Review

A meta-analytic review of Elliot's (1999) *Hierarchical Model of Approach and Avoidance Motivation* in the sport, physical activity, and physical education literature

Marc Lochbaum [a],*, Javan Jean-Noel [a], Colleen Pinar [a], Todd Gilson [b]

[a] Department of Health, Exercise, and Sport Sciences, Texas Tech University, Lubbock, TX 79409, USA
[b] Department of Kinesiology, Northern Illinois University, DeKalb, IL 60115, USA

Abstract

Purpose: The purpose of this quantitative review was to summarize the state of Elliot's *Hierarchical Model of Approach and Avoidance Motivation*, specifically the antecedents of the 2×2 achievement goals in the sport, physical activity, and physical education literature. In addition, the intercorrelations amongst the 2×2 goals were also examined.

Methods: A systematic review of the literature was conducted. Meta-analytic procedures were used with the mean weighted sample correlation (r_w) as the effect size metric. The antecedents were coded by Elliot's (1999) antecedent categories. A number of moderators were coded *a priori*.

Results: Based on a fixed effects model from 47 published studies (total unique $n = 15,413$) that met inclusion criteria, the 2×2 achievement goals were significantly correlated amongst each other ranging from small to medium to large in meaningfulness. Concerning the antecedents, overall they were theoretically correct in associations, but only a few of the relationships were medium in meaningfulness. Most relationships were small in meaningfulness. Heterogeneity was present for the interrcorrelation and antecedent analyses.

Conclusion: Future research is encouraged to grow and enrich the understanding of achievement goals within Elliot's complete *Hierarchical Model of Approach and Avoidance Motivation* to include both antecedents and outcomes simultaneously to improve upon the understanding of achievement motivation in sport, exercise, and physical activity settings.

1. Introduction

In the late 1990's, Elliot and Church[1] proposed the approach-avoidance achievement goals and Elliot purposed his *Hierarchical Model of Approach and Avoidance Motivation*.[2,3] Elliot's model theorized a number of antecedents that stimulate adoption of his achievement goals, thereby mediating the link between antecedents and achievement behaviors, cognitions, and emotions. Specifically, Elliot[3] outlined 6 categories of antecedents: competence-based, self-based, relationally based, demographics, environmental, and neurophysiological predispositions.

Past meta-analytic research has demonstrated that Elliot's approach-avoidance or 2×2 achievement goals have been researched in sport, exercise, and physical education (PE) research.[4–6] Stevenson[4] was the first to quantitatively review Elliot's goals in the psychology of sport, exercise, and PE research. Her dissertation, which also examined educational literature, listed nearly 50 studies. In their meta-analytic review of approach-avoidance achievement goals and performance in sport, exercise, and PE, Lochbaum and Gottardy[5] included 17 studies many of which were not in Stevenson's review. Most recently, Jean-Noel[6] summarized the Self-Determination Theory and the approach-avoidance achievement goal literature and identified 17 studies for inclusion with again a number not in the Stevenson[4] or Lochbaum and Gottardy[5] meta-analytic reviews. In short, a literature base exists with Elliot's goals in the sport, exercise, and PE

literature. However, a significant knowledge gap remains in understanding Elliot's *Hierarchical Model of Approach and Avoidance Motivation* in the sport, exercise, and PE domains to better determine the utility of the model and to help shape future research with approach-avoidance goals.

1.1. Elliot's approach-avoidance achievement goals

Elliot's approach-avoidance goals stem from the dichotomous achievement goal framework.[7,8] In the dichotomous framework, there are 2 orientations by which personal competency is judged. Individuals endorsing a task orientation are primarily motivated by personal mastery or improvement. Because of their personal mastery orientation, these individuals reflect a self-referenced standard of personal achievement to gauge their personal competency for a desired behavior. In contrast, an ego-oriented person strives to attain high normative standards of ability which is typically defined by winning or beating intended others. Ego-oriented individuals judge their success and failure on other-referenced standards. While the dichotomous task and ego distinction relates to how competence is defined, the approach-avoidance dimension relates to how competence is valenced. Elliot and his colleagues' contribution to achievement goal theory is the approach-avoidance dimension.[1,2]

An approach valence indicates a behavior that is initiated by a positive or desirable event or possibility. In contrast, an avoidance valence indicates a behavior which is initiated by a negative or undesirable event or possibility. Thus, approach goals focus on attaining competence, whereas avoidance goals focus on avoiding incompetence. Initially, Elliot and colleagues[1,2,9] proposed a trichotomous framework with the mastery, performance-approach, and performance-avoidance goals. These 3 goals were the focus of the hierarchical model of achievement motivation.[1] The trichotomous model[2] was then expanded with bifurcation of the mastery goal into the mastery-approach and mastery-avoidance goals.[10,11]

With the 2×2 achievement goal framework, competence based on the mastery-approach goal is defined by a focus on task-based attainment such as improving upon one's past performance in a marathon, whereas competence based on the mastery-avoidance goal is defined by a focus on avoiding a worsening of task-based attainment. For instance when playing golf, a golfer's focus could be to not get score worse relative to a past performance what was a personal best such breaking 80; thus, the focus is not on scoring a 79, but avoiding to score an 80. From the performance goal perspective, the performance-approach goal defines competence based on normative achievements such as a student in a PE class focusing on scoring more soccer goals than anyone else in class, whereas the performance-avoidance goal defines competence based on avoiding displays of normative incompetence such as not missing more tennis serves than one's opponent.

1.2. Purpose and hypotheses

The key question of course is how one chooses to adopt one or all of the 2×2 achievement goals because achievement goal selection influences important consequences such as performance,[5] intrinsic motivation,[6] and future task selection.[12] Thus, the purpose of the present research was to examine Elliot's *Hierarchical Model of Approach and Avoidance Motivation* in the sport, exercise, and PE literature to determine the relationships of his antecedent categories on goal adoption. To date, the only published quantitative review of antecedents of achievement goals was conducted in the organizational psychology literature with the learning, prove performance, and avoid performance achievement goals.[13] Though important in their own right, organizational psychology achievement goals are not those of Elliot's, which are widely reflected in sport, exercise, and PE. Hence, to date quantitative reviews with Elliot's approach-avoidance goals and his theorized antecedents are nonexistent.

Elliot[3] set forth basic sets of hypotheses for each antecedent category and his approach-avoidance goals. Given the mastery goal was bifurcated after his 1999 article,[14] hypotheses generation was extended upon logically on either the definition or valence dimensions. For competence-based variables such as need for achievement, it was hypothesized that these variables would be positively related to approach while negatively related to avoidance goal adoption. The identical hypotheses were also forwarded for self-based variables such as self-esteem and self-worth. For relationally-based variables such as fear of rejection, it was hypothesized that they would be positively related to the avoidance goals as well as the performance-approach goal. Performance-approach goal adoption was hypothesized to be at a lesser degree compared to both avoidance goals, but it should be related given relationally-based variables inherently orient to others. It was hypothesized that relationally-based variables would be negatively related to a small degree with mastery-approach goal adoption. For demographics, sex and age were examined. As cited in Elliot,[3] researchers with various forms of avoidance motivation constructs have suggested that women are one group that is more susceptible to avoidance motivations.[15] Hence, women were hypothesized to be more likely to adopt avoidance goals compared to men. No hypothesis was forwarded for age. Environmental variables have a long history in achievement goal research stemming from the original implicit self-theories work[16] as well as Ames' goal climate research.[17] To account for differing directional hypotheses because of the constructs themselves, it was hypothesized that incremental and mastery environmental constructs would be positively related to adoption of both mastery goals, whereas, entity and ego environmental constructs would be positively related to adoption of both performance goals. Last for the neurophysiological predispositions, this class of variables was also split on whether they should be positively related to approach or avoidance goals. Specifically, positively valenced neurophysiological predispositions such as extraversion and Gray's[18] behavioral activation were hypothesized to be related to adoption of both approach goals. The negatively valenced neurophysiological predispositions such as neuroticism and Gray's[18] behavioral inhibition were hypothesized to be related to adoption of both avoidance goals.