Philip Jefferies

Physical literacy and resilience: The role of positive challenges

Littératie physique et résilience : Le rôle des défis positifs

ABSTRACT

Physical literacy is the competence to perform movement skills combined with the motivation, confidence, and understanding to value and take responsibility for engagement in physical activity across the lifespan. It has also been defined as the foundational attributes for beginning and maintaining physical activity, and therefore the capacity for an active lifestyle. The benefits of physical literacy include enhanced health through increased physical activity, and also improvements in confidence and participation, as individuals recognise their movement competencies and engage more fully with their environments. Growing recognition of the value of physical literacy has led to global drives to involve physical literacy in multiple sectors including broadening early childhood and elementary curricula to aid child development, with proponents arguing for it to be emphasised similarly to literacy and numeracy. In parallel, educators, health professionals, and policymakers, among others, are becoming increasingly interested in ways to build resilience. Rather than addressing potential vulnerabilities and weaknesses, resilience approaches promote fostering protective factors that help individuals experiencing adversity to avoid poor default trajectories and instead achieve positive outcomes (through recovery, adaptation, or transformation). This paper explores links between the two desirable and promising constructs of physical literacy and resilience, considering their conceptual interplay and the shared notion of engaging 'positive challenges' that may be essential for nurturing important resources when facing subsequent adversity. This connection provides the base for further robust empirical studies that involve both physical literacy and resilience and for the development of holistic resilience programme development.

KEYWORDS

Physical literacy; Resilience; Challenge; Adversity; Movement; Physical education; Curriculum.

RÉSUMÉ

La littératie physique est la compétence des individus pour exécuter des mouvements, aptitude combinée à la motivation, à la confiance en soi et à la compréhension nécessaires pour valoriser et assumer la responsabilité de s'engager dans une activité physique tout au long de la vie. Elle a également été définie comme les attributs fondamentaux pour commencer et pour maintenir une activité physique, et donc la capacité à adopter un mode de vie actif. Les avantages de la littératie physique comprennent à la fois une amélioration de la santé grâce à une activité physique accrue, ainsi qu'une amélioration de la confiance en soi et de la participation aux pratiques sportives, car les individus

reconnaissent leurs compétences à effectuer les mouvements et les intègrent plus pleinement dans leur cadre de vie. La reconnaissance croissante de la valeur de la littératie physique a conduit à des initiatives mondiales visant à l'introduire dans de multiples secteurs, y compris scolaire avec l'élargissement des programmes dispensées durant la petite enfance et ceux du cours élémentaire, afin d'aider au développement de l'enfant. Les partisans de la littératie physique plaident pour qu'elle soit considérée de la même manière que la littératie et la numératie. Parallèlement, les éducateurs, les professionnels de la santé et les décideurs politiques, entre autres, s'intéressent de plus en plus aux moyens de renforcer la résilience. Plutôt que de s'attaquer aux vulnérabilités et faiblesses potentielles des personnes, les approches fondées sur la résilience favorisent la promotion de facteurs de protection qui aident les personnes confrontées à l'adversité à éviter de s'engager dans des trajectoires de vie négatives et à obtenir des résultats positifs (par le biais du rétablissement, de l'adaptation ou de la transformation). Cet article explore les liens entre ces deux concepts prometteurs que sont la littératie physique et la résilience, tout en tenant compte de leurs interactions conceptuelles et de leur notion commune qui est de s'engager dans des « défis positifs » qui peuvent être essentiels pour nourrir des ressources importantes face à l'adversité ultérieure. Ce lien fournit la base pour d'autres études empiriques robustes qui impliquent à la fois la littératie physique et la résilience et soutient le développement de programmes holistique de résilience.

MOTS-CLÉS

Littératie physique ; Résilience ; Défi ; Adversité ; Mouvement ; Éducation physiques ; Curriculum.

INTRODUCTION

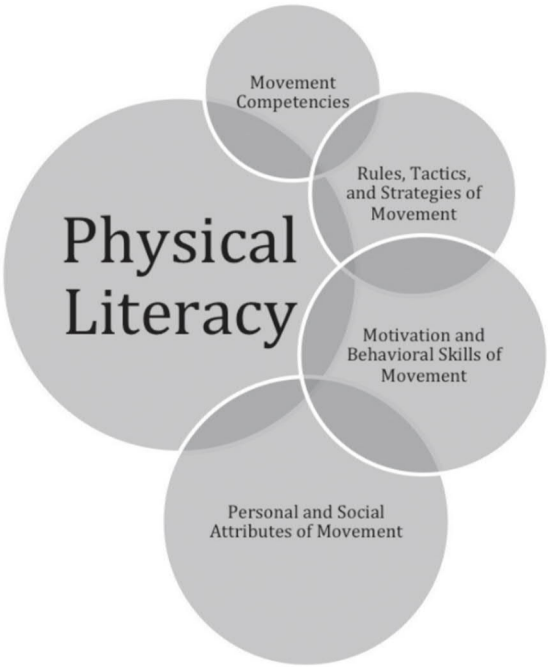
Resilience and physical literacy are terms enjoying increasing interest in public, educational, and health domains, among others. However, to date, research and discussion regarding their interaction has been limited. In this article, I outline what is generally understood by these broad, often ambiguous, and contextually defined terms, and propose a conceptual bridge based on the idea of 'positive challenges'. This link provides the foundation for further important empirical work. It aims to inspire resilience-building interventions and programmes currently limited to the development of psychosocial competencies to consider a more holistic strengths-based approach to fostering protective factors important for managing adversity across the lifespan.

Physical literacy

Physical literacy is an umbrella term gaining significant traction in health and education domains. It encompasses the knowledge, motivation, confidence, physical competence, and understanding that is important for engaging in physical activity (International Physical Literacy Association, 2017; ParticipACTION et al., 2015) (Figure 1). This constellation of constructs has been argued to be the impetus and driving force for engaging physical activity throughout the lifespan (Dudley et al., 2017). Their centrality to long-term health is likely why there is growing global interest in

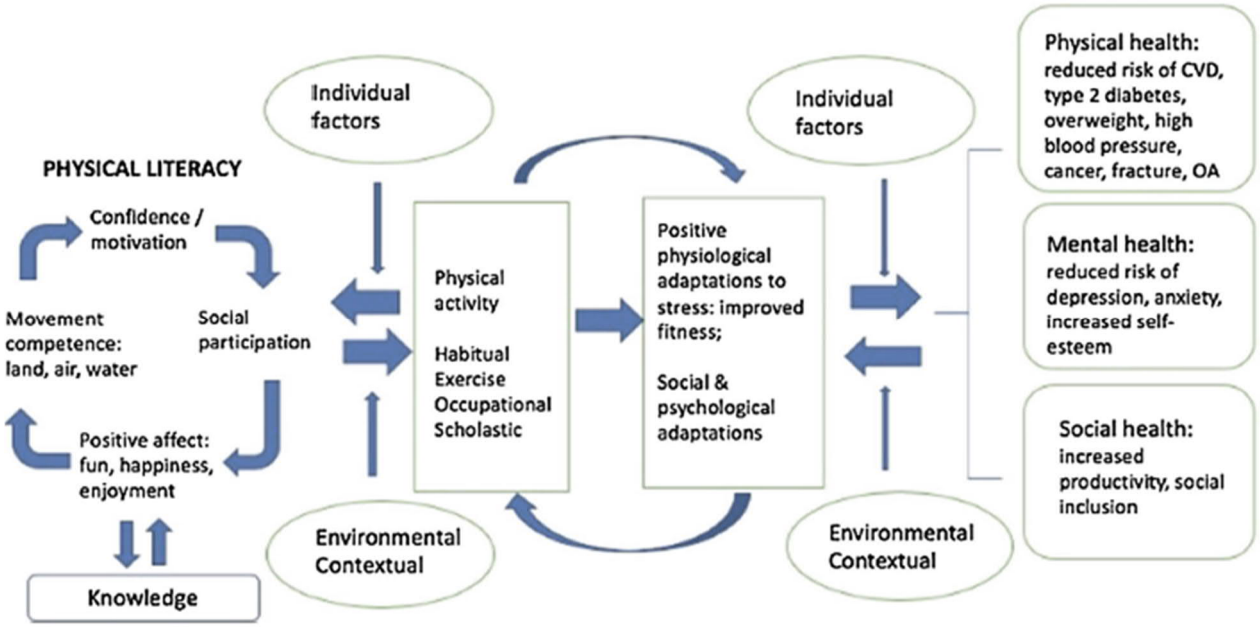
cultivating physical literacy. For example, UNESCO created a program focus about physical literacy (UNESCO, 2017), and the WHO included physical literacy as part of a proposal for active societies (World Health Organization, 2018). Some have even equated its importance to that of literacy and numeracy (Growing Young Movers, 2020; Jurbala, 2015; Tremblay, 2012), and questioned why emphasis in schools is placed on developing socio-cognitive skills and abilities to the detriment of those related to movement, which tend to be relegated to free time (Robin, 2013).

Figure 1. Dudley's (2015) conceptual model of physical literacy



The benefits of developing physical literacy are wide-ranging. Foremostly, children who have experienced physical literacy-enriched physical education curricula demonstrate greater engagement in physical activity (Belanger et al., 2018; Brown et al., 2020; Choi et al., 2018). Since greater activity tends to lead to better health, physical literacy is therefore also associated with the extensive health benefits that come from increased movement and a reduction in sedentary behaviour (Belanger et al., 2018; Lubans et al., 2016). Higher levels of physical literacy have also been associated with greater global self-esteem and self-confidence (Whitehead, 2001), as individuals become more confident with their bodies and their movement abilities. Furthermore, as a gateway to greater physical activity, physical literacy is not only linked to individual health and well-being, but also to potential societal improvements as a healthier workforce is developed and maintained, which in turn reduces burdens on health systems (Cairney et al., 2019) (Figure 2). The significant benefits of nurturing physical literacy are driving calls to augment physical education in schools, and approaches for developing physical literacy in adults are also emerging (Jones et al., 2018; Jones & Stathokostas, 2016; Roetert & Ortega, 2019). The cascading effects across psychological, physical, and social domains have led to associations between physical literacy and flourishing (Almond, 2013; Durden-Myers et al., 2018). However, there are still some tensions about its definition and the essential elements contained within the construct (Edwards et al., 2017; Shearer et al., 2018). Further, it remains unclear what the specific knowledge and understandings are required for physical literacy, and how these compare to health literacy.

Figure 2. Cairney and colleagues' (2019) conceptual model linking physical literacy, physical activity, and health



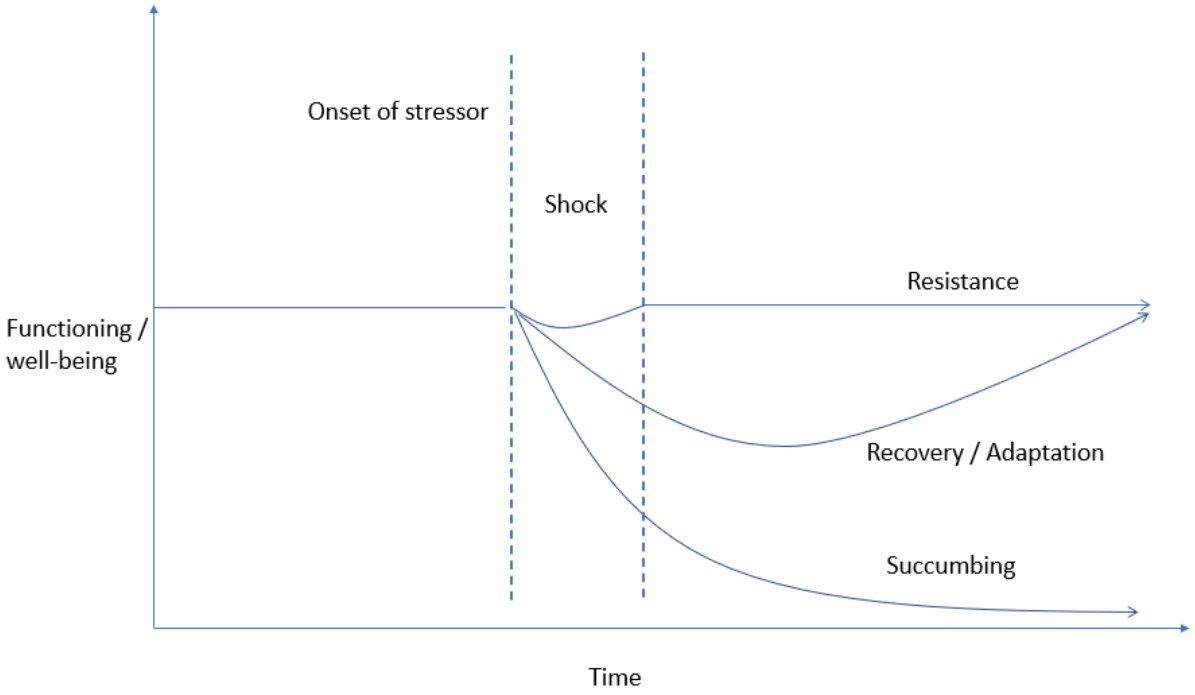
Resilience

In a related field, the similarly encompassing concept of resilience is steadily surging in popularity. A simple search for the term in Google Scholar returns over 2.5 million results and over 35,000 articles on PubMed (as of May 2020). The increasing scientific focus in resilience is matched by growing public interest (unlike similar terms, Google Trends indicates a steady increase in searches for the term worldwide since their records began). However, this growing interest is challenged by confusion about what resilience actually is, as it tends to be taken to mean different things depending on the context (Google reports that the two most common queries related to resilience are "resilience meaning" and "resilience define"). A basic definition is that resilience is about achieving positive outcomes despite stress and challenge, which we all face at different times in our lives (Figure 3). The broad appeal of resilience is therefore understandable: parents want their children to "be resilient" when faced with developmental challenges. Leaders want their nation to show resilience in the face of economic downturns and other societal challenges. However, the context-agnostic nature of resilience can be a problem when there is a lack of clarity about what resilience involves and therefore how to act on it (Earvolino-Ramirez, 2007).

Recently, researchers have sought to give greater clarity to resilience (see Ungar, 2011). In brief, this has involved shifting from a perspective that resilience involves a psychological trait akin to 'toughness', to a process that reflects the variable capacity of biopsychosocial systems (a person or a group such as a family or community) to draw on resources that enable recovery from or adaptation to adversity. This modern and broader understanding foregrounds the resources an individual has access to that afford the capacity to manage adversity, including internal characteristics that can be nurtured and bolstered such as self-efficacy, self-compassion, a

strong sense of coherence, and optimism (Ledesma, 2014; Masten, 2015; Werner, 2000). More recent accounts have sought to highlight the importance of protective factors from individuals' social-ecological worlds such as family and peer support, community ties and infrastructure, and the built and natural environment (Ungar, 2012; Ungar et al., 2013; Ungar & Theron, 2020). The inclusion of internal and external protective factors that help to achieve good outcomes despite challenges highlights that resilience is not down to the individual to achieve by themselves.

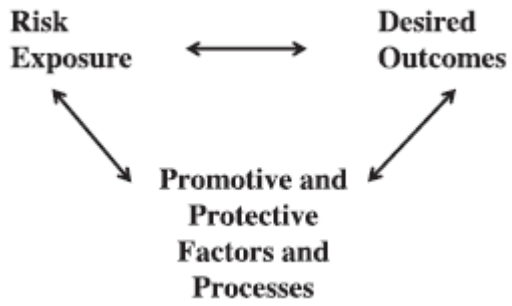
Figure 3. Pathways of resilience



A clear and shared understanding enables the basis for furthering the science and study of resilience, where different internal and external resources implicated in resilience can be identified, studied, and subsequently promoted. This approach to the management of adversity is one of the reasons why resilience is gaining traction in the broader field of positive psychology (Luthar et al., 2014; Yates & Masten, 2004); as a strengths-based approach, resilience promotes strengthening protective factors rather than focusing on and addressing vulnerabilities (such as cognitive-behavioural therapy techniques to manage mental health issues). However, in addition to the protective factors and processes associated with resilience, researchers such as Ungar (2019) have argued that studies of resilience must also consider two further dimensions: risk and outcomes. The latter is relatively straightforward: we anticipate that despite exposure to adversity, individuals with strong protective factors will do better than those exposed to adversity that do not. This "doing better" can be measured in different ways: typically through mental health or well-being (Johnston et al., 2015; Rutten et al., 2013), but also through other indicators of functioning like good social relations or participation in society (Ungar, 2019). However, it is the dimension of risk that may be more nebulous and sometimes

overlooked. By definition, resilience is evident when good outcomes are experienced or demonstrated following or during adversity, thus it is imperative that researchers and practitioners understand the challenge faced by individuals or groups and account for these in their work. Therefore, an understanding of risk is important, in addition to a focus on key protective factors and outcomes of interest (Figure 4).

Figure 4. Ungar's (2019) three-part model for resilience studies



Linking physical activity and resilience

To date, few connections have been made between resilience and physical literacy, yet they share significant conceptual overlap. Both are associated with positive outcomes like good health and well-being, and both include affective, social, and cognitive dimensions. Studies of resilience and sport support the likelihood of a link (Sarkar & Fletcher, 2014; Wagstaff et al., 2017). These ideas prompted an initial exploratory study, where a preliminary assessment of Canadian school children determined correlations between resilience (operationalised using the Child and Youth Resilience Measure; Jefferies et al., 2018; Liebenberg et al., 2013) and the components of physical literacy, drawing on data from a range of sources including self-report and reports from assessors trained in physical literacy assessment (Jefferies et al., 2019).

The Canadian study is useful as a base for further investigations, but was limited in various ways, including that it only drew on cross-sectional data and therefore could not illuminate causal mechanisms, nor was it sophisticated enough to clearly delineate how the two constructs may interact. To develop a better understanding of the potential conceptual linkage, it is important to consider the processual nature of both physical literacy and resilience. In resilience, at a basic level, the initial experience of some stressor prompts a response from an individual. They are said to do something which immediately or eventually helps them to overcome the issue, to transform (positively) as a result of the experience, or to adapt to it (especially if the stressor is ongoing), each of which reflects the manifest 'bouncing back' that is typically associated with resilience. The action that facilitates these outcomes involves individuals drawing on internal and external protective factors.

One important feature to note, however, is that these episodes are typically not contained, and instead may incur spill-over effects. Rutter (2012) has explored the experience of adversity and consequent spill-over effects, drawing on animal and psychosocial research to determine that they fall into one of two kinds: "steeling" and "sensitising" effects. In the former, exposure to a stressor decreases vulnerabilities to future stressors, akin to resistance to infection, where the experience of overcoming mild infections leads to future immunity (Rutter, 1999). This occurs at biological levels (e.g., through diminished HPA axis activity (Hagan et al., 2014)) as well as psychological levels

(e.g., better mental health; Dooley et al., 2017; Mortimer & Staff, 2004; Sharpley et al., 2020) when facing future stressors.

In this way, when faced with subsequent adversities, steeling means an individual is better placed to manage them. Sensitising denotes the opposite outcome, of increased vulnerability, where an individual is harmed to the extent that future adversities may have a more damaging impact. Liu (2015) and Höltge and colleagues (2018) provide further articulation, suggesting that the choice of outcome may be determined by the level of adversity, where moderate or "positive" stressors, which are not overwhelming, yet are sufficiently arousing to stimulate relevant resources, confer an advantage in subsequent encounters (see also, Seery et al., 2010). Rutter (2013) has also suggested that the "circumstances" surrounding the experience of adversity are important.

A positive challenge

The nature of the adversity experienced by an individual and its consequent effects may therefore be where processual models of physical literacy and resilience intercept. For example, a common core characteristic of school physical education curricula that builds physical literacy is the promotion of goals of an appropriate challenge to the individual. This is the challenge that an individual should struggle with. Like the process involved in appropriate goal attainment scaling (Bovend'Eerdt et al., 2009; Kiresuk & Sherman, 1968) and adherence to the tenets of optimal challenge theory (Ahmed, 2017), the level of adversity should be sufficiently difficult to achieve yet not insurmountable. In other words, a child is expected to struggle, to fail, and to perceive the possibility for success and then to achieve this eventually. For example, a teacher asks a class to circle a gym while balancing a ball on a hockey stick. This draws on fundamental locomotor and object control skills and can be scaled up or down in difficulty such as by asking the child to use a non-dominant hand or a harder or softer ball which rolls more or less. The careful calibration of the challenge to ability underscores the need for trained educators who can attend to each child individually. Should the challenge be too hard, there will no gains, and at worst, a sense of inescapable failure could be off-putting for future encounters (the sensitising effect). Similarly, should it be too easy, no sense of progression will be achieved (or a false sense, which may cause problems later) (Clifford, 1990). In contrast, engaging a challenge at a difficulty appropriate for the individual leads to greater affect than success alone (Abuhamdeh & Csikszentmihalyi, 2012).

A key feature of engagement with such positive challenges is that the struggle should come to be seen as part of the process, and not thought of as something to avoid nor bypass. Some negative affect is to be expected, but positive affect is promised through repeated engagement. For example, if an instructor asks a child to throw a ball vertically, turn 360 degrees and catch the ball, a child immediately able to do this competently is not experiencing sufficient challenge, and therefore no growth would be possible. Likewise, a child who repeatedly fails may come to see this as a continuing pattern and so may avoid situations like this in the future, as they associate engagement with the negative affect that accompanies failure, and when faced with similar situations may in fact withhold effort to self-protect, paradoxically leading to poor performance (Thompson, 2004).

Adjustment of the challenge to ability, whether through changing the activity or suggestions for how to improve engagement (such as starting posture), can create the conditions where an initial negative affective state related to doubt and worry is overtaken by the enjoyment related to recognising progression and the possibility of mastery. A child nearly catching the ball, catching it but then dropping it, or turning competently in time but not successfully catching it would all be examples of progression. Per a physical literacy cycle, competence leads to confidence in oneself and one's abilities, which encourages the motivation to keep engaging and participate in other activities (Figure 5). In other words, the construction of appropriate challenge means that worries and failures are not off-putting but instead are seen as necessary steps toward competence, and part of the journey of success, thereby stimulating engagement in further activity. The steeling effect in resilience would be expected in subsequent physical education sessions, where challenges become less daunting and engaging with them in pursuit of competence is perceived more positively (Cairney et al., 2012).

This experience of challenge echoes Rutter's (2013) assertion that resilience may be produced through "repeated brief exposure to negative experiences in circumstances that allow the individual to cope successfully with the experience" (p.477). Coping in physical literacy settings also involves managing the affective and cognitive states prior to and when engaging with the challenge. However, the broader circumstances that facilitate coping can easily be overlooked, such as when physical educators ask children to perform their engagement in front of their class, where failure can interrupt the cycle and lead to diminished confidence and ongoing social inhibition (Williams, 1996). Appropriate challenge circumstances should therefore involve consideration of suitable levels of risk across physical, psychological, as well as social domains that can facilitate growth. This runs somewhat counter to societal tendencies to try to minimise or eradicate risk, or to produce 'surplus safety', yet which are now facing resistance in both physical activity (Active for Life, 2019; Wyver et al., 2010) and resilience circles (Reid, 2012; Ungar, 2009).

Figure 5. The physical literacy cycle (Jefferies et al., 2019)

Another important link involves the way challenges are approached. For instance, good quality physical literacy activities involve an element of interpretation. That is, a goal may be set (e.g., circle the gym without dropping the ball balanced on a stick) and some conditions may be required depending on individual ability (hop or use one or both hands to hold the stick), but there is a degree of openness involved in the engagement. For example, an individual may choose to move faster or slower, they may hold the stick with their

thumb on top or wrapped around, or with the stick out in front of them or by their side. Some techniques will work better than others, but importantly, the individual determines these themselves, and can test and alter them depending on how they go. The same movement competencies may be called upon, but their expression or sequence may vary depending on how the individual decides to approach the challenge. This marks a fundamental distinction between physical literacy and traditional physical education curricula involving sport, where, in the latter, there are typically set ways of doing things, toward which individuals are trained. In contrast, physical literacy promotes a greater degree of creativity, as individuals experiment with different movement techniques (Mandigo et al., 2009; Richard et al., 2020). The study by Kriellaars and colleagues (2019) where children engaged a circus arts instruction programme and demonstrated curricula linked movement skills is a good example of this. Creativity can also be emphasised by asking participants to repeat a challenge differently to how they did it before. This creative dimension relates to well-established protective factors in the resilience literature, such as problem-solving, decision-making, and goal-setting (e.g., Masten, 2001; Morrison & Allen, 2007; Ungar et al., 2005). For instance, Masten (2015) describes the global applicability of problem-solving that helps individuals to appraise challenges and to test and evaluate potential ways to manage them, noting that such skills could enhance the likelihood of adaptive outcomes when faced with a novel or more substantial adversity.

The challenges involved in developing physical literacy are clearly of a different magnitude to some of the more serious adversities in studies of resilience (e.g., natural disasters (Reich, 2006), war and conflict (Betancourt & Khan, 2008)). However, as Casey (2019) aptly describes, the relative safety of the gymnasium or AstroTurf is not designed to replicate the challenges of the world. Nevertheless, the spill-over effects of engaging positive challenge may foster important transferable protective factors that encompass the competencies (problem-solving, decision-making), mindset (self-efficacy, confidence), and agency (through recognition of competence). In turn, these may encourage the likelihood of more adaptive outcomes when faced with different and more significant challenges (Ennis, 2015), and would therefore be important to cultivate and strengthen.

A conceptual bridge

The characteristics of the physical literacy cycle and its immediate and latent effects suggest a relationship with modern conceptions of resilience processes. The link between positive challenges involved in physical literacy and the kinds of adversities that promote steeling suggest that resilience may be evident and built during these experiences. Some studies have begun to link challenge and resilience in elite athletes (e.g., Howells et al., 2017) but further empirical work is clearly needed to help test and clarify these relationships in the context of the development of movement competencies and early physical activity. For example, longitudinal intervention studies may be used to compare children who have undertaken a physical literacy enriched curriculum with those experiencing traditional physical education, to determine how individuals may fare in terms of prominent protective factors implicated in resilience, such as their problem-solving ability,

self-efficacy, and perseverance. Such studies may also explore the experience of significant adversities faced during this time (e.g., involving measures of adverse childhood experiences or significant life upheaval like parental divorce), as those demonstrating resilience may be expected to demonstrate greater well-being and functioning.

Physical literacy leads to greater biopsychosocial functioning through ongoing engagement in movement, involving uptake and maintenance of physical activity like exercise or sport. On this basis alone it is important to encourage. However, the additional quality, that it may be an antecedent of resilience, or help foster important protective factors associated with resilience (or both), is a further advantage conferring its value. For educators, health professionals, and policymakers who are becoming interested in conceptions of resilience and how to involve these in interventions and educational curricula, a holistic approach would include the development of physical literacy to foster the competencies and confidence that may be important for coping with and addressing the occurrence of future challenges.

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CONFLICTS OF INTEREST

The author does not declare any conflict of interest.

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PRÉSENTATION DE LA REVUE

Sciences & Bonheur

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