

Physical education, positivism, and optimistic claims from achievement goal theorists: A response to Pringle (2000)

Biddle, SJH; Duda, Joan; Papaioannou, A; Harwood, C

Document Version

Early version, also known as pre-print

Citation for published version (Harvard):

Biddle, SJH, Duda, J, Papaioannou, A & Harwood, C 2001, 'Physical education, positivism, and optimistic claims from achievement goal theorists: A response to Pringle (2000)', *Quest*, vol. 53, no. 4, pp. 457-470.

[Link to publication on Research at Birmingham portal](#)

General rights

Unless a licence is specified above, all rights (including copyright and moral rights) in this document are retained by the authors and/or the copyright holders. The express permission of the copyright holder must be obtained for any use of this material other than for purposes permitted by law.

- Users may freely distribute the URL that is used to identify this publication.
- Users may download and/or print one copy of the publication from the University of Birmingham research portal for the purpose of private study or non-commercial research.
- User may use extracts from the document in line with the concept of 'fair dealing' under the Copyright, Designs and Patents Act 1988 (?)
- Users may not further distribute the material nor use it for the purposes of commercial gain.

Where a licence is displayed above, please note the terms and conditions of the licence govern your use of this document.

When citing, please reference the published version.

Take down policy

While the University of Birmingham exercises care and attention in making items available there are rare occasions when an item has been uploaded in error or has been deemed to be commercially or otherwise sensitive.

If you believe that this is the case for this document, please contact UBIRA@lists.bham.ac.uk providing details and we will remove access to the work immediately and investigate.

Physical Education, Positivism, and Optimistic Claims From Achievement Goal Theorists: A Response to Pringle (2000)

Stuart J.H. Biddle, Joan L. Duda,
Athanasios Papaioannou, and Chris Harwood

In a recent issue of *Quest*, Pringle (2000) asserts a number of criticisms of the achievement goal approach to motivation and claims that conclusions drawn by researchers in this field are "overly optimistic." In this response, we suggest that Pringle's paper is marked by a limited review of the literature and many erroneous conclusions. Several issues of contention are discussed, and it is proposed that claims of achievement goal theorists are rightly optimistic. In particular, the assertions that the achievement goal area of inquiry is decontextualized and reductionistic are challenged. It is also argued that the championing of the interpretivist perspective for the study of motivational processes reflected in the Pringle article is inherently biased. In contrast, we suggest that there is not one correct methodology or theoretical perspective for understanding and fostering motivation of young people in physical education and that the achievement goal framework has much to offer with respect to this question.

The study of motivation, and achievement motivation in particular, has gained in popularity over the last decade or so in a number of domains, including sport, physical education, and wider aspects of classroom education. One conceptual model that has been widely recognized as having practical value for the investigation of motivational processes by researchers, teachers, and coaches is that of the achievement goal framework. Pringle (2000) asserts a number of criticisms of this approach and, in particular, suggests that research stemming from this conceptual model is decontextualized and reductionistic. Moreover, Pringle (p. 27) claims

Stuart Biddle and Chris Harwood are with the Department of Physical Education, Sports Science & Recreation Management at Loughborough University, Loughborough, Leicestershire LE11 3TU, UK. E-mail: <s.j.h.biddle@lboro.ac.uk>. Joan L. Duda is with the Department of Sport and Exercise Science at the University of Birmingham, B15 2TT, UK; Athanasios Papaioannou is with the Dept. of Physical Education and Sport Science at Democritus University of Thrace in Komotini, 69100 Greece.

that conclusions drawn from achievement goal theorists are "overly optimistic." He also proposes that the achievement goal framework epitomizes a positivistic approach and implies that only through an interpretivist framework can we adequately comprehend the achievement striving of young people in an achievement activity such as physical education.

In this response, we challenge some of the conclusions embedded in Pringle's paper. First, we indicate that achievement goal theory can and has been tested via quantitative as well as qualitative methods and argue that one methodology is not superior over another. We demonstrate that this framework is not void of values or blind to situational (micro or macro) influences. In contrast to the contention that achievement goal theory centers on the motivational implications of an "objective" reality, we describe how subjective perceptions are central to this conceptual model. Second, we indicate the ways in which the understanding of the conceptualization, measurement, and predictive power and purpose of achievement goals, as conferred in Pringle (2000), is flawed. The suggestion that achievement goal research exemplifies a reductionistic approach to the study of motivation is also countered. Finally, we address Pringle's stated problems with the application of achievement goal theory into real-world physical education settings. In contrast to what is argued, we attempt to show how achievement goal research does not negate the complexities of the classroom environment. In this response, we also try to counter the assertion that achievement goal theory considers students to be the primary cause of motivational difficulties and teachers to be the "cure."

The Interpretivist Approach Versus Positivism

One of Pringle's central arguments is based on pitting research paradigms against each other and implying that the interpretivist approach is inherently superior. As researchers who have conducted investigations grounded in achievement goal theory, we make no such claims regarding the interpretivist perspective or the positivist alternatives. Indeed, we support the view of Sparkes (1989) who says we must avoid the "simplistic view that naturalistic enquiry is a panacea for research on teaching and learning in physical education" (p. 132). Ironically, the writings of Sparkes are used to support one view that positivism—the paradigm claimed by Pringle to underpin achievement goal theory—is at the root of the "problem" in achievement goal research. We do not share the cynicism regarding positivist approaches to scientific inquiry and would like to point out that such a research perspective characterizes the majority of work on motivation within pedagogy and sport psychology, not only investigations grounded in achievement goal theory.

Embracing Qualitative and Quantitative Methods

We do recognize that there are different ways to view the world and the research process, but, like Sparkes (1989), we believe that "*all* paradigms have their strengths and weaknesses" (p. 132). The degree to which diverse approaches, associated with different paradigms, could or should be integrated (or abandoned!) is a matter for the reader to decide. Some have stated that qualitative and quantitative approaches reflect fundamentally different paradigms, as suggested by Pringle. However, while certain methods are more likely to reflect underlying philosophical

and paradigmatic assumptions, it is our view that Pringle is confusing methods and paradigms. Paradigms are overarching and general views that may then be reflected in the adoption or rejection of certain research methods. While there are obvious differences in qualitative and quantitative approaches, there are many cases when the two can and should be used in concert. This is what Hammersley (1996) refers to as methodological eclecticism "on the ground that this promises to cancel out the respective weaknesses of *each* method" (p. 167, emphasis added). For example, questionnaire development in sport and exercise psychology often uses both methods (Hatzigeorgiadis & Biddle, 2000), and the research program of Scanlan and colleagues on the sport commitment model provides a good example of the use of both a quantitative and qualitative approach in combination (Scanlan, Carpenter, Schmidt, Simons, & Keeler, 1993; Scanlan & Simons, 1992).

Our point here is that the tenets of achievement goal theory can be (and indeed have been) tested with qualitative as well as quantitative methodologies. In fact, although limited, research based on this theoretical framework has employed the former research strategy (e.g., Krane, Anderson, & Stean, 1997).

Pringle does not seem to be aware that in his later work, Nicholls turned almost exclusively to qualitative methodologies involving extensive observation and interviews with children (e.g., Nicholls & Hazzard, 1993). This research epitomized the multifaceted, complex, and interactive environments existing in elementary school classrooms but still had at its roots the constructs and tenets of the achievement goal framework. From such interpretive inquiry, Nicholls went on to argue for the educational benefits of considering students as curriculum theorists (Nicholls & Thorkildsen, 1995).

That achievement goal theory happens to have been dominated by quantitative methods is partly a criticism of researchers more persuaded by naturalistic inquiry who have failed to provide further evidence in this domain of interest. This contrasts with those researchers adopting quantitative methods, associated with over 70 published studies, who have demonstrated, with remarkable consistency, the motivational significance of the achievement goal approach (Duda & Hall, 2001; Duda & Whitehead, 1998; Ntoumanis & Biddle, 1999a). Just to take one example, in Ntoumanis and Biddle's meta-analysis of achievement goals and affective responses in physical activity, the correlation between a task goal and positive effect (satisfaction, enjoyment, etc.) from 33 studies was 0.55. To reduce this to below a "small effect" would require 149 studies showing no relationship! Even accounting for some caution due to the correlational nature of the data, to assert that we are being "overly optimistic" regarding the differential motivational implications of task and ego goals seems a touch harsh, to say the least. In this rebuttal, we assert our support for the findings and promise of achievement goal research while at the same time recognizing the diversity of research methods that are possible in sport and exercise psychology (Biddle, Markland, Gilbourne, Chatzisarantis, & Sparkes, 2001).

Subjective Versus Objective Realities

In his discussion of the proposed limitations of positivism, Pringle confuses research on achievement goal theory with traditional research based on the behaviorist approach. He asserts that "the ontological and epistemological assumptions that underpin positivism clearly operate within achievement goal theory" (p. 20).

Pringle states that "within a positivist or objectivist research paradigm, an external-realist ontology prevails with the assumption that there is a hard reality out there" (p. 19).

Research stemming from achievement goal theory does not make such assumptions. Rather, achievement goal theory holds that the *subjective* meaning of an activity for individuals is a driving force behind their subsequent cognitions, affective responses, and behaviors. In the theory, it is proposed that perceptions of competence are fundamental to variations in achievement striving and that competence can be construed in different ways. As argued by Nicholls (1984, 1989), students' behaviors make sense (i.e., are rationale, though not always adaptive) when we understand their concerns (i.e., their personal goals) in the educational milieu.

A major construct in Nicholls' theorizing is that of students' "personal theories of achievement." He assumed that these comprise the interpretive lens by which students view and make sense of their educational experiences. In essence, Nicholls proffers that personal theories of achievement play a role in coloring individuals' subjective reality. These theories are composed of individuals' personal goals and their views about how the context at hand operates (i.e., their beliefs about the causes of success). Other beliefs and values (e.g., students' views regarding what is acceptable or just in the classroom, students' views about the purposes of sport or physical education) form a conceptually coherent constellation with students' personal theories.

With respect to Pringle's assertions, it is important to note that research has shown that within-class differences explain greater variability in the perceived physical education environment than between-class differences (Papaioannou, 1994). According to social cognitive theories such as the achievement goal framework, these within class differences in the perceived environment are due to students' many different experiences in life that shape their different belief systems, dispositions, perceptions, etc. At the heart of achievement goal theory is the assumption that students' behaviors are more likely to be determined by their subjective reality than the objective reality. However, the observed significant between-teacher differences in students' perceptions of their class climate (Papaioannou, 1994) and recent findings supporting a significant interdependence between team members' views about the climate operating on their team (Duda, Newton, & Yin, 1999) indicate that there is to some degree a consensual perception of reality created by the teacher or coach. Drawing from the present state of research, we offer guidelines to teachers and coaches to help them affect this objective reality (Papaioannou & Goudas, 1999; Treasure & Roberts, 1995). On the other hand, we are the first to assert that we still have limited information with regard to what shapes the subjective view of the motivational environment held by students and athletes (Duda, 2001; Duda et al., 1999).

A Decontextualized Theory?

Another criticism of a positivist approach to science echoed by Pringle is that such a perspective strives for "value-free" investigation that is removed from the immediate context. Even a quick perusal of the work of Dweck (1999), Ames (1992a, 1992b), and, in particular, Nicholls (1989) indicates that the philosophical underpinnings behind achievement goal theory are not "value free" or

"decontextualized." (As an aside, it was particularly troubling that the extensive and ground-breaking work of Nicholls was not cited once by Pringle). Many of the popular assumptions of educational practice (e.g., that praise of students is always desirable) are questioned in this line of work. A basic premise of the achievement goal framework is that the goal of education should not center merely on the enhancement of the quantity of achievement (e.g., as reflected in grades). Rather, it is proffered that we need to be deeply concerned with maximizing the quality of achievement experiences (Nicholls, 1989). Further, achievement goal theorists suggest that the aim of educational practice should be on fostering lifetime accomplishment and love of learning in students rather than short-term achievement (e.g., immediate test scores). This work is far from being void of values. Indeed, in his 1989 book, Nicholls questions the competitive ethos lying at the heart of "democratic" education.

The world is complex, and knowledge will always be enhanced through a true multidisciplinary perspective. However, research projects need to consider pragmatism alongside idealism, hence the adherence of most researchers to the view of Confucius that it is "better to light one small candle than to curse the darkness." Pringle's propensity for cursing the darkness ignores the fact that any social issue requires study of the social context as well as individual differences and perceptions. Achievement goal research in the physical domain has contributed knowledge on individual differences, and a clearer picture is emerging as a result. In addition, contextual factors (such as perceptions of the motivational climate; Ames, 1992a; Papaioannou, 1994; Seifriz, Duda, & Chi, 1992) are endemic to the achievement goal approach.

In further promoting his arguments about positivism, Pringle states that "achievement goal theory . . . disregards the respondents' culture, history and the social context of the achievement environment" (p. 21) and "achievement goal theory . . . omits valuable factors of socio-cultural influence" (p. 22). Ironically, in making this point, he cites the paper of Maehr and Nicholls (1980) where traditional achievement motivation research was criticized because of its inability to address cross-cultural differences in interpretations of achievement. Moreover, there is research going back some 20 years examining the interplay between goals, culture, and ethnicity within the physical domain (Duda, 1980, 1981, 1985a, 1985b; Duda & Allison, 1989). In addition, numerous studies have examined the nature of and antecedents and consequences of achievement goals across diverse national, ethnic, social, and age groups (Duda, 2001; Duda & Whitehead, 1998).

In short, the achievement goal framework reinforces the argument that perceptions, goals, motivation, and behavior are affected by people's culture, history, and the social context. We have stated this in all major reviews of achievement goal theory (e.g., Duda, 1987, 1993). Indeed, the achievement goal perspective includes the consideration of environmental and contextual cues, in interaction with individual dispositions, in the prediction of behavioral patterns (Swain & Harwood, 1996).

Interestingly, research has indicated that students' achievement goals in physical education and sport are inherently linked with their goals in other life domains such as academic and family contexts (e.g., Duda & Nicholls, 1992). Contrary to Pringle's impression that achievement goal theory assumes that "the influence of the individuals' home lives or the characteristics of the community are not considered problematic" (p. 20), this theory precisely states that pupils' achievement

goals and the corresponding motivational outcomes in achievement contexts are shaped by their experiences in family, peer, school, and the wider social context (Ames & Archer, 1987; Nicholls, 1989). In short, Pringle vehemently attacks achievement goal theorists on the decontextualized nature of their research, yet the achievement goal framework is quite contextually driven.

In Pringle's view, all of us who stress the importance of physical education in the promotion of public health perceive "pupils ... *captive* and potentially an *audience* for adopting active lifestyles" (p. 18; our emphasis). He once again argues that our approach is decontextualized, "without regard for social issues, such as racism or sexism" (p. 24). We fail to understand why research investigating the associations of the perceived motivational climate with perceptions of teachers' differential behavior toward students differing in abilities and gender (Papaioannou, 1995), sportspersonship attitudes (Papaioannou, 1997b), and social responsibility (Papaioannou, 1998) disregards social issues. We do not comprehend why a large number of studies that have established the link between achievement goal orientations and athletes' perceptions of the legitimacy of rule-violating and aggressive behaviors (Duda & Huston, 1995; Duda, Olson, & Templin, 1991; Papaioannou, 1997a) are based on a "decontextualized" research approach. Reflecting a major concern for the social problems evidenced in sport and other physical activity settings, it has been achievement goal researchers who have asked if variations in achievement goals provide insight into whether sport involvement and exercise are "health conducive or health compromising" (i.e., may be predictive of steroid use, the etiology of eating disorders, overtraining, and resulting injury, etc.; Duda, 1996, 2001).

The Measurement, Conceptualization, and Implications of Achievement Goals

Pringle talks about the existence of two goal types or orientations and suggests that individuals are classified as task oriented or ego oriented. He also refers to the types of behavioral patterns that are subsequently related to each (separate individual classification). His discussion of this literature and interpretation of the theory seems to stem from chapters written some 10 years ago (Ames, 1992a; Duda, 1992). However, we have all moved on from here and so has achievement goal research. More specifically, the two goal types are ultimately task and ego involvement, as these reflect the actual goal states that represent an individual's achievement focus in an achievement situation. Goal orientations are the orthogonal tendencies or dispositions regarding the adoption of task and/or ego involved goals in achievement situations (Duda, 2001; Harwood, Hardy, & Swain, 2000). The independent nature of the task and ego orientation constructs means that individuals can obviously vary in their levels of each goal orientation. For example, individuals could possess a high level of task orientation and a low level of ego orientation. In terms of analyzing the cognitive, affective, and behavioral consequences of goals, it becomes vital to examine individual differences in the combination of task and ego goal orientations (e.g., via moderated hierarchical regression analyses, canonical correlation analyses, cluster analysis, goal profiling).

Pringle highlights the use of the Task and Ego Orientation in Sport Questionnaire (TEOSQ; Duda & Whitehead, 1998) as the main instrument for assessing

achievement goal orientations. This is, of course, true, in addition to the use of the Perception of Success Questionnaire (POSQ; Roberts, Treasure, & Balague, 1998). However, the criticisms leveled at the TEOSQ show a fundamental misunderstanding of the theory (and the measure that is grounded in the theory). First, it is claimed that by asking participants to reflect on when they feel successful in sport “pre-empts focus on sporting outcome and not the actual sporting process” (Pringle, 2000, p. 21). It is precisely because of the conceptual underpinnings of achievement goal theory that people are asked to respond to criteria capturing an emphasis on the sporting process (e.g., “I feel successful . . . when I work really hard”—task item) and sporting outcomes (e.g., “I feel successful . . . when I am the best”—ego item). That is, a critical assumption of this theoretical framework and resulting measures of individual differences is that individuals can define success in different ways; it is not always related to competitive outcomes such as winning (Duda, 1992, 1996).

Second, Pringle says “if the questionnaire asked respondents to report when they feel happiest in sport, it is likely that responses would be skewed in a different direction” (p. 21). We do not understand, conceptually or empirically, the logic here. Further, it is critical to point out that asking participants about when they feel “happy” is not assessing achievement goals! The conceptual basis of achievement goal theory is clear—achievement goal orientations are concerned with how people tend to define success (i.e., the typical criteria underlying subjective success) and whether they are more or less prone to hold a differentiated and/or undifferentiated conception of ability (Duda, 2001; Nicholls, 1989). Although affective responses may differ as a function of goal orientations, as indeed the evidence shows (Ntoumanis & Biddle, 1999a), this is not synonymous with the assessment of goals *per se*.

Suggestions of Reductionism

Pringle criticizes achievement goals research for being reductionistic: “It is apparent that this theory has been developed by requiring individuals to respond to a limited number of questions, selectively restricted to the theorized constructs of task and ego goal orientations” (p. 21). This is not so. The assessment of other constructs, such as the perceived motivational climate, as discussed above, and perceptions of ability have been paramount in contemporary examinations of the achievement goal framework in the physical domain (Duda, 1993; Roberts, Treasure, & Kavussanu, 1997).

Pringle (p. 22) goes on to suggest that “achievement goal theory provides only a limited understanding of how students think about physical education, sport, and themselves.” Yet, research grounded in this theoretical framework has found that dispositional and situational goals predict students’ use of learning strategies, enjoyment of the activity, reported effort, beliefs about the causes of success, views regarding the purposes of education, attitudes toward the rules and aggression, self esteem, body image, etc. It could be argued that this model of motivation, when applied to PE and other physical activity contexts, is perhaps one of the most comprehensive in terms of understanding the thoughts, feelings, and behavioral patterns of students. Reductionism is not evident in the independent variables typically examined or the dependent variables researchers attempt to predict.

And what about the significance of task and ego goal orientations in and of themselves? Research over many years has revealed two important findings. First, variation in task and ego orientations *are* predictive of differences in achievement-related perceptions, attitudes, emotional responses and behaviors. Second, achievement goal theorists have never claimed that these are the only goals in achievement domains. Indeed, Maehr and Nicholls' (1980) seminal paper proposed social approval goals alongside task and ego and, more recently, the differentiation of ego goals into approach and avoidance types has proved fruitful (Duda & Hall, 2001; Elliot & Harackiewicz, 1996). This is an important advancement, and it is recommended that work continues in this direction. Several other goals have been proposed (Ford, 1992), and the importance of cooperative and other social goals has been addressed in the more current literature (Wentzel, 1999). However, it has yet to be determined if these alternative "goals" are truly achievement goals or not (based on the tenets of achievement goal theory), and this remains a viable and important research question for the future.

Although achievement goal theory assumes that the majority of people's behaviors are intentional and goal-directed (Nicholls, 1984, 1989), we acknowledge the possibility that this principle does not cover the whole range of human actions. We also recognize that in nonachievement situations, such as leisure contexts, other goals may be more important. However, the physical education lesson can usually be considered an achievement context, certainly within the UK system, where students have certain goals to achieve. Achievement, of course, can mean different things, but we do support the view that multiple forms of achievement—performance, self-improvement, effort, cooperation, etc.—are expected and often valued in this context. Task goals, such as skill, fitness, and knowledge development, and ego goals, such as striving to show evidence of high normative ability, are salient. This does not undervalue the significant role of social goals or other goals such as sensation seeking. To illustrate, studies show that task and ego goals are interrelated with other motives for participating in physical education such as cooperation, excitement, and striving for status (Duda, 1993).

Achievement goal theorists, according to Pringle, outline that "goal orientations may *cause* certain behaviors, such as sport withdrawal" (p. 21). We know of no such theorists who have stated anything more than (a) achievement goals can be considered an organizing principle that influences people's interpretations of achievement activities, and (b) the motivational processes which ensue from such interpretations impact variability in observed achievement-related patterns. These points have been supported in the findings of over 70 studies (Duda, 1993; Duda & Whitehead, 1998). Moreover, it is instructive that Sallis, Prochaska, and Taylor's (2000) review of physical activity determinants in children and youth, found that of 17 psychological constructs, achievement orientation was one of only four variables to be consistently associated with physical activity. We would be the first, however, to say that more experimental and longitudinal data are required to test notions of causality in terms of achievement goals or any other motivation-related construct.

The conceptual leap made by Pringle from what achievement goals research purports to the view that goal orientations can be "viewed as controlling the body in a unidirectional and superior manner" (p. 22) is astounding. In no way can this theory be seen in such a light. The theory claims that people construe competence

in different ways and this has relevance with respect to variation in achievement striving—no more, no less!

Pringle (p. 22) argues that achievement goal theory “disregards how different bodies give individuals different advantages or disadvantages in physical settings.” Key to the achievement goal paradigm, though, is a focus on those who possess low perceived ability in achievement settings. Nicholls (1989) eloquently illustrates how the current educational system perpetuates and often exacerbates such feelings of inadequacy and, thus, hinders students from reaching their potential. The principles behind advocating an emphasis on task goals are two fold: (a) If competence is construed in a task-involved manner, students are less likely to feel low in ability; and (b) when task involvement prevails, students are less concerned with questions of the degree and adequacy of their competence. Rather, they are captured by how they can increase their competence.

According to achievement goal theory, however, all is not well among those who are highly skilled and physically capable. Their talented bodies do not necessarily prove “advantageous.” That is, an ego goal emphasis is assumed to place even the physically gifted at risk because their concern revolves around being superior or not being inferior (Duda, 2001).

Implications for Practice

In our view, there is not enough good intervention research based on achievement goal theory or other approaches to reach definitive conclusions regarding intervention effectiveness. However, Pringle’s claim that “manipulating teaching variables to solely measure change in student goal orientations is fraught with problems” (p. 23) masks what interventions stemming from this theoretical framework attempt to test. We are not aware of any intervention studies that have only assessed goal orientations when examining the impact of the manipulation(s) conducted (Theeboom, De Knop, & Weiss, 1995; Treasure, 1993). For example, Goudas, Biddle, Fox, and Underwood (1995) manipulated teaching styles within an achievement goal theory approach. In addition to showing that young adolescent girls reported higher levels of task involvement in track and field lessons after being taught with a “differentiated” rather than a “direct” teaching style, when taught by the differentiated style, the girls reported higher perceptions of autonomy and intrinsic motivation. These quantitative findings were supported by qualitative data as well.

How this squares with the claim that an achievement goals approach “may dissuade certain youth from participating in sport” (Pringle, 2000, p. 25) baffles us and contradicts the evidence. Moreover, it should be noted that throughout Pringle’s critique, we are offered nothing on what the interpretivist approach would advocate in terms of maximizing students’ experiences in sport and PE.

The Complexity of the Teaching Environment

We have already made the assertion that indeed the world is complex, and multidisciplinary perspectives are helpful in research. In addition, we support the view that research projects often need pragmatism to be completed successfully. Within this context, we refute the claim that the achievement goal literature has “undervalued the complexities of the teaching environment” (Pringle, 2000, p.

23). Studies of motivational climate, for example, show a multitude of factors associated with pupil perceptions of their social environment in physical education (Papaioannou & Goudas, 1999) and other physical activity contexts (Newton, Duda, & Yin, 2000; Walling, Duda, & Chi, 1993).

In contrast to what was suggested by Pringle (2000), assumptions regarding the richness and multidimensionality of the motivational climate are inherent in achievement goal theory (Ames, 1992a; Nicholls, 1989). This perceived environment is held to be a function of how students or athletes are evaluated, the achievement criteria set, the way in which tasks are structured, the degree of autonomy present, the bases and nature of recognition, how successes and failures are responded to, the manner in which students or athletes are grouped, etc. Further, the achievement goal literature acknowledges that there are a number of motivational climates that surround young people (and older "kids" as well); they are created by the significant others in the students' or athletes' lives. For example, measures have been developed to assess the perceived motivational climate created by coaches, physical education teachers, and parents (Ntoumanis & Biddle, 1999b).

Pringle also states that "claims that teachers can create mastery climates that will significantly enhance pupil motivation may be overly optimistic" (p. 23). This contradicts research from 14 studies, with a total sample of 4,484, showing a large effect for a mastery climate on positive psychological outcomes such as satisfaction, positive attitudes, and intrinsic motivation (Ntoumanis & Biddle, 1999b). To reduce this effect to "small" would require 85 studies with zero effects! Optimistic? Yes, we are very optimistic!

Students as Motivational Problems and Teachers as Potential Problem Solvers

Another assertion Pringle makes in relation to the teaching environment is that researchers in the field of achievement goals "infer that the teacher is responsible for pupil motivation" (p. 23). The underpinning philosophy of achievement goal research is on enhancing *potential*, including the potential of teachers to invest in their teaching and create a mutually stimulating environment and the potential of students to invest in and contribute to their learning.

In addition, creating a mastery climate, which is the favored climate according to theoretical tenets and a plethora of research findings, is associated with allowing pupils greater autonomy and choice. The teacher, in creating a mastery climate, subscribes to the view that motivation is not something they "do" to students. Rather, the creation of a task-involving environment is one in which students can develop feelings of competence, autonomy, and social relatedness. These are basic psychological needs associated with facilitating intrinsic motivation, social development, and well-being (Ryan & Deci, 2000). The view that "categorizing inappropriate classroom behaviors, such as low pupil enthusiasm, as an individual's responsibility" (p. 24) is a fault of the achievement goal approach fundamentally misunderstands competence and autonomy-based theories on which this framework is closely aligned. Such approaches, including the promotion of a mastery climate, are in complete opposition to the view that "competitive, and able-bodied boys, will be considered privileged, while others will be discriminated against" (p. 24).

Conclusion

Pringle (2000) seems to suggest that researchers should follow his preferred paradigm if they want to conduct good quality research. We consider this view as problematic, damaging for research in social sciences, and inherently biased. In the words of Pringle (2000, p. 26), "if one voice or paradigm continues to dominate our perspective of physical education, there is danger of repeatedly studying the same issues while being blind to other problems." We agree with this latter sentiment and emphasize that the same danger abounds if only interpretivist research is looked to as the answer to understanding what physical education is and can be. What concerns us most, and what we hope to have countered in this rebuttal, is the large number of misinterpretations of achievement goal theory characterizing the Pringle (2000) article. We hope too that we will see more careful, coherent, and balanced (even if critical!) reviews of achievement goal research in the future.

References

- Ames, C. (1992a). Achievement goals, motivational climate, and motivational processes. In G.C. Roberts (Ed.), *Motivation in sport and exercise* (pp. 161-176). Champaign, IL: Human Kinetics.
- Ames, C. (1992b). Classrooms: Goals, structures and student motivation. *Journal of Educational Psychology*, **84**, 261-271.
- Ames, C., & Archer, J. (1987). Mothers' beliefs about the role of ability and effort in school learning. *Journal of Educational Psychology*, **79**, 409-414.
- Biddle, S.J.H., Markland, D., Gilbourne, D., Chatzisarantis, N.L.D., & Sparkes, A.C. (2001). Research methods in sport and exercise psychology: Quantitative and qualitative issues. *Journal of Sports Sciences*, **19**, 777-809.
- Duda, J.L. (1980). Achievement motivation among Navajo students. *Ethos*, **8**, 316-331.
- Duda, J.L. (1981). Achievement motivation in sport: Minority considerations for the coach. *Journal of Sport Behavior*, **4**, 24-31.
- Duda, J.L. (1985a). Goals and achievement orientations of Anglo and Mexican-American adolescents in sport and the classroom. *International Journal of Intercultural Relations*, **9**, 131-150.
- Duda, J.L. (1985b). Perceptions of sport success and failure among white, black and Hispanic adolescents. In J. Watkins, T. Reilly, & L. Burwitz (Eds.), *Sports science* (pp. 214-222). London: E. & F.N. Spon.
- Duda, J.L. (1987). Toward a developmental theory of children's motivation in sport. *Journal of Sport Psychology*, **9**, 130-145.
- Duda, J.L. (1992). Motivation in sport settings: A goal perspective approach. In G.C. Roberts (Ed.), *Motivation in sport and exercise* (pp. 57-91). Champaign, IL: Human Kinetics.
- Duda, J.L. (1993). Goals: A social cognitive approach to the study of achievement motivation in sport. In R.N. Singer, M. Murphey, & L.K. Tennant (Eds.), *Handbook of research on sport psychology* (pp. 421-436). New York: Macmillan.
- Duda, J.L. (1996). Maximizing motivation in sport and physical education among children and adolescents: The case for greater task involvement. *Quest*, **48**, 290-302.
- Duda, J.L. (2001). Achievement goal research in sport: Pushing the boundaries and clarifying some misunderstandings. In G.C. Roberts (Ed.), *Advances in motivation in sport and exercise* (pp. 129-182). Champaign, IL: Human Kinetics.

- Duda, J.L., & Allison, M.T. (1989). The attributional theory of achievement motivation: Cross-cultural considerations. *International Journal of Intercultural Relations*, **13**, 37-55.
- Duda, J.L., & Hall, H. (2001). Achievement goal theory in sport: Recent extensions and future directions. In R.N. Singer, H.A. Hausenblas, & C.M. Janelle (Eds.), *Handbook of sport psychology* (pp. 417-443). New York: Wiley.
- Duda, J.L., & Huston, L. (1995). The relationship of goal orientation and degree of competitive sport participation to the endorsement of aggressive acts in American football. In R. Van Fraechem-Raway & Y. Vanden Auweele (Eds.), *Proceedings of the IXth European Congress on Sport Psychology* (pp. 655-662). Brussels: FEPSAC.
- Duda, J.L., Newton, M.L., & Yin, Z. (1999). Variation in perceptions of the motivational climate and its predictors. In V. Hosen, P. Tilinger, & L. Bilek (Eds.), *Proceedings of the 10th European Congress of Sport Psychology* (FEPSAC) (pp. 167-169). Prague, CZ: Charles University Press.
- Duda, J.L., & Nicholls, J.G. (1992). Dimensions of achievement motivation in schoolwork and sport. *Journal of Educational Psychology*, **84**, 290-299.
- Duda, J.L., Olson, L.K., & Templin, T.J. (1991). The relationship of task and ego orientation to sportsmanship attitudes and the perceived legitimacy of injurious acts. *Research Quarterly for Exercise and Sport*, **62**, 79-87.
- Duda, J.L., & Whitehead, J. (1998). Measurement of goal perspectives in the physical domain. In J.L. Duda (Ed.), *Advances in sport and exercise psychology measurement* (pp. 21-48). Morgantown, WV: Fitness Information Technology.
- Dweck, C.S. (1999). *Self-theories: Their role in motivation, personality, and development*. Philadelphia, PA: Taylor & Francis.
- Elliot, A.J., & Harackiewicz, J.M. (1996). Approach and avoidance achievement goals and intrinsic motivation: A mediational analysis. *Journal of Personality and Social Psychology*, **70**, 461-475.
- Ford, M.A. (1992). *Motivating humans: Goals, emotions and personal agency beliefs*. Newbury Park, CA: Sage.
- Goudas, M., Biddle, S., Fox, K., & Underwood, M. (1995). It ain't what you do, it's the way that you do it! Teaching style affects children's motivation in track and field lessons. *The Sport Psychologist*, **9**, 254-264.
- Hammersley, M. (1996). The relationship between qualitative and quantitative research: Paradigm loyalty versus methodological eclecticism. In J.T.E. Richardson (Ed.), *Handbook of qualitative research methods for psychology and the social sciences* (pp. 159-174). Leicester: BPS Books.
- Harwood, C., Hardy, L., & Swain, A. (2000). Achievement goals in competitive sport: A critique of conceptual and measurement issues. *Journal of Sport and Exercise Psychology*, **22**, 235-255.
- Hatzigeorgiadis, A., & Biddle, S.J.H. (2000). Assessing cognitive interference in sport: Development of the Thought Occurrence Questionnaire for Sport. *Anxiety, Stress, and Coping*, **13**, 65-86.
- Krane, V., Anderson, M., & Stean, W. (1997). Issues of qualitative research methods and presentation. *Journal of Sport & Exercise Psychology*, **19**, 213-218.
- Maehr, M.L., & Nicholls, J.G. (1980). Culture and achievement motivation: A second look. In N. Warren (Ed.), *Studies in cross-cultural psychology - Vol II* (pp. 221-267). New York: Academic Press.

- Newton, M.L., Duda, J.L., & Yin, Z. (2000). Examination of the psychometric properties of the Perceived Motivational Climate in Sport Questionnaire - 2 in a sample of female athletes. *Journal of Sports Sciences*, **18**, 275-290.
- Nicholls, J.G. (1984). Achievement motivation: Conceptions of ability, subjective experience, task choice, and performance. *Psychological Review*, **91**, 328-346.
- Nicholls, J.G. (1989). *The competitive ethos and democratic education*. Cambridge, MA: Harvard University Press.
- Nicholls, J.G., & Hazzard, S.P. (1993). *Education as adventure: Lessons from the second grade*. New York: Teachers College Press.
- Nicholls, J.G., & Thorkildsen, T.A. (Eds.). (1995). *Reasons for learning: Expanding the conversation on student-teacher collaboration*. New York: Teachers College Press.
- Ntoumanis, N., & Biddle, S.J.H. (1999a). Affect and achievement goals in physical activity: A meta-analysis. *Scandinavian Journal of Medicine and Science in Sports*, **9**, 315-332.
- Ntoumanis, N., & Biddle, S.J.H. (1999b). A review of motivational climate in physical activity. *Journal of Sports Sciences*, **17**, 643-665.
- Papaioannou, A. (1994). Development of a questionnaire to measure achievement orientation in physical education. *Research Quarterly for Exercise and Sport*, **65**, 11-20.
- Papaioannou, A. (1995). Differential perceptual and motivational patterns when different goals are adopted. *Journal of Sport and Exercise Psychology*, **17**, 18-34.
- Papaioannou, A. (1997a). "I agree with the referee's abuse, that's how I also beat ..." Prediction of sport violence and attitudes towards sport violence. *European Yearbook of Sport Psychology*, **1**, 113-129.
- Papaioannou, A. (1997b). Perceptions of the motivational climate, beliefs about the causes of success, and sportsmanship behaviors of elite Greek basketball players. In R. Lidor & M. Bar-Eli (Eds.), *Innovations in sport psychology: Linking theory with practice*. Proceedings of the IX World Congress of Sport Psychology (pp. 534-536). Wingate, Israel: International Society of Sport Psychology.
- Papaioannou, A. (1998). Goal perspectives, reasons for being disciplined and self-reported discipline in the lesson of physical education. *Journal of Teaching in Physical Education*, **17**, 421-441.
- Papaioannou, A., & Goudas, M. (1999). Motivational climate of the physical education class. In Y.V. Auweele, F. Bakker, S. Biddle, M. Durand, & R. Seiler (Eds.), *Psychology for physical educators* (pp. 51-68). Champaign, IL: Human Kinetics.
- Pringle, R. (2000). Physical education, positivism, and optimistic claims from achievement goal theorists. *Quest*, **52**, 18-31.
- Roberts, G.C., Treasure, D.C., & Balague, G. (1998). Achievement goals in sport: The development and the validation of the Perception of Success Questionnaire. *Journal of Sports Sciences*, **16**, 337-347.
- Roberts, G.C., Treasure, D.C., & Kavussanu, M. (1997). Motivation in physical activity contexts: An achievement goal perspective. In M. Maehr & P. Pintrich (Eds.), *Advances in motivation and achievement*, Vol. 10 (pp. 413-447). Greenwich, CT: JAI Press.
- Ryan, R.M., & Deci, E.L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, **55**, 68-78.
- Sallis, J.F., Prochaska, J.J., & Taylor, W.C. (2000). A review of correlates of physical activity of children and adolescents. *Medicine and Science in Sports and Exercise*, **32**, 963-975.

- Scanlan, T.K., Carpenter, P.J., Schmidt, G.W., Simons, J.P., & Keeler, B. (1993). An introduction to the sport commitment model. *Journal of Sport and Exercise Psychology*, **15**, 1-15.
- Scanlan, T.K., & Simons, J.P. (1992). The construct of sport enjoyment. In G.C. Roberts (Ed.), *Motivation in sport and exercise* (pp. 199-215). Champaign, IL: Human Kinetics.
- Seifriz, J., Duda, J.L., & Chi, L. (1992). The relationship of perceived motivational climate to intrinsic motivation and beliefs about success in basketball. *Journal of Sport and Exercise Psychology*, **14**, 375-391.
- Sparkes, A.C. (1989). Paradigmatic confusions and the evasion of critical issues in naturalistic research. *Journal of Teaching in Physical Education*, **8**, 131-151.
- Swain, A.B.J., & Harwood, C.G. (1996). Antecedents of state goals in age-group swimmers: An interactionist perspective. *Journal of Sports Sciences*, **14**, 111-124.
- Theeboom, M., De Knop, P., & Weiss, M.R. (1995). Motivational climate, psychological response, and motor skill development in children's sport: A field-based intervention study. *Journal of Sport & Exercise Psychology*, **17**, 294-311.
- Treasure, D., & Roberts, G.C. (1995). Applications of achievement goal theory to physical education: Implications for enhancing motivation. *Quest*, **47**, 475-489.
- Treasure, D.C. (1993). *A social-cognitive approach to understanding children's achievement behavior, cognition, and affect in competitive sport*. Unpublished Doctoral Thesis, University of Illinois, Urbana-Champaign, IL.
- Walling, M.D., Duda, J.L., & Chi, L. (1993). The Perceived Motivational Climate in Sport Questionnaire: Construct and predictive validity. *Journal of Sport and Exercise Psychology*, **15**, 172-183.
- Wentzel, K.R. (1999). Social-motivational processes and interpersonal relationships: Implications for understanding motivation at school. *Journal of Educational Psychology*, **91**, 76-97.