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# THE DYNAMIC PROCESS OF DEVELOPMENT THROUGH SPORT

# DINAMIČNI PROCES RAZVOJA PREK ŠPORTA

## ABSTRACT

This article presents a global vision for sport through a new framework that incorporates the elements necessary for a developmentally sound approach to youth sport involvement. This framework proposes that youth sport involvement includes three basic elements: (1) taking part in activities (what), while creating relationships with others (who), in a specific setting (where). When these three elements positively interact, it creates a context that, when repeated on a regular basis, leads to changes in the personal assets of the participants. Changes in individuals' personal assets, such as Competence, Confidence, Connection, and Character (4 C's), have long been associated with positive sport experiences, which in turn lead to long-term outcomes, including continued sport Participation, higher levels of Performance in sport, and Personal development through sport (3 P's). Research linking the three basic elements of youth sport (activities, relationships, and settings) to positive changes in personal assets (4 C's) and long-term outcomes (3 P's) are discussed and the Personal Assets Framework is presented

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## IZVLEČEK

Članek predstavlja globalno vizijo športa s pomočjo novega okvirja, ki vključuje elemente, nujne za razvojno primeren pristop k ukvarjanju mladih s športom. Okvir predlaga, naj udejstvovanje mladih v športu vključuje tri osnovne elemente: (1) sodelovanje v aktivnostih (kaj), pri katerih se vzpostavljajo odnosi z drugimi (kdo) v specifičnem okolju (kje). Ko se ti trije elementi pozitivno prepletejo, se izoblikuje okvir, ki ob rednem ponavljanju pripelje do sprememb v osebnih prednostih sodelujočih. Spremembe v osebnih prednostih posameznika, kot so kompetenca, zaupanje, povezava in značaj (angl. 4 C's) se že dolgo časa povezujejo s pozitivnimi športnimi izkušnjami, ki vodijo v dolgoročne rezultate, vključno z neprekinjenim ukvarjanjem s športom, boljšo uspešnostjo v športu in osebnim razvojem s pomočjo športa (angl. 3 P's). Raziskava obravnava povezavo treh osnovnih elementov v športu mladih (aktivnosti, odnosi in okolje) s pozitivnimi spremembami v osebnih prednostih (4 C's) in dolgoročnimi rezultati (3 P's) ter predstavi okvir osebnih prednosti.

*Ključne besede:* Šport mladih, športni razvoj; psihologija, treniranje

Several theories have been developed over the years to explain the dynamic relationships between the individual and the context responsible for human development (e.g. Bronfenbrenner, 1979; Ford & Lerner, 1992; Gottlieb, 1997; Smith & Thelen, 2003). The foci of these developmental system theories is to outline a reciprocal conception of important processes, structures, and functions, and to display how various systems interact over time to influence individuals' development (Lerner, 2002). In a review of developmental system theories, Lerner (2002) suggested that, whereas each of the key theories spotlight particular issues such as motor development, skill acquisition, or cognitive achievement, all theories are nevertheless primarily concerned with illuminating the relationships between the individual and his or her context. As a result, the power of developmental system theories to explain sport participation and performance resides in their ability to conceptualize sport involvement as a system of integrated personal and social variables that interact to shape development.

One form of developmental theory that has received much attention in the sport realm are ecological theories. Specifically, in a special issue of the International Journal of Sport Psychology, Araújo and Davids (2009) examined the influence of *ecological psychology* in the study of cognition and behaviour in sport and made parallels between ecological and dynamical systems approaches. The ecological approaches reviewed in the special issue included theories introduced by Gibson (Fajen, Riley, & Turvey, 2009), Brunswik (Hammond & Bateman, 2009), Barker (Kaminski, 2009), and Bronfenbrenner (Krebs, 2009). Araújo and Davids suggested that these ecological approaches share the same fundamental characteristics of human development based on: (a) A focus on the temporality of change (i.e. understanding change over time), and (b) integrating multiple levels of organizational systems (e.g., family, sport teams, sport organizations, communities, cultures, nations). In other words, the concepts involved in ecological approaches focus on the integration of the developing person in his or her context.

Applying ecological theories of human development to sport, numerous systems at various levels shape the youth sport experience. In fact, several qualitative studies underscore the significant influence of a myriad of variables at the personal (e.g., play, practice), relational (e.g., coaches, peers, parents), and environmental levels (e.g., club structure, birthplace) that interact throughout development to influence long-term participation, performance, and personal development (e.g., Fraser-Thomas & Côté, 2009; Henriksen, Stambulova, & Roessler, 2010; Strachan, Côté, & Deakin, 2011). This understanding is consistent with ecological approaches – such as Bronfenbrenner's system approach – that are particularly well-suited frameworks for studying development through sport (Côté, Strachan, & Fraser-Thomas, 2008; Krebs, 2009). Specifically, the multidimensional nature of an ecological approach in sport complements the empirical evidence, revealing that sport participation and performance neither results from involvement in one single activity, nor is it attributable to a specific personal characteristic. (Côté & Abernethy, 2012). Broad ecological approaches emanating from Bronfenbrenner's ecological theory fail, however, to identify the diverse mechanisms evident in sport involvement that work together to create changes in the athletes, short-term engagement, and ideally promote long-term positive developmental outcomes.

In this article, we will adapt Lerner's (2002) term "developmental theories" to describe an ecological framework – the Personal Assets Framework – that focuses on integrative levels of development over time. The Personal Assets Framework focuses on the key elements of sport involvement that govern long-term participation, performance, and personal development. The elements of this framework are based on the dynamic interactions between the sport participants, their relationships with others (e.g., peers, coach, parents), and the environment in which sport

takes place. The main premise of the framework is that the dynamic interactions between youth involvement in an activity, relationships with others, and the environment are structured to nurture the assets of the participants instead of achieving an outcome (e.g., performance) that is often not in line with the immediate needs of the participants. The developmental aspect of the Personal Assets Framework suggests that the alignment between the dynamic elements of the model and the participants' assets can change according to the developmental context including variables such as maturation and age. In other words, the framework describes a *person-centered* approach to sport involvement that changes over time according to the developmental level of the participant.

## THE PERSONAL ASSETS FRAMEWORK

The Personal Assets Framework considers personal factors (i.e., personal engagement in activities), relational factors (i.e., quality relationships), and organizational environments (i.e., appropriate settings) as the elements necessary to understand the processes through which development in sport, and through sport, occurs. The interaction of these three dynamic elements constitute a specific sport experience (e.g., games, practice, social activities) that, when repeated over a period of time such as a season, will generate changes in the personal assets (e.g., confidence, competence, connection, and character) for the participant involved in the experience. Eventually, changes in the personal assets of sport participants will influence the long-term outcomes of sport in terms of the participants' participation, performance, and personal development. Figure 1 outlines the components of the Personal Assets Framework for Sport that create the conditions for positive experiences and optimal development in sport over time.

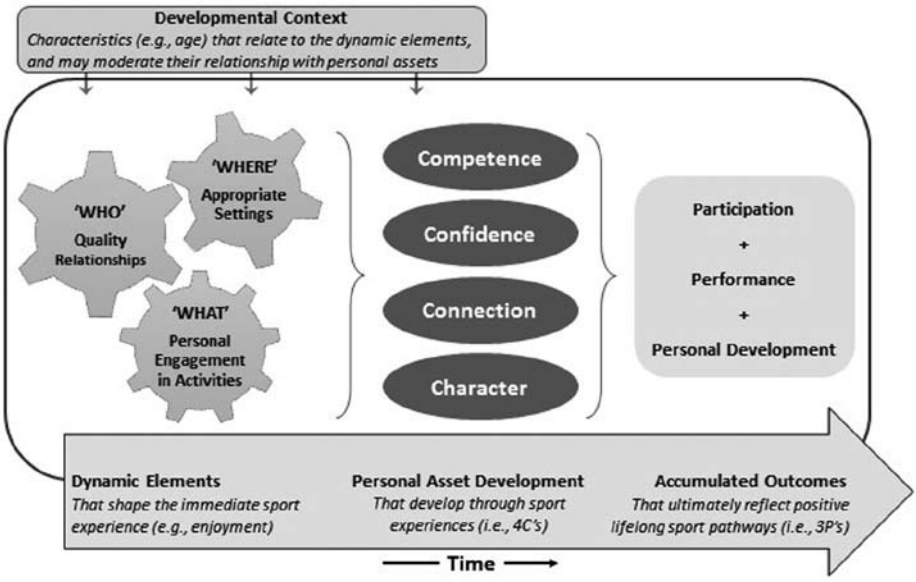


Figure 1. Personal Assets Framework for sport. Figure adapted from Côté et al. (in press).

The framework in Figure 1 illustrates how, within a specific developmental context, three conditions are necessary for fostering optimal youth development through sport. First, the dynamic

elements of personal engagement in activities, quality relationships, and appropriate settings constitute an integrative approach that propels youth towards the development of positive personal assets (e.g., 4 C's: Competence, Confidence, Connection, and Character; see Côté, Bruner, Strachan, Erickson, & Fraser-Thomas, 2010; Fraser-Thomas, Côté, & Deakin, 2005). Second, an alignment between the dynamic elements (activities, relationships, and settings) and the personal assets is necessary on a short-term basis (e.g., a season) to influence the objectives of continued participation, performance, and personal development that are accrued over a longer period of time. Third, an overemphasis on one outcome at the expense of the other two during childhood (e.g., a focus on performance over participation) will diminish the short- and long-term contribution that sport involvement can make to the total development of a person.

The Personal Assets Framework was first conceptualized by Côté, Turnnidge, and Vierimaa (in press), as a descriptive structure that accounts for the mechanisms and outcomes that constitute positive youth development in sport. More recently, Cote and Erickson (in press) as an organizational system that frames the influence of practice, play, and coaches upon athletes' development. The present article will focus more generally on the dynamic features of the Personal Assets Framework and the interactions that occur between the different variables of the framework. Central to the Personal Assets Framework are the personal attributes of the individuals involved that are likely to change from repeated positive sport experiences. We will describe the assets and outcomes next and conclude this paper with an explanation of how the three dynamic elements – activities, relationships, and settings – interact together to form the basis of any short-term and long-term positive sport experience.

## DEVELOPING PERSONAL ASSETS

Youth sport programs that focus on personal assets of youth appear to have an immediate effect on the climate of the sport environment and the experience of youth involved in sport (Turnnidge, Vierimaa, & Côté, 2012). When extra-curricular activities, such as sport, focus on developing positive personal assets, youth may experience a broader scope of developmental benefits associated with regular involvement, along with fewer potential costs, compared to poorer developmental activities (Larson, 2000). Further reviews suggest that, within sport programs and coaching approaches that prioritize the 4 C's (Fraser-Thomas et al., 2005), athletes reap the long-term benefits of higher levels of performance (i.e., sport expertise), participation (i.e., continued participation in sport and a physically active lifestyle), and personal development (i.e., psychosocial and emotional outcomes, such as initiative) (3 P's; Côté et al., 2008). Sport programs that focus on developing personal assets might, as an example, strive to design experiences where athletes have ample opportunities for social connections with peers and adults (e.g., lifelong friendships, mentorship), where athletes have opportunities to develop skills and to feel confident in their abilities (e.g., learning new skills through play, promoting skill mastery), and where athletes are put in situations that develop and promote character (e.g., establishing moral guidelines, sportsmanship role models). The Personal Assets Framework extends this understanding by highlighting that developmentally rich experiences (e.g. developmental context) are largely dependent on the activities, relationships, and broader environment within which sport occurs. The remainder of this article will explore explanations, and implications, of each of these dynamic elements for shaping sport involvement.

## DYNAMIC ELEMENTS THAT INFLUENCE POSITIVE ASSET DEVELOPMENT

**Personal Engagement in Activities.** Theoretical and empirical research in youth sport reveals that the specific activities in which developing athletes engage fundamentally contribute to the quality of their sport experiences. As an example, whereas some developing athletes engage in extended periods of deliberate practice to develop specific skills, other athletes may spend more time in unorganized play activities with peers. Developed by exploring sport involvement throughout development, the Developmental Model of Sport Participation (DMSP) suggests a progression in sport for both expert and recreational athletes that is ideally based on a diversity of sport experiences during childhood and a large volume of play activities. The main tenets of the DMSP are that (a) diversity should precede specialization in sport and (b) play should be prioritized over structured practice activities during childhood (Côté & Erickson, in press; Côté, Horton, MacDonald, & Wilkes, 2009). In other words, diversity between sports (e.g. involvement in several sports) and within sports (e.g. involvement in different activities of a specific sport) are the foundation of a sampling environment that drives personal engagement (Côté & Erickson, in press).

Regarding the first tenet that diversity between sports precedes specialization in one sport, a growing number of studies from different countries, sports, and settings have demonstrated that involvement in several sports before specialization in one sport sets the stage for long-term participation and performance (e.g. Baker, Côté, & Abernethy, 2003; Baker, Côté, & Deakin, 2005; Bridge & Toms, 2013; Hornig, Aust, & Güllich, 2014; Moesch, Elbe, Hauge, & Wikman, 2011). Involvement in different sports during childhood allows young athletes to experience a wide range of opportunities and then select (or be selected to) a specific sport during adolescence, entering either the recreational years or the specializing years. The advantage of being involved in different sports during childhood provides young athletes with a breadth of skill experiences and exposure to a broad range of social settings. The diversity of sport activities during childhood should not be seen as a discriminating factor that predicts sport expertise, but rather as a foundation to optimal development in an elite performance or recreational pathway.

The second tenet of the DMSP is that play should be prioritized over structured practice activities during childhood, resulting in a mix of activities within the same sport. Support for the positive role of play in the development of sport expertise is found within several bodies of literature, including studies that examined the developmental histories of elite and expert athletes (e.g., Baker et al., 2003; Baker, et al., 2005; Soberlak & Côté, 2003). Bohnert, Fredricks, and Randall (2010) suggested to not only use the total number of activities as the sole indicator of diversity because it does not account for the different contexts and different types of experiences that could be experienced within a single activity. For example, children can be involved in basketball in a driveway, with friends in a schoolyard, in an organized game with referees, or in a structured practice with teammates and a coach. Although each of these four activities involves the sport of basketball, they take place in four different settings and provide children with different experiences and outcomes. Similarly, youth can experience different positions within a sport (e.g.. offense, defense, or goalkeeper) that allow them to diversify their involvement, roles, and identity. Therefore, diversity can also be achieved by a variation of settings within the same sport to account for differences in activities such as level of competition, opportunities for skill building, and social interaction with peers and adults.

Following this idea, the developmental activities of youth in sport can be categorized into one of four quadrants divided by two axes: One axis corresponding to the social structure of the activity (adult led to youth led) and the other axis relating to the personal value the activity provides to the participants (extrinsic to intrinsic; Côté, Erickson, & Abernethy, 2013). These quadrants form a matrix in which the different activities of youth sport can be located and distinct learning contexts emerge. Accordingly, a "rational learning context" is characterized by the prototype activity of deliberate practice (Ericsson, Krampe, & Tesch-Römer, 1993); an "emotional learning context" is represented by activities such as play practice (Launder, 2001); an "informal learning context" is characterized by spontaneous practice (Livingstone 2002); and the prototype activity of a "creative learning context" is deliberate play (Côté, 1999; Côté, Baker, & Abernethy, 2007). The social and environmental milieus created by the developmental contexts of these four types of learning environments are qualitatively different, as are the resultant learning and motivational outcomes. As no one activity is necessarily better than another, each diverse learning context facilitates unique social interactions, emotions, and learning mechanisms.

The practice and play activities of the DMSP integrate the various outcomes of sport – performance, participation, and personal development – by focusing on the transition of key sport activities, which typically change over time during development. The sampling years of the DMSP is based on a developmental approach that features diversification across sports (e.g.. involvement in basketball, ice hockey, football, tennis) and diversification within a sport (e.g., play, practice, playing defense, offence). A sport development approach founded on a sampling of sport experiences, with sampling conceptualized as participation in multiple sports and diversified activities within a sport, is proposed to lead to more positive outcomes and less negative consequences for the youth sport participants.

## QUALITY RELATIONSHIPS

Integrated within the different activities of sport, athlete development is also critically shaped by the interpersonal relationships formed within sport (e.g., coaches, parents. peers; Fraser-Thomas & Côté, 2009; Keegan, Harwood, Spray, & Lavallee, 2009; Ullrich-French & Smith, 2006). In fact, the study of youth development more generally has highlighted the central role of interpersonal relationships as key drivers of individual development (Lerner, 2004). Consistent with this assertion, high quality relationships have been associated with a myriad of positive outcomes, such as initiative and continued sport participation (Conroy & Coatsworth, 2009; Ullrich-French & Smith, 2009).

Although a range of theories highlight the value of relationships in sport development, Transformational Leadership theory provides a particularly valuable standpoint to explore how sport experiences are influenced by athletes' relationships with parent, peer, and coach leaders. According to Bass and Riggio (2006), transformational leaders are identified according to four dimensions: Idealized influence (leaders foster trust and respect and are role models for their followers), inspirational motivation (leaders inspire and challenge their followers), intellectual stimulation (leaders encourage their followers to be innovative and creative), and individualized consideration (leaders display genuine concern for individuals' development and achievement). An extensive body of literature within a wide range of disciplines, such as health, education, and organizational psychology, highlights that transformational leaders improve outcomes for other

group members, and the group as a whole. However, the application of this theory within the sport context is relatively limited (Vella, Oades, & Crowe, 2013). As such, the aim of this section is to introduce Bass and Riggio's (2006) transformational leadership framework and illustrate how transformational behaviours relate to coach-athlete, parent-athlete, and peer relationships.

When speaking of sport, *coaches* are often the focus of leadership research and it is well documented that coaches' interpersonal styles influence athlete outcomes (Horn, 2008; Smith & Smoll, 2007). Previous research suggests that positive coach-athlete relationships are characterized by coaches who display care and concern for their athletes, include their athletes in decision-making processes, promote interactive discussions, acknowledge individual athlete's feelings and perspectives, and behave in a clear and consistent manner (e.g., Becker, 2013; Erickson, Côté, Hollenstein, & Deakin, 2011, Mageau & Vallerand, 2003). Interestingly, transformational leadership shares striking similarities with several of these characteristics. For instance, individualized consideration reflects the characteristics of recognizing an athlete's feelings and caring for one's athletes. Given the various ways transformational leadership embodies the characteristics of high-quality coach-athlete relationships grounded in alternative conceptualizations, this coaching style may be particularly effective in fostering positive youth development. In line with this proposition, Vella, Oades, and Crowe (2013) revealed that higher ratings of coach transformational leadership were linked with the development of personal and social skills, cognitive skills, goal setting skills, and initiative.

Parent-athlete relationships represent another key element of the youth sport experience. In addition to often being the primary socializing agents for youth's initial experiences with sport (Wuerth, Lee, & Alfermann, 2004), parents are also important role models for youth's attitudes and behaviours within sport (Fredricks & Eccles, 2004). Consistent with this perspective, Zacharatos, Barling, and Kelloway (2000) found that adolescents who observe their parents exhibiting transformational leadership behaviours adopted similar behaviours on their sport teams. In turn, adolescents who employed these behaviours were rated by their peers and coaches as more effective, satisfying, and effort-evoking leaders. Within the physical activity context, Morton and colleagues (2011) demonstrated that mothers' and fathers' transformational parenting was positively linked with adolescents' life satisfaction, as well as self-regulatory efficacy for physical activity and healthy eating. Taken together, these results highlight the utility of transformational leadership theory for understanding the role of parents in facilitating positive development in sport.

Another important social factor that may be positively influenced by transformational leadership is the quality of an athlete's relationships with their peers. For instance, Price and Weiss (2011) found that effective peer leadership among adolescent soccer players was associated with higher levels of task and social cohesion and collective efficacy. In addition, the influence of the team captain's use of transformational leadership was evaluated by Callow, Smith, Hardy, Arthur and Hardy (2009). Results indicated that some transformational behaviours (e.g., using individualized consideration, fostering acceptance of group goals, promoting team work, and holding high performance expectations) facilitated task cohesion, while others (e.g., promoting teamwork and fostering acceptance of group goals) predicted social cohesion. Although this study was conducted with an adult population, we expect that similar associations could exist within the youth sport context.

It is important to acknowledge that there are several other significant relationships within the sport environment. These may include, but are not limited to, athletes' relationships with their siblings, assistant coaches, officials, volunteers, and sport administrators. Moreover, all of these relationships do not occur in isolation from one another and the interactions between the different relationships may thus have an important influence on the quality of youth's sport experiences. For example, an athlete who views their coach as a transformational leader may use a similar style with their peers. The complex intricacies of such relationships and their influences on youth development are consequently a worthy area of future study.

Collectively, future research can build upon these findings by examining how transformational coaching, parenting, or peer leadership may promote the assets and outcomes outlined in the Personal Assets Framework. This is an important direction, as the relationships and social interactions that athletes experience within sport may translate sport activity involvement into the development of a better person, both in and out of sport.

## APPROPRIATE SETTINGS

When considering athletes' personal development and how it is shaped by sport-related activities and quality relationships, the Personal Assets Framework highlights how these components interact with the broader social and physical environment surrounding athletes. As an example, consider how the experiences of the following elite young athletes might differ: (a) Marit, who is training as a gymnast within the largest and most competitive club in her region, (b) Rafael, who plays soccer everyday on his competitive team or on a small dirt pitch in his community – an underprivileged area of Brazil, and (c) Thomas, who is training to meet national standards within his small club of regionally-competitive athletes. These examples reveal how different environments surrounding development involve an array of factors, and shape the activities an athlete will engage-in and the relationships they form.

The *birthplace effect* is a striking example of how environments shape development, whereby studies ranging across sport type and international settings reveal that smaller cities or regions (e.g., 50,000 to 100,000 inhabitants) produce relatively greater numbers of athletes who reach elite levels of competition and promote youth sport participation (e.g., Baker, Shuiskiy, & Schorer, 2014; Balish, Rainham, & Blanchard, 2015; Côté, MacDonald, Baker, & Abernethy, 2006; MacDonald, Cheung, Côté, & Abernethy, 2009; Turnnidge, Hancock, & Côté, 2012; Imtiaz, Hancock, Vierimaa, & Côté, 2014). From a personal development perspective, Fraser-Thomas, Côté, and MacDonald (2010) showed that swimmers who were part of clubs in smaller cities (less than 500,000) scored significantly higher on indicators of personal assets such as commitment to learning, positive identity, empowerment, and support, compared to swimmers training in bigger cities (greater than 500,000). Overall, the birthplace effect suggests that city size influences the long-term outcomes of performance and participation in sport as well as personal development through sport.

Although explanations for *why* the birthplace effect occurs generally involve an interaction of factors, small cities and towns may contain a set of unique features related to the physical environment and behavior patterns of youth that are conducive to athletes' optimal development in sport (MacDonald et al, 2009). In terms of the physical environment, smaller communities provide children with more space for unorganized physical activity behaviors such as cycling,

running, skating, and playing sports with peers (Balish & Côté, 2013; Kytta, 2002). For instance, smaller cities' less structured, more natural, more spacious, and safer physical environment might facilitate various types of sport behaviors at a young age (e.g. deliberate play). From a behavioral perspective, smaller cities may provide integrative approaches to sport participation that engage families, schools and communities. Smaller settings and sport groups may foster more supportive social relationships that effectively promote an abundance of positive social norms.

In contrast to the general physical environment or relationships formed in smaller communities, athletes might also experience a different type of social comparison environment. Social comparison theory would predict that athletes rely on peers and teammates from their community or region as a *frame of reference* to compare themselves, and this type of local comparison is fundamental for generating self-perceptions such as identity and competence (see Wood & Wilson, 2003). Although using nearby others as a frame of reference may seem intuitive, research reveals that individuals continue to focus on how they compare to local targets (e.g., teammates, well-known peers) even when information from higher levels is available (e.g., results from state/provincial, national, or international competitors; see Zell & Alicke, 2010). Indeed, participants' positive affect and competence perceptions following performance feedback are higher after performing well within their in-group, regardless of whether their group compared well or poorly with other groups (Zell & Alicke, 2009).

Positive and negative social comparisons with peers are important because repeated experiences with comparisons accumulate over time and influence individuals' sense of self (Marsh, 1987). Decades of large-scale correlational studies in a range of educational contexts demonstrate the tendency for perceptions of self-competence to be negatively associated with the level of achievement within one's school (Dai & Rinn, 2008). This finding was replicated within elite gymnastics clubs (Chanal, Marsh, Sarrazin, & Bois, 2005) and leads to the understanding that, given two athletes with equal ability, the athlete from a club where the average ability of their peers is higher will likely have lower perceptions of competence. Applied to the birthplace effect, it is plausible that smaller cities or towns provide developing athletes a positive place to compare themselves with others (e.g., fewer high-performing peers).

The implications of these findings can be framed in terms of the demands that high-ability schools, large training centers, and large cities place on athletes' self-concept: In these settings, athletes must achieve extremely high standards at a young age to be 'the best'. Nevertheless, provided the potential benefits of access to high performance resources and coaching, how can coaches in such settings ensure that their athletes can benefit from positive social comparisons? On one hand, group leaders may consider finding a way for all members to have experiences with being the 'top performer' in the group. On the other hand, coaches can also work to provide an environment where group members embrace the club, team, or teammates' shared performance as their own (Mussweiler, Ruter, & Epstude, 2004). Provided that individuals often bask in the glory of their team as a way to enhance their view of themselves (Cialdini, Borden, Thorne, Walker, Freeman, & Sloan, 1976) sport teams can be a place where members share an identity, particularly for relatively lower-performing or under-developed team members (Forsyth, 2010).

## CONCLUSION

Development through sport involves a complex pathway that is shaped by numerous factors over time. For instance, consider a team of 5-year-old hockey players chasing a puck on a local hockey rink. Each member of this team is likely to develop and mature individually, even though it might be difficult at such an early age to pick athletes out who will become elite athletes, recreational sport participants, or sport drop-outs. Which individual and environmental factors determine how sport involvement relates to personal development? Although the answer to this question is indeed complex, the Personal Assets Framework suggests that sport environments should be considered regarding the extent that they promote, or thwart, athletes' opportunities to develop essential personal assets. By exploring the existing sport literature, Côté et al. (2012) identified that the acquisition of personal assets is influenced by three dynamic elements, including: (a) Personal engagement in activities, (b) quality relationships, and (c) appropriate settings. Although each of these elements is distinct, we expect that they interact so that changes in one aspect (e.g., living in a small community) may also influence other elements (e.g., closer relationships and greater opportunities for play in the community). Nevertheless, by shaping each of these dynamic elements in ways that promote personal asset development, coaches, parents, and sport organizations will ideally promote positive sport experiences and longer-term outcomes – both in sport, as well as in other domains of life.

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## REFERENCES

Araujo, D., & Davids, K. (2009). Ecological approaches to cognition and action in sport and exercise: Ask not only what you do, but where you do it. *International Journal of Sport Psychology, 40,* 5-37.

Baker, J., Côté, J., & Abernethy, B. (2003). Sport-specific practice and the development of expert decision-making in team ball sports. *Journal of Applied Sport Psychology, 15,* 12-25.

Baker, J., Côté, J., & Deakin, J. (2005). Expertise in ultra-endurance triathletes early sport involvement, training structure, and the theory of deliberate practice. *Journal of Applied Sport Psychology, 17,* 64-78.

Baker, J., Shuiskiy, K., & Schorer, J. (2014). Does size of one's community affect likelihood of being drafted into the NHL? Analysis of 25 years of data. *Journal of Sports Sciences, 16,* 1570-1575.

Balish, S. M., Rainham, D., & Blanchard, C. (2015). Community size and sport participation across 22 countries. *Scandinavian Journal of Medicine & Science in Sports.* Online first publication. DOI: 10.1111/sms.12375.

Bass, B. M., & Riggio, R. E. (2006). *Transformational leadership* (2nd ed.). New York, NY: Psychology Press.

Becker, A. (2013). Quality coaching behaviors. In P. Potrac, W. Gilbert, & J. Denision (Eds.), *Routledge handbook of sports coaching* (pp. 184-195). New York, NY: Routledge.

Bohnert, A., Fredricks, J., & Randall, E. (2010). Capturing unique dimensions of youth organized activity involvement theoretical and methodological considerations. *Review of Educational Research, 80,* 576-610.

Bridge, M. W., & Toms, M. R. (2013). The specializing or sampling debate: A retrospective analysis of adolescent sports participation in the UK. *Journal of Sports Sciences, 31,* 87-96.

Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design.* Cambridge, MA: Harvard University Press.

Callow, N., Smith, M. J., Hardy, L., Arthur, C. A., & Hardy, J. (2009). Measurement of transformational leadership and its relationship with team cohesion and performance level. *Journal of Applied Sport Psychology, 21,* 395-412.

Chanal, J. P., Marsh, H. W., Sarrazin, P. G., & Bois, J. E. (2005). Big-fish-little-pond effects on gymnastics self-concept: Social comparison processes in a physical setting. *Journal of Sport & Exercise Psychology, 27,* 53-70.

Cialdii, R. B., Borden, R. J., Thorne, A., Walker, M. R., Freeman, S., & Sloan, L. R. (1976). Basking in reflected glory: Three (football) field studies. *Journal of Personality and Social Psychology, 34,* 366-375.

Coatsworth, J. D., & Conroy, D. E. (2009). The effects of autonomy-supportive coaching, need satisfaction, and self-perceptions on initiative and identity in youth swimmers. *Developmental Psychology, 45,* 320-328.

Côté, J. (1999). The influence of the family in the development of talent in sport. *The Sport Psychologist, 13,* 395-417.

Côté, J., & Abernethy, B. (2012). A developmental approach to sport expertise. In S. Murphy (Ed.), *The Oxford handbook of sport and performance psychology (pp.435-447).* New York: Oxford University Press.

Côté, J., Bruner, M. Strachan, L., Erickson, K., & Fraser-Thomas, J. (2010). Athletes development and coaching. In J. Lyle & C. Cushion (Eds.), *Sport Coaching: Professionalism and Practice (pp.63-83).* Oxford, UK: Elsevier.

Côté, J. & Erickson, K. (in press). Diversification and deliberate play during the sampling years. In J. Baker & D. Farrow (Eds.), *The handbook of sport expertise* London: Routledge.

Côté, J., Erickson, K., & Abernethy, B. (2013). Practice and play in sport development. In J. Côté & R. Lidor (Eds.), *Conditions of children's talent development in sport* (pp. 9-20). Morgantown, WV: Fitness Information Technology.

Côté, J., Horton, S., MacDonald, D.J., & Wilkes, S. (2009). The benefits of sampling sports during childhood. *The Physical and Health Education Journal, 74,* 6-11.

Côté, J., MacDonald, D., Baker, J., Abernethy, B. (2006). When "where" is more important than "when": Birthplace and birthdate effects on the achievement of sporting expertise. *Journal of Sport Sciences, 24,* 1065-1073.

Côté, J., Strachan, L., & Fraser-Thomas, J. (2008). Participation, personal development, and performance through sport. In N. L. Holt (Ed.), *Positive Youth Development through Sport* (pp. 34-45). London: Routledge.

Côté, J., Turnnidge, J., & Vierimaa, M. (in press). A personal assets approach to youth sport. In A. Smith & K. Green, (Eds.), *Handbook of youth sport.* London, UK: Routledge.

Dai, D. Y., & Rinn, A. N. (2008). The big-fish-little-pond effect: What do we know and where do we go from here? *Educational Psychology Review, 20,* 283-317.

Erickson, K., Côté, J., Hollenstein, T., & Deakin, J. (2011). Examining coach-athlete interactions using state space grids: An observational analysis in competitive youth sport. *Psychology of Sport & Exercise, 12,* 645-654.

Ericsson, K. A., Krampe, R. T., & Tesch-Römer, C. (1993). The role of deliberate practice in the acquisition of expert performance. *Psychological Review, 100,* 363-406.

Fajen, B. R., Riley, M. A., & Turvey, M. T. (2009). Information affordances and the control of action in sport. *International Journal of Sport Psychology, 40,* 79-107.

Ford, D. H., & Lerner, R. M. (1992). *Developmental systems theory: An integrative approach.* Thousand Oaks, CA: Sage.

Forsyth, D.L. (2010) *Group dynamics* (5th ed.). Belmont, CA: Wadsworth.

Fraser-Thomas, J., & Côté, J. (2009). Understanding adolescents' positive and negative developmental experiences in sport. *The Sport Psychologist, 23,* 3-23.

Fraser-Thomas, J., Côté, J., & Deakin, J. (2005) Youth sport programs: An avenue to foster positive youth development. *Physical Education and Sport Pedagogy, 10,* 19-40.

Fraser-Thomas, J., Côté, J., & MacDonald, D. (2010). Community size in youth sport settings: Examining developmental assets and sport withdrawal. *Physical & Health Education Academic Journal, North America, 2,* July. 2010. Available at: http://ojs.acadiau.ca/index.php/phenex/article/view/8/1172.

Fredricks, J. A., & Eccles, J. S. (2004). Parental influences on youth involvement in sports. In M.R. Weiss (Ed.), *Developmental sport and exercise psychology: A lifespan perspective* (pp. 145-164). Morgantown, WV: Fitness Information Technology.

Gottlieb, G. (1997). *Synthesizing nature–nurture: Prenatal roots of instinctive behavior.* Hillsdale, NJ: Erlbaum.

Hammond, K. R., & Bateman, R. A. (2009). Sport psychology as an instance of ecological psychology. *International Journal of Sport Psychology, 40,* 38-49.

Henriksen, K., Stambulova, N., & Roessler, K. K. (2010). Holistic approach to athletic talent development environments: A successful sailing milieu. *Psychology of Sport & Exercise, 11,* 212-222.

Horn, T. S. (2008). Coaching effectiveness in the sport domain. In T. S. Horn (Ed.), *Advances in sport psychology* (3rd ed., pp. 239-268). Champaign, IL: Human Kinetics.

Hornig, M., Aust, F., & Güllich, A. (2014). Practice and play in the development of German top-level professional football players. *European Journal of Sport Science,* Advance Online Publication. Doi: 10.1080/17461391.2014.982204

Imtiaz, F., Hancock, D. J., Vierimaa, M., & Côté, J. (2014). Place of development and dropout in youth ice hockey. *International Journal of Sport and Exercise Psychology, 12,* 234-244.

Kaminski, G. (2009). Sport in the perspective of Barkerian psychological ecology. *International Journal of Sport Psychology, 40,* 50-78.

Keegan, R., Harwood, C., Spray, C., & Lavallee, D. (2009). A qualitative investigation exploring the motivational climate in early career sports participants: Coach, parent and peer influences on sport motivation. *Psychology of Sport & Exercise, 10,* 361-372.

Krebs, R. J. (2009). Bronfenbrenner's bioecological theory of human development and the process of development of sports talent. *International Journal of Sport Psychology, 40,* 107-135.

Launder, A. G. (2001). *Play practice: The games approach to teaching and coaching sports.* Champaign, IL: Human Kinetics.

Larson, R. W. (2000). Toward a psychology of positive youth development. *American Psychologist, 55,* 170-183.

Lerner, R. M. (2002). *Concepts and theories of human development* (3rd Ed.). Mahwah, NJ: Erlbaum.

Mageau, G., & Vallerand, R. (2003). The coach-athlete relationship: A motivational model. *Journal of Sport Sciences, 21,* 883-904.

Marsh, H. W. (1987). The big-fish-little-pond effect on academic self-concept. *Journal of Educational Psychology, 79,* 280-295.

MacDonald, D. J., Cheung, M., Côté, J., & Abernethy, B. (2009). Place but not date of birth influences the development and emergence of athletic talent in American football. *Journal of Applied Sport Psychology, 21,* 80-90.

Moesch, K., Elbe, A. M., Hauge, M. L., & Wikman, J. M. (2011). Late specialization: The key to success in centimeters, grams, or seconds (cgs) sports. *Scandinavian Journal of Medicine & Science in Sports, 21,* 282-290.

Morton, K. L, Barling, J., Rhodes, R. E., Mâsse, L. C., Zumbo, & Beauchamp, M. R. (2011). The application of transformational leadership theory to parenting: Questionnaire development and implications for adolescent self-regulatory efficacy and life satisfaction. *Journal of Sport & Exercise Psychology, 33,* 688-709.

Mussweiler, T., Ruter, K., & Epstude, K. (2004). Ups and downs of social comparison: Mechanisms of assimilation and contrast. *Interpersonal Relations and Group Processes, 87,* 832-844.

Price, M. S., & Weiss, M. R. (2011). Peer leadership in sport: Relationships among personal characteristics, leader behaviors, and team outcomes. *Journal of Applied Sport Psychology, 23,* 49-64.

Smith, R. E., & Smoll, F. L. (2007). Social-cognitive approach to coaching behaviors. In S. Jowett, & D. Lavallee (Eds). *Social psychology in sport* (pp.75-90). Champaign IL: Human Kinetics.

Smith, L. B., & Thelen, E. (2003). Development as a dynamic system. *Trends in Cognitive Sciences, 7,* 343-348.

Soberlak, P., & Côté, J. (2003). The developmental activities of elite ice hockey players. *Journal of Applied Sport Psychology, 15,* 41-49.

Strachan, L., Côté, J., & Deakin, J. (2011). A new view: Exploring positive youth development in elite sport contexts. *Qualitative Research in Sport, Exercise and Health, 3,* 9-32.

Turnnidge, J., Hancock, D. J., & Côté, J. (2012). The influence of birth date and place of development on youth sport participation. *Scandinavian Journal of Medicine & Science in Sports, 24,* 461-468.

Turnnidge, J., Vierimaa, M., Côté, J. (2012). An in-depth investigation of a model sport program for athletes with disabilities. *Psychology, 3,* 1131-1141.

Ullrich-French, S., & Smith, A. L. (2006). Perceptions of relationships with parents and peers in youth sport: Independent and combined prediction of motivational outcomes. *Psychology of Sport & Exercise, 7,* 193-214.

Vella, S., Oades, L., & Crowe, T. (2013). The relationship between coach leadership, the coach–athlete relationship, team success, and the positive developmental experiences of adolescent soccer players. *Physical Education and Sport Pedagogy, 18,* 549-561.

Wood, J. V. & Wilson, A. E. (2003). How important are social comparisons for self-evaluation? In M. R. Leary & J. P. Tangney (Eds.). *Handbook of self and identity* (pp. 344-366). New York, NY: Guilford Press.

Wuerth, S., Lee, M. J., & Alfermann, D. (2004). Parental involvement and athletes' career in youth sport. *Psychology of Sport & Exercise, 5,* 21-33.

Zacharatos, A., Barling, J., & Kelloway, E. K. (2000). Development and effects of transformational leadership in adolescents. *Leadership Quarterly, 11,* 211-226.

Zell, E., & Alicke, M. D. (2009). Contextual neglect, self-evaluation, and the Frog-Pond effect. *Journal of Personality and Social Psychology, 97,* 467-482.

Zell, E., & Alicke, M. D. (2010). The local dominance effect in self-evaluation: Evidence and explanations. *Personality and Social Psychology Review, 14,* 368-384.