Editorial: Volition in Sports

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Of the many people who make New Year's resolutions, only very few achieve them persistently (Statistic Brain, 2017). This so-called *intention-behavior gap* extends well beyond the realm of New Year's resolutions (Sheeran & Webb, 2016) and exemplifies the necessity to not only focus on the processes of *goal setting* (i.e., motivation) but also on the factors related to *goal striving* (i.e., volition) (Achtziger & Gollwitzer, 2018; Lewin, 1926). While a large body of research has addressed the motivational processes that enable effective goal setting, the volitional processes that govern the translation of these goals into actual behavior had long been neglected (Gollwitzer, 2012). However, the crucial relevance of volition in sports is intuitively clear: Motivating oneself to sign up for a marathon is considerably easier than actually training for and completing a marathon. In turn, research on volition in sports and exercise has received increased attention since the early 1990s (e.g., Beckmann & Strang, 1991), and this pioneering work has sparked further research on volition and the processes that determine and affect whether goals are translated into action. For example, research has highlighted critical phases during goal striving in sports (Wolff et al., 2019), the impact of automatic processes and habits on exercise behaviour (Brand & Ekkekakis, 2018; Strobach et al., 2020), and the functional relevance of effort as a key construct for sports performance and behaviour (Marcora, 2009; Staiano et al., 2018). And, importantly, a rich body of theoretical and empirical work has focused on the accentuated role of self-control as a key psychological mechanism that helps exercisers deal with critical phases of goal striving, detrimental automatic processes and habits, as well as the modulation and optimization of effort expenditure (Englert & Taylor, 2021).

Taken together, research on volition in sports has blossomed into a rich field and this has substantially increased our understanding of sports behaviour and performance (Englert et al., 2021). However, the intention-behaviour gap remains far away from being closed and further

research on volition is dearly needed. This Special Issue aims at – at least partly – addressing some of these open research questions. Our aim is to provide an overview on 1) historical developments and open questions in volition research, 2) theory-driven research that focuses on effort as a key volitional challenge during sports, and 3) if-then planning as a strategy that focusses on optimizing how athletes deal with such challenges. We are grateful that experts on these topics have agreed to directly address these aims with their three contributions to this Special Issue.

Beckmann, Ehmann, Kossak, Perl, and Hähl (2021), provide an overview over the three theoretical approaches that have so far predominantly shaped volition research in sports and exercise science: The theory of action control (Kuhl, 1983), the Rubicon model of action phases (Heckhausen, 1989), and the strength model of self-control (Baumeister et al., 1994). Crucially, while these frameworks represent a considerable advancement from prior theories that neglected volitional processes and primarily focused on goal setting, Beckmann et al. conclude that our understanding of “volition is still in its infancy”. As one way forward towards a better understanding of volition, Beckmann et al. invite researchers to employ a clear-cut distinction between effortless goal striving and volition by means of effortful control. Indeed, the understanding of effort (Inzlicht et al., 2018; Shenhav et al., 2017; Steele, 2020), effortful and effortless goal striving (Ainslie, 2020), as well as the mechanisms that govern effort mobilization in goal striving are all far from being fully understood.

In their contribution, Brinkmann, Richter, and Gendolla address this last issue (2021): Sports performance hinges on effort mobilization, and motivational intensity theory formulates testable principles that determine how much effort is expended in a given task (Brehm & Self, 1989). In a nutshell, motivational intensity theory proposes that humans strive to conserve resources. Thus, while effort expenditure is limited by the maximum effort one can justifiably

expend towards a task (denoted as *potential motivation*), how much effort one actually does expend is determined by the *motivational intensity*, which varies as a function of task properties (e.g., whether or not task difficulty is clear or unclear). To illustrate, a runner who wants to qualify for the Olympics (how much said runner wants to qualify represents the potential motivation) and is guaranteed to qualify upon running a pre-determined time (fixed task difficulty) should only expend the effort that is required to meet this time hurdle. However, if only the fastest runner in the country is selected for the Olympics, then task difficulty is unclear and effort expenditure is a direct function of the runner's potential motivation. Brinkmann et al. review a comprehensive body of literature that has tested motivational intensity theory in the context of physical effort and sports, highlighting the applicability and usefulness of this framework to better understand effortful volition in sports. Attesting to the usefulness of motivational intensity theory in the domain of sports, the recently developed psychobiological model of endurance performance is directly derived from motivational intensity theory (Pageaux, 2014).

Research that is informed by motivational intensity theory emphasizes the crucial role of effort in sports performance (Marcora, 2009) and the need to effectively regulate its expenditure (Brinkmann et al., 2021). To facilitate effective regulation of the volitional challenges in sports, effective psychological strategies are highly needed. In their scoping review, Bieleke, Wolff, Englert, and Gollwitzer discuss implementation intentions as one strategy that has proven effective for dealing with the many obstacles goal striving can impose (Bieleke et al., 2020). Formulating an implementation intention facilitates goal striving by furnishing a goal intention (e.g., I want to run 10 km!) with an if-then plan. Here, the athlete links a critical situation (e.g., feeling exhausted after the halfway point) with a behavioral response that is deemed adaptive in the critical situation (e.g., putting on one's favorite music) in an "if (situation), then (behavior)"

format. Somewhat surprisingly, the review by Bieleke et al. reveals that if-then planning effects on sports performance are not straightforward but rather multifaceted (for example, affecting prefrontal cortex activation in response to a strenuous task, but not directly affecting performance) and are moderated by individual differences. These heterogeneous and complex findings point towards the specificity of the challenges exercisers face in the sporting context, indicating that strategies that reliably work in other contexts do not necessarily translate directly into the sports context without taking into account further moderators.

In conclusion, the contributions to this Special Issue clearly indicate that volition matters in sports and that considerable progress has been made over the years. So where do we go from here? In our eyes, volition research will greatly benefit from fully embracing the fact that goal striving is a multifactorial *process* and not merely an *outcome*. This calls for the simultaneous monitoring of psychological, physiological and neuronal processes during goal striving in sports and for a more fine-grained analysis of the temporal dynamics that underly these processes (Wolff & Martarelli, 2020). This will advance not only the mechanistic understanding of how volition in sports operates but it will also shed light on the interplay and functional relevance of sensations that people regularly experience during goal striving and that affect goal-directed behavior. For example, while a large body of research has focused on the role of effort and self-control during goal striving in sports, its interplay with other sensations (e.g., boredom) that affect goal striving has so far been neglected. The functional relevance of boredom as a powerful signal to disengage from what one is currently doing (i.e., goal striving) and do something else has started to receive increased research interest in recent years (Danckert & Eastwood, 2020; Westgate & Wilson, 2018). Its relevance to volitional processes in sports, particularly its interplay with self-control has been explicated elsewhere (Wolff et al., 2021). To illustrate, while for a novice, practicing free throws in Basketball might require high levels of self-control due to

the sensorimotor challenges it imposes, this very same task might require self-control due to the boredom it elicits in an expert (Wolff et al., 2021). Thus, monitoring the temporal dynamics of the volitional challenges a task imposes is critical, as it enables to dynamically and flexibly account for such changes and to adaptively respond to them (i.e., in the former case, the athlete might reduce the self-control demands by practicing throws closer to the basket and in the latter case by re-emphasizing the meaningfulness of perfecting the free throw stroke). Indeed, recent work supports the proposition that boredom can necessitate self-control, thereby rendering a presumably effortless task self-control demanding instead (Mangin et al., 2021). We believe that further unraveling how such sensations interact during goal striving will not only be of great theoretical relevance but also help practitioners in supporting professional and recreational athletes to achieve their sports-related goals.

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