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A systematic review of the intrapersonal correlates of motivational climate perceptions in sport and physical activity

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ABSTRACT

Objectives: The purpose of this study was to systematically review and appraise the achievement goal literature (1990–2014) with a view to identifying the intra-individual correlates of motivational climate perceptions, and to identify research gaps and avenues in need for further development.
Design: Systematic review.
Method: Four databases were searched, leading to 104 published studies being sampled (121 independent samples) that met inclusion criteria. Correlates were grouped into 17 categories and qualitative analysis focussed on identifying the associations predicted by achievement goal theory. Effect sizes were calculated using the Hunter-Schmidt method for correcting sampling error.
Results: A total population size of 34,156 ($\chi = 316.3$, $\sigma = 268.1$) was sampled in the analysis, with the published mean ages ranging from 10.0 to 38.2 years ($\chi = 16.5$ years, $\sigma = 4.7$). Perceptions of a task or mastery climate were consistently associated with a range of adaptive motivational outcomes including perceived competence, self-esteem, objective performance, intrinsic forms of motivational regulation, affective states, practice and competitive strategies and moral attitudes, and the experience of flow. Perceptions of an ego or performance climate were positively associated with extrinsic regulation and amotivation, negative affect, maladaptive strategy use, antisocial moral attitudes and perfectionism, but negatively associated to positive affect and feelings of autonomy and relatedness.
Conclusions: After reviewing the sum total of research in this topic area, the authors appraise the options for future research to make meaningful progress in developing understanding of the social determination of motivation in sport and physical activity settings.

Over the past 30 years, research on achievement motivation within sport and physical activity domains has received unprecedented attention, generating an extensive range of publications. In developing Achievement Goal Theory (AGT), Nicholls (1984, 1989) proposed that in achievement contexts the meaning of competence to any individual could be defined as follows:

> Achievement behaviour is defined as behaviour directed at developing or demonstrating high rather than low competence. It is shown that competence can be conceived in two ways. First, ability can be judged high or low *with reference to the individual's own past performance or knowledge* [termed task goals]. In this context, gains in mastery indicate competence. Second, ability can be judged as capacity *relative to that of others* [termed ego goals]. In this context, a gain in mastery alone does not indicate high competence. To demonstrate high capacity, one must achieve more with equal effort, or use less effort than do others for an equal performance.
>
> (Nicholls, 1984; p. 328 – italics added)

In subsequent research, these two definitions of competence have been applied at different levels of analysis: (a) the state level (goal involvement); (b) the situational/contextual level (climate); and (c) the dispositional level (goal orientation). Within AGT, participants' immediate goals for achievement (a) are determined by the interaction between (c) their goal orientation (a) proneness in

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individuals towards adopting certain goals; cf. Duda, 1993) and (b) the situational goal climate (defined as the specific situational and contextual circumstances in which the achievement task is defined; cf. Ames, 1992a). Ames (1992b) asserted that the individual's subjective perception of the motivational environment was the critical factor in predicting subsequent psychological and behavioural responses. These developments led researchers to define two types of motivational climate: a 'mastery' climate reflecting task goals, and a 'performance' climate endorsing ego goals (Blumenfeld, 1992).

Notionally, any individual participating in sport and physical activity settings can influence the motivational climate by differentially emphasising task-mastery or ego-performance goals; through their visible attitudes and behaviours. In attempts to quantitatively capture such social behaviour and its effects, several questionnaires have been developed to assess the perceived influences of teachers, coaches, parents and peers separately. Following Ames' (1992b) assertion that the subjective perceptions of the motivational environment were critical, these questionnaires focussed on the perceived situational and contextual goal emphases in sport and physical education settings. These questionnaires included: (1) *teacher focussed* scales, such as the Learning and Performance Orientations in Physical Education Classes Questionnaire (LAPOPECQ – Papaioannou, 1994; 1995; 1997), and its abridged version the Teacher-Initiated Motivational Climate Questionnaire (Papaioannou, 1998). Likewise, the Physical Education Class Climate Scale (PECCS – Goudas & Biddle, 1994), and L'Echelle de Perception du Climat Motivational (EPCM – Biddle et al., 1995); (2) *coach focussed* inventories, such as the Perceived Motivational Climate in Sport Questionnaire (PMCSQ – Seifriz, Duda, & Chi, 1992), PMCSQ-2 (Newton & Duda, 1993) and the Motivational Climate Scale for Youth Sports (MCSYS – Smith, Cumming, & Smoll, 2008); (3) *parent focussed* measures, such as the Parent Initiated Motivational Climate Questionnaire (PIMCQ-2 – White, 1996); and (4) *peer-focussed* instruments, such as the Peer Motivational Climate in Youth Sport Questionnaire (PeerMCYSQ – Ntoumanis & Vazou, 2005). Many of these questionnaires, their strengths, weaknesses and associated findings are reviewed in Harwood, Spray, and Keegan (2008) and Duda and Whitehead (1998). However, in succinctly summarising the sub-factors of these scales: (i) effort, (ii) learning/skill-improvement, (iii) perceived important role, (iv) cooperative learning and (v) 'mistakes-are-part-of-learning' are key themes of Perceived Task/Mastery Climate questionnaire items (hereafter PTMC). In contrast, subscales which assess: (i) interpersonal comparison (and rivalry); (ii) punishment/fear of mistakes; (iii) unequal treatment of players; and (iv) 'achieving-without-effort' are consistent themes of Perceived Ego/Performance Climate questionnaire items (hereafter PEPC).

A great deal of research has focused upon the antecedents and consequences of athletes' task and ego orientations as dispositional achievement tendencies in sport (see Biddle, Wang, Chatzisarantis, & Spray, 2003 for a systematic review, and Van Yperen, Blaga, & Postmes, 2014 for a meta-analysis). This investment in goal orientation research has been parallelled by an ongoing academic interest in perceived motivational climate. An abundance of research has investigated the motivational, affective and behavioural correlates of PTMCs and PEPCs. In the first narrative review of the area, Ntoumanis and Biddle (1999) appraised attempts to experimentally manipulate motivational climate, and included a brief analysis of the correlates of climate perceptions. Nine years later, Harwood et al. (2008) completed a qualitative review of the theoretical associations between perceived motivational climate and outcomes such as perceived competence, positive- and negative-affective states, beliefs about the purpose of sport (status versus development) and also the causes of success in sport (effort/learning versus natural ability). In both analyses, the same pattern was reported wherein PTMCs were associated with positive/adaptive experiences but PEPCs either formed no association or were linked to negative/maladaptive experiences.

On the one hand, the extensive body of research examining the correlates of perceived motivational climate has contributed very meaningfully to our understanding of how these perceptions are associated to psychosocial functioning in sport and physical activity settings. On the other hand, findings can often be equivocal or inconsistent between studies, and the broad pattern of associations has not been comprehensively, systematically, recorded at this time. As such, there is a strong argument for conducting a systematic review of the correlates of perceived motivational climate. Further, with research tending to focus on the meaning of achievement contexts to the individual (as noted above), a review focussing on the intrapersonal correlates of perceived motivational climate appears timely.

Systematic reviews aim to identify, evaluate and summarise the findings of all relevant individual studies, thereby making the available evidence more accessible (Higgins & Green, 2011). When appropriate, combining the results of several studies gives a more reliable estimate of an intervention's effectiveness than one study alone (Murtagh et al., 2007; Pope & Mays, 2006; Roen, Aray, Roberts, & Popay, 2006). Systematic reviews adhere to a strict scientific design based on transparent, pre-specified and reproducible methods and all the data they employ is publically available for others to inspect (Higgins & Green, 2011). Because of this rigour, when carried out well, systematic reviews provide reliable summaries of the current state-of-the-literature, thus rendering any conclusions more defensible. As well as setting out what we know about a particular topic, systematic reviews can also demonstrate where knowledge is lacking (Dixon-Woods et al., 2006; Giacomini & Cook, 2000), which can then be used to inform future research (Pawson, Greenhalgh, Harvey, & Walsh, 2004). Further, systematic reviews can be differentiated from meta-analyses, which seek to use quantitative methods to summarise overall effect sizes and trends. For example, a systematic review can be purely qualitative if insufficient quantitative data exist. However, where appropriate, systematic reviews can be informed by meta-analytic techniques (Alderson & Green, 2008), as is the case in the present study.

With an ever-growing body of research using correlational designs to explore the associations of motivational climate perceptions in sport and physical activity, this systematic review was undertaken with three objectives. First, to uncover and examine the known intrapersonal correlates of the achievement goals construct: perceived motivational climate. Second, to capture and record the theoretical explanations for such correlations. Third, to summarise the findings of published correlational studies within the sampling period January 1990–January 2014. Likewise, this study set out to evaluate the value of correlational research in examining the social and cognitive processes influencing motivation in sport and physical activity – both to date and looking forwards to the future. From this robust platform, conclusions and recommendations can subsequently be made relating to perceived limitations in current knowledge and directions for future studies.

Method

Search strategy

Published studies were selected for the systematic review through electronic searches of four computer databases that were either sport specific (SPORTdiscus), psychology specific (PsycINFO) or general (Web of Science and PubMed) – see Fig. 1 for PRISMA diagram. To assist with replication efforts, Google Scholar was not included as a database following the establishment of inclusion