conditions combinations and Fear of Social Rejection \times Conditions combinations, along with similar tests of hypotheses, are also presented for purposes of comparison.³ Note in Table 1 that the pattern of interaction for Motive \times Conditions combinations is exactly as predicted, assuming a linear relationship between positive motivation and efficiency of performance. Approval-oriented swimmers (high resultant affiliation motive) had significantly faster swimming speeds in the group competition than in the individual competition ($p < .001$), whereas a significant reversal occurred for rejection-threatened swimmers (low resultant affiliation motive; $p < .001$). Similar patterns of interaction with conditions may also be seen for *n* Affiliation, though they are nonsignificant, and for fear of social rejection, though they are weaker than the resultant measure analysis. For *n* Affiliation, high scorers had faster swimming speeds in the group competition than in the individual competition, and these differences were greater than for those scoring low. For fear of social rejection, low scorers had faster swimming

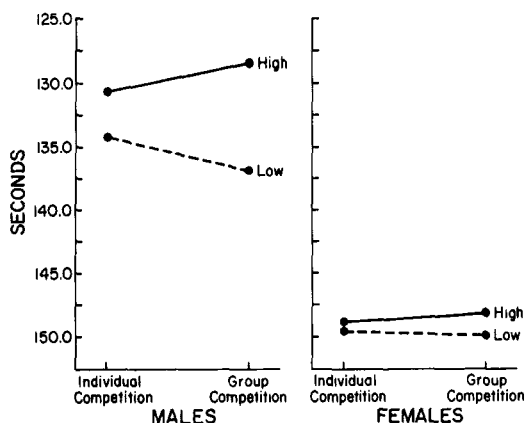


Figure 1. Mean swimming performance in seconds for approval-oriented (high) versus rejection-threatened (low) persons in Condition \times Sex combinations.

speeds in group than in individual competition, whereas the reverse occurred for those who scored high. These results then, while showing similar patterns of interaction, are not significant for *n* Affiliation and are weaker for fear of social rejection than the resultant measure. Hence, both the hypotheses and the notion that a resultant measure of affiliation motivation would yield greater precision than other measures alone received support.

Other Analyses

Analysis of variance of the principle experimental design yielded a significant main effect for sex, $F(1, 58) = 26.67, p < .001$, with males having faster swimming times ($M = 130.16$ sec) than females ($M = 148.49$ sec), as would be expected. A highly significant interaction, supporting the predicted Affiliation-Related Motives \times Conditions effects was found, $F(2, 58) = 11.15, p < .001$. Significant interactions were also obtained for Achievement-Related Motives \times Affiliation-Related Motives \times Conditions, $F(4, 58) = 3.07, p < .03$; for Affiliation-Related Motives \times Conditions \times Sex, $F(2, 58) = 4.65, p < .01$; and for a four-factor interaction with both Mo-

³ The latter analyses are collapsed for sex, since there were zero entries in some cells when sex was included. This accounts for the difference in degrees of freedom for resultant affiliation motivation from the other two measures shown in Table 1.

Table 2
Mean Difference (in sec) for Performance from Individual Competition to Group Competition as a Function of Resultant Achievement Motive and Resultant Affiliation Motive Combinations

Resultant achievement motive	Resultant affiliation motive					
	Low		Moderate		High	
	<i>M</i>	<i>n</i>	<i>M</i>	<i>n</i>	<i>M</i>	<i>n</i>
High	-3.17	6	-.94	8	+2.89	11
Moderate	-1.15	10	-1.10	10	+.53	6
Low	-.03	10	+0.17	8	+1.03	7

Note. Each cell contains the performance in the individual competition condition minus the performance in the group competition condition. A plus(+) indicates a faster and a minus(-) a slower swimming time in group than in individual competition.

tives, Conditions, and Sex, $F(4, 58) = 2.60$, $p < .04$. No other significant main effects or interactions were found in this analysis. Separate analyses found no significant effects for order, and although significant main effects were found both for university and ability, as would be expected, these variables did not interact with predicted results.

The results on performance for the significant Affiliation-Related Motives \times Conditions \times Sex interaction ($p < .01$) are illustrated in Figure 1. Note that while the predicted pattern of interaction between affiliation-related motives and conditions occurs for both sexes, this difference is greater for male than for female swimmers. An a posteriori test of this pattern of interaction was found to be significant, $t(58) = 3.45$, $p < .005$.

Table 2 presents the results on performance for the significant Affiliation-Related Motives \times Achievement-Related Motives \times Conditions interaction ($p < .03$).

Note in Table 2 that this interaction does not conform to what may be expected from a curvilinear assumption relating the strength of positive motivation to efficiency of performance. The fact that the success-oriented, approval-oriented group (high-high in Table 2) swam 2.89 sec faster in the group than in individual competition would suggest that overmotivation did not occur. It also appears

that achievement- and affiliation-related motives do not combine in an additive manner. Rather, they interact in a manner similar to the interaction between sex, affiliation-related motives, and conditions on performance. That is, the faster swimming speeds for approval-oriented subjects and the slower swimming speeds for rejection-threatened subjects in group than in individual competition are greater for success-oriented (high resultant achievement motive) than failure-threatened (low resultant achievement motive) groups. An a posteriori test of this pattern of interaction was also found to be significant, $t(58) = 3.45$, $p < .005$.

Finally, the pattern of results for the significant four-factor interaction, although not presented here, is consistent with the above two three-factor interactions. That is, the predicted pattern of interaction between affiliation-related motives and conditions was greatest for male success-oriented swimmers and least for female failure-threatened swimmers, with other combinations falling in between. The pattern of interaction was also found to be significant by an a posteriori test, $t(58) = 5.160$, $p < .001$.

Discussion

In spite of the various sources of "noise" inherent in a field study of this kind (e.g., different universities, experimenters, and coaches), the results lend strong support to the hypotheses. Approval-oriented swimmers had significantly faster ($p < .001$) and rejection-threatened swimmers significantly slower ($p < .001$) swimming times in group than in individual competition, yielding a highly significant Motives \times Conditions interaction ($p < .001$) in the predicted direction. The approval-oriented person, sensing the available positive source of affiliation incentives should he or she succeed, increased efforts because of those incentives. The rejection-threatened person, fearing the probable negative source of affiliation incentives should he or she fail, was less positively motivated, or was inhibited, leading to a decrease in performance.

Although the predicted pattern of interaction between affiliation-related motives and

conditions was found to also interact with sex and/or achievement-related motives, it is important to note that the predicted pattern of interaction itself was not altered. Rather, the two variables appear to have affected the strength of the pattern (e.g., strongest for success-oriented males and weakest for failure-threatened females). This does not mean that the interaction with these variables is unimportant, particularly with regard to future research and possible application.

While there may be other explanations of the unexpected interactions, and while one hesitates to utilize what is a "too oft employed" post hoc interpretation, there is one explanation that suggests a highly intriguing avenue for future research. In an area related to achievement-oriented activity, differences in self-attributions of performance have been found for both achievement-related motives (e.g., Weiner & Kukla, 1970) and sex (e.g., Deaux, 1976, chapter 4). The findings relevant to the present study are that while success-oriented persons attribute much of their performance to effort or motivation, failure-threatened persons rely primarily on ability, ignoring effort. Females are also less likely than males to attribute the results of their performance to effort, relying on external factors such as luck or task difficulty. Given that the reliance of failure-threatened persons and females is less on effort or motivation than on other variables, we wonder if in the present study such persons were less sensitive to our attempts at motivational arousal than persons who do rely on effort or motivation. Hence, whereas the success-oriented male was highly affected in his performance by the motivational consequences of affiliation and experimental conditions, the failure-threatened female was least affected. This explanation for the female performance data might also account for some of the problems that achievement research has had in predicting female performance (see Horner, 1974a). That is, expected differences due to achievement-related motives may be weaker than those for males because females may rely less on effort than on external factors.

Finally, note also that consistent with reports of moderates by Sorrentino and Short (1977), those subjects moderate in resultant

affiliation motives did not fall in between approval-oriented and rejection-threatened groups but had the highest performance scores of the three groups. There was no significant main effect for affiliation-related motives, however, and the difference due to conditions, for the moderates, does fall in between that for approval-oriented and rejection-threatened swimmers.

Hence, while some anomalies exist in the data, they are consistent with past research or suggest interesting avenues for future research. More importantly, however, they are not seen to affect the hypotheses of the present study, since approval-oriented and rejection-threatened persons were clearly affected by individual versus group competition.

Implications

The results of the present study not only support the principal hypotheses but also have the following implications:

1. Further predictive validity is given to the resultant affiliation-motive concept and measure. Approval-oriented persons appear to be positively aroused and rejection-threatened persons negatively aroused by affiliative incentives, which in turn affect their performance accordingly. The resultant measure also increases precision over n Affiliation or fear-of-social-rejection scores alone. Hence, investigators interested in relating affiliation motivation to other forms of social behavior should be made aware of the bidirectional nature of the affiliation motive (i.e., approach or avoidance) and how this may interact with situational determinants.

The paucity of past research surrounding the relationship between the affiliation motive and group processes could well be due to misconceptions regarding the nature of the motive. More precise predictions may be made concerning such processes as leadership, conformity, group performance, and social interaction if one is aware of the expectancy-value nature of the motive and its interaction with situational determinants. In the area of conformity, for example, the approval-oriented person may or may not conform, depending upon whether the situation offers approval for this behavior. Similarly, the rejection-

threatened person may or may not conform, depending upon whether the situation offers avoidance of rejection for this behavior. Preliminary results by Sorrentino and Hancock (Note 3) offer support for this notion.

2. Overmotivation, or the possibility that too much positive motivation would lead to a decrement in performance for approval-oriented persons, alone or in conjunction with success orientation, did not occur. Aside from the ability interpretation of the interaction between Affiliation-Related Motives \times Achievement-Related Motives \times Conditions, there may be still another reason why there is no evidence for overmotivation: the fact that this was a field experiment. Previous studies in which overmotivationlike effects were found for affiliation-related motives, alone (Sorrentino & Short, 1977) or in conjunction with achievement-related motives (e.g., Atkinson & O'Connor, 1966; Entin, 1974; Horner, 1974b; Sorrentino, 1974), have one characteristic in common. All were situations in which subjects were either engaging in an activity for the first time or were under novel testing conditions. The present study, however, utilizes experienced swimmers who have had repeated exposure to the task at hand. Also, while the interteam swim-off itself was novel, swimmers were familiar with competing in events of this nature. This suggests that overmotivation may be observed on novel tasks, whereas familiar tasks, as found in the field, would not be as likely to yield such an effect. Future research might well investigate motivational effects over time, where subjects have repeated exposure to the task and testing conditions, in order to test this hypothesis.

3. Aside from its conceptual and methodological implications, the present field experiment is also not without its practical consequences. Coaches, physical education teachers, and researchers have long been interested in the effects of motivational variables on the performance of athletes. Councilman, swimming coach at the University of Indiana, for example, suggests that the scientific analysis of the psychological aspects of coaching lags far behind that of the physiological aspects (Councilman, 1968). The expectancy-value approach to the problem suggests that matching the incentives in the

situation with the appropriate motive combinations of the athletes can lead to significant changes in performance. In this study, the interaction of affiliation-related motives and incentive conditions led to average increases or decreases in swimming speed of around 1.5 sec. In fact, the success-oriented male swimmers increased or decreased their performance by as much as 6 sec as a function of affiliation-related motives and conditions. While such times may seem minor to the layman, swimming is an activity in which tenths and even hundredths of a second are critical.⁴ At this point, perhaps we can only suggest what type of athlete should or should not engage in a relay race, but an interesting follow-up study would be to have various affiliative incentives made salient by a coach and determine whether this would similarly accentuate differences as a function of affiliation-related motives.

Conclusions

The present study demonstrates that differences in performance due to affiliation-related motives can be systematically affected by the affiliative incentives involved in performance situations. If a field-experimental setting is used, the results suggest that this conception is generalizable to situations beyond the laboratory and may have practical as well as theoretical implications.

⁴In the year this study was conducted (1976), Western won their dual swim meet with Toronto as a result of winning the final relay by 2/100 sec. In addition, no individual event of 200 yards or less was won by more than 1.3 sec.

Reference Notes

1. Short, J. C. *Fear of success, role orientation, and performance in women*. Unpublished master's thesis, University of Western Ontario, 1973.
2. Short, J. C., & Sorrentino, R. M. *The effects of affiliation motivation and group activity on performance due to achievement-related motives*. Paper presented at the meeting of the Eastern Psychological Association, New York, April 1975.
3. Sorrentino, R. M., & Hancock, R. J. *Who conforms and when: An expectancy-value approach to the conformity process*. Paper presented at the meeting of the Eastern Psychological Association, New York, April 1976.

References

- Atkinson, J. W. (Ed.). *Motives in fantasy, action, and society*. Princeton, N.J.: Van Nostrand, 1958.
- Atkinson, J. W. *An introduction to motivation*. Princeton, N.J.: Van Nostrand, 1964.
- Atkinson, J. W. Strength of motivation and efficiency of performance. In J. W. Atkinson & J. O. Raynor (Eds.), *Motivation and achievement*. Washington, D.C.: Winston & Sons, 1974.
- Atkinson, J. W., & Feather, N. T. *A theory of achievement motivation*. New York: Wiley, 1966.
- Atkinson, J. W., Heyns, R. W., & Veroff, J. The effect of experimental arousal of the affiliation motive on thematic apperception. *Journal of Abnormal and Social Psychology*, 1954, 49, 405-410.
- Atkinson, J. W., & O'Connor, P. Neglected factors in studies of achievement-oriented performance. In J. W. Atkinson & N. T. Feather (Eds.), *A theory of achievement motivation*. New York: Wiley, 1966.
- Atkinson, J. W., & Raynor, J. O. *Motivation and achievement*. Washington, D.C.: Winston & Sons, 1974.
- Atkinson, J. W., & Walker, E. L. The affiliation motive and perceptual sensitivity to faces. *Journal of Abnormal and Social Psychology*, 1956, 53, 38-41.
- Bechtel, R. B., & Rosenfeld, H. M. Expectations of social acceptance and compatibility as related to status discrepancy and social motives. *Journal of Personality and Social Psychology*, 1966, 344-349.
- Counsilman, J. *The science of swimming*. Englewood Cliffs, N.J.: Prentice-Hall, 1968.
- Deaux, K. *The behavior of women and men*. Monterey, Calif.: Brooks/Cole, 1976.
- Entin, E. E. Effects of achievement-oriented and affiliative motives on private and public performance. In J. W. Atkinson & J. O. Raynor (Eds.), *Motivation and achievement*. Washington, D.C.: Winston & Sons, 1974.
- Entin, E. E. & Raynor, J. O. Effects of contingent future orientation and achievement motivation on performance in two kinds of tasks. *Journal of Experimental Research in Personality*, 1973, 6, 314-320.
- French, E. G. Effects of the interaction of motivation and feedback on task performance. In J. W. Atkinson (Ed.), *Motives in fantasy, action, and society*. Princeton, N.J.: Van Nostrand, 1958.
- Heyns, R. W., Veroff, J., & Atkinson, J. W. A scoring manual for the affiliation motive. In J. W. Atkinson (Ed.), *Motives in fantasy, action, and society*. Princeton, N.J.: Van Nostrand, 1958.
- Horner, M. S. The measurement and behavioral implications of fear of success in women. In J. W. Atkinson & J. O. Raynor (Eds.), *Motivation and achievement*. Washington, D.C.: Winston & Sons, 1974. (a)
- Horner, M. S. Performance of men in noncompetitive and interpersonal competitive achievement-oriented situations. In J. W. Atkinson & J. O. Raynor (Eds.), *Motivation and achievement*. Washington, D.C.: Winston & Sons, 1974. (b)
- Lesser, G. S., Krawitz, R., & Packard, R. Experimental arousal of achievement motivation in adolescent girls. *Journal of Abnormal and Social Psychology*, 1963, 66, 59-66.
- Lewin, K. Constructs in psychology and psychological ecology. *University of Iowa Studies on Child Welfare*, 1944, 20, 23-27.
- Mandler, G., & Sarason, S. B. A study of anxiety and learning. *Journal of Abnormal and Social Psychology*, 1952, 47, 166-173.
- Marlowe, D., & Gergen, K. J. Personality and social interaction. In G. Lindzey & E. Aronson (Eds.), *The handbook of social psychology*. Reading, Mass.: Addison-Wesley, 1968.
- McClelland, D. C. *The achieving society*. Princeton, N.J.: Van Nostrand, 1961.
- McClelland, D. C., Atkinson, J. W., Clark, R. A., & Lowell, E. L. A scoring manual for the achievement motive. In J. W. Atkinson (Ed.), *Motives in fantasy, action, and society*. Princeton, N.J.: Van Nostrand, 1958.
- Mehrabian, A. The development and validation of measures of affiliative tendency and sensitivity to rejection. *Educational and Psychological Measurement*, 1970, 30, 417-428.
- Mehrabian, A., & Ksionzky, S. *A theory of affiliation*. Lexington, Mass.: Lexington Books, 1974.
- O'Connor, P. A., Atkinson, J. W., & Horner, M. Motivational implications of ability grouping in schools. In J. W. Atkinson & N. T. Feather (Eds.), *A theory of achievement motivation*. New York: Wiley, 1966.
- Raynor, J. O. Future orientation and motivation of immediate activity: An elaboration of the theory of achievement motivation. *Psychological Review*, 1969, 76, 606-610.
- Raynor, J. O. Future orientation in the study of achievement motivation. In J. W. Atkinson & J. O. Raynor (Eds.), *Motivation and achievement*. Washington, D.C.: Winston & Sons, 1974.
- Raynor, J. O., & Rubin, I. S. Effects of achievement motivation and future orientation on level of performance. *Journal of Personality and Social Psychology*, 1971, 15, 28-33.
- 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, N.J.: Van Nostrand, 1958.
- Sorrentino, R. M. An extension of theory of achievement motivation to the study of emergent leadership. *Journal of Personality and Social Psychology*, 1973, 26, 356-368.
- Sorrentino, R. M. Extending initial and elaborated theory of achievement motivation to the study of group processes. In J. W. Atkinson & J. O. Raynor (Eds.), *Motivation and achievement*. Washington, D.C.: Winston & Sons, 1974.
- Sorrentino, R. M., & Short, J. C. The case of the mysterious moderates: Why motives sometimes fail to predict behavior. *Journal of Personality and Social Psychology*, 1974, 26, 356-368.

- Psychology*, 1977, 35, 478-484. (Expanded and elaborated in Research Bulletin #410. London, Canada: University of Western Ontario, 1977.)
- Watson, D., & Friend, R. Measurement of social-evaluative anxiety. *Journal of Consulting and Clinical Psychology*, 1969, 33, 448-457.
- Weiner, B., & Kukla, A. An attributional analysis of achievement motivation. *Journal of Personality and Social Psychology*, 1970, 15, 1-20.
- Winer, B. J. *Statistical principles in experimental design* (2nd ed.). New York: McGraw-Hill, 1971.
- Yerkes, R. M., & Dodson, J. D. The relation of strength of stimulus to rapidity of habit formation. *Journal of Comparative and Neurological Psychology*, 1908, 18, 459-482.

Received June 24, 1977 ■