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FROM AGT TO SDT, FROM ATHLETES TO COACHES: REFOCUSING THE STUDY OF SPORT MOTIVATION

Saul Alcaraz ; Miquel Torregrosa ; Carme Viladrich ;
Yago Ramis ; Jaume Cruz

Autonomous University of Barcelona

ABSTRACT

The present research describes how the study of sport motivation has evolved over the last three decades. Two main trends are observed. On the one hand, the theoretical framework most used in the study of sport motivation has changed from Achievement Goal Theory (AGT) to Self-Determination Theory (SDT). On the other hand, in the recent years researchers have begun to analyse not only athletes' sport experiences but also coaches' sport experiences. In this paper, we briefly present AGT and SDT and then we move on to review the research conducted by international and Spanish groups that we find important to understand how the study of sport motivation has been developed. In addition, we present how the *Grup d'Estudis de Psicologia de l'Esport* (GEPE) has adapted to the changes described. Finally, we offer avenues for future research in the field of sport motivation.

Key Words: achievement goal theory, self-determination theory, sport environment, goal orientation, behavioural regulations

RESUMEN

La presente investigación describe cómo el estudio de la motivación deportiva ha evolucionado a lo largo de las últimas tres décadas. En este tiempo, se pueden observar dos tendencias principales. Por un lado, el marco teórico más utilizado en el estudio de la motivación deportiva ha pasado de ser la Teoría de las Metas de Logro (AGT, por sus siglas en inglés) a ser la Teoría de la Autodeterminación (SDT, por sus siglas en inglés). Y por el otro lado, recientemente se ha podido apreciar una tendencia de los investigadores a estudiar no sólo las experiencias de los deportistas, sino también las de los entrenadores. En este trabajo, repasamos en primer lugar los aspectos clave de la AGT y la SDT, para posteriormente detallar algunas investigaciones realizadas por grupos tanto internacionales como españoles que consideramos relevantes para entender cómo ha evolucionado el estudio de la motivación deportiva. Adicionalmente, presentamos cómo el *Grup d'Estudis de Psicologia de l'Esport (GEPE)* se ha adaptado a estos cambios. Por último, ofrecemos posibles líneas de investigación futura para el estudio de la motivación deportiva.

Palabras clave: teoría de las metas de logro, teoría de la autodeterminación, contexto deportivo, orientación motivacional, regulaciones conductuales

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Correspondencia:
Saül Alcaraz Garcia
Department of Basic, Developmental and Educational Psychology.
Faculty of Psychology (Edifici B). Universitat Autònoma de Barcelona.
Bellaterra (Barcelona), Spain, 08193
saul.alcaraz@uab.cat

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INTRODUCTION

The sport context is a competitive environment where motivational factors created by significant others influence how sport experiences affect kids' and youngsters' psychosocial development (Smith, Smoll, & Cumming, 2009). In initiation and development stages, teammates and coaches have a great influence on athletes (e.g., Boixadós, Valiente, Mimbrero, Torregrosa, & Cruz, 1998). According to Cruz, Torregrosa, Sousa, Mora and Viladrich (2011), the interaction between coaches and athletes is especially relevant to understand how athletes could develop beyond the sport environment.

Among the different motivational theories employed to study the influence of the social context, two have captured the attention of many researchers over the last three decades, the Achievement Goal Theory (AGT; Ames, 1992; Nicholls, 1989) and the Self-Determination Theory (SDT; Deci & Ryan, 1985, 2000). Specifically, the biggest amount of research on sport motivation has moved from the first to the second. A search conducted in the ISI Web of Science in June 2014, using the words "motivation", "sport" and "Achievement goal theory" for the period 1985-1999 showed 43 results, whereas only nine manuscripts were found using "motivation", "sport" and "Self-determination theory" in the same period of time. In contrast, when the same searches were conducted for the period 2000-2015, 351 results were found for SDT and 175 results for AGT. These results show that both theories have been increasingly used, with a preference for the SDT in the last years. Furthermore, almost all these publications were focused on the experiences of athletes. However, in the recent years some researchers have begun to study the sport experiences of other groups involved in sport, mainly coaches. In this manuscript, we briefly present both AGT and SDT, and then we move on to review the research conducted by international and Spanish groups that we find relevant to understand how these two trends in the study of sport motivation have evolved (i.e., main theory employed and target sample). In addition, we explain how the *Grup d'Estudis de Psicologia de l'Esport* (GEPE) from the *Universitat Autònoma de Barcelona* (Autonomous University of Barcelona) has adapted to those changes and we present some of the investigations conducted as a result of this transition.

Describing how achievement goal theory contributed to the study of sport motivation

As it is well known, AGT (Ames, 1992; Nicholls, 1989) is a motivational theory focused on how competence, success and failure are interpreted, namely goal orientations. These goal orientations are defined as the dispositional tendencies reflecting how success is understood in a certain context (Duda,

2001). AGT considers two different goal orientations: task orientation and ego orientation (Nicholls, 1989; see Duda & Ntoumanis, 2003, for a review). Task-oriented athletes define their achievement in self-referenced terms and focus on effort and improving their skills. In contrast, ego-oriented athletes compare their ability to other athletes and need to demonstrate superiority over others in order to feel competent.

According to AGT, athletes' perceptions regarding how significant others interpret ability and achievement (i.e., motivational climates) influence their goal orientations. According to Ames (1992; see also Ntoumanis & Biddle, 1999, for a review), motivational climates include mastery (or task-involving) climates and performance (or ego-involving) climates. In task-involving climates, significant others define achievement in terms of effort and improvement. Those climates have been linked to positive outcomes, such as athletes' sportsmanlike behaviours (Leo, García-Calvo, Sánchez, Gómez, & Sánchez, 2008). In contrast, in ego-involving climates the focus is placed on hetero-referenced comparisons and competence evaluations are based on normative criteria. Ego-involving climates have been related to athletes' contingent self-esteem and physical ill-being (Reinboth & Duda, 2004). As stated in previous literature, task-involving motivational climates created by coaches and peers are positively related to athletes' task orientations, and ego-involving climates are positively associated to ego orientations (Moreno-Murcia, Cervelló, & González-Cutre, 2008; Vazou, 2010). In addition, Vazou, Ntoumanis and Duda (2006) found positive relationships between coach and peer task-involving climates, as well as between their ego-involving climates.

In the GEPE, the studies on athletes' motivation in the first decade of the 2000's were framed only in AGT. In 2004, Boixadós, Cruz, Torregrosa and Valiente found that athletes' perceptions of task-involving motivational climates were positively associated with satisfaction in practices and self-referenced perceived ability, and were inversely related to rough play attitudes and normative perceived ability. In addition, athletes' perceptions of ego-involving climates were positively linked to normative perceived ability and favourable attitudes towards winning. As suggested by Balaguer, Duda, Atienza and Mayo (2002), interventions focused on the coach-created motivational climate would have an important influence on athletes' and team motivation. As a result, we developed the Personalized Programme for Coaches Counselling (PAPE; Sousa, Cruz, Torregrosa, Vilches, & Viladrich, 2006; Sousa, Smith, & Cruz, 2008), an individualized coach-intervention primarily framed in line with the Coach Effectiveness Training (CET; Smith & Smoll, 1996). Additional research by Mora, Cruz and Sousa (2013) expanded the PAPE and included tips for coaches based on AGT. In those studies, the PAPE proved to successfully

improve coaches' communication style. However, its influences on coach-created motivational climates could not be clarified. Regarding those variables, an empirical study by Torregrosa, Sousa, Viladrich, Villamarín, and Cruz (2008) showed that coach task-involving motivational climates were highly correlated to coaches' positive communication style. Moreover, coach task-involving climates and positive communication styles positively determined players' sport commitment and enjoyment. Concerning gender differences associated to climate perception, Torregrosa et al. (2011) found that girls reported significantly higher task-involving and lower ego-involving coach and peer motivational climates than boys. In addition, female athletes reported significantly more enjoyment and commitment to sport than boys. Taking into account that the assessment of AGT constructs had required a considerable number of items, Alcaraz, Viladrich and Torregrosa (2013), decided to develop short-forms for two of the most widely known AGT questionnaires: the Peer Motivational Climate in Youth Sport Questionnaire (PeerMCYSQ; Ntoumanis & Vazou, 2005) and the Task and Ego in Sport Questionnaire (TEOSQ; Duda, 1989). Those short-forms allowed assessing athletes' motivational variables more efficiently.

Exploring how self-determination theory contributed to the study of sport motivation

As described in AGT, those environments that are less performance-oriented and thus support athletes' desire for improvement and learning, create positive conditions for athletes' achievement and well-being. According to Deci & Ryan (2000), these statements are also in line with the postulates of Self-Determination Theory (SDT; Deci & Ryan, 1985). Furthermore, SDT affirms that in order to understand human motivation is necessary to consider not only their competence but also their autonomy and relatedness. These three requirements are defined as the basic psychological needs (BPN). The SDT states that humans are actively oriented towards self-actualization and personal growth through the fulfilment of their BPN. According to the SDT, social environment plays a key role in the satisfaction of these needs. Autonomy reflects the need to feel that behaviours are self-initiated and that one is responsible of his/her own behaviours (DeCharms, 1968). Competence is defined as the need to perceive that one is able to face challenges and to achieve desired outcomes (White, 1959). Relatedness is the desire to feel meaningfully connected to others and be accepted by them (Baumeister & Leary, 1995). In sport environments, athletes' BPN fulfilment has been related to positive outcomes, such as psychological well-being (Adie, Ntoumanis, & Duda, 2008) and enjoyment (Quested et al., 2013).

Contrary to BPN satisfaction, need thwarting diminishes humans' effective functioning and entails negative consequences. Deci and Ryan (2000) pointed out that BPN thwarting is a process that goes beyond the absence of BPN fulfilment. In the words of Bartholomew, Ntoumanis, Ryan and Thøgersen-Ntoumani (2011) "need thwarting does not simply reflect the perception that need satisfaction is low, but moreover the perception that need satisfactions are being obstructed or actively frustrated within a given context" (p. 78). In sport environments, BPN thwarting has been positively associated to indicators of athletes' psychological ill-being, such as burnout, and negatively related to indicators of psychological well-being, such as subjective vitality (e.g., Bartholomew, Ntoumanis, Ryan, Bosch, & Thøgersen-Ntoumani, 2011; Castillo, González, Fabra, Mercé, & Balaguer, 2012).

Athletes' behavioural regulations.

According to SDT, the motivations or behavioural regulations define the reasons why humans engage in or disengage from particular activities and behaviours. Those behavioural regulations could be ordered in a continuum of self-determination (Deci & Ryan, 2000), including: intrinsic motivation, four types of extrinsic motivation (integrated, identified, introjected and external regulations) and amotivation. Intrinsic motivation refers to the tendency of developing skills, facing challenges and inherently engaging in new activities, without considering external reinforcements from the environment (Ryan & Deci, 2007). Thus, intrinsic motivation involves doing an activity for its own enjoyment and interest (Ryan & Deci, 2000). Related to AGT, previous research has shown that intrinsic motivation is predicted by athletes' task orientation (e.g., Núñez, León, González, & Martín-Albo, 2011). Integrated regulation appears when an athlete perceives that a certain activity is a part of him/her; that is, the activity is in concordance with and integrated in his own personal values (Ryan, Williams, Patrick, & Deci, 2009). When athletes experience identified regulation, they engage in an activity because they feel identified with its purpose and values (Ryan & Deci, 2007). Moreover, introjected regulation refers to participating in an activity in order to increase self-esteem or avoid situations that could undermine it; thus, introjected regulation is based on internal punishments and reinforcements (Ryan et al., 2009). According to Deci & Ryan (2000), ego orientation would be a form of introjected regulation. When externally regulated, athletes engage in activities in order to obtain certain benefits or avoid punishments that are contingent to these activities. Finally, amotivation is defined as the state of lacking the intention to participate in a particular activity or behaviour (Ryan & Deci, 2000). When amotivated, athletes could feel incompetent in sport, understand that the activity will not

bring the desired outcomes or perceive that sport has no value or interest (Ryan et al., 2009).

In accordance to SDT, the degree to which BPN are satisfied is related to a certain behavioural regulation or other (Deci & Ryan, 2000). On the one hand, BPN satisfaction is associated with intrinsic motivation and self-determined regulations (i.e., integrated and identified regulations). On the other hand, both need thwarting and the lack of need satisfaction are related to controlled regulations (i.e., introjected and external regulations) and amotivation. Different studies have confirmed those associations in samples of athletes (e.g., Hollembeak & Amorose, 2005). In turn, athletes' intrinsic motivation and autonomous regulations have been related to positive consequences (e.g., effort; Pope & Wilson, 2012) and controlled regulations along with amotivation to negative outcomes (e.g., dropout; García-Calvo, Cervelló, Jiménez, Iglesias, & Moreno-Murcia, 2010). Complementary to those studies, it is necessary to highlight some investigations that specifically aimed at testing the mediational role of athletes' behavioural regulations in the relationships between BPN and indicators of well- and ill-being. For example, Lonsdale, Hodge and Rose (2009) found that athletes' self-determined motivation partially mediated the relationships between athletes' BPN satisfaction and their burnout. Similarly, McDonough and Crocker (2007) showed that self-determination motivation partially mediated the paths from BPN satisfaction to positive and negative affect.

Vallerand (1997; see also 2001, 2007) developed the Hierarchical Model of Intrinsic and Extrinsic Motivation (HMIEM), a theoretical sport-based model that structures the relationships considered in SDT. The author states that social factors from the environment influence the degree to which athletes perceive their BPN satisfied, which in turn lead them to engaging in a particular behaviour regulation, and in the end to experiencing particular outcomes (including affective, cognitive and behavioural outcomes). In accordance with the model, these connections emerge in three different levels of generality: global level, contextual level (e.g., sport, education), and situational level (e.g., games, practices). Those different levels are in turn related to each other. For example, Gillet, Vallerand, Amoura and Baldes (2010) found that athletes' contextual self-determined motivation predicted their situational self-determined motivational, and the latter predicted their sport performance. Furthermore, both HMIEM postulates and research framed in line with the HMIEM (e.g., Álvarez, Balaguer, Castillo, & Duda, 2009; Balaguer, Castillo, & Duda, 2008; Blanchard, Amiot, Perreault, Vallerand, & Provencher, 2009) emphasizes the influence of the social environment, particularly coaches, over the sport experiences of athletes.

Coach interpersonal style.

According to SDT, coaches could engage in two different interpersonal styles to interact with their athletes (Mageau & Vallerand, 2003): using an autonomy-supportive style or a controlling style. In accordance to the classical definition by Black and Deci (2000), a person in a position of authority (e.g., coach) engages in an autonomy-supportive style when he or she assumes the point of view of their subordinates (e.g., athletes), acknowledges their feelings, offers relevant information and opportunities for choice, and diminishes the use of pressures and demands (see also Mageau & Vallerand, 2003, for a review). The autonomy-supportive style has been related to athletes' BPN satisfaction (Amorose & Anderson-Butcher, 2007) and self-determined motivation (Pelletier, Fortier, Vallerand, & Brière, 2001). On the other hand, a coach is engaged in a controlling style when he or she behaves in an authoritative and coercive way, imposing his or her ideas concerning how athletes should think and behave (Bartholomew, Ntoumanis, & Thøgersen-Ntoumani, 2010; see also Bartholomew, Ntoumanis, & Thøgersen-Ntoumani, 2009 for a review). The controlling style induces the locus of control of athletes to move from internal to external (Bartholomew et al., 2010), thwarting athletes' BPN (e.g., Balaguer et al., 2012) and leading them to experience controlled regulations (e.g., Blanchard et al., 2009).

Although interpersonal styles have usually been studied in coaches, in the GEPE we extended the concept to other social agents. Ramis, Torregrosa, Viladrich and Cruz (2013) assessed the autonomy-support created not only by coaches, but also by peers and parents. The results showed that perceptions of coaches' autonomy support in the first place, followed by parents' and peers', predicted athletes' autonomous regulations. In addition, coaches' autonomy support prevented athletes' from experiencing amotivation. This investigation brought more detail to the study of athletes' context, as the authors presented the influence of three different social agents. In their study, Ramis et al. administered the Spanish adaptation of the Behavioral Regulation in Sport Questionnaire (BRSQ; Lonsdale, Hodge, & Rose, 2008). This adaptation was developed by Viladrich, Torregrosa and Cruz (2011) and those authors provided evidences supporting the psychometric merit of the questionnaire. Later, further evidence concerning the psychometric properties of the BRSQ across five European countries was provided by Viladrich et al. (2013). Finally, in order to assess the social environment more efficiently, Alcaraz et al. (2013) developed and validated short-forms of the Sport Climate Questionnaire (SCQ; Deci, 2001) to study the autonomy-supportive behaviours of coaches and peers.

Moving from the Study of Athletes to the Study of Coaches

Considering that coaches' behaviours and strategies influence young athletes' sport experience (e.g., Reinboth, Duda, & Ntoumanis, 2004), recently some studies have begun to focus on the sport experiences of coaches, in order to gain understanding regarding how the former influences operate. Stebbings, Taylor and Spray (2011) where the first authors that studied the antecedents of coach interpersonal styles. Their results showed that coaches' BPN satisfaction was positively related to their psychological well-being, which in turn was positively associated to engaging in an autonomy-supportive style and negatively related to developing a controlling style.

Later, Stebbings, Taylor, Spray and Ntoumanis (2012) extended the former study and added the assessment of the coaching context. Specifically, these authors tested a model where factors from the environment (i.e., opportunities for professional development, job security and work-life conflict) predicted satisfaction and thwarting of coaches' BPN, which in turn was related to their psychological well- and ill-being, and in the end to the adoption of a certain interpersonal style. On the one hand, opportunities for professional development along with job security were positively associated to coaches' BPN satisfaction, and the latter was positively related to coaches' psychological well-being and to engaging in an autonomy-supportive style. On the other hand, perceptions of work-life conflict positively predicted coaches' BPN thwarting, which in turn lead coaches to experience psychological ill-being and to develop a controlling style. Furthermore, Rocchi, Pelletier and Couture (2013) assessed a model where factors from the environment influenced coaches' self-determined motivation and lead them to engage in an autonomy-supportive style. Following the study of Pelletier, Séguin-Lévesque and Legault with physical education teachers (2002; see also Pelletier & Sharp, 2009), Rocchi et al. classified the influences from the environment in perceptions of pressure from above and pressure from below. Pressure from above refers to club or peer pressure that may be exerted on coaches. In Rocchi et al., pressure from above included pressure from coaching colleagues, practice pressure, and administrative pressure. Their results show that those pressures were negatively related to coaches' self-determined motivation. Furthermore, pressure from below concerns coaches' perceptions of their athletes' behavioural regulations for participating in sport. The results by Rocchi et al. showed that when coaches perceived that their athletes were experiencing self-determined motivation, they also experienced self-determined motivation.

As seen, the quantitative study of coaching environments and coaches' experiences is relatively new. However, there are a larger number of studies that have assessed the experiences of physical education (PE) teachers.

Although there are some differences between groups, coaches and PE teachers (e.g., salary), we think that the results obtained with PE teachers could enlighten the study of sport coaches. Among those studies conducted with PE teachers, we want to highlight two investigations: the work by Taylor, Ntoumanis and Standage (2008) and the study by Bartholomew, Ntoumanis, Cuevas and Lonsdale (2014). First, Taylor et al. analysed how time constraints, administrative pressure and pressure related to being evaluated due to students' performance, along with teachers' causality orientations and perceptions of students' self-determined motivation, influenced teachers' BPN satisfaction. In turn, teachers' need satisfaction was related to their self-determined motivation and in the end to the engagement in more positive behaviours and strategies towards their students. And second, Bartholomew et al. studied the negative experience of PE teachers. Specifically, their results showed that perception of job pressures, including time constraints and pressures stemming from school authorities and school colleagues, positively predicted teachers' BPN thwarting, which in turn was related to teachers' burnout and perceptions of physical ill-being.

In the GEPE we also wanted to do our bit to help in the study of coaches' environment. To do so, we conducted some studies regarding how sport contexts influence coaches' experiences. In contrast to the previously presented investigations, we wanted to study the coaches' experiences themselves, not as an antecedent of their interpersonal style. Taking into account that coaches could suffer from negative consequences regarding their job (e.g., stress; Kelley & Gill, 1993), we thought that development coaches were a group that had been traditionally forbidden and deserved to be studied in detail. For this reason, we conducted two different investigations. Both studies assessed the coaching context in terms of pressure from above and pressure from below (Pelletier et al., 2002; Rocchi et al., 2013). On the one hand, Alcaraz, Viladrich, Torregrosa and Ramis (in press) presented a model where coaches' perceptions of opportunities for professional development along with perceptions of athletes' intrinsic motivation positively predicted coaches' own intrinsic motivation and negatively predicted their amotivation. In turn, coaches' intrinsic motivation was positively associated to their subjective vitality and coaches' amotivation was positively related to their perceived stress. On the other hand, in line with Bartholomew et al. (2014), Alcaraz, Torregrosa and Viladrich (2015) focused on the negative sport experience of coaches. The authors presented a model where coaching in a negative environment thwarted coaches' BPN, which in turn lead them to experience amotivation. The assessment of the social environment extended the conceptualization of pressure from above and pressure from below (Pelletier et al., 2002) with the inclusion the conflict

between the coaching job of and other life spheres (see Stebbings et al., 2012). Specifically, Alcaraz et al. (2015) included administrative pressures concerning how to conduct practices along with perceptions of athletes' amotivation and work-life conflict.

In addition to those studies that tested structural equation models to analyse the sport experience of coaches, other recent investigations need to be presented here. On the one hand, Allen and Shaw (2009, 2013) conducted two qualitative studies where they assessed the antecedents of BPN in samples of performance women coaches. Globally, their results stated that positive working conditions such as being provided with opportunities for professional development and perceiving support from their sport organization fulfilled women coaches' needs. On the other hand, we want to highlight some qualitative and quantitative studies focused specifically on coaches' motivation. In this line, the qualitative study by McLean and Mallett (2012) showed that different types of coaches (i.e., recreational, development and performance coaches) participated in different environments and were driven by different forms of behavioural regulations. For example, development coaches were oriented towards participating in the development and progress of their athletes and themselves as coaches. In order to help researchers improve the study of coaches' motivation, two new questionnaires assessing coaches' behavioural regulations have appeared in the recent years: the Coach Motivation Scale (CMS; McLean, Mallett, & Newcombe, 2012) and the Coaches' Motivation Scale (EME, Spanish acronym; Guzmán & Romagnoli, 2011). Using the EME, Guzmán, Macagno and Imfeld (2013) presented a descriptive study that displaying the differences in coaches' behavioural regulations and BPN satisfaction, among other variables, by gender, age and type of sport. In the GEPE, we continued the line of research centred on coaches' motivation with a study that analysed the mediational role of self-determined motivation. Specifically, Alcaraz, Torregrosa and Viladrich (2014) found that development coaches' self-determined motivation partially mediated in the relationships from coaches' BPN satisfaction and thwarting to indicators of their psychological well- and ill-being.

Future Research in Sport Motivation

There are still several challenges that researchers could face in the near future. For example, further investigation is required concerning how SDT and AGT constructs interact. Ntoumanis (2001) suggested that athletes' high task orientation promotes their self-determined motivation and ego orientation predicts their controlled regulations (see also Moreno-Murcia, Cervelló, & González-Cutre, 2010). In addition, longitudinal studies by Sarrazin, Vallerand,

Guillet, Pelletier and Cury (2002), and Reinboth and Duda (2006) explored how coach-created motivational climates and athletes' BPN are associated. However, there are still some gaps regarding how SDT and AGT theories could be combined (e.g., relationships between goal orientations and BPN). In addition, we encourage future research to explore associations between SDT and other psychological theories, such as personality theories (Vasalampi et al., 2014).

Another challenge that SDT should overcome is the inclusion of behavioural regulations in structural equation models. A significant amount of previous research has been using a self-determination index (SDI; Vallerand, 2001) as an integrative measure of sport motivation. However, several authors have recently highlighted the limitations this index could entail and have proposed different alternatives (Chemolli & Gagné, 2014; Martín-Albo, González-Cutre, & Núñez, 2014; Wilson, Sabiston, Mack, & Blanchard, 2012). In this line, further research is needed in order to provide more evidence supporting the use of these alternative methods.

CONCLUSIONS

The present research highlights that the study of sport motivation is in constant evolution. Specifically, we have described the two main trends followed over the last three decades. On the one hand, SDT has emerged as the most used motivational theory. In addition, the number of studies framed on AGT has also increased. On the other hand, in the recent years motivation research has focused not only on the sport experiences of athletes, but also on the experiences of coaches. In this line, we consider that the study of different target populations could become even broader, in order to include all the social agents involved in sport, such as parents (Torregrosa, Lagarma, & Portillo, 2011, July) or officials (Gray & Wilson, 2008). Finally, we encourage researchers to transfer their knowledge to sport fields and courts using theory-based interventions (e.g., Promoting Adolescence Physical Activity; Duda, 2013), with the aim of involving athletes and significant others in the evolution of sport motivation research.

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