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# GOAL ORIENTATION AND BELIEFS ABOUT THE CAUSES OF SUCCESS AMONG GREEK TRACK AND FIELD ATHLETES[1]

PANAYIOTIS VELIGEKAS, KOSTAS MYLONAS, AND YANNIS ZERVAS

*University of Athens, Greece*

*Summary.*—This study employed Nicholls' social-cognitive approach to achievement motivation along with beliefs about the causes of success. The aims of the study were (a) to test the factor structure of the Greek adaptation of the Perception of Success Questionnaire and the Beliefs about the Causes of Sport Success Questionnaire in a sample of Greek track and field athletes, (b) to explore goal orientation and beliefs about the causes of success in the same sample of track and field athletes, and (c) to interpret both factor structures together, according to the respective theoretical frameworks of achievement motivation. The results verified the task and ego goal orientation dimensions for the Perception of Success Questionnaire. The proposed dimensions for the Beliefs about the Causes of Sport Success Questionnaire were also supported. Two dimensions were found when the two sets of factors were conjointly described, named "winning by all means" and "working hard," which might act as an alternative framework when dealing with achievement issues in sports.

Achievement motivation has been widely addressed on several research grounds and constitutes an important issue in sport psychology. It is a drive that may motivate individuals to achieve goals and refers to the way individuals perceive their own abilities. Perception of ability serves as an organizing factor for an athlete's interpretation of activities and responses to achievement experiences (Nicholls, 1989). According to Nicholls (1984, 1989), there are two types of conceptions of ability operating in achievement contexts, namely task and ego goal orientations. The "self-referenced" task goal orientation is the undifferentiated manifestation of the conception of ability regarding mastery of the task. The "other-referenced" ego goal orientation is the conception of ability as a demonstration of superior ability compared to others. Research has indicated that the two orientations are somewhat independent of each other. However, individuals with both high task and ego orientations exhibit the highest motivation and perceived competence (Duda & Whitehead, 1998).

Self-perception of ability has a vital role to play as well. When a person is high in task or in ego orientation and is also convinced of high personal ability (high perceptions of ability), he is prone to adaptive motivational patterns such as choosing challenging activities, applying effort, and persisting

[1]Address correspondence to Panayiotis Veligekas, The University of Athens, Department of Physical Education and Sport Sciences, 41, Ethnikis Antistasis Str., 172 37, Athens, Greece or e-mail (pveligekas@phed.uoa.gr).

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in the face of difficulty. In contrast, when a person is high in task or ego orientation but is not convinced of high personal ability (low perceptions of ability), he is prone to maladaptive behaviors such as choosing very easy or very difficult tasks and failing to persist in attempts to engage obstacles (Dweck, 1986; Nicholls, 1989).

An integral part of goal orientation is an individual's belief system regarding how success is achieved. Goal orientation has important implications for achievement motivation, whereas beliefs about success play a significant role in the motivational process and achievement behavior (White, Kavussanu, Tank, & Wingate, 2004).

Goal orientation has been addressed through stringently devised and tested questionnaires. A goal orientation assessment method has been proposed by Duda, the Task and Ego Orientation in Sport Questionnaire (1989). Roberts, Treasure and Balague, have also proposed an assessment method, the Perception of Success Questionnaire (1995, 1998), which has exhibited concurrent validity with the Task and Ego Orientation in Sport Questionnaire. Beliefs about success have been previously assessed via the Beliefs about the Causes of Sport Success Questionnaire proposed by Duda and White (1992). The questionnaire was found to assess "effort," "external factors," "illegal advantage drugs," and "ability."

Goal orientation and beliefs about the causes of success as well as the correlation between them has been examined in both academic and sport settings. In academic setting (Nicholls, 1989; Nicholls, Cobb, Wood, Yackel, & Patashnick, 1990), task goal orientation has been combined with beliefs that hard work and collaboration with peers lead to success. In sport settings a large number of studies (Duda & Nicholls, 1992; Duda & White, 1992; Lochbaum & Roberts, 1993; Newton & Duda, 1993; Papaioannou & Macdonald, 1993; Papaioannou, 1994, 1997; White & Zellner, 1996; White, *et al.*, 2004) have corroborated the respective findings in academic settings. In addition to this, ego orientation has been linked to the view that success in sports is essentially defined by external factors (Duda & White, 1992; Newton & Fry, 1998), possession of high ability, and the use of deceptive strategies such as trying to impress the coach or pretending to like the coach.

A few studies have attempted to combine the two instruments—that is, Goal Orientation and Beliefs about the Causes of Sport Success—into a single factor structure (Duda & Nicholls, 1992; Duda & White, 1992; Newton & Duda, 1993; Treasure & Roberts, 1998). These efforts showed interrelations between the two sets of dimensions, suggesting that goal orientation is partly related to variance generated by beliefs and personal theories of athletic success.

The aims of the present study were (a) to explore the factor structures of the Greek adaptations of the Perception of Success Questionnaire and

TABLE 1
PERCEPTION OF SUCCESS QUESTIONNAIRE ITEM LOADINGS AND PERCENT OF VARIANCE EXPLAINED BY EACH FACTOR

| Item | Goal Orientation | |
|---|---|---|
| | Ego | Task |
| I am the best | **.80** | −.02 |
| I beat other people | **.76** | −.03 |
| I am clearly superior | **.72** | −.11 |
| I show others that I am the best | **.70** | −.04 |
| I accomplish something others cannot do | **.69** | .01 |
| I do better than opponents | **.65** | .21 |
| I show personal improvement | −.05 | **.82** |
| I overcome difficulties | .06 | **.80** |
| I work hard | −.03 | **.74** |
| I master something I could not do before | .02 | **.58** |
| Eigenvalue | 3.18 | 2.73 |
| Variance explained, % | 26.5 | 22.7 |
| Total explained variance, % | 49.2 | |

(12 items) and the exploratory factor analysis outcomes (10 items), were considered. Thus, appropriateness of both the theoretically proposed 2-factor model (Roberts, *et al.*, 1995, 1998) and the 2-factor 10-item model that emerged from this study's exploratory factor analysis were examined.

Although other models were tested, a null model assuming unifactorial structure and goodness-of-fit inflation models, only the 2-factor models are reported here, for reasons of brevity. The analysis was performed on the variance–covariance matrix for the 449 athletes. In evaluating the adequacy of each of the 2-factor models, several criteria were considered: (a) the probability levels for the normal theory-weighted least squares $\chi^2$ criterion, (b) the root mean square error of approximation index (RMSEA; Browne & Cudeck, 1993), (c) the adjusted goodness-of-fit index (AGFI; Jöreskog & Sörbom, 1999), and (d) the $\Delta\chi^2$ of improvement between successive models. It has been supported that a $\chi^2$ fit index suggesting that the data depart significantly from the specified model, especially with large sample sizes, may give excessive weight to trivial variations in fit (Hu & Bentler, 1995; Dunbar, Ford, Hunt, & Der, 2000); thus, for the evaluation of goodness of fit in these models the main criterion was RMSEA, AGFI, and $\Delta\chi^2$ indices, since the aim was not hypothesis testing at this stage.

The $\chi^2$ criteria were statistically significant at the .01 level for both models, but the 10-item factor model, including six items assessing Ego goal orientation and four items assessing Task goal orientation, showed significant improvement ($\Delta\chi^2 = 105.13$, $\Delta df = 19$, $p < .001$) with the AGFI index improving by .03 (from .88 to .91) and RMSEA decreasing from .09 to .08. It was concluded that the best estimates for Task and Ego goal orientation scores

TABLE 3
PEARSON CORRELATIONS AMONG ROTATED FACTORS

| Factor | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| 1. Ego | | | | | | |
| 2. Task | .02 | | | | | |
| 3. Effort | .01 | .39 | | | | |
| 4. External Factors | .27 | .07 | .26 | | | |
| 5. Illegal Advantage Drugs | .18 | −.16 | −.14 | .23 | | |
| 6. Ability | .39 | .06 | .14 | .27 | .21 | |

for possible homogeneous sets among the factor outcomes for goal orientation and beliefs about the causes of sport success. These six measures were analyzed using a nonmetric multidimensional scaling solution. Although a single dimension solution might be more appropriate in respect to the number of measures analyzed, a two-dimensional solution was preferred so that the trigonometric properties of the resulting coordinates could be computed. Young's Stress index approached zero (.0031) and the $R^2$ index approached 1 (.996). These partly artificial indices were a result of the two-dimensional model; the unidimensional solution proved equally successful (Young's Stress = .04, $R^2$ = .99). For the two-dimensional solution, the stimulus coordinates were transformed to degrees through an arctangent-radian transformation and then the outcomes were plotted on the circumference of a semicircle in order to return to the more appropriate unidimensional interpretation. The outcomes are presented in Fig. 1. The first factor, Winning by all means, lies on the left side of the circumference and the second factor, Working hard, lies on the right side of the circumference. It is of interest to

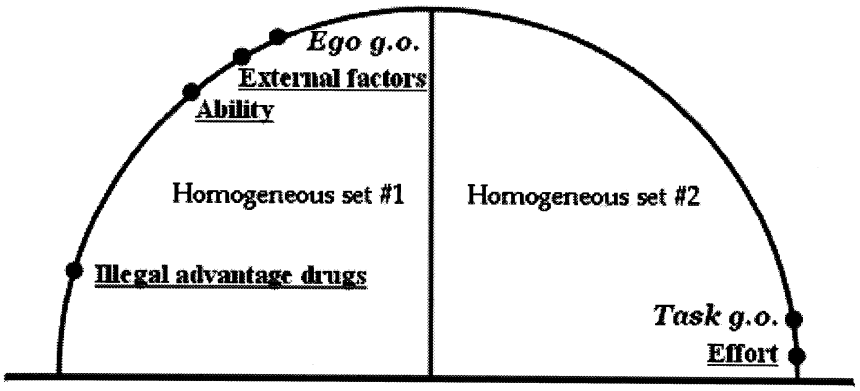


FIG. 1. Multidimensional scaling solution (trigonometric transformation) for the two Perception of Success Questionnaire and the four Beliefs about the Causes of Sport Success Questionnaire factors.