GOAL CONFIDENCE AND DIFFICULTY AS PREDICTORS OF GOAL ATTAINMENT IN JUNIOR HIGH SCHOOL CROSS-COUNTRY RUNNERS[1]

ANDREW M. LANE AND COSTAS I. KARAGEORGHIS

Department of Sport Sciences
Brunel University College, U.K.

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[1]Address correspondence to A. Lane, Department of Sport Sciences, Brunel University College, Borough Road, Isleworth, Middlesex TW7 5DU, England, United Kingdom.

Summary. This study examined the influence of confidence in a goal and difficulty of the goal on the attainment of self-set goals regarding time and position. 63 Junior high school cross-country runners (M Age=13.5 yr., SD=.5 yr.) completed a 6-item Race Goals Questionnaire approximately 24 hr. prior to a 2km race. Attainability of a goal was assessed by categorizing runners into either a Performed to Expectation (Time, Position) or an Underperformed group (Time, Position). A 2 x 2 multivariate analysis of variance indicated significant differences between the two groups on Time for Confidence in and Difficulty of goals. There were no differences between the two groups on Position. Discriminant function analyses to predict time goal performance indicated that 47 (74.6%, participants could be correctly classified into the groups by Time on the basis of Confidence in, and Difficulty of goals. Discriminant function analyses to predict performance in terms of Position indicated 38 participants (60.3%) could be correctly classified on the basis of Confidence in, and Goal Difficulty of goals. The results concur with previous proposals that goals regarding time and position have a differential influence on performance.

Goal setting theory proposes that a great deal of human behavior is oriented toward the achievement of goals (Locke & Latham, 1990). Goal setting is recommended as a technique to increase motivation in both industrial and sport settings (Kyllo & Landers, 1995; Locke, Shaw, Saari, & Latham, 1981; Pemberton & McSweggin, 1989; Roberts, 1992). A central tenet of goal setting theory is that goals enhance motivation when they are specific, and at a level of difficulty which is challenging but attainable. Difficult goals can enhance motivation when people accept that the goal is attainable, regardless of the objective difficulty of the goal (Bandura, 1990; Locke & Latham, 1990). Contrastingly, difficult goals have been found to lead to anxiety or tension (Jones, Swain, & Cale, 1990; Lane, Terry, & Karageorghis, 1995a, 1995b; Lane, Terry, & Lane, in press).

Burton (1989) found that athletes distinguish between outcome and performance goals. Outcome goals typically depend on how well one does in competition against others (Position goal). For example, an outcome goal may be to finish ahead of a rival competitor. Performance goals reflect how one performs against a self-referenced standard, such as a finish time (Time goal). Burton (1989) suggested that a problem with an outcome goal is that an athlete cannot control the ability and effort of other athletes which can reduce motivation. This problem is exemplified in less skilled athletes for whom winning offers excessive challenges because a personal best performance will not necessarily lead to victory (Martens, 1987). Athletes with low skills can develop a pessimistic approach to competition and attribute occasional success to luck, rather than to ability.

Martin and Gill (1991, 1995) examined the influence of self-efficacy expectations toward the attainment of position and time goals in school-age long-distance runners. In both studies, self-efficacy in terms of the Position goal was the strongest predictor of performance. The lower correlation for confidence regarding the Time was ascribed to two main reasons. First, self-efficacy of the Time goal was assessed in terms of confidence in achieving a personal best time. As was conceded by the authors, a measure of the Time goal for that race may have been a more useful index. Second, the runners had competed against many of the competitors in previous races which ensured that they had received comparative feedback on which to base their confidence in a position goal for the current race.

Collectively, research suggests that Time and Position goals have a differential influence on performance (Burton, 1989; Martin & Gill, 1991, 1995). However, to

understand the influence of confidence in and difficulty of a Time goal on performance it is suggested that athletes set personal goals for each competition (Martin & Gill, 1991). The purpose of the present study was to compare confidence in and the difficulty of goals on the attainment of self-set Position and Time goals. The study extended the line of investigation initiated by Martin and Gill (1991, 1995) by using personal time goals for the present race as opposed to goals relating to personal best times completed on the same course. It was hypothesized that the different nature of Time and Position goals would mediate the influence of perceived confidence in and difficulty of goals on their attainability (Bandura, 1990; Burton, 1989; Locke & Latham, 1990).

METHOD

Participants

Participants were 63 volunteer cross country runners (Age: M=13.5 yr., SD=.5 yr., Male=26, Female=34) engaged in a Junior High intramural competition. They were relatively heterogeneous in terms of ability (Finish Time M=13.57 min., SD=2.92 min; Finish Position (M=51.9 places, SD=34.22 places), and in terms of race expectations (Time goal M=12.17 min., SD=4.47 min.; Position goal M=45.1 places, SD=28.4 places).

Measures of goal difficulty and goal confidence

A 6-item Race Goal Questionnaire was used to assess pre-race time and position goals, rated difficulty of the goals, and rated confidence in the goals. The Race Goal Questionnaire comprised race goal items from the Pre-race Questionnaire developed to assess constructs of performance expectation in middle-distance running (Jones, et al., 1990). Items are rated on a 9-point scale anchored by phrases such as 1="Not at all" and 9="Very much so".

Measures of attainability of a goal

Attainability of a goal was assessed by comparing time and position outcomes with pre-race Position and Time goals. Participants were categorized into either a Performed to Expectation group or an Underperformed group on the basis of attainment of Time and Position goals. It is acknowledged that a limitation of this measure is that runners may run close, but slower to their prerace goal and be classified as Underperformed even though the runner was satisfied with that performance.

Procedure

The questionnaire was completed approximately 24 hr. before a 2 km school cross-country race. Prior to completing the questionnaire participants were informed that there

were no right or wrong answers, and that they should answer the questions honestly. Complete confidentiality was assured. A 2 x 2 (Time: Performed to Expectation, Underperformed x Position: Performed to Expectation, Underperformed) multivariate analysis of variance was conducted to compare groups by ratings of Confidence in and Difficulty of goals. Discriminant function analysis was used to examine the discriminant effectiveness of Confidence and Difficulty of subjective performance outcome.

RESULTS

A 2 x 2 (Time: Performed to Expectation, Underperformed x Position: Performed to Expectation, Underperformed) multivariate analysis of variance indicated a significant main effect for attainment of the Time goal (Hotelling's T^2=.45, p<.001), no significant main effect for attainment of the Position goal (Hotelling's T^2=.10, p>.05), and an overall significant interaction (Hotelling's T^2=.30, p<.01). Follow-up univariate analyses indicated that the Performed to Expectation time goal group rated time goal significantly lower than of athletes who Underperformed (PE: M=5.51, SD=2.35; UP: M=8.40, SD=2.09, $F_{4,57}$=25.3, p<.001). The univariate interaction effect was not significant, indicating that attainment of the time goal was independent of ratings of confidence and difficulty in individuals who Performed to Expectation or Underperformed.

Insert Table 1 about here

Discriminant function analyses to predict subjective performance in attainment of the Time goal indicated that 47 out of the 63 cases (74.6%, p<.001) could be correctly classified as Performed to Expectation or Underperformed on the basis of rated goal confidence and goal difficulty. Discriminant function analysis to predict subjective performance in attainment of position goal indicated that 38 out of the 63 cases (60.3%, p>.05) could be correctly classified on the basis of rated Confidence and Difficulty.

DISCUSSION

The purpose of the present study was to examine the influence of ratings of Confidence in and Difficulty of time and position goal on performance. The results indicate that rated difficulty of a Time goal is a better discriminator of subjective performance than ratings of Confidence or Difficulty of Position goal (see Table 1). The differential influence of Time and Position goals on performance supports the proposal that participants have greater control over Time because it is largely independent of the

other competitors. Participants have less control over Position because the performance of other competitors cannot be predicted accurately (Burton, 1989). Differences in rated difficulty of Time goal between those who Performed to Expectation and those who Underperformed indicate that goals perceived to be difficult have a debilitative effect on performance.

The findings concur with the proposal that the estimation of Confidence and Difficulty of the Time goal should be referenced to the immediate race. Therefore, not using a personal best measure from a previous race (Martin & Gill, 1995). As the participants in the present study had previously completed the course, they could make accurate estimates of a Time goal which were based on previous races, and how much effort they were prepared to expend to attain that time. Martin and Gill (1991, 1995) suggested that their sample of athletes had prior knowledge of other competitors' abilities which facilitated an accurate estimation of Position goals. In the present study, participants had limited prior knowledge of the ability of other athletes, particularly as a total of 234 runners completed the course.

The high discrimination by Time goal suggests that self-set Time goals provide accurate indicators of performance irrespective of ability. It is suggested that the process of setting specific goals raises self-awareness of current ability and the effort the participant plans to exert in the coming race. Further, runners in the present study could compare the effort they exerted to attain the Time goal on the previous performance with the effort they planned to give in the present race.

Collectively, the findings suggest that goal setting is a viable strategy to increase motivation of physical education students in junior high school. Findings suggest that goals should be made in terms of specific Times, rather than Position. Self-set Time goals would be of particular value to low ability runners to whom a realistic Position goal might reinforce perceptions of low-ability, and as a consequence may have a demotivating effect. The implications for practitioners are that to facilitate positive attributions of performance outcome, it is suggested that Junior High School cross-country runners should be encouraged to set specific Time goals which are challenging but attainable. Further, it appears that immersing athletes in their competitive environment prior to an important competition, may lead to setting more effective goals.

Conclusions

The findings indicated that ratings of Difficulty of Time goals were accurate discriminators of subjective performance. This results support the notion that Time and Position goals have a differential influence on performance (Burton, 1989). Findings support the notion that runners should set specific goals which are challenging but attainable (Locke & Latham, 1990).

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Table 1.

Means and Standard Deviations of Confidence in and Difficulty of goals among successful and unsuccessful runners regarding Time and Position

	Performed to Expectation				Underperformed			
	Time		Position		Time		Position	
	M	SD	M	SD	M	SD	M	SD
How confident are you in being able to achieve this finish time goal?	7.34	2.13	6.92	2.02	6.39	2.13	6.78	2.40
How difficult do you think it will be to achieve this time goal?	5.51	2.35	5.68	2.20	8.40	2.09	7.12	2.62
How confident are you in being able to attain this position goal?	6.07	1.81	5.62	1.93	5.12	1.79	5.54	1.75
How difficult do you think it will be to achieve this position goal?	5.19	1.89	6.05	1.97	6.12	1.91	5.12	1.51