

Setting the stage : social-environmental and motivational predictors of optimal training engagement

Quested, Eleanor; Duda, Joan

DOI:

[10.1080/13528160903319265](https://doi.org/10.1080/13528160903319265)

License:

Creative Commons: Attribution (CC BY)

Document Version

Publisher's PDF, also known as Version of record

Citation for published version (Harvard):

Quested, E & Duda, J 2009, 'Setting the stage : social-environmental and motivational predictors of optimal training engagement', *Performance Research*, vol. 14, no. 2, pp. 36-45.
<https://doi.org/10.1080/13528160903319265>

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

Publisher Rights Statement:

Eligibility for repository : checked 14/05/2014

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.

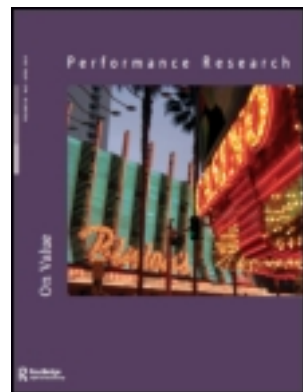
If you believe that this is the case for this document, please contact UBIRA@lists.bham.ac.uk providing details and we will remove access to the work immediately and investigate.

This article was downloaded by: [University of Birmingham]

On: 15 May 2014, At: 01:38

Publisher: Routledge

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



Performance Research: A Journal of the Performing Arts

Publication details, including instructions for authors and subscription information:

<http://www.tandfonline.com/loi/rprs20>

Setting the Stage: Social-environmental and motivational predictors of optimal training engagement

Eleanor Quested & Joan L. Duda

Published online: 03 Nov 2009.

To cite this article: Eleanor Quested & Joan L. Duda (2009) Setting the Stage: Social-environmental and motivational predictors of optimal training engagement, *Performance Research: A Journal of the Performing Arts*, 14:2, 36-45, DOI: [10.1080/13528160903319265](https://doi.org/10.1080/13528160903319265)

To link to this article: <http://dx.doi.org/10.1080/13528160903319265>

PLEASE SCROLL DOWN FOR ARTICLE

Taylor & Francis makes every effort to ensure the accuracy of all the information (the "Content") contained in the publications on our platform. Taylor & Francis, our agents, and our licensors make no representations or warranties whatsoever as to the accuracy, completeness, or suitability for any purpose of the Content. Versions of published Taylor & Francis and Routledge Open articles and Taylor & Francis and Routledge Open Select articles posted to institutional or subject repositories or any other third-party website are without warranty from Taylor & Francis of any kind, either expressed or implied, including, but not limited to, warranties of merchantability, fitness for a particular purpose, or non-infringement. Any opinions and views expressed in this article are the opinions and views of the authors, and are not the views of or endorsed by Taylor & Francis. The accuracy of the Content should not be relied upon and should be independently verified with primary sources of information. Taylor & Francis shall not be liable for any losses, actions, claims, proceedings, demands, costs, expenses, damages, and other liabilities whatsoever or howsoever caused arising directly or indirectly in connection with, in relation to or arising out of the use of the Content.

This article may be used for research, teaching, and private study purposes. Terms & Conditions of access and use can be found at <http://www.tandfonline.com/page/terms-and-conditions>

It is essential that you check the license status of any given Open and Open Select article to confirm conditions of access and use.

Setting the Stage

Social-environmental and motivational predictors of optimal training engagement

ELEANOR QUESTED & JOAN L. DUDA

From the stadium to the stage, time investment is a recognized prerequisite for proficient performance. According to Ericsson, expert performers typically accumulate 10,000 hours of practice to become exceptional in their performance arenas (Ericsson et al. 1993).

However quantity represents only one facet of training that might encourage maximal performance gains. 'Going through the motions' for 10,000 hours may not be sufficient to guarantee expertise. The *quality* of engagement in training also holds significance for the development of proficiency, as well as for the longevity of the performer's career. Performers can only train at their best when they are 'firing on all cylinders' and feeling well. Thus, to get the most from one's training, the experience should also contribute towards the performer's physical and psychological welfare. These often-overlooked requisites to optimal engagement in training may be primary determinants of whether performers realize and sustain their full potential.

Theories of motivation have frequently been employed as frameworks within which to explore antecedents of sustained, healthful and optimal engagement in physical and scholarly pursuits. 'Motivation' is one of the most widely examined psychological constructs in achievement domains. Yet in performance contexts, the term remains vague and often inadequately understood (Roberts 1992). Early theories construed motivation as a quantitative entity synonymous with the degree of energy and effort directed towards the targeted behaviour. This

conceptualization does not take into account *why* the behaviour was initiated or how it was regulated (Roberts 1992). From a qualitative perspective, 'motivation' refers to the meaning and value of the behaviour for the individual as well as the cognitive processes that underscore interpretation of the reason to act (Ames and Ames 1984).

According to this latter conceptualization, the *type* of motivation driving the behaviour is considered to be the primary determinant of performance and training quality and also relevant to the degree to which the performer experiences well- and ill-being. Research undertaken in academic and sport contexts indicates that features of training environments (i.e., teacher/coach behaviours) play a fundamental role in promoting adaptive motivational processes. In turn, these have been associated with desirable consequences, in and beyond the training forum. Much of this work has been grounded in the self-determination theory (SDT) framework (Deci and Ryan 1985, Deci and Ryan 2000).

In this paper, we will firstly explore the central tenets of SDT. Research that has examined the social-environmental and motivation-related correlates of optimal training, performance and health-related engagement through the theoretical lens of SDT will be reviewed. Drawing from SDT-driven work undertaken in educational, sport and dance settings, we will draw conclusions and suggest future directions from a research and applied perspective.

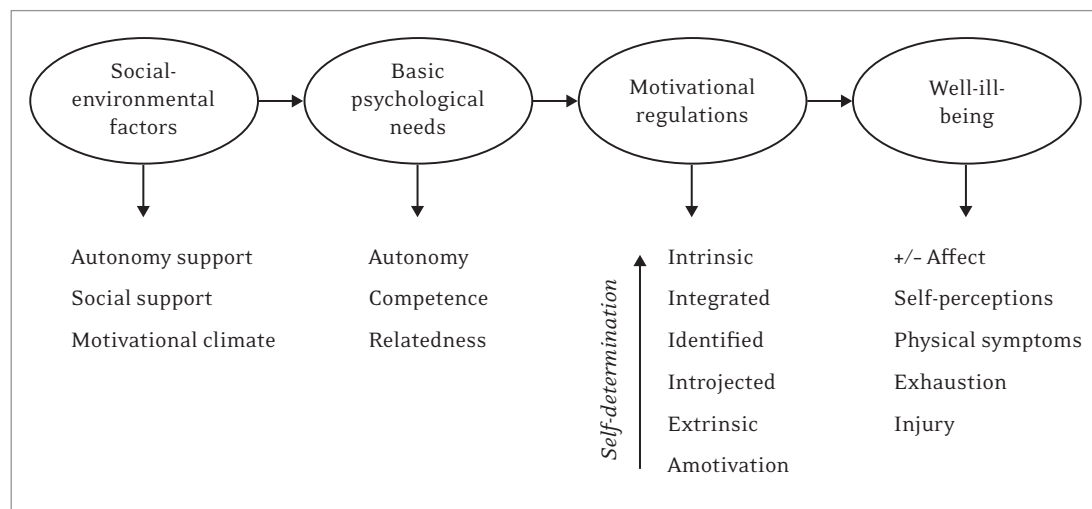
A MOTIVATIONAL CONTINUUM AND PSYCHOLOGICAL NEED SATISFACTION

Individuals engage in training for a variety of reasons. The term 'motivation regulations' refers to this range of motives for actions in all domains of life; in essence, the 'why' of behaviour. Differentiating between types of motivation regulations is a central feature of SDT (Deci and Ryan 1985, Deci and Ryan 2000). Two types of motivation were originally distinguished: intrinsic (i.e., from within) and extrinsic (i.e., from something, or someone else). SDT extended this somewhat simplistic conceptualization and posits motivation regulations for behaviour engagement to lie on a continuum with varying degrees of autonomy (Deci and Ryan 2000). According to SDT, intrinsic motivation represents the most self-determined or autonomous behaviour regulation. When intrinsically motivated, individuals engage in activities for reasons underpinned by inherent interest, enjoyment and satisfaction. Integrated regulation refers to behavioural engagement for reasons that are in congruence with the individual's overall aspirations and lifestyle; the behaviour is both volitional and anchored to the individual's identity. Identified regulation lies next on the continuum and also represents autonomous reasons for behavioural engagement, but in this case, one recognizes the

underlying purpose and potential value of the behaviour for themselves and therefore freely participates. When one partakes in an activity on account of internal or external contingencies (e.g., appeasement or avoidance of guilt, desire to exhibit ability or averting demonstration of failure) the regulation can be described as introjected. External regulations are considered to be highly controlled and underpin engagement in behaviours for reasons that are externally defined. Typical examples of external motivators include praise, rewards and punishment avoidance. At the far end of the continuum lies amotivation, representing a lack of any impetus driving behaviour. A burgeoning collection of SDT-driven investigations indicate that the level of self-determination undergirding engagement in achievement-related activities is a critical determinant of a performer's cognitive, behavioural and emotional responses in those settings.

FACILITATING NEED SATISFACTION AND AUTONOMOUS BEHAVIOUR REGULATION: THE ROLE OF COACHES, TEACHERS AND INSTRUCTORS

SDT assumes the satisfaction of three psychological needs (namely competence, autonomy and relatedness) to be essential for self-initiated actions, and subsequent



• Figure 1. Schematic representation of Self-Determination Theory.

psychological development and well-being (Deci and Ryan 2000). Competence represents the feeling that one is effective and efficient in the pursuits undertaken. Feeling connected, cared for and that one belongs in a social setting is captured by the construct relatedness. Satisfaction of the need for autonomy occurs when actions are perceived as self-governed, volitional and reflective of personal values. SDT hypothesizes that individuals seek out and persist in endeavours that are optimally challenging (Deci and Ryan 2000). Essentially, the desire to feel efficacious and self-determined as well as cared for provides the fuel to energize more intrinsic behavioural engagement. Thus, when participation in training is autonomously regulated, persistent and effective engagement, as well as corresponding performance and health-related benefits, are considered to be the likely consequences.

SDT proposes that the social environment can support or impede need satisfaction and subsequent self-determined behavioural engagement. Coaches and teachers are ideally placed with this regard. The organization and delivery of training as well as the interpersonal approach adopted by the leader are fundamental to whether performers in the context at hand feel autonomous, competent and connected.

REWARDS AND REINFORCEMENT

In the 1970s and 1980s, Deci and colleagues undertook a series of experiments examining the motivational impact of rewards and verbal feedback. Findings indicated that social-contextual cues (such as praise and rewards) that fostered feelings of competence benefited intrinsic motivation (Deci et al. 1999). Positive verbal feedback augmented, whereas negative responses thwarted intrinsic motivation for the activity in question. However, when rewards were contingent on performance, task completion or merely task engagement, studies found intrinsic motivation to be consistently undermined (Deci et al. 1999). This was attributed to the controlling

nature of rewards; when behavioural engagement is conditional on incentives then the impetus for self-regulation is considered to be forestalled.

In the past thirty years, a plethora of studies have supported the fundamental tenets undergirding these early findings. A recent experimental study undertaken in a Physical Education (PE) context re-illustrates the potential benefits of using reinforcements (Mouratidis et al. 2008). In line with the early work of Deci and colleagues, positive competence feedback enhanced intrinsic motivation for a shuttle-run task, via the reinforcement of the need for competence. A negative association between competence feedback and amotivation was also revealed. This suggests that when feedback is pitched in a way that supports basic needs, learners tend to feel more autonomous and less helpless and amotivated during the task in hand. Collectively, this line of research highlights the importance of careful and calculated use of rewards, feedback and praise. It is important that these responses support, rather than destabilize the performer's psychological needs.

AUTONOMY SUPPORT

'Autonomy support' is the dimension of interpersonal style that has attracted the majority of SDT research attention in achievement settings. Teachers who support the learner's autonomy encourage choice, use of initiative and self-directed behaviours. More-controlling teachers tend to adopt a more authoritarian style, set specific agendas and endeavour to control and/or coerce the learner's goals and behaviours towards a pre-determined outcome (Pelletier et al. 2001). A substantial body of research undertaken in sport settings indicates that leader's attempts to exercise control (by imposing rules, deadlines or coercion via rewards/punishments) undermines participants' self-determined behaviour (Amorose 2007). On the contrary, more autonomously motivated actions are more likely when leaders support autonomy by offering

choice and considering the other's perspective (Pelletier et al. 2001). More specifically, studies show that need satisfaction, autonomous motivation and subsequent desirable outcomes are more likely in autonomy-supportive sport settings (Amorose 2007). In our own work undertaken in vocational dance settings (Quested and Duda in press-b), perceptions of the dance teachers as autonomy-supportive predicted dance students' intrinsic motivation and amotivation (positively and negatively, respectively).¹

SOCIAL SUPPORT

Social support in training is evident when teachers and coaches exhibit signs of respect, care and consideration and proffer emotional support. Socially-supportive teaching is expected to facilitate the performer's need satisfaction (in particular, feelings of relatedness), autonomous behaviour regulations and quality of engagement in the achievement setting (Amorose 2007). In sport settings, the expected link between social support provided by coaches and athletes' reported feelings of relatedness has been empirically substantiated (Reinboth et al. 2004). Less conclusive is the evidence *vis-à-vis* the link between perceived social support and motivation regulations in achievement contexts. Previous studies have failed to support an association between perceptions of social support in the training setting and athletes' autonomous motivation for their sport participation (Amorose and Horn 2000). Perhaps even more surprisingly, longitudinal studies have indicated that when coaches are perceived as providing social support, intrinsic motivation is subsequently undermined (Amorose and Horn 2001). This theoretical anomaly may be attributable to an increase in desire (and therefore internal pressure) to please the individual who is exhibiting care and concern (Amorose 2007). As a consequence, engagement in the targeted behaviour becomes controlled by these contingencies. Nevertheless, it seems that social

support has the propensity to afford motivation-related benefits. In the future researchers and practitioners might consider the quality and nature of social support (e.g., instrumental and/or expressive, conditional or non-contingent) offered when examining the potential impact upon self-determined behaviour of performers.

MOTIVATIONAL CLIMATE

The way that competence and success are defined and recognized in training holds implications for the behavioural and affective patterns exhibited by performers. This premise is a defining feature of achievement goal theory (AGT) (Ames 1992, Nicholls 1989). Contextual cues are held to shape individuals' interpretations of their achievement goals and views about success (Ames 1992, Nicholls 1989). AGT-driven research in sport indicates that perceptions of the motivational climate can influence an array of motivational, behavioural and health-related responses among athletes (Duda 2001). Motivational climates that encourage self-referenced judgments of competence have been labelled as task-involving (Ames 1992). In such settings there is an emphasis on personal development and co-operative learning and a focus on individual effort and improvement. In ego-involving climates a normative conception of competence is emphasized and so personal performance accomplishments and ability level are assessed relative to others. Thus, performers are always 'looking over their shoulder' with the end goal being the demonstration of superiority. Ego-involving climates are characterized by a dearth in participant decision-making, competition and intra-individual rivalry, reprimand following error, and marked by a hierarchy tied to the ability level of the performer; the more able receive more attention (Duda 2001). An array of advantageous performance and health-related responses has been attributed to higher task-involving motivational learning climates such as persistence, enjoyment and physical and psychological well-being. On the contrary,

¹ In this study, perceived autonomy support did not significantly and negatively predict extrinsic regulation. This theoretical anomaly was explained by the fact that the latent variable representing 'extrinsic motivation' incorporated the three extrinsic regulations that vary in their degree of autonomy (identified, introjected, external).

ego-involving environments have been linked with less desirable health and performance related consequences including unhealthy eating, diminished self-esteem and dropout from the activity in question (Duda 2001).

Recent investigations have considered perceptions of the motivational climate as a relevant social-contextual variable within the SDT framework. Features of social environments such as *the* opportunities for self-selected tasks and competence enhancing activities, as well as self-referenced achievement judgments) might be expected to help one feel more connected, efficacious and able. On the contrary, engagement in an ego-focused training context might link to the thwarting of the basic needs as the climates are inherently competitive and comparative. Research in sport (Reinboth and Duda 2004, Reinboth and Duda 2006) and dance (Quested and Duda 2009-a, Quested and Duda 2007a, Quested and Duda 2009-b, Quested and Duda in press-a) is largely supportive of the hypotheses with regard to perceptions of task-involving climates. However empirical support for the expected associations between perceptions of ego-involving climates and undermined needs is less consistent. In vocational dance contexts, dancers' perceptions of ego-involving cues negatively predicted satisfaction of the needs for competence and relatedness (Quested and Duda in press-a). However other studies in sport, as well as hip hop company training settings (Quested and Duda 2009-a, Reinboth and Duda 2006) have failed to support an association between perceptions of ego-involving learning climates and need satisfaction. Perhaps other situational characteristics and individual differences moderate this link. For example, in the vocational dance context, dancers are training full-time. In the latter mentioned studies, behavioural engagement in the relevant setting was part-time. Thus, time spent in an ego-involving climate could be a moderating variable in the association between perceptions of an ego-involving learning context and need satisfaction.

WHY WE NEED NEEDS AND WHY 'WHY' MATTERS: OUTCOMES ASSOCIATED WITH THE 'SOCIAL-ENVIRONMENTAL-NEEDS-MOTIVATION REGULATIONS' SEQUENCE

The application of SDT in education, sport and (more recently) dance research has witnessed considerable growth. This is perhaps attributable to the value of the framework as a means to understand the personal, environmental and motivational antecedents of human behaviours, cognitions and responses. A number of outcomes have been considered in this regard.

ADHERENCE AND PERSISTENCE

If expertise takes ten years to nurture (Ericsson et al. 1993), then sustained engagement in performance-related training is imperative. Research in elite sport settings has examined the motivation-related predictors of sustained engagement in athletic activities (Pelletier et al. 2001). In a 22-month study involving competitive swimmers, amotivated swimmers at the beginning of the season (time one) had the highest rates of dropout at the two later time points (ten and twenty-two months). However there were noteworthy differences in the patterns of persistence predicted by the different forms of non-autonomous motivation. Introjected regulation at time one significantly predicted training persistence ten months later, but not twenty-two months on. This indicates that introjected regulations can coerce behavioural engagement, but this does not sustain behaviour in the long term. External regulation at the start of the season did not predict dropout from training at time two (ten months later), but drop-out by time three (twenty two months later) was positively predicted by externally regulated swimming training reported at the beginning of the season. On the contrary the more self-determined athletes (i.e., high intrinsic/identified regulations) were more likely to persist after ten and twenty-two months. In line with the expectations of SDT, Pelletier and colleagues found swimmers who perceived their coaches to

be controlling were more likely to adopt non-self-determined (i.e., external and amotivated) behavioural regulations. When coaches were perceived as autonomy-supportive, the swimmers were more likely to adopt autonomous behaviour regulations.

A 21-month study involving female handballers corroborated and extended these findings (Sarrazin et al. 2002). These authors found perceptions of less task-involving and more ego-involving coach behaviours as well as low reported competence, autonomy and relatedness satisfaction to be shared characteristics among those players who eventually dropped out. The study also revealed that intention significantly mediated the associations between motivation regulations and subsequent training persistence. However this effect was only moderate, suggesting that intentions might have changed over the 21-month time period and/or the athletes' withdrawal was sometimes for reasons outside of their own control (e.g., injury, relocation).

Taken as a whole, these studies reinforce the utility of understanding motivational processes, not only for interpreting optimal functioning in 'the here and now' but also in the future. In particular, the extent to which coaches and teachers can foster self-determination for engagement in training activities appears critical for the promotion of long term engagement.

'DOING WELL': MOTIVATIONAL AND SOCIAL PREDICTORS OF TRAINING AND PERFORMANCE QUALITY

Regardless of the nature of the activity, quality engagement and learning are usually considered to be prerequisites for expertise development. SDT-based studies undertaken in educational settings have found autonomous motivation for learning to equate with persistence, better learning, higher grades and more satisfaction with the learning experience (Guay et al. 2008). Thus, taking pleasure in and identifying with the benefits associated with educational pursuits can

make personal investment in training more worthwhile. Autonomy-supportive and structured learning environments are held to facilitate autonomous behaviour and enhanced learning in education contexts (Guay et al. 2008). Research supports the role of need satisfaction as an inherent mediator in the association between social influences and adaptive approaches to learning. For example, when students' needs for competence and autonomy are nurtured, then academic aptitude has been shown to be improved (Grolnick and Ryan 1989, Grolnick et al. 1991). Specifically, in these studies academic grades and teacher ratings of students' capability were significantly predicted by the students' reported degree of autonomy and competence satisfaction. Like teachers, parents are a prominent socializing influence in the lives of children. Accordingly, these studies also examined parental autonomy support. In line with SDT, provision of parental autonomy support directly predicted academic outcomes and these associations were mediated by need satisfaction.

It may seem intuitive that autonomy and competence would emerge as the more salient needs in learning environments. However satisfaction of the need for relatedness has also been recognized as an important predictor of positive academic experiences. In a classroom-based study, Furrer and Skinner (2003) found that feeling 'connected' to peers, parents and teachers linked to significant changes in students' engagement in the classroom over the course of the school year. The relative contribution of the children's relatedness satisfaction exceeded that predicted by perceived control of learning (Furrer and Skinner 2003). Hence, it is important for teachers and parents to create a caring, trusting and emotionally supportive environment to help foster young performers' vigour and investment in training. Research concerning the motivational correlates of optimal learning in physical activity or other non-academic training environments is warranted. Predictors of optimal learning and performance have been considered to a lesser extent in these contexts.

‘FEELING WELL’: WELL- AND ILL-BEING

Deci and Ryan (2000) define well-being as more than personal experiences of positive affect but refer to ‘an organismic function in which the person detects the presence or absence of vitality, psychological flexibility and a deep inner sense of wellness’ (2000: 243). In essence, performers exhibiting a high degree of well-being are fully functioning and experiencing personal growth alongside desire fulfilment in their achievement endeavours. The multifaceted nature of well-being dictates that the state could be operationalized in numerous ways. Accordingly, a variety of assessments has been employed to gauge the degree of well-being experienced by performers. Self-esteem, vitality, affective states/traits, happiness and satisfaction are among the more common indicators of well-being applied in research undertaken in sport, as well as other domains. In line with Deci and Ryan’s definition, it is important to recognize that well- and ill-being are not polar opposites. The absence of physical or psychological ill-health does not necessarily equate to optimal functioning. Thus, examinations of the antecedents of thriving well-being are just as important and may point to different contributors when contrasted to investigations of the determinants of compromised welfare (e.g., burnout, physique anxiety, illness).

The proposition that coach behaviours can impact upon the health status (degree of well- and ill-being) and performance potential of athletes is well corroborated in the literature (Amorose 2007). Moreover, the hypothesized mediating roles of need satisfaction and motivation regulations in this relationship have been supported in recent sport and dance investigations. For example, in a series of studies Reinboth and colleagues (2004, 2006) found perceptions of the coach-created motivational climate to be predictive of athletes’ degree of need satisfaction and reported well-/ill-being (i.e., vitality, physical symptoms, emotional and physical exhaustion). In a longitudinal study

spanning an athletic season, these authors found an increase in perceptions of a task-involving training environment to positively predict changes in the athletes’ autonomy, competence and relatedness. Increases in need satisfaction corresponded with increased subjective vitality reported by the athletes. The former findings were largely replicated in our recent investigations in vocational and company dance settings (Quested and Duda 2009-a, Quested and Duda 2009-b, Quested and Duda in press-a).

In achievement settings, displays and tests of competence are customary. When pitted against the needs for autonomy and relatedness, it might be logical to expect competence to hold the most functional significance for the performers’ psychological and emotional welfare. Previous investigations including those undertaken in sport (Reinboth and Duda 2006) and in the case of company-based hip hop dancers (Quested and Duda 2009-a) have substantiated this hypothesis. In these studies, competence was the most salient predictor of the athletes’ and dancers’ reports of positive and negative affect. On the contrary, in the case of vocational dancers, relatedness emerged as the strongest predictor of dancers’ emotional states (Quested and Duda in press-a). Perceptions of the task- and ego-involving cues in the dance schools also had quite a striking impact upon relatedness satisfaction. The strength of these paths exceeded those between perceptions of task- and ego-involving motivational climates and both autonomy and competence. Thus, although satisfying one’s desire to feel competent is clearly important in the case of performers in achievement contexts, feeling connected to others is also highly relevant to the performer’s welfare.

In the view of SDT theorists, relatedness is often considered to be a subsidiary need, fulfilling a more distal role than autonomy and competence in the nurturing of well-being (Deci and Ryan 2000). Thus, the discrepancy between the most functionally significant need in the competitive sport and vocational dance studies is

intriguing. Perhaps there are moderating features inherent to vocational dance contexts that might accentuate the relevance of relatedness. For instance, incongruent with the athletes and the company-based hip hop dancers, vocational dancers are engaged in their dance training fulltime. Often they will have left home for the first time to train in another city or country. Thus, it is conceivable that feeling that one 'belongs' in the dance school and holds a meaningful connection with other students, staff members etc. could have a more pronounced impact upon the affective states the dancers experienced. The disparity in the findings of the aforementioned studies highlights the need for further research, particularly in other full-time, non-obligatory achievement contexts (e.g., companies on tour, summer schools, sport academies). In such domains feeling connected to peers and teachers may be particularly salient to healthful engagement.

The hypothesized links between motivation regulations and reported dimensions of well-being have also been empirically substantiated. Research undertaken with young gymnasts revealed motivation regulations to predict variability in the day-to-day well-being experienced by the athletes (Gagne et al. 2003). Specifically, using a daily diary-style methodology, Gagne and colleagues found that increases in autonomous motivation increased pre-practice feelings of positive affect, self-esteem and vitality, and decreased negative affect reported by the gymnasts. In our recent work with fulltime student dancers (Quested and Duda in press-b), we examined the extent to which motivation regulations for dance engagement contributed towards dancers' self-evaluations and concerns (social physique anxiety, self-esteem, body dissatisfaction). Heightened social physique anxiety, greater dissatisfaction with one's body and low levels of self-esteem have been linked to disordered eating tendencies, behaviours that are known to be more prevalent among dancers (Smolak et al. 2000). We found that when dancers engage in

their training for extrinsic reasons they are more likely to report higher social physique anxiety.² This suggests that when dancers' participation is driven by internal or external pressures they are more likely to be emotionally susceptible to judgements of observers. Amotivation also positively predicted heightened anxiety associated with others viewing the dancers' physique, as well as greater body dissatisfaction and compromised self-esteem. Perceptions of autonomy support in the dance environment directly predicted the dancers' self-evaluations and concerns, and these associations were mediated by amotivation. These findings highlight the importance of promoting more autonomous motivation for dance training. Future research adopting longitudinal designs as well as the application of diary-style methodologies (Gagne et al. 2003) would serve to delineate the antecedents of adaptive as well as negative self-perceptions of dancers as well as among other performing artists.

Taken in their totality, the studies briefly reviewed support the SDT-based proposition that a) social-contextual features impact upon athletes' and dancers' degree of well- and ill-being experienced and b) that need satisfaction and motivation regulations serve as mediators of these relationships.

FOSTERING OPTIMAL FUNCTIONING IN ACHIEVEMENT SETTINGS: CONCLUSIONS AND PRACTICAL APPLICATIONS

Research undertaken in sport, dance and education contexts demonstrates that SDT is an applicable framework for understanding predictors of adaptive behaviours and optimal emotional and training-related responses. This literature base provides a sound conceptual grounding from which recommendations for teachers and trainers can be derived. The endorsement of autonomy-supportive, task-involving approaches to teaching would appear to be essential in the development of sustained, constructive and healthful engagement in training settings.

² In this study, the three extrinsic regulations (identified, introjected, external) were captured in one latent variable.

The TARGET framework (Epstein 1989) is a schema representing the central achievement structures in learning settings. Specific dimensions of the training environment (e.g., the Task, Authority, Recognition, Grouping, Evaluation and Timing) can be targeted with a view to enhancing the task-involving and autonomy-supportive, and tempering the ego-derived features of the context at hand. Modifications of the social environment created by coaches and teachers can be tailored in such a way to promote need satisfaction and autonomous behaviour regulations in the case of the performers involved. For example, with respect to the 'task' facet, provision of opportunities for performers to undertake diverse, challenging and self-selected tasks in training would create a learning environment supportive of autonomy need satisfaction. If recognition and reward are more private, and founded on personal progress, feelings of competence may be enhanced. A reduction in public, normative comparisons may reduce intra-individual rivalry and competition, and as a consequence a sense of greater relatedness between performers may result. The submission of authority to the learners by actively endorsing self-monitoring, enabling learners to take leadership roles and encouraging peer-learning could serve to enhance autonomy and competence as well as relatedness need satisfaction.

This review set out to introduce self-determination theory (Deci and Ryan 2000) and highlight the relevance and application of the central theoretical principles in training environments. There is much insight to be gleaned from the existent research undertaken in sport, education and dance. However, from a relative perspective, lines of research undertaken in dance and especially other performing arts are in their infancy. The stage is now set for future SDT-driven research in other performance domains. The application of the SDT framework in musical and theatrical contexts could contribute towards maximizing the training experience and welfare of performing artists.

REFERENCES

- Ames, C. (1992) 'Achievement goals and the classroom motivational climate', in J. Meece and D. Schunk (eds) *Students' Perceptions in the Classroom: Causes and consequences*, Hillsdale, New Jersey: Erlbaum, pp. 327-48.
- Ames, C. and Ames, R. (1984) 'Systems of student and teacher motivation: Toward a qualitative definition', *Journal of Educational Psychology* 76: 535-56.
- Amorose, A. J. (2007) 'Coaching effectiveness', in M. S. Hagger and N. L. D. Chatzisarantis (eds) *Intrinsic Motivation and Self-Determination in Exercise and Sport*, Leeds: Human Kinetics, pp. 209-27.
- Amorose, A. J. and Horn, T. S. (2000) 'Intrinsic motivation: Relationships with collegiate athletes' gender, scholarship status and perceptions of their coaches' behavior', *Journal of Sport and Exercise Psychology* 22: 63-84.
- Amorose, A. J. and Horn, T. S. (2001) 'Pre- to post-season changes in the intrinsic motivation of first year college athletes: Relationships with coaching behavior and scholarship status', *Journal of Applied Psychology* 13: 355-73.
- Deci, E. L., Koestner, R. and Ryan, R. M. (1999) 'A meta-analytic review of experiments examining the effects of extrinsic rewards on intrinsic motivation', *Psychological Bulletin* 125: 627-68.
- Deci, E. L. and Ryan, R. M. (1985) *Intrinsic Motivation and Self-Determination in Human Behavior*, New York: Plenum.
- Deci, E. L. and Ryan, R. M. (2000) 'The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior', *Psychological Inquiry* 11: 227-68.
- 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*, Leeds: Human Kinetics, pp. 129-82.
- Epstein, J. L. (1989) 'Family structures and student motivation: A developmental perspective', in C. Ames and R. Ames (eds) *Research on Motivation in Education*, New York: Academic Press, pp. 259-95.
- Ericsson, K. A., Krampe, R. T. and Teschroemer, C. (1993) 'The role of deliberate practice in the acquisition of expert performance', *Psychological Review* 100: 363-406.

- Furrer, C. and Skinner, E. (2003) 'Sense of relatedness as a factor in children's academic engagement and performance', *Journal of Educational Psychology* 95: 148-62.
- Gagne, M., Ryan, R. M. and Bargmann, K. (2003) 'Autonomy support and need satisfaction in the motivation and well-being of gymnasts', *Journal of Applied Sport Psychology* 15: 372-90.
- Grolnick, W. S. and Ryan, R. M. (1989) 'Parent styles associated with children's self-regulation and competence in school', *Journal of Educational Psychology* 81: 143-54.
- Grolnick, W. S., Ryan, R. M. and Deci, E. L. (1991) 'Inner resources for school achievement: Motivational mediators of children's perceptions of their parents', *Journal of Educational Psychology* 83: 508-17.
- Guay, F., Ratelle, C. F. and Chanal, J. (2008) 'The role of self-determination in education', *Canadian Psychology* 49: 233-40.
- Mouratidis, A., Vansteenkiste, M., Lens, W. and Sideridis, G. (2008) 'The motivating role of positive feedback in sport and physical education: Evidence for a motivational model', *Journal of Sport and Exercise Psychology* 30: 240-68.
- Nicholls, J. G. (1989) *The Competitive Ethos and Democratic Education*, London: Harvard University Press.
- Pelletier, L. G., Fortier, M. S., Vallerand, R. J. and Briere, N. M. (2001) 'Associations among perceived autonomy support, forms of self-regulation, and persistence: A prospective study', *Motivation and Emotion* 25: 279-306.
- Quested, E. and Duda, J. L. (In press-a). Exploring the social-environmental determinants of well- and ill-being in dancers: A test of Basic Needs Theory. *Journal of Sport & Exercise Psychology*.
- Quested, E., & Duda, J. L. (In press-b). A self-determination theory approach to understanding the antecedents of dancers' self-evaluative tendencies. *Journal of Dance Medicine and Science*.
- Quested, E. and Duda, J. L. (2009-a) 'Perceptions of the motivational climate, need satisfaction, and indices of well- and ill-being among hip hop dancers', *Journal of Dance Medicine and Science* 13: 10-19.
- Quested, E. and Duda, J. L. (2009-b) 'The experience of well- and ill-being among elite dancers: A test of basic needs theory', *Journal of Sport Sciences*, 26(S2), S41.
- Reinboth, M. and Duda, J. L. (2004) 'The motivational climate, perceived ability, and athletes' psychological and physical well-being', *Sport Psychologist* 18: 237-51.
- Reinboth, M. and Duda, J. L. (2006) 'Perceived motivational climate, need satisfaction and indices of well-being in team sports: A longitudinal perspective', *Psychology of Sport and Exercise* 7: 269-86.
- Reinboth, M., Duda, J. L. and Ntoumanis, N. (2004) 'Dimensions of coaching behavior, need satisfaction and the psychological and physical welfare of young athletes', *Motivation and Emotion* 28: 297-313.
- Roberts, G. C. (1992) 'Understanding the dynamics of motivation in physical activity', in G. C. Roberts (ed.) *Advances in Motivation in Sport and Exercise*, Champaign, Illinois: Human Kinetics, pp. 1-51.
- Sarrazin, P., Vallerand, R., Guillet, E., Pelletier, L. and Cury, F. (2002) 'Motivation and dropout in female handballers: A 21-month prospective study', *European Journal of Social Psychology* 32: 395-418.
- Smolak, L., Murnen, S. K. and Ruble, A. E. (2000) 'Female athletes and eating problems: A meta-analysis', *International Journal of Eating Disorders* 27: 371-80.