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The role of confidence in world-class sport performance

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Abstract

In this study, we examined the role of confidence in relation to the cognitive, affective, and behavioural responses it elicits, and identified the factors responsible for debilitating confidence within the organizational subculture of world-class sport. Using Vealey's (2001) integrative model of sport confidence as a broad conceptual base, 14 athletes (7 males, 7 females) were interviewed in response to the research aims. Analysis indicated that high sport confidence facilitated performance through its positive effect on athletes' thoughts, feelings, and behaviours. However, the athletes participating in this study were susceptible to factors that served to debilitate their confidence. These factors appeared to be associated with the sources from which they derived their confidence and influenced to some extent by gender. Thus, the focus of interventions designed to enhance sport confidence must reflect the individual needs of the athlete, and might involve identifying an athlete's sources and types of confidence, and ensuring that these are intact during competition preparation phases

Keywords: *Affect, behaviour, cognition, gender, debilitate*

Introduction

One of the most consistent findings in the peak performance literature is the significant correlation between self-confidence and successful sporting performance (Feltz, 2007). Thus, it is perhaps not surprising that the study of self-confidence has featured prominently in sport psychology literature, with social cognitive theories such as Bandura's (1977) self-efficacy theory and Vealey's (1986, 1998, 2001) models of sport confidence providing the basis for most of this work. Vealey provided the first model of sport confidence in 1986 in an attempt to develop a sport-specific framework and inventories to operationalize confidence in competitive sport. More recently, Vealey's work has advanced to developing a unifying framework relevant both to researchers and practitioners for the study and enhancement of confidence in sport (Vealey, 2001). The function of Vealey's revised model was twofold: first, it provided an organizational framework from which meaningful extensions to the literature could be generated, and second, the model served as a foundation from which interventions designed to enhance confidence in athletes could be developed.

The integrative model of sport confidence (Vealey, 2001) predicts that organizational culture (e.g.

competitive standard, motivational climate, and the goals and structural expectations of sport programmes) and the personality characteristics, attitudes, and values of individual athletes influence the development and manifestation of confidence in athletes, as well as the three domains they use to source confidence (achievement, self-regulation, and social climate). Subsequent levels of sport confidence then influence an athlete's thoughts, feelings, and behaviours, which determine sporting performance. Thus, while the model indicates that performance is influenced by the physical skill and characteristics of the athlete, in addition to uncontrollable factors such as weather and opponents, sport confidence is viewed as critical to human functioning and sport performance.

Confident individuals tend to be more skilled and effective in using cognitive resources necessary for sporting success. For example, although not directly tested in the sport literature, Bandura and Wood (1989) showed that confident individuals remain task-diagnostic by focusing on process solutions to problems in the face of obstacles, whereas less confident individuals are more likely to become self-diagnostic and focus on their perceived inadequacies. Furthermore, confidence has been found to influence the coping processes of athletes. More

specifically, athletes who possess a strong belief in their ability reported being able to peak under pressure and cope successfully with adverse situations during competition (Cresswell & Hodge, 2004).

Confidence has been consistently associated with positive affect, whereas a lack of confidence has been associated with anxiety, depression, and dissatisfaction (e.g. Martens, Vealey, & Burton, 1990; Vealey, 1986; Vealey & Campbell, 1988; Vealey, Hayashi, Garner-Holman, & Giacobbi, 1998). Recent investigations within the stress domain have found self-confidence to be a moderating factor in the interpretation of pre-competition symptoms, where high confidence in some way protects or overrides debilitating interpretations of pre-competition emotions usually perceived as negative (i.e. anxiety; Hanton, Mellalieu, & Hall, 2004; Mellalieu, Neil, & Hanton, 2006). These propositions seem to accord with anecdotal reports of athletes performing exceptionally well when they are feeling both anxious and self-confident.

Confidence has also been linked to productive achievement behaviours such as increased effort and persistence. In their processing efficiency theory, Eysenck and Calvo (1992) argued that a decrease in performance efficiency as a result of anxiety might manifest itself in higher subjective effort, but only if participants felt they had a reasonable chance of success. Furthermore, a strong sense of confidence has been associated with the setting of challenging goals and the expenditure of maximal effort and persistence to achieve those goals (Bandura, 1986). Thus, athletes who are high in confidence are likely to succeed because of their productive achievement behaviours. In addition to goal attainment, the attributions made by individuals to appraise success and failure have been found to influence expectations and motivation for future behaviour. Attributing success to personally controllable causes would seem conducive to both self-efficacy and the expenditure of future effort, because personal control is dependent on intention and effort (Gernigon & Delloye, 2003).

The conceptualization of sport confidence as specific and unique to sport was intended to enhance understanding in the field of sport psychology (Vealey, 1986). However, despite Vealey's (2001) proposals that sport confidence influences performance through its affect on how athletes think about, feel about, and respond to everything that happens to them in sport, the processes and mechanisms that underlie confidence have been largely ignored. Although several researchers advocate confidence as beneficial to performance, research into the relationship between confidence and elite performance is characterized by correlational designs, making it difficult to draw firm conclusions about

causal relationships. Furthermore, while most athletes believe that sport confidence is critical to performance, even the most successful athletes demonstrate fluctuations in confidence. In the highly pressurized environment of Olympic-standard competitive sport, athlete confidence has been reported to be particularly susceptible to instability (Gould, Guinan, Greenleaf, Medbery, & Peterson, 1999). Given the importance of self-confidence in sport performance, the factors responsible for negating the confidence of world-class athletes need to be identified.

Hays and colleagues (Hays, Maynard, Thomas, & Bawden, 2007) were the first to investigate sport confidence in successful world-class sports performers. They identified sources and types of confidence used by athletes competing on the world stage and demonstrated that demographic and organizational factors influence the development of confidence in such athletes. For example, women athletes derived confidence from a perceived competitive advantage, such as seeing their competitors perform badly, or crack under the pressure of competition. In contrast, men just believed they were better than their competitors. These findings suggest that in accordance with previous research (e.g. Lirgg, George, Chase, & Ferguson, 1996), female world-class athletes tend to be situationally dependent on external information in establishing performance expectations.

Vealey et al. (1998) suggested that athletes who derive their confidence from uncontrollable sources could develop weaker or unstable perceptions of control and competence. Corbin (1981) found that the threat of playing "a good opponent" could create a vulnerability in women that is not experienced by men. Consequently, with regard to perceptions of sport confidence, female world-class athletes might be more susceptible to factors associated with the organizational culture of world-class sports performance. Previously, researchers have demonstrated that while male athletes generally demonstrate greater confidence than female athletes (e.g. Krane & Williams, 1994; Lirgg, 1991), they are also less susceptible to changes in self-confidence during the pre-competition period (Jones & Cale, 1989; Jones, Swain, & Cale, 1991).

Although Olympic athletes have reported that the pressure and distractions of world-class competition can render their confidence atypically "fragile" (Gould et al., 1999), further research is required to identify confidence debilitating factors (cf. Hays et al., 2007). Furthermore, gender variations have yet to be examined in athletes of this calibre, providing an additional avenue for future enquiry.

The present study was designed to examine the role of confidence in relation to the cognitive,

affective, and behavioural responses it elicits, and identify the factors responsible for debilitating confidence levels within the organizational subculture of world-class sport. An ideographic research approach was adopted to provide in-depth information about the thinking process involved in managing confidence, and in so doing, more effectively unravel how confidence influences cognitions, feelings, and behaviours. More specifically, qualitative interviews were conducted and the integrated model of sport confidence (Vealey, 2001) formed the broad conceptual base of the interview guide.

Methods

Participants

After receiving institutional ethics approval, seven male and seven female athletes were interviewed. The male athletes were aged between 25 and 48 years (35.4 ± 8.5 years) and the female athletes between 21 and 36 years (27 ± 4.9 years). Thirteen of the athletes had won a medal in at least one major championship (i.e. Olympic Games, World Championship, World Cup). The remaining athlete was the current world record holder in her discipline. The male athletes had competed at their highest level (Olympic and/or World Championship) for between 6 and 14 years (10.7 ± 3.3 years) and the females for between 6 and 16 years (10.3 ± 3.1 years). The male athletes included one team-sport participant (rugby) and six participants from five individual sports: athletics, $n=2$; bob-skeleton, $n=1$; diving, $n=1$; judo, $n=1$; speed-skating, $n=1$. The female athletes also included one team-sport participant (hockey) and six participants from four individual sports: judo, $n=1$; modern pentathlon, $n=2$; swimming, $n=2$; and taekwondo, $n=1$. The athletes were contacted through e-mail or by telephone and to maximize the retrieval of accurate and in-depth data, were asked to reflect on their most and least confident career moments before being interviewed. Participants' interviews were audio taped and transcribed verbatim by the first author for later review. Due to the constraints associated with accessing a world-class sample, the data for the present study and a previous publication (Hays et al., 2007) were collected in one interview. However, two themed interview guides delineated the aims of the two studies.

Procedure

The athletes were contacted via cold emails and invited to participate in the study. An open-ended, semi-structured interview (Patton, 2002) was conducted by the first author with each athlete. (A copy

of the interview guide is available from the first author.) The interviewer followed an interview guide, but allowed the natural flow of the conversation to dictate the direction of questioning (Patton, 2002). Consistent with the research aims, a causal questioning technique was adopted (cf. Hanton & Connaughton, 2002; Thomas, Hanton, & Maynard, 2007). Specifically, probes associated with the questions searched for perceived explanations that described the most important processes (cognitive, affective, and behavioural) by which self-confidence affected performance. For example: What do you think were the factors responsible for your successful/unsuccessful performance? To what extent do you think that your pre-competition confidence affected your performance?

In line with previous studies seeking causal explanation, the interview schedule was pilot tested to ensure clarity of the questions and the ability of the approach to produce perceived causal explanations (cf. Hanton & Connaughton, 2002; Thomas et al., 2007). Three retired international performers completed the pilot interviews, after which minor refinements were made to the guide that focused upon the clarity of question phrasing.

At the onset of each interview, standardized introductory comments were provided about the purpose of the study, the use of data, and issues regarding confidentiality and anonymity. To control for guessed responses, participants were reminded that there were no right or wrong answers, to take their time responding to questions, and to tell the interviewer if they could not remember something rather than guess (Hindley, 1979; Moss, 1979). The full interview schedule comprised three sections. The first section asked the athletes to describe the time that they had felt least confident going into an important competition, and identify the factors responsible for debilitating sport confidence (e.g. Can you tell me about anything that happened or any factors that affected your confidence during the lead up to competition/on the day of competition?). The second section asked the athletes to describe the time that they had felt most confident going into an important competition. In both sections, athletes were asked causal questions about their cognitive, affective, and behavioural responses to competition. For example: Please describe for me any thoughts that you remember experiencing/how you were feeling/your behaviour on the day of competition? What do you think were the main factors influencing your thoughts/feelings/behaviours? What were you focused on as you stepped onto the track, rink, poolside, etc.? Is this typical of your focus just before you are about to compete? The third and final section of the interview examined the interview experience and any other important information that

might have been overlooked during the interview process.

Clarification and elaboration probes were used throughout the interview to ensure an accurate and in-depth understanding of what the participants were describing, and to create a consistent level of depth across the interviews (Patton, 2002).

Analysis

All interviews were transcribed verbatim by the first author and content analysed by the four investigators following procedures recommended by Miles and Huberman (1994) and successfully applied to sport psychology research (e.g. Gould, Dieffenbach, & Moffett, 2002; Greenleaf, Gould, & Dieffenbach, 2001; Hays et al., 2007). The four authors independently read and re-read the 14 interview transcripts and manually identified factors identified as debilitating to sport confidence (e.g. negative comments from coach about weight). These raw data responses were then organized into patterns of like responses in the data to create meaningful higher-order themes (e.g. coaching). Although these dimensions emerged from the data inductively, they were subsequently verified through deductive methods ensuring they existed in the raw transcripts (e.g. Hanton & Jones, 1999).

The higher-order themes representing factors debilitating to the athletes' sport confidence were validated during a focus group meeting. The primary author presented her findings to the remaining three investigators and where inconsistencies or differences arose between the investigators, a discussion ensued until consensus was reached. As advocated by Greenleaf et al. (2001), no inter-rater reliability statistics were computed because the goal of the analysis was to establish an understanding of the factors responsible for debilitating the confidence of world-class athletes, not to test the four investigators' ability to identify common themes.

Several researchers have highlighted the descriptive nature of content analysis, which does not allow identification of causal linkages between processes and outcomes (e.g. Hanton & Jones, 1999). Consequently, causal networks (Miles & Huberman, 1994) were adopted as the analysis technique used to examine the processes by which sport confidence influences performance in world-class athletes.

Causal networks have been successfully applied to the analysis of qualitative data, and the procedures employed by Hanton and Connaughton (2002) and Thomas et al. (2007) were adapted for the present study. Specifically, a case-orientated approach was adopted whereby each case (one participant's transcript) was analysed in its entirety, and configurations, associations, perceived causes, and within effects were elicited for each participant for both high and low

confidence contexts (cf. Miles and Huberman, 1994; Thomas et al., 2007). Subsequently, a comparative analysis was undertaken to outline the general explanations that were elicited across the group. It was during this comparative stage of the analysis and the inherent inductive process, that any gender effects were allowed to emerge from the data. This process produced separate causal networks developed from the data for both high and low confidence, with the frequency of each stream (percentage of respondents) being recorded. Finally, deductive analyses were performed to ensure that all themes were present in the raw transcripts. The perceived causal streams were validated during a focus group meeting in which the primary author presented her findings to the remaining three investigators and the final networks were discussed until agreement was reached.

Results

The role of confidence in sport performance

Two causal networks were constructed from the transcripts to represent the athletes' cognitive, affective, and behavioural responses to competition when both high (Figure 1) and low (Figure 2) in sport confidence. The causal networks consist of two major elements: (1) a set of variables linked together by arrows depicting the direction of the relationship, and (2) a percentage of the number of participants who identified the responses and their perceived effect on performance.

Cognitions. All 14 of the athletes interviewed identified high confidence as synonymous with effective cognitions and, more specifically, an ability to retain appropriate competition focus. For example, "just concentrating on each game and not getting too excited about what the outcomes would be at the end". In contrast, the athletes succumbed to faulty cognitions when low in confidence, and were unable to focus on their usual competition routines:

I was trying to use my psychological techniques . . . I use self-hypnosis just to take myself off into a trance type state, but none of them were working, I just couldn't concentrate. I find a spot that I stare at in my line of sight and eventually as my eyes relax I get two spots, and I just couldn't concentrate on that spot long enough to get my eyes to relax and everything was going wrong and it was just horrible.

The athletes became distracted by negative thought patterns and were unable to maintain concentration, as highlighted by one Olympic diver when talking about his least confident career moment:

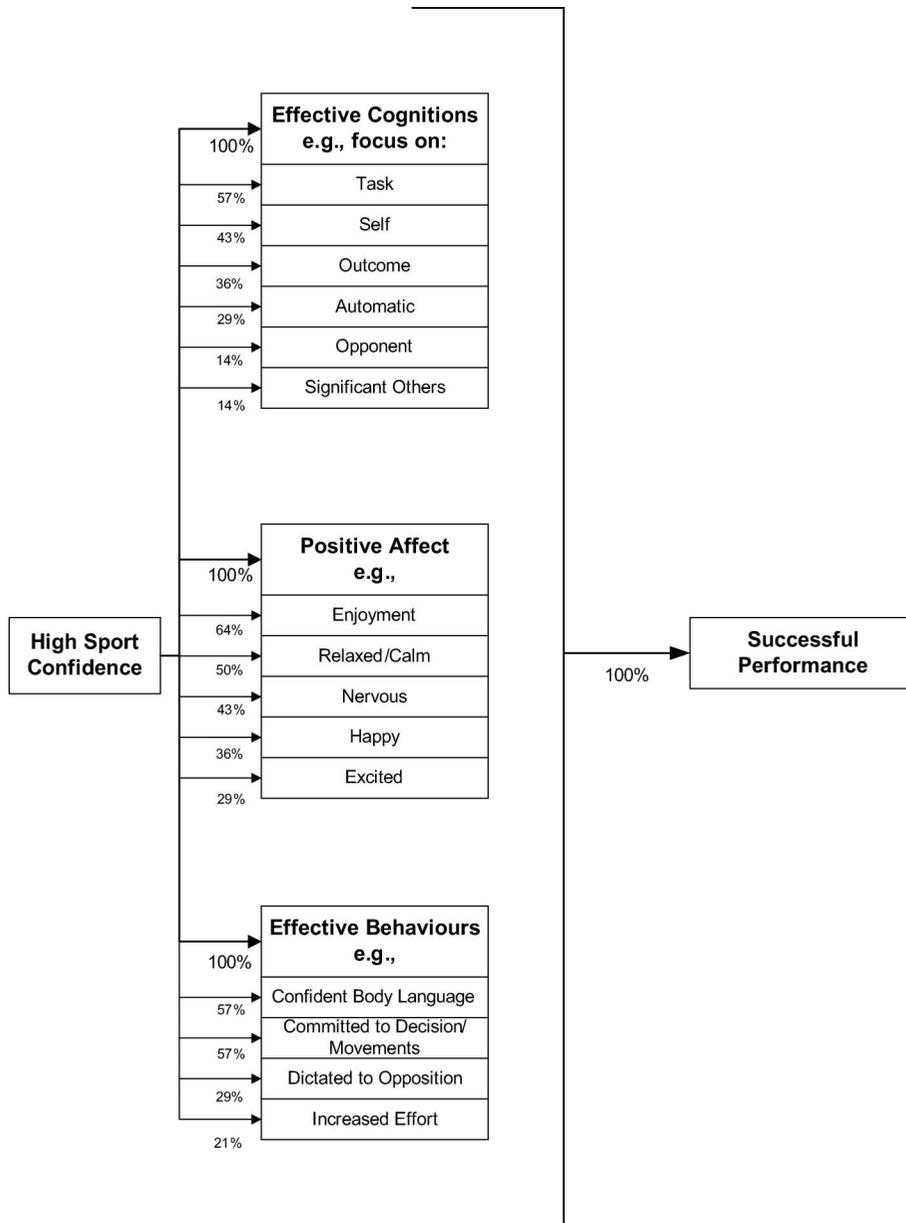


Figure 1. Causal network representing cognitive, affective, and behavioural responses to competition when sport confidence is high.

I was a lot more negative than I would normally be, I was a lot more distracted by other athletes and what they were doing. Normally I follow a routine and I just stick to that and concentrate on it, but this time I was following my routine but I wasn't buying into it as I normally do.

In contrast, when describing his competition focus during his most confident career moment, the same athlete stated:

Me! And that was it. I ignored everyone else, I was just following my routines, being aware of the crowd but not being distracted by it, not thinking "Oh who's doing what? Where am I? What's the scoreboard saying?" All the kind of distractions

which I was distracted by before. Just focusing on me and what I was doing.

The above athlete described confidence as his "shield", which protected him from the distractions associated with low sport confidence, such as worries about the crowd and other athletes. Indeed, the athletes interviewed consistently identified confidence as a protection against negative thoughts. As one World Cup winner highlighted:

We knew that we could play Australia week in week out and we could beat them . . . And having a confidence like that when you go into a game makes a game so much simpler, you're not worried about things, you're not worried about your

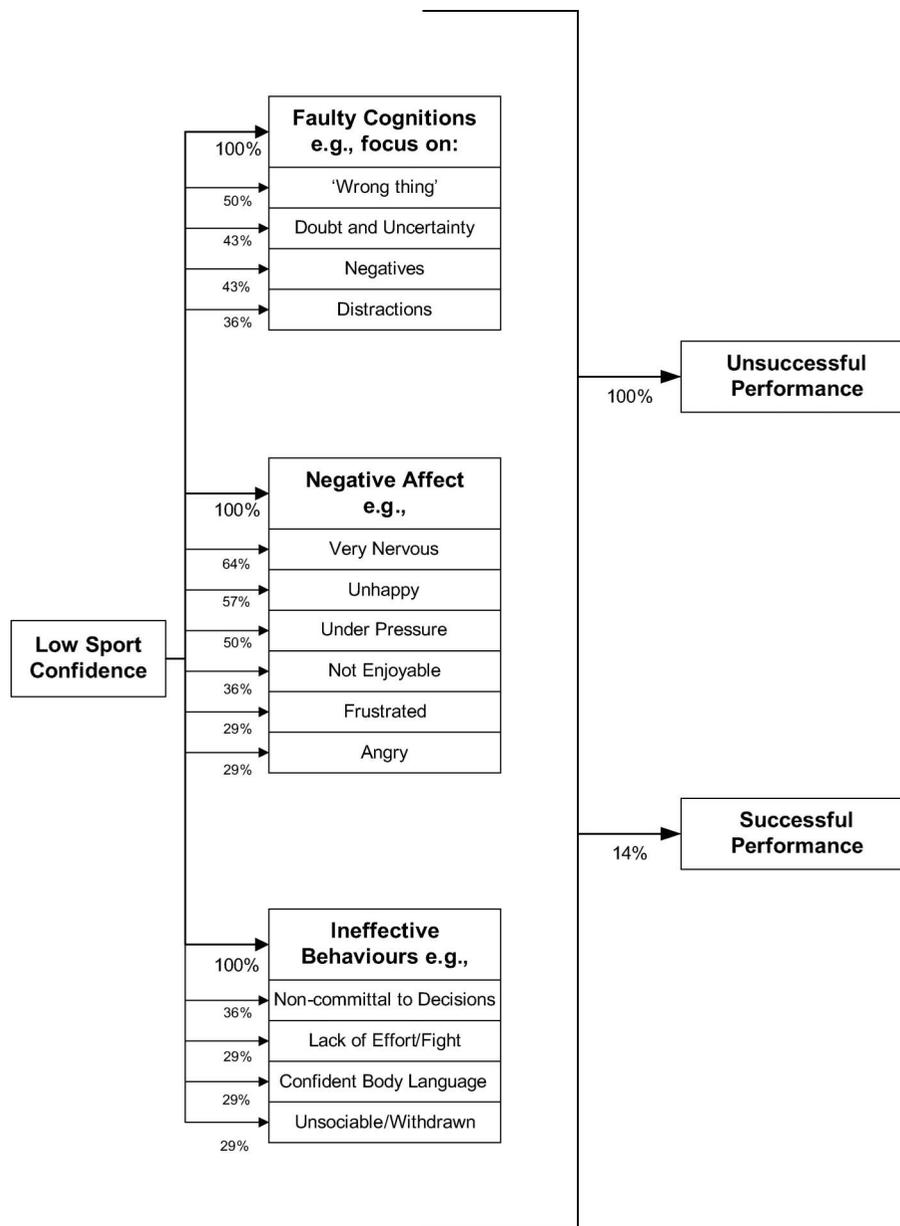


Figure 2. Causal network representing cognitive, affective, and behavioural responses to competition when sport confidence is low.

opposite number, you're not worried about what they're going to throw at you, you're just completely worried about your performance and your team's performance, as long as we get that right we're going to win, and so from that side of it was just confidence and the fact that we knew we weren't going to lose that game.

In contrast, it appeared that when the athletes' confidence was low, they had difficulty in believing anything positive:

I've got a sports psychologist that I'm working with and we've got what we call this brick wall . . . on the wall we write down all of my achievements and what

I'm proud of, whether it's inside swimming or outside swimming, whether it's about me or about me helping someone or whatever, we've put it all down on that wall and I read it the night before my races, but it's very hard when nerves overtake you, all your logic, thinking, just goes out the window.

While several of the athletes tried to use positive self-talk as a means of enhancing their sport confidence when it was low, they were unable to maintain their positive thinking during competition. As one of the swimmers described:

When you're in the lead up you can be quite logical and you can be quite positive about things,

it's just literally in the hour leading into the race that you can't control logic, nerves have overtaken and I didn't want to race on the Sunday, I did not want to race, I knew I had to but I didn't want to race because I knew that I probably wouldn't perform as well as I should do, and I was right. It's easy to say "oh well I should have thought positive thoughts", and I did in the days leading up to it, but in the last hour I just couldn't control anything.

Other athletes tried using rationalization to enhance their feelings of confidence. As one World Champion highlighted, "I always say to myself if I'm scared, then they must be twice as bad because of who I am. It's what gets me through it really, thinking if I'm scared then they must be scared as well". However, when talking about their least confident career moments these athletes found it difficult to remain logical. As another athlete highlighted, "I'm not very rational, that's one of my weaknesses, I'm not very rational at all".

For the speed skater, just trying to reframe his cognitions served to reduce confidence further:

When I skated well, I just skated well, I didn't have to think about it, obviously I was confident and that's why I didn't have to think about it ... So positive self-talk was almost a bad thing for me ... you've got to try and be positive, but the fact that I was having to use positive self-talk told me I wasn't in the right place.

Twenty-nine percent of the athletes interviewed said that during their most confident career moment they entered into a state of "automaticity" where "everything just came together" and they didn't have to think about anything. For example:

I got into this what we call a flow state and I think with probably anyone you speak to who's been in a flow state it's quite difficult to describe what was going on when it was happening, because the whole point is that it's so automatic you don't think about anything, it just like happens. I just felt really confident in what I was doing and whenever I'm confident I get this really warm feeling in my stomach, like I was like really strong and just warm and just at the same time really relaxed...

Affect. All 14 of the athletes interviewed indicated that high confidence led to positive affective responses and low confidence led to negative affect. For example, when the athletes felt confident going into an important competition, they were able to enjoy the experience (64%). Furthermore, the athletes described themselves as feeling relaxed and

calm when high in confidence (50%). As one male World Cup gold medallist highlighted:

I just feel very relaxed, very happy with myself and happy with how my preparation has gone ... you never know what's going to happen the next day but you're confident that you can perform at a level that meets your expectation.

In contrast, the athletes reported feeling unhappy (57%) and under pressure (50%) when confidence was low. For example:

Well this would have been the first world stage competition that I would have been at since my injuries so the pressure was on and the pressures of funding were in the back of my mind. So I was nervous because of those, and normally the pressures of funding and being on the world stage isn't a problem but because I wasn't very confident in my ability to perform ... I felt pretty crap mentally going into the competition.

The athletes experienced "nerves" when they were both high in confidence (43%) and when they were experiencing low confidence (64%). However, when confidence was low these "nerves" were perceived as negative and responses pertained to "fear", "panic", "worry", and "anxiety". In contrast, when sport confidence was high, the nerves experienced were "very minimal really and didn't affect my performance at all", or were interpreted positively. For example, one athlete talked about "good nerves", experienced when sport confidence was high, and "bad nerves", which were associated with low confidence:

I find I get good nerves and bad nerves ... Bad nerves is like I say the panic, the anxiety, the worry, and once that door's open then all the other stuff flies in ... And then the good nerves is the stuff where you feel indestructible ... And it's like they're in there and they're making you go to the toilet all the time but they just feel good ... it's just enjoyment, excitement, and belief.

When reliving their most confident career moments, some athletes did not refer to nerves at all, only the positive affective responses associated with high confidence. For example:

I just felt like I was just this strong person and even if someone was fighting me down the last length there was no way they were going to beat me. And when I went out onto the blocks all I felt was excitement and wanting to get out there and race, I had no fear whatsoever.

Behaviour. High sport confidence was demonstrated through the athletes' body language (57%) and commitment to performance decisions/competition plans (57%). For example, one track World Champion and Olympic gold medallist highlighted that when his confidence in his physical capability was high, he was able to stick to his race plan:

I think the confidence allows you to go in and make good decisions, not tempted by fear of what might happen if you're not a bit quicker than you had planned to be at a certain stage of the race ... when I was well trained I never had a doubt about my physical ability to carry out my plan, whereas I think some people did.

The negative influence of low confidence on sporting performance was also evident throughout the sample, although the responses given were sport specific. For example, as one of the modern pentathletes highlighted:

When you're confident on the piste you get your distances much better ... When you're not confident in what you're doing you tend to be more timid in your movement and the thing with fencing is, once you go for a move you've just got to go for it ... as soon as you hesitate it's too late, they've hit you.

When the athletes were high in sport confidence, this was seen in their behaviour before competing. As one World Champion highlighted:

I always look at the person and then if they look away straight away that's one up for me, it's a psychological boost, they've fallen, they can't handle it so it's one up. If you walk out with your head down then you just know that that person's not up for it.

These athletes were aware of the impact of their behaviour and dictating to the opposition was identified as important to 29% of the athletes interviewed. As one Olympic gold medallist highlighted while talking about his Olympic experience:

When you are a favourite for something people tend to watch you, I was always aware that there would be a few people out there who thought they had a real chance, who would be watching me to see psychologically how I was coping with issues, even queuing up for my tea in the morning in the village, sitting down, whether you were confident, whether you were relaxed. And I think you have to fill the room, you have to dominate your space, you have to dominate the track, you have to walk out there onto a track and really basically what you

want to get people to think when you walk out there is "actually today I'm running for second, I can't beat him", "I can't beat her".

Thus, when experiencing low sport confidence, 29% of the athletes still presented themselves as confident to try and gain a competitive advantage over their opposition. Consequently, their own feelings of sport confidence were also enhanced:

I think even if you're not confident inside, you need to present yourself as confident on the outside because that's half the battle won; firstly with yourself, because if you present yourself as confident then you immediately feel more confident, and also for your opponents, if you look confident then you're obviously a little bit more scary, perhaps they don't feel as confident as you look and might be intimidated by that.

For 29% of the athletes, low confidence was also synonymous with lack of effort or fight. For example, as one of the swimmers highlighted: "I should have been going on it, but instead of standing there and believing that there was no-one else that can beat me, when a girl was on my shoulder on the last length I just let her pass me". However, two of the male athletes (14%) said that they performed at maximum effort regardless of their confidence levels because of their motivation to perform successfully. As the rugby World Cup winner highlighted:

I was only supposed to play 40 minutes but I hadn't done anything in those 40 minutes so I was gutted with myself and I didn't want to go off ... It was supposed to be a way of easing me in [after injury] and I ended up playing a full game.

Finally, 29% of the athletes reported feeling increasingly withdrawn and unsociable when their confidence was low. As the Olympic diver highlighted:

Instead of sitting down and relaxing or having a chat I was sitting on my own, I was being unsociable... and that's different to normal. Normally in a competition I'll chat to other athletes while we're lying about waiting for the next go, other team mates, but I was very much withdrawn.

Performance effects. All of the athletes interviewed performed successfully when their feelings of sport confidence were high, and unsuccessfully when they were experiencing low sport confidence. However, two of the athletes did manage to perform successfully on occasion when their confidence was low. For

one track athlete, this was due to effective race tactics:

You'll go down there and you'll ask the pacemaker to run through in 54. Now the others will think "I can't handle 54" but you go with the pacemaker. . . and they sit back running their own race, you're not in that shape but you've already got the lead and they've left it too late to get that lead back. That's sometimes just playing the game.

For the other athlete, this was due to pure exhaustion:

I got up on the morning of the Europeans and I hadn't slept, and to be honest with you I couldn't eat . . . But basically what happened next was that I shot a PB [personal best] . . . I was just so exhausted that I don't think my body or my mind could focus on many things . . . the thing that you get in flow state is just automatic and I think I went into that state anyway because I was so exhausted that it was just automatic.

Factors responsible for debilitating sport confidence

Factors responsible for debilitating sport confidence were categorized into six higher-order themes representing poor performances, injury/illness, poor preparation, coaching, pressure and expectations, and psychological factors. In accordance with previous research (e.g. Gould et al., 2002; Greenleaf et al., 2001), the numbers of male and female athletes citing each raw data response and higher-order theme are shown in brackets (M/F). The frequencies and descriptive text are provided together to enable the reader to reach their own conclusions regarding the applicability of the findings for use with other athletes in other settings.

As shown in Figure 3, the frequency of respondent results indicated that poor performances and injury/illness were the primary factors responsible for reducing pre-competition confidence in male athletes competing on the world stage. For the female athletes, poor preparation, coaching, psychological factors, and pressure and expectations were also deemed important.

Poor performances. Poor performances were responsible for reduced confidence in 11 of the 14 athletes interviewed (4 males, 7 females). In addition to responses pertaining to unsuccessful results, five of the female athletes also highlighted that starting a competition badly reduced their confidence for the remainder of the competition. One of these athletes stated:

We were playing a team in the first game who weren't particularly good and we should have beaten them quite easily but we lost 1-0, so that knocked quite a few people's confidence because that was one of the teams that you sort of earmark as three points.

Injury/illness. Eight athletes (6 males, 2 females) identified injury or illness as a factor responsible for debilitating their feelings of sport confidence going into an important competition. These athletes described a reduced confidence in their physical ability to perform, which ultimately affected their performance. As one World Cup winner highlighted:

It was not the lack of confidence in my own ability, it was the lack of confidence in my ankle performing to the level that I needed it to in the game situation . . . So if I was going into contact I'd go in a bit slower, or I'd try and get into a position where I knew that my ankle was going to be alright, and I'd do a job but not at the standard that it needed to be.

Poor preparation. Five female athletes and one male athlete identified poor preparation as a factor responsible for reduced feelings of sport confidence. Their responses pertained predominantly to poor physical training, or not doing enough in training and consequently feeling underprepared. One female World Champion highlighted:

There've been times where I know that I'm on a roll therefore I know I'm going to win the championship. But there have also been times when I've gone in there not fully fit or fully prepared, I haven't done enough, and therefore you're at a 5-10% disadvantage straight away because you're thinking that in your head.

Coaching. Five female athletes and one male athlete also identified factors relating to coaching as debilitating to their confidence. One athlete spoke about a coach who had been detrimental to her self-confidence by calling her "fat". This athlete explained how her coach "knocked every insecurity I had and kept knocking me down thinking that he'd make me tough and he didn't". Additional factors identified as debilitating to sport confidence included spending less time with a personal coach due to national squad training, coach's lack of belief in the athlete's ability, falling out/arguing with coach, and doubting the coach's ability. As another female athlete highlighted: "I had a lot of confidence issues with how good he was [the coach], I figured if he didn't know what he was doing then how on earth was I supposed to swim fast".

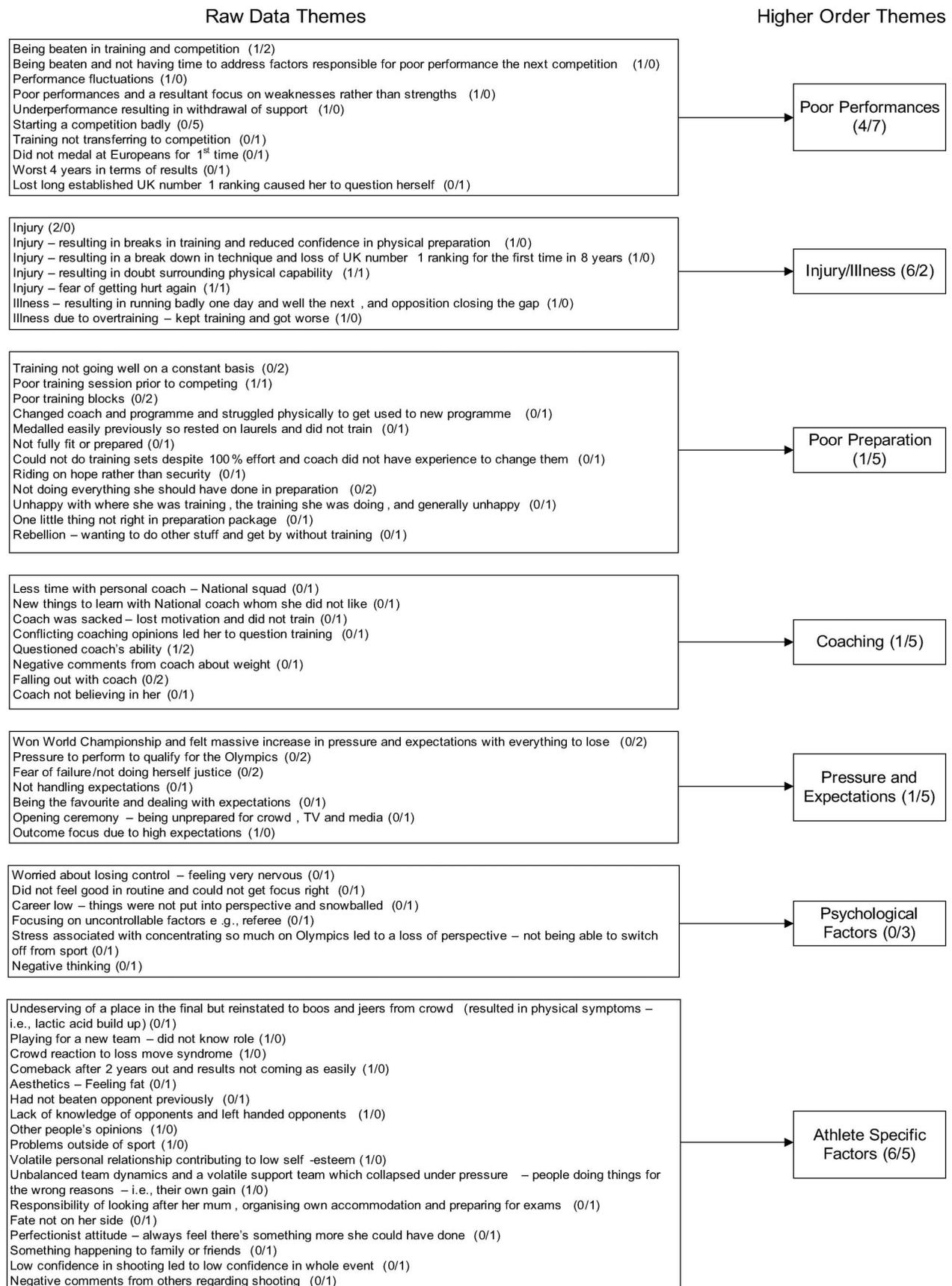


Figure 3. Confidence debilitating factors identified by world-class sport performers. *Note:* Numbers in parenthesis are (males/females).

Pressure and expectations. The pressure and expectations associated with successful world-class performance were also identified as being debilitating to sport confidence by five female and one male athlete. As one World Champion highlighted:

As a kid I had nothing to lose, I was just going in there fresh faced trying to win, whereas now reputation comes before me, probably a bit of pressure I've put on myself more than other people but there is that expectancy that I'm on the mat and I'm going to win and in your head you're always thinking, "what if I don't?" You start questioning yourself.

Self-doubt as a consequence of high expectations was a common theme among the female athletes and was related to qualifying for major championships in addition to championship outcomes. Thus, reaching the pinnacle of their sporting career actually seemed to reduce the female athletes' sport confidence. As one of the swimmers highlighted, "I'm not very good in the position where people are coming at me, which is the position that I've put myself in now. I like to be the underdog where nobody really knows who I am". For the female athletes, "being confident going into an event is when you feel confident that you can deal with your level of expectation".

In contrast, the pressure and expectations associated with world-class competition did not seem to affect the males' feelings of sport confidence. Rather, expectations seemed to motivate these athletes to succeed. As the rugby World Cup winner highlighted:

We'd always gone out there with the expectation that we were going to win this competition, it wasn't just said for the sake of saying it, it was the fact that we weren't going to lose ... And we didn't want to win it by losing one game and having to go through a different route, we were going to win all our games and when you set yourself something like that, it's a massive motivation for you every time you play.

Psychological factors. Three of the female athletes identified psychological factors as debilitating to their confidence. Responses included focusing on uncontrollable factors, worry about losing control, negative thinking, and stress. As one athlete highlighted:

Stress is a big factor for me and I think that would probably stamp on my confidence and you kind of lose perspective. ... you're concentrating so much on the Olympics that it just sets you back because fatigue especially comes along, you'll go further

back in training, not hit the times, and then for me I'd get annoyed, frustrated, and then my confidence would be a lot lower.

Athlete-specific factors. Finally, 11 of the 14 athletes (6 males, 5 females) identified confidence debilitating factors that were specific to them and not described by the aforementioned higher-order themes. These included negative comments from others, fate, exam preparation, a left-handed opponent, and a volatile crowd.

Discussion

We examined the role of confidence in relation to the cognitive, affective, and behavioural responses it elicits in world-class performers, and identified factors responsible for fluctuating confidence within this elite group. In support of research that has demonstrated a positive correlation between high sport confidence and successful sporting performance, all of the athletes interviewed performed successfully when their feelings of sport confidence were high, and unsuccessfully when they were experiencing low sport confidence. On examination of the processes and perceived mechanisms underlying confidence effects, high sport confidence was found to be synonymous with positive affect, effective competition behaviours, and effective competition focus. In contrast, low sport confidence was synonymous with negative affect, ineffective competition behaviours, and an inability to maintain an effective competition focus.

With regard to the effective use of cognitive resources, the findings were consistent with Vealey's (2001) contentions. All 14 of the athletes interviewed identified high confidence as synonymous with an effective competition focus and low confidence with an ineffective competition focus. Support was also found for Bandura and Wood's (1989) contention that confident individuals are able to remain appropriately focused on the task, whereas less confident individuals become distracted and instead tend to focus on their inadequacies. Several of the athletes interviewed maintained a task focus when their confidence was high. In contrast, when the athletes were experiencing low sport confidence they were irrational, and unable to control their nerves, think positively or maintain focus on their usual routines. In support of previous research (e.g. Cresswell & Hodge, 2004), it is apparent that confidence does have an impact on the coping resources of athletes, and those athletes who possess a strong belief in their ability to perform successfully might be more able to perform optimally under pressure. These findings highlight the importance of identifying potential

confidence debilitators and interventions to eradicate them in the lead-up to major competition.

In accordance with previous research (e.g. Martens et al., 1990; Vealey, 2001), all of the athletes interviewed associated high confidence with positive affective responses and low confidence with negative affect. Some support was also found for Jones and Hanton's (2001) findings that self-confidence moderates the interpretation of pre-competition symptoms, such as anxiety. For example, when confidence was low, "nerves" were perceived as negative and interpreted as fear, panic, worry, and/or anxiety. In contrast, when sport confidence was high, the athletes interpreted their nerves positively and felt excitement rather than fear.

The athletes' affective responses were also evident in their behaviour, with some of the athletes becoming increasingly withdrawn and unsociable when their confidence was low. In contrast, when the athletes felt confident, they not only presented themselves as such before competing, but their confidence also showed in their performance. For example, they made bold or decisive movements because they believed in their ability to perform successfully. In contrast, when the athletes were experiencing low sport confidence, they doubted in their ability to execute their skills and thought they could be beaten. As such, four of the 14 athletes reduced their effort expenditure resulting in performance decrements. These findings indicate an interactional relationship between affect, behaviour, and cognition, and also provide some support for Eysenck and Calvo's (1992) proposition that decreases in performance efficiency as a result of anxiety manifest in higher subjective effort only when participants feel they have a reasonable chance of success. Nonetheless, two of the athletes performed at maximum effort regardless of their confidence due to their motivation to perform successfully. Although a strong sense of confidence has been associated with the setting of challenging goals and expenditure of maximal effort and persistence in the achievement of those goals (Bandura, 1986), to the authors' knowledge, similar findings have not been reported when confidence is low. Interpretations cannot be based on the findings of only two participants, thus the relationship between low confidence and goal attainment needs to be investigated more thoroughly.

The factors responsible for debilitating the athletes' sport confidence were directly related to the sources of sport confidence identified by Hays et al. (2007). For example, poor performances, poor preparation, poor coaching, and illness/injury demonstrate a lack of physical and mental preparation, performance accomplishments, and coaching sources of sport confidence. As with the sources of

confidence previously identified by world-class athletes (Hays et al., 2007), the confidence debilitating factors highlighted in the present study also appeared to be influenced by gender, with the female athletes seemingly more susceptible to external confidence debilitating factors. For example, only the female athletes suffered confidence decrements if they had to spend less time with their personal coach due to national team training, or if they were not getting on with their coach prior to competing. A likely explanation for this is that female world-class athletes tend to derive confidence from the social support of their coach, whereas males derive confidence from a belief in their coach to set the right training (Hays et al., 2007). Nonetheless, this finding has implications for sports in which athletes are required to travel and compete under a national coach when competing internationally, rather than their personal coach.

The perceived pressure and expectations associated with successful world-class performance were such that at the height of their sporting success, the female athletes described lower sporting confidence than when they began their career. In contrast, the pressure and expectations associated with world-class competition did not seem to have an adverse affect on the confidence of the male athletes. While the male athletes were slightly older than the females, they had like years of experience and had achieved similar success. Consequently, the differences between the male and female responses are more likely due to gender than other explanations. It is difficult to come to any definitive conclusions about the reasons for apparent gender differences in sport confidence. Gender research in both social psychology and sport and exercise psychology has seen a shift in focus from gender differences to gender role as personality and to social context and processes (Gill, 2000). Beyond biological differences, we acquire attitudes, beliefs, emotions, and prejudices that are associated with gender and shape our identity. Once we learn the gender role behaviour "appropriate" for our culture, our behaviour and reactions to others are guided by our conceptions of masculinity and femininity. These male-female differences are reinforced by images provided by the media. For example, coverage of male and female athletes shows several forms of gender bias (e.g. Kane, 1989; Kane & Parks, 1992). Females receive substantially less coverage than males and also different coverage, reflecting gender hierarchy. Generally, the emphasis is placed on femininity and physical attractiveness for female athletes, and athletic ability and accomplishments for males.

Despite an increase in sport participation among girls and women since the mid-1960s (Coakley, 2007), gender stereotypes still exist in the social

context of sport. Sport, particularly power-based and contact sport, is often perceived as masculine, with associated masculine behaviours. Parents and others monitor the bodies and actions of girls more closely than they do those of boys, even during infancy, and this pattern of protectiveness has been shown to limit female physical skill development and participation in sports (Frederickson & Harrison, 2005). Although not specifically investigated within the context of the present study, there was some evidence in the interview transcripts that in contrast to the females, the male athletes had identified long-term outcome goals from an early age and had prepared throughout their career to realize these goals. For example, one Olympic gold medallist stated:

he [coach] said to me when I was at the age of 14, "I don't want this to come as a shock to you but you're going to go to the Olympic Games and I've seen people who when they get to an Olympic Games get really unnecessarily nervous about the whole process, so I don't want it to come as a surprise to you, I know you will go". Well I didn't go for another eight years so he was thinking that way down the line ... so at various stages in an athlete's development, the coach is actually sometimes painting the pictures that you can't possibly see.

The way in which confidence and possible gender differences impact upon goal-setting behaviours in world-class athletes needs to be investigated, particularly since goal orientation has been shown to influence performance (Burton, 1992; Vealey, 1986).

Although male athletes have been found consistently to demonstrate higher confidence than female athletes (e.g. Lirgg, 1991), Vealey (1988) found that gender differences in sport confidence did not extend to elite performers. However, whereas Vealey (1988) measured trait sport confidence, the world-class athletes in the present study described their state sport confidence at specific career moments when they had felt least and most confident going into an important competition. It is possible that male and female world-class athletes experience similar trait sport confidence, but in accordance with previous research (e.g. Corbin, 1981; Hays et al., 2007; Lirgg et al., 1996), females might be more susceptible to confidence debilitating factors than males. Support for this contention was found in the interview transcripts. For example, one female athlete highlighted, "I always actually felt confident going into the tournaments, and then it was things that might have happened in the tournament that knocked my confidence". An alternative explanation to account for the observed gender differences in self-confidence relates to differences

between males and females in reporting symptoms of self-confidence. Krane and Williams (1994) suggest that female athletes are more honest and open in their self-reporting of anxiety and confidence. Consequently, they might be more likely to reveal emotions that may be perceived as undesirable. Further research is required to objectively measure confidence in athletes competing on the world stage, and investigate the temporal patterning of self-confidence during the period preceding competition. Research with university athletes (e.g. Jones et al., 1991) has shown a reduction in self-confidence as competition neared in both sexes, but a greater decrease in females than in males. These findings need to be investigated in world-class athletes.

Associations can also be made between some of the confidence debilitating factors identified and the five main organizational stress structures associated with major international competitions: factors intrinsic to the sport, roles in the sport organization, sport relationships and interpersonal demands, athletic career and performance development issues, and organizational structure and climate of the sport (cf. Fletcher, Hanton, & Mellalieu, 2006). For example, poor preparation can be likened to "factors intrinsic to the sport", and coaching to "organizational structure and climate of the sport". Thus, relationships between organizational stress and sport confidence are evident, supported by Gould and colleagues' (1999) finding that the pressure and distractions in world-class competition can render Olympic athletes' confidence atypically "fragile" and vulnerable to instability. This is an important notion that has not been studied by investigators (Gould et al., 1999) and provides a new dimension to the concept of confidence in world-class sport performance. As evident in the present study, gender is likely to mediate this relationship.

Limitations

Although the findings of the present study indicate gender-based differences in confidence stability among world-class athletes, similar gender differences in reporting symptoms of anxiety and self-confidence might account for the results. Krane and Williams (1994) suggested that female athletes are more honest and open in their self-reporting of anxiety and confidence. Since they are more forthcoming about their feelings, they might be more likely to reveal emotions that could be perceived as undesirable. Furthermore, while it is clear that gender has an influence on such matters, it is difficult to come to any definitive conclusions about reasons for gender-based differences in sport confidence. Although biological sex is part of the gender mix, more recent research has indicated that men

and women differ primarily because they have learned to differ (Baron & Byrne, 1997).

A further limitation relates to the retrospective nature of the study and the attempts of performers to recall information about the effects of confidence on performance. Issues of recall accuracy and memory disturbance can be an issue within retrospective designs. Although attempts were made to minimize these effects by binding perceived explanations to the athletes' most and least successful performance, the reader should consider these effects when interpreting the findings. The reader should also consider the sample size used in the current study when interpreting the findings. Specifically, the use of percentage scores within the analysis process with seven athletes per group can lead to potential interpretation issues. Although the authors raise these concerns, it is felt that they are somewhat offset by the elite standard of the sample and the inclusion criteria employed within the study (i.e. Olympic Games, World Championship, and/or World Cup). It would be somewhat unrealistic to expect a large sample size using such criteria due to the logistical issues of gaining access to participants.

Conclusions

The present study provides an in-depth exploration of the role of confidence in world-class sport performance. Consistent with Vealey's (2001) contentions, high sport confidence facilitated sport performance through its positive effect on athletes' thoughts, feelings, and behaviours. However, despite the calibre of the athletes interviewed, or perhaps because of it, the athletes participating in this study were susceptible to factors that served to debilitate their confidence. These factors appear to be associated with the sources from which they derive their confidence and are influenced by gender. For example, in contrast to the males, several of the female athletes identified "pressure and expectations" as debilitating to sport confidence. The nature of expectancy in relation to confidence and performance has yet to be examined (Vealey, 2001) and would seem a fruitful line for further research.

The findings of this study are particularly relevant given that none of the athletes could enhance low feelings of confidence while in the pressurized context of world-class sport competition, resulting in performance decrements. As previously suggested by Bull and colleagues (Bull, Shambrook, James, & Brooks, 2005), rather than focus on the historically accepted approach of "how high can we get your confidence?", the findings of the present study highlight the importance of developing interventions that are geared towards protecting and maintaining sport confidence in the lead-up to competition. This finding

is particularly important for female athletes who show a pattern of confidence reduction once they have reached the top echelons of sporting performance.

To facilitate the maintenance of an athlete's sport confidence, interventions targeted towards their specific needs are urgently required. The findings of the present study emphasize the importance of the sources of sport confidence identified by Hays et al. (2007) and Vealey et al. (1998), as these would seem imperative to the confidence of athletes. The sources from which athletes derive their confidence are not only sport specific, but also influenced by demographic and organizational factors. Consequently, the focus of interventions designed to facilitate sport confidence must reflect the individual needs of the athlete and might be targeted towards increasing an athlete's range of confidence sources and types, or identifying an athlete's current sources and types of confidence and ensuring that these are intact during competition preparation phases. The ideographic approach adopted in this study provided a depth of information not possible to gain from generic questionnaires, and enabled individual differences in confidence to emerge. This approach would seem the most appropriate in intervention work in which an assessment of an athlete's sport confidence, regardless of their age, gender, competitive standard or sport type, is required.

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