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The role of social interaction during pre-performance routines: An Individual Zones of Optimal Functioning (IZOF) perspective

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The purpose of the current study was to provide an exploratory account of swimmers' pre-performance routines prior to a successful performance and the influential role that social interaction plays during this time. Eight swimmers' descriptions of their pre-performance routines were analyzed using an interpretive thematic analysis to identify salient storylines. Two overarching themes were identified: (a) athletes' interactions with the social environment; and (b) connection between the social modality and other modalities of a psychobiosocial state. The authors conclude by promoting a move towards more contextualized understandings of pre-performance routines and an acknowledgement of the social state as an integral component of an interactive psychobiosocial state. We propose that the dynamic nature of person-environment relationships, and how these may impact athletes' feeling states, should be considered during the development of pre-performance routines.

KEY WORDS: Context-driven, Pre-performance routines, Psychobiosocial state, Swimming.

Achieving optimal performance every time they dive off the block is crucial for elite swimmers for whom meaningful competitions are few and far between. Developing an individually tailored pre-performance routine is one method promoted by many sport psychology practitioners (Bertollo,

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Saltarelli, & Robazza, 2009). Pre-performance routines have been defined as "a sequence of task-relevant thoughts and actions which an athlete engages in systematically prior to his or her performance of a specific sport skill" (Moran, 1996, p. 177). These routines are often developed to help athletes focus on task relevant thoughts and cues, adjust arousal levels, mentally rehearse the upcoming task, overcome a natural tendency to dwell on negatives, and prevent losing the benefits gained from their warm-up period (Boutcher, 2012). Researchers have considered both the mental and behavioural components of pre-performance routines, indicating an awareness of the need for an integrative approach to preparing athletes for optimal performance. Robazza, Pellizzari, and Hanin (2004) provided an example of this integrative approach in their examination of the individualized self-regulation strategies utilized by eight male elite Italian athletes. The authors applied the individual zones of optimal functioning (IZOF; Hanin, 2000b) model as a conceptual idiographic framework to study athletes' self-regulation strategies through the use of pre-performance routines prior to competition. The IZOF model is intended to guide the process of aiding an athlete to become *aware, accept,* and *act* to self-regulate their psychobiosocial state (Hanin, 2000a, 2000b). The psychobiosocial state is conceptualized in the IZOF model as a dynamic multidimensional manifestation of human experience reflecting the nature of past, on-going, or anticipated interactions with the environment (Hanin, 2000a; Ruiz, Hanin, & Robazza, 2016). The multi-dimensional nature of the state is reflected in eight interrelated modalities (Hanin & Ekkekakis, 2014). The cognitive, emotional, motivational, and volitional modalities form the psychological component of the state; bodily-somatic and motor-behavioural modalities form the biological component; and operational and communicative modalities form the social component. The conceptualization of a situational and dynamic psychobiosocial state has been supported by findings from both sport and physical education domains (e.g., Bortoli, Bertollo, Vitali, Filho, & Robazza, 2015; Robazza, Bortoli, & Hanin, 2006).

Research on pre-performance routines, including IZOF related research, has been primarily focused on the interrelatedness between the psychological and biological components of the psychobiosocial state (Cotterill, 2010; Ruiz, Raglin, & Hanin, 2017). This has included a considerable amount of research conducted on the benefits of adopting a psychobiosocial state approach to the study of emotion and emotion-related components of an athlete's state (for reviews see Robazza & Ruiz, 2018; Ruiz et al., 2017). The social component of an athlete's psychobiosocial state is seemingly less well researched. The social component is comprised of the operational modality and the communicative modality. According to Ruiz et al. (2016):

> The operational modality refers to one's perception of the effectiveness of action or task execution patterns, while the communicative modality is related to the verbal and non-verbal messages exchanged by the members of a group interacting directly or indirectly in the execution of a task. (p. 203)

Importantly, these two modalities are seen as evaluative aspects of the psychobiosocial state. The evaluative nature of these modalities is related to another major underpinning of the IZOF model, that of person-environment interactions (Hanin, 2000b). Vygotsky (as cited in Hanin, 2000b) first conceptualized person-environment relationships as the basis for emotional experiences. He proposed that emotional experience hinged on whether a person felt superior to, in balance with, or too much pressure from their environment. A person's evaluation of this relationship impacts their behaviour and cognition and is thus used within the IZOF model as the social psychological determinant of affective and behavioural responses (Hanin, 2000b). The importance of the person-environment relationship is a neglected aspect in a majority of pre-performance routine literature, especially when researchers have attempted to determine the impact of pre-performance routines on performance in laboratory settings (Cotterill, 2010). Researchers have begun to recognize that performance does not take place within the vacuum of an athlete's mind and body, but rather within an ever-changing context, one filled with environmental factors including teammates, opponents, coaches, competition officials, and family members (e.g., Clowes & Knowles, 2013). Additionally, researchers have recently proposed examining what athletes should be focusing their attention on during different times pre- and post-performance. Davies, Collins, and Cruickshank (2017) examined the different levels of focus needed to perform optimally during a round of golf. They determined that golfers required differing levels of focus during *micro* (i.e., immediately prior to a shot), *meso* (i.e., time between shots and holes), and *macro* (i.e., prior to and during a round of golf) stages of performance. Considering the surrounding environment at different times in relation to performance, which is manifested in the athletes' feeling states (Hanin, 2000b), would be important to enhance the ability of sport psychology practitioners to provide interventions that meet their clients' needs.

In his review of pre-performance routine literature, Cotterill (2010) urged researchers to move beyond observing and describing pre-performance routines and begin to use qualitative methodologies to explore how athletes described the composition and function of their pre-performance routines. He also suggested a need for researchers to explore relationships between psychophysiological, behavioural, and mental components of pre-performance routines. The current study aimed to join this conversation

through a qualitative exploration of the role that athletes described social interactions playing during their pre-performance routines. To this end, the following research questions were used to guide the data collection and analysis process:

1. What environmental elements do these athletes believe influence their social state?
2. How do these athletes describe the impact of social interactions during their pre-performance routines prior to a successful performance?

Methodology

An interpretative thematic analysis approach was deemed appropriate to answer our research questions as this enables a thorough understanding of how the athletes interpreted the role of their social state during pre-performance routines and the meaning they give to it (Braun, Clarke, & Weate, 2016). Additionally, our aim was to provide researchers with an emic perspective into the dynamics and development of a pre-performance routine, rather than seek to explain a cause-effect relationship between pre-performance routines and performance (Sparkes & Smith, 2014). To this end, we acknowledge that in our search for the multiple meanings that athletes have attached to their pre-performance routines, our involvement has shaped the data collection and analysis presented here (Charmaz, 2004). Accordingly, we begin this section by situating ourselves within the research project.

Situating The Researchers

The current study was part of a larger project aimed at understanding swimmers' use of music as a pre-performance strategy (Middleton, Ruiz, & Robazza, 2017). The first author, a former competitive swimmer for 15 years, previously swam with the team from which the participants were drawn. Following his swimming career, he became a certified coach in Canada and has coached young competitive swimmers for three years. He has also provided sport psychology consultancy services for swimmers competing at the international level. Intrigued by observing the various ways that swimmers prepare for a race, the current study was undertaken to further understand swimmers' pre-performance routines. Throughout the project, the author found himself relating the swimmers' stories back to his own swimming career journey and the pre-performance routines he had developed. His

extensive previous swimming experience enabled him to understand the nuances described by swimmers, leading to an appreciation of their uniqueness. The second author is a doctoral student who has published previous qualitative research and has herself been involved in national level sport, both as an athlete and coach. The third author is an experienced qualitative researcher and was asked to provide guidance throughout the writing of this manuscript. Additionally, he is a former world class athlete and prominent applied sport psychology practitioner working with both Olympic and professional boxers for over twenty years. Authors four, five, and six all have experience conducting theoretically underpinned IZOF related research in several individual and team sports. Their work has included a focus on the application of the IZOF model in applied settings. The authors' extensive experience in qualitative research and IZOF realms provided a more critical lens to the analysis and interpretation of the data.

Situating The Participants

Participants for this study were eight swimmers (five women, three men) purposefully selected from a Canadian university varsity swim team with a rich history of success, including multiple Olympic medals and a former world record holder. They ranged in age from 18-21 years old (M = 19.00, SD = 1.07). Seven of them had swum for between 9-12 years. One of them was a former competitive diver who had been swimming competitively for three years. Varsity swimmers were targeted as they often have experienced numerous years of competitive swimming prior to reaching the varsity level. The swimmers were a successful group, evidenced by their involvement in provincial and national level competitions, which require a qualifying time standard in Canada.

Data Collection

Following ethics approval for the overarching project from the institutional review board of the local university, the coach of the team organized a meeting at which all participants were introduced to the study. Following an introduction to the conceptualization of psychobiosocial states through stages of the larger project, each swimmer was interviewed individually about the pre-performance strategies they employed during the 20 minutes prior to a successful race. Each interview was conducted face-to-face in a private

location close to the pool where the swimmers trained and lasted between 16 and 25 minutes. The interviews, conducted as a conversation between the first author and each participant following a responsive interview format (Rubin & Rubin, 2012), began with one main question: What is your routine in the 20 minutes prior to a successful swim race? Participants were asked to 'tell a story' in relation to this question to provide a base from which the rest of the interview could be built. Follow-up questions were then asked to help clarify specific strategies and routines that were included within this time-period. Finally, in response to what was learned, the first author probed further into each strategy and routine to determine how and why they were used, where on the pool deck they were conducted, and any other relevant probes in relation to the conversation (see Rubin & Rubin, 2012). This line of questioning resulted in a rich understanding of each participant's pre-performance routine and provided participants with the opportunity to reconstruct their experiences in an open manner without reliance on leading questions that may have influenced the direction of their responses (Gubrium & Holstein, 2012). An example of this is the inclusion of an athlete's talk with their coach directly prior to their pre-performance routine. Follow-up questions were asked as to why the talk occurred, the nature of the talk, and the possible consequences of the talk. These questions consisted of the first author reflecting previous answers back to the swimmer and asking them to expand on the brief initial descriptions of different components in their pre-performance routine. Throughout each interview, rapport was maintained using non-verbal (e.g., nodding of the head) and verbal (e.g., words of understanding) cues allowing each participant to feel comfortable in sharing their story (Doody & Noonan, 2013), helping to ensure authentic responses. Each participant was continuously reminded that there was no right or wrong way to perform a pre-performance routine and that having his or her own idiosyncratic 'quirks' was normal.

Data Analysis

The data from each swimmer's audio recorded interview was transcribed verbatim, and then analyzed using a recursive six-step interpretive thematic analysis (Braun, Clarke, & Weate, 2016). The first step of this process was a thorough reading and re-reading of the transcripts by the first, second, and fourth authors. The second and fourth authors were recruited during this stage to act as critical co-authors (Smith & McGannon, 2017). These three authors then met and discussed their initial impressions of the stories. Dur-

ing this conversation, they agreed that they had each identified the connections athletes made with other individuals around them as playing a key storyline appearing in swimmers' stories about their pre-performance routines. Deciding to pursue this storyline, they returned to the interview transcripts and proceeded with the second step of the process; an inductive semantic coding of the data leading to the identification of each specific reference made to social connections by each participant. Social connections in this phase were defined by the first author as any instance in which swimmers mentioned their thoughts and/or behaviours occurring in relation to those around them. Following this, the first, second and fourth authors collaboratively collated and compared their codes on an individual swimmer basis and found that while finding similar codes in relation to a range of explicit thoughts and/or behaviours, they each interpreted a varying number of implicit connections made by each swimmer during their pre-performance routines. To begin the third step, the first author returned to the transcripts and analyzed contradictions between his interpretations and those from the second and fourth authors, reflecting on his initial interpretations and how these were impacted by exploring the different interpretations provided by his critical co-authors. After feeling comfortable with his interpretations, the first author clustered his codes together based on similarity and collated them into higher order themes. During the fourth step of this process, the first author presented his themes to the other authors and they collaboratively reviewed the themes and determined whether the perspectives of all participants were adequately represented. The co-authors helped push the first author to consider conflicting stories told by the swimmers, so as to not miss the uniqueness of each swimmer's pre-performance routine. Following this meeting, the fifth step, conducted by the first author, was a further refinement of each theme by giving each a name and definition. The final step of the process was the writing of the results section. The final two steps, while being conducted by the first author, were not done in isolation with co-authors providing critical insight at each stage. The entire process was conducted in an iterative manner with the aim of presenting a coherent and persuasive story grounded in the data, as well as relevant to the existing literature.

During the research process, the first author kept a journal to help track and reflect on his experiences related to the data collection and analysis (Braun & Clarke 2013). This practice, guided by Braun, Clarke, and Weate's (2016) 15-point checklist, helped to ensure a high quality thematic analysis. The checklist is broken down into five categories: (a) transcription, (b) coding, (c) analysis, (d) overall, and (e) written report. To begin, when there was

a difference between his interpretation and that of the co-authors during the third step of the analysis process, the first author returned to the transcript and his notes from the data collection process, examined the way he had framed the question, and determined whether he felt this had impacted the swimmer's response and therefore his interpretation of their answer. An example of this came in the form of a question related to the talk between swimmer and coach prior to their pre-performance routine. The first author's initial coding highlighted the leading role the swimmer took in this conversation. After comparing codes with his co-authors and returning to the transcript, he came to the realization that the phrasing of the question may have been the reason why the swimmer described the interaction with their coach in this way. Furthermore, if there was still any lingering doubt in his mind, the first author returned to the audio data to check for accuracy of the transcription. Secondly, by seeking to explore each individual account, the authors ensured that all data items were given equal attention, as each could lead to a novel finding. All relevant extracts were collated under each theme, including conflicting descriptions. Third, through the themes that were developed, the authors have tried to create a clear and coherent story that reflects the nature of the research questions. Fourth, while each theme contained direct quotations, these were accompanied by an interpretation of the swimmers' descriptions and how this related back to the aim of understanding the dynamic and influential nature of their social interactions during pre-performance routines. Finally, in this written report, the authors have positioned themselves as active agents in this research process, who have subjectively identified the presented themes, rather than trying to present the themes as having emerged from the data.

Results

Swimmers' portrayals of their pre-performance routines prior to successful and unsuccessful performances brought to light the dynamic and influential nature of the social environment. Swimmers' stories highlighted how their pre-performance routines differed prior to successful and unsuccessful performances. Through the two overarching themes, (a) athletes' interactions with the social environment, and (b) connection between the social modality and other modalities of a psychobiosocial state, we aimed to further the understanding of the dynamic and context specific component of the social state within the athletes' psychobiosocial states. Each theme is portrayed below through direct quotations from the swimmers' interviews, as

well as critical commentary aimed at producing an in-depth and coherent understanding of how these swimmers believed their social state could impact their pre-performance routine and subsequent performance.

THEME 1: Athletes' Interactions with the Social Environment

The athletes' descriptions of their pre-performance routines brought attention to an interplay between the competitive context and specific social modalities of their feeling state. Contextual factors were discussed as key to how socially connected one wanted to feel. Swimmers spoke of a wide number of contextual factors, including the temporal dimension, their valuation of the context, their familiarity with significant others, and a possible incongruence between how they felt and how they wanted to feel.

Temporal dimension. Swimmers' descriptions narrated an interplay between the unfolding of their pre-performance routines and their social state leading up to their race. The intensity that swimmers expressed regarding their desire to be socially connected varied with their temporal dimension in relation to their race. Most swimmers spoke of the need to be social during the time between their warm-up or previous race and time used for their pre-performance routine: "During a swim meet, like between races, I'm always with people, I always talk to people, sometimes I listen to music, but it's not the same music from behind the blocks, it's more mellow I guess" (Swimmer 3). The desire to be with others was suggested by some swimmers as a strategy they used to avoid becoming mentally exhausted from overthinking about their race, a topic discussed further in the second theme. A critical incident in most swimmers' stories of their pre-performance routines was a meeting with their coach. As one swimmer explained, meeting with their coach was a mutually beneficial social interaction:

> Every time I start a race I go and talk to [coach] … I think it's his ideology … I think the coach likes you to check in, just so he knows, right, because if you haven't checked in with him then he thinks that you might be missing your race or you're in the shower and you don't know that your race is coming up, so if you check in with him that way he knows that you're behind the block and that you're ready, and also for me, it's just kind of like a thing, 'oh you know I'm going to go do my race, gotta check in with [coach]', it's just kind of one those things … when I'm ready to go behind the blocks I'll go talk to [coach] (Swimmer 5).

Another swimmer expressed that their conversation with their coach had been routinized and was consequently essential: "I don't know, it's just

habit. I've done it my whole life so I just kind of need to" (Swimmer 3). This habit was evident in all the swimmers' stories, and further impacted on the routine that followed as it served as a first step in the athletes' pre-performance routine. Following the connection with their coach, swimmers felt a need to be alone to reach their optimal state:

> Depending on how close the race is and how close I am to the race I'll probably go sit by myself, think about it … I'm normally by myself, if a friend is racing I'll normally go talk to them for a little bit, but yeah, I just think about it, and I'm pretty quiet … I just kind of think about my race, what I'm nervous about, go over it in my head. (Swimmer 4)

A common explanation for this need to be alone was to hone their focus solely on their race. For one swimmer, this was their time to get in the zone:

> I feel I need to be behind the blocks to actually zone in … I usually do it when there's like three of four heats ahead of me and then I know that mine is coming up and that's when I start blocking out everyone, I just start doing my own thing. (Swimmer 2)

One swimmer explained that this need to focus was also associated with the realization that race time was upon them and there was no more postponing thinking about it: "just the atmosphere and knowing that the race is coming up and there's no more putting it off, it's that day" (Swimmer 1). The entire process of slowly becoming less socially connected as they approached their race was common throughout each swimmer's story. The role that others within the context played largely revolved around helping the swimmer remain relaxed with their mind off their race. The coach was the individual whose connection was needed to begin their pre-performance routine that would slowly narrow their focus onto their race.

Valuation of the context. While the influence of the temporal context was a common storyline, it was often spoken of as dependent and at times secondary to the swimmer's valuation of the context. For example, one swimmer compared their preparation for local races and their preparation for events they deemed more important:

> I find if it's a big race right, like one that I'm, like a finals or something like that, then I'm really by myself, like I usually just like to listen to my music and disassociate from other people … if it's a race that I'm a little less worried about then I'm a bit more social with other swimmers and ask them how they're doing, you know catch up and stuff like that … but like if I'm super serious, like this needs to be my best race, like (provincial competitions) and stuff like that and (regional championships) right, then I'd be a bit more solitary, so yeah I eat, sit by myself, listen to music … I try to avoid long conversations with (others), maybe like a 'hey how is it going, good luck' sort of thing, but other than

> that it's just polite … it's more like a polite greeting and good luck sportsmanship sort of deal if I'm more reserved. (Swimmer 5)

Increasing focus was a higher priority prior to a highly-valued race, which in turn was a determinant of whether swimmers felt a need to be socially connected or not. The need to be focused on a race during a high-value competition was a storyline that most swimmers told; however, it was also one that had been ingrained into athletes' routines and was a tactic that was beginning to be questioned by some swimmers:

> Some days I like to focus, like the bigger meets I like to focus, but if it's like a smaller I like to socialize because it takes my mind off things and then sometimes I do like really good if I just don't think about anything so … I kind of like trying different strategies … so sometimes, I am just like might as well not think about it and see how it happens and just trust myself. (Swimmer 8)

This swimmer's story, which resonated with many other swimmers' stories, highlights the importance placed on the need to take more time and be more focused during more valued competitions. However, as the story continues, the questioning of difference in approach based on valuation of the context was a tactic that the swimmer had begun to question due to prior experiences. Swimmers also explained that they had begun trying different strategies, but that this occurred only at less valued competitions, suggesting that their trust in themselves only went so far before they reverted to what they had been ingrained to think about optimal focus levels.

Familiarity with others in the social context. Swimmers' desire to be socially connected varied with their familiarity with others who comprised their immediate social context. One swimmer discussed how most of their socialization was confined to being with their friends:

> Yeah usually just friends, I mean the only reason why I'd talk to someone else I didn't know is if they were talking to me, like I've had that before, where they're like 'oh are you in this heat?' and I'm like 'yeah' and then that's how we get talking … but other than that it's just someone I know. (Swimmer 2)

Feeling connected with those familiar around them was not just limited to spoken word, as one swimmer explained, but also to feeling physically connected with teammates prior to a race: "if other people are there I'll wish them good luck, and I don't know, usually I find someone to hug good luck … someone on my team, like whoever's there. I'm always in a heat [with someone I know]" (Swimmer 1). Evident in both swimmers' stories is also the feeling that if an unfamiliar person tried to connect with them

that they felt the need to be polite and reciprocate the gesture. However, the need to connect with unfamiliar others often did not go beyond a reciprocal greeting:

> When someone gives me a friendly look, well yeah [say] hi, shake your hand, good luck … I won't cut a person off when they are talking to me, but like if they come to talk to me, I still talk to them … I am not going to start a conversation, I will be like 'hi good luck'. (Swimmer 6)

Beyond feeling connected verbally or physically to familiar others directly around them, swimmers also spoke of how familiarity with their competitors influenced their connectivity to others during their pre-performance routines. Connecting with the competition around them through "sizing them up" was a common occurrence for many swimmers during their pre-performance routine: "you know I'm nervous [so] I just watch … watch the clock go … watching swims, watching how fast they are going" (Swimmer 6). Once again familiarity with those they were watching or going to be racing against played a role in how influential this connection was during their routine:

> We'll look at people's times, if we know someone in the race that we know I've been trying to match up with or beat we'll go over some strategies about how that person might do their race if we're familiar with them. (Swimmer 4)

Familiarity, whether it was with teammates or others around them or with the competition, played an influential role during the swimmers' pre-performance routines and fed into the valuation of the context made by the swimmers, helping them determine how valued the competition was and therefore the level of focus they felt was required. Additionally, being connected with those familiar others around them was controlled by swimmers in relation to the temporal dimension (i.e., how close their race was) and was key in how they used their level of social connectivity to prepare for their race.

THEME 2: Connection between the social modality and other modalities of a psychobiosocial state

Swimmers' accounts of their pre-performance routines reflected the interactive nature of all modalities of a state (i.e., psychological, biological, and social). The portrayal of these interactions is presented through subthemes related to the four theorized psychological modalities that form one's state (i.e., cognitive, emotional, motivational, and volitional), as well as a subtheme portraying the connection to the biological state modalities (i.e., bodily-somatic and motor-behavioral).

Connection to the cognitive state modality. Swimmers discussed how they utilized social aspects of the environment to influence their cognitive state modalities, for instance, to focus. As mentioned in previous sections, prior to entering their pre-performance routines swimmers looked to increase their connection with those around them in order to stop focusing on the race and avoid becoming mentally fatigued:

> I usually keep talking to people, because [then] I don't psych myself out, so I don't really isolate myself from anyone because that's when I start to get in my head about it and worry about it I guess … I think it's just to like not get nervous I guess, because then you're like sitting by yourself for an hour before your race and you're just thinking about your race and then you're going to dwell on it too much … and like then if you don't have a good race then you're beating yourself up for it afterwards and like 'I should have done this' or whatever, so like I think I just like being distracted and talking to people (Swimmer 3)

Conserving their mental energy for the race was not limited to solely connecting with others. When needed, swimmers also spoke about sharing their feeling with teammates to reduce any tension they felt: "I'll start thinking about it, I'll start to talk to other people about it, I'll say 'yo this is coming up, I'm getting a little nervous'" (Swimmer 2). Alternatively, and dependent on the time until their race, swimmers also spoke about the strategies they used when needing to socially isolate themselves to prepare for their race. Putting in earphones and listening to music was a common tactic used when being alone became necessary:

> Depending on when the race is and how close I am to the race I'll probably go sit by myself, think about it … I just normally sit or stand behind the blocks for about a good 10 minutes before the race, just to have my own time before I go up ... I like that quiet alone time, I love how when you have earphones in people don't talk to you so that's kind of nice. (Swimmer 4)

Finding their own space was crucial for many swimmers, as they aimed to increase their concentration on their upcoming race. This time of increased focus was often related to concentrating on tactical reminders for an optimal performance: "pointers kind of things … keep my head down, more underwater work … how you start off, how you want to be in the middle, how you want to finish it off" (Swimmer 4). Operating in their own space also allowed swimmers to connect with themselves and focus on their own self-talk rather than talking with others. Interestingly, the self-talk that swimmers spoke about was still connected to those around them as they used recalled memories from their conversations with their coach to help direct their focus appropriately:

> Usually if I talk to my coach before my race I'm thinking about whatever [they say] … like try and work on your dive or whatever because it wasn't great before and you did it really good at this practice or whatever … so I just think about what [they] said. (Swimmer 3)

For one swimmer, the conversation with their coach was a constant echo in their head throughout their routine:

> Kind of throughout the whole process I'm kind of thinking of things that I need to focus on, like if my coach said like 'Oh [name] you know your dive is, your dives have been too shallow you need to go a bit further underwater' or something like that then that's always ringing in my head and stuff like that, stuff that I don't usually do in my race that I need to remember to do. (Swimmer 5)

The swimmers' ability to regulate their cognitive states (i.e., level of focus) through engaging in, or disengaging from, social interactions dependent on their needs was a key storyline that ran through their stories. Swimmers acknowledged the need to use specific tools, such as the use of music, to allow them to connect with themselves and use skills (i.e., self-talk) that helped to direct their attention in the appropriate direction for optimal performance.

Connection to the emotional state modality. Swimmers' stories also highlighted the impact that their social interactions had on their emotional states prior to performance. Two expressed emotions were the pleasant feeling of being set for their race and the unpleasant feeling of anger; both influenced through swimmers' social interactions. One-way swimmers used social interaction to influence their emotions was through connections with their coach. For example, one swimmer spoke about how they felt reassured when their coach affirmed their game plan:

> I talk to him, like, I am going behind the blocks and he is like 'what's your game plan?' and I tell him what I am going to do … so you have [it] already all down, it's just like your coach is basically just reassuring you. (Swimmer 8)

However, not all swimmers' interactions with their coach would elicit similar emotional reactions. One swimmer explained how the nature of their pre-race interaction with their coach played out in relation to their affective state:

> Usually after warm-up I talk to [coach] … [I talk about] just kind of where I am in the season, what he thinks I am able to do, kind of reassuring what I think I am able to do … sometimes it is [reassuring], if I'm feeling good that day it's a reassurance but if I am feeling bad it's a stressor. (Swimmer 7)

The influential role played by the coach for this swimmer, was one that the coach may not have been aware of, and regardless of how a swimmer was feeling the talk with their coach was a necessary part of their pre-performance routine. These talks were portrayed as a habit that had been formed over time whether in swimming or in other sports and the habitual nature of

their interaction with their coach resulted in them valuing their pre-race conversations as a need they had to fulfill:

> That's what I've always done since I've been swimming here. It was sort of what we did with diving, I was a diver, before any dive you go up to talk to your coach, your coach pretty much tells you the exact same thing every time, but you always go up first before and after your dive, so I think that's why I do it in swimming too … it's reassuring … just that it's a routine, it's comforting and hearing from [coach] is always comforting. (Swimmer 1)

The influential nature of this conversation, and the swimmers' expressed need for it to occur, was a major storyline within each swimmer's story, highlighting the valued and influential role that the coach plays in determining the course of a swimmer's pre-performance routine. However, coaches were not the only actors who played a role in how swimmers felt during their pre-performance routine. While the use of teammates to remain relaxed has been highlighted in previous sections, swimmers also spoke about becoming angry if they felt that their individual needs during their pre-performance routines were interrupted by others. The intensity of anger felt by swimmers was often in relation to how close this disruption occurred in relation to their race: "If it gets too close to a race and people are talking to me I'll get really annoyed" (Swimmer 2). The need for social connections to match their required needs was a common thread throughout most swimmers' stories, while if this match was not in harmony pre-performance routines were disrupted, often resulting in a suboptimal performance.

Connection to motivational and volitional state modalities. Social interactions were expressed as crucial components to feeling confident and motivated while preparing for a race. The swimmers' coach was credited as a key agent in this component of their stories. For many, their coach's words were enough to provide them with the extra confidence they needed in order to be ready to race:

> It's kind of nice for your coach to be 'you are ready, like just do what you gotta do.'… Basically, if you race you need to be confident, you can't just be like 'ok coach, tell me what to do now, like I am ready to go swim.' … That's the big one for me, because I know I need that, like I'm ready and like I don't have to worry about it (Swimmer 8).

A common topic of conversation with athletes' coaches was an evaluation of the competition that they would face in their race. However, as one swimmer explained, "sizing up of the competition" was done continuously and subconsciously in order to foster motivation and develop tactics for their race:

> I'm always kind of subconsciously sizing up the competition, kind of going 'ok this guy I've never raced before' right, and kind of I try to think if I know how they swim … if I know a guy goes out hard then I'm going to try and keep up with him at the start because you know I don't want to die and I know he's going to have a crappy second half so I might be able to pass him then … [Coach] for the most part doesn't like to say too much before the race … sometimes he'll say keep up with this guy (Swimmer 5)

Comparing themselves to the competition was especially important for some if they constructed the comparison to another swimmer as one that was challenging but ultimately a swimmer they could be successful against: "so if I have somebody that I know, that you know they're also pretty good, I'll be like 'ok you can beat her, you can do this, you can do this" (Swimmer 2). Connecting with those around them, particularly those they were familiar with, was a commonly expressed need for swimmers to generate motivation prior to a race. The presence of a swimmers' family in the stands was an especially important connection. For one swimmer, this was particularly important when constructing their pre-race self-talk:

> Just something like 'come on you can do this, you have people, like my mum and dad up in the stands' … so if I swim in [hometown] my family from [hometown] comes and watches me and I say, 'ok you can do this, you gotta do this for Aunty, you gotta do this for Uncle', just stuff like in the moment. (Swimmer 2)

The people who were depicted as being key members of swimmers' lives were instrumental as sources of motivation and confidence for swimmers, whether these others were aware of it or not.

Connection to biological state modality. The connection between the biological and social modalities of a state was often expressed by swimmers as primarily dependent on an intrinsically assessed need to either increase or decrease energy levels. For some swimmers, feeling socially connected with others was expressed as an energy boost: "I feel like talking to people makes me more energetic in a way and if it's someone that boosts me up in a way it helps me out" (Swimmer 5). Another swimmer expressed a similar sentiment when talking about how their teammates could help get them excited for a race: "if there is someone I like to talk to, somehow makes me feel excited for the race" (Swimmer 8). Contrastingly, some swimmers spoke about how being connected with others helped them keep calm and conserve their energy levels for their race. When asked about why being social with teammates prior to a race was important to them one swimmer replied that it was mainly to help them remain calm: "if I'm really nervous I use it as a calming, to keep me calm" (Swimmer 4). Another swimmer expressed a similar sentiment and

explained that keeping calm was important for them, as they tried to conserve their energy for the upcoming race: "you've got 20 minutes before your race, there's no reason to get stressed now, save the stress for in the race" (Swimmer 7). As expressed in previous sections, swimmers' needs generally changed over time. For most swimmers, the closer they got to a race the more they spoke about the need to be alone. One explanation swimmers gave for this, as discussed earlier, was a need to focus in on their race. However, for many swimmers feeling physically prepared for their race was another reason to limit social interactions. As one swimmer explained, feeling disconnected from others before their race was a method they used to conserve not only their mental energy, but also their physical energy: "right before the race I don't like to talk or cheer at all, because I just want to breathe because I know I won't breathe a lot [during the race]" (Swimmer 1). Stories discussing the connection between social and biological state were individually distinct in regard to the energy level that swimmers felt was required at different points throughout their pre-performance routine. However, the common thread was the portrayal of the social interaction as playing a role in meeting their assessed energy and physical needs at each moment in time.

Discussion

Researchers are beginning to explore athlete's descriptions and understandings of pre-performance routines as an alternative to trying to develop 'optimal' pre-performance routines in laboratory settings (e.g., Cotterill, Sanders, & Collins, 2010). Our aim in this study is to add to this conversation by exploring how eight elite swimmers describe and understand the utility of their pre-performance routines. The swimmers' accounts presented here highlight the need for practitioners to understand what a pre-performance routine means to an athlete. Hazell, Cotterill, and Hill (2014) recently included gaining the athletes' perception of how to prepare for successful performance into their research design. This information was then used to inform the development of 'more appropriate' components of a pre-performance routine. This approach should be applauded for moving pre-performance routine research towards more contextualized interventions. However, for the swimmers involved in this study, this approach may have missed an important aspect apparent in their stories, the importance of their social interaction prior to entering their pre-performance routines. Similar to gymnasts and golfers, the swimmers varied in their desire to either find an isolated location to focus on their upcoming performance or distracted them-

selves by engaging in irrelevant conversations with teammates, or in the case of the golfers, their caddies (Clowes et al., 2013; Cotterill et al., 2010). The importance of being disengaged by being socially connected was highlighted by the caddies of four professional golfers interviewed by Davies and colleagues (2017). For the caddies, the time between shots (i.e., *meso* level) was a time to bring focus away from the competition, allowing the golfer to remain mentally fresh through the entire round. For the swimmers involved in this study, the substitute for a caddy was their teammates and coach. Teammates were involved primarily between races to help keep swimmers' focus away from performance, while their coach played a role in determining when focus began to shift to the race so as to spur the beginning of the pre-performance routine (i.e., *micro* level; Davies et al., 2017). The shift for the athletes meant beginning to isolate themselves from others, helping them to ensure they were physically and mentally prepared to race. Similar to a caddy for a golfer, the coach played an important role in determining the swimmer's level and direction of focus. The importance played by the coach reinforces the importance of other team members in helping an athlete maintain an appropriate focus level at the appropriate time (Davies et al., 2017).

Novel in these swimmers' stories is that how a pre-performance routine was utilized was dependent on the value placed on the competition. Common advice stemming from qualitative interviews with Olympic athletes has been for athletes to stick to their pre-performance routines regardless of the competition context (Gould et al., 2002). However, these swimmers' stories provided examples of how the importance of a competition can determine how a race is approached in order to be successful. The IZOF model provides theoretical guidance in this regard through its grounding in person-environment relationships (Hanin, 2000b). These relationships are dependent on an athletes' evaluation of their resources and the demands of the environment. Applied practitioners may consider using a framework, such as the Triple-A framework, which encourages athletes to become *aware* of the transactions with the context and their feeling states, *accept* that they feel a certain way due to the appraisals of these transactions, before *acting* to regulate their feeling states to a desired pre-performance state (Hanin, 2000a). This would allow pre-performance routines to become contextually appropriate, result in athletes being better able to respond to the demands of the environment, and allow athletes to develop a deeper understanding of what pre-performance strategies are most effective for them (Cotterill et al., 2010).

Beyond contextualizing pre-performance routines, the current study also provides evidence for an athlete's social state modality to be considered by future researchers and practitioners. Numerous researchers that explore

IZOF and pre-performance routines have advocated for an integration between psychological and biological aspects of a state (e.g., Cotterrill, 2010; Robazza et al., 2004); however, early conceptualizations of the IZOF model also included the social modality (Hanin, 2000b). Recently there has been an interest to extend the conceptualization of the social modality, including a method of direct assessment (e.g., Ruiz et al., 2016). The accounts provided here by swimmers reveal a connection between the social, psychological, and biological state modalities that is so intertwined, disregarding one for the others means overlooking a holistic view of an athlete prior to competition. Additionally, the swimmers' stories also reveal an understanding of how the regulation of their social state can be used as a pre-performance strategy to help regulate other aspects of their state, including both physical and mental energy and level of focus.

The open-ended nature of the conversational interviews and the flexible nature of interpretative thematic analysis allowed us the opportunity to discover novel insights into swimmers' pre-performance routines. Our interest in the meaning given to pre-performance routines by swimmers rather than measuring their effectiveness allowed us to develop a more naturalistic and contextualized understanding of how swimmers believe pre-performance routines are effectively executed (Braun & Clarke, 2013). The hope is that the novel understandings gained through this approach will be used to help inform future practice and research looking to develop a more integrative approach to understanding the role that the social state plays in athletes' pre-performance routines.

Conclusion

Researchers and practitioners in sport psychology have begun to promote the need for contextualized and idiographic approaches to both research and applied practice (Ruiz et al., 2016). We opened this paper with Moran's (1996) narrow definition of pre-performance routines that has become widely used. While this definition is still very applicable to a *micro* focus on pre-performance routines, the current findings suggest the adoption of a more pragmatic and holistic approach to understanding how athletes prepare for optimal performance. Davies and colleagues (2017) referred to three levels of focus required for optimal performance, and our findings provided further evidence that practitioners should consider this approach. We have added to this conversation by highlighting the role that social interaction plays within an athlete's pre-performance routine, and the interactive nature of the psychobiosocial state, along with how this state is influenced by the context in

which an athlete finds themselves in. Including social interactions as a component of skills engaged in prior to performance would allow for truly integrative pre-performance routines. We encourage researchers and practitioners to consider an athlete's entire psychobiosocial state within their planning and implementation of interventions. Excluding one component risks producing only a shallow understanding of the true nature of an athlete's performance and the effectiveness of their pre-performance routine leading to that performance. Using an idiographic approach to understanding athletes' contextualized sport performances has the potential to produce a truly integrative understanding that will result in helping athletes enhance awareness of their pre-performance routine experience, assess how effective the pre-performance routine is, and act to improve subsequent pre-performance routines.

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