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Psychosocial aspects of coaching in Olympic sport

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Psychosocial Aspects of Coaching in Olympic Sport

by

Gillian M. Cook

Doctoral Thesis

Submitted in partial fulfilment of the requirements for the award of

Doctor of Philosophy of Loughborough University

May 2019

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Abstract

Olympic coaches are recognized as performers in their own right. They influence athletes' performance, learning, and development, devote considerable time to training and competition schedules, select and manage support staff, and perform under scrupulous attention from the public, media, and National Governing Bodies. This thesis aimed to enhance our understanding of the psychosocial aspects of coaching in Olympic sport, and represents the first investigation of the psychosocial factors which discriminate between world-leading and world-class swimming coaches. Study One comprised a systematic review of the existing literature related to psychosocial aspects of coaching in Olympic sport. Twenty-five studies which included 207 Olympic coaches and 925 Olympic athletes were identified, and a convergent thematic analysis highlighted coach traits, states, and behaviors which were related to athlete performance in a perceived facilitative, debilitative, or neutral, mixed, or unclear manner. Whilst this synthesis provides a valuable amalgamation of existing information, it also highlighted significant limitations. In particular, much of the research was atheoretical, there was limited empirical progression, there a predominant focus on coaches' bright characteristics, and there was little use of multi-variate and comparative designs. The existing literature has treated Olympic coaches as a homogenous group, and has not yet explored the factors which may discriminate between coaches who are more and less successful. In order to examine these potentially discriminating factors, 38 Olympic swimming coaches and 38 Olympic swimmers participated in four empirical studies across this thesis. The included coaches had collectively coached swimmers to win a total of 354 Olympic medals, of which 156 were Olympic gold medals. Study Two quantitatively examined the psychosocial characteristics which discriminated between world-leading (i.e. Olympic gold medal winning) and world-class (i.e. Olympic non-gold medal winning) swimming coaches. Psychometrically validated self-report questionnaires were used which covered the Big Five personality traits, emotional intelligence, hardiness, and the dark triad, and a series of one-way multivariate analysis of variances (MANOVAs) with follow-up univariate F-tests were employed to analyze the results and identify any significant differences between the two groups. The results showed that the world-leading coaches perceived themselves as significantly more agreeable, with a greater perception of emotion and ability to manage their own emotion, and were less Machiavellian and narcissistic in comparison with the world-class coaches. Study Three aimed to quantitatively examine whether Olympic swimmers perceived any discriminating

psychosocial characteristics between world-leading and world-class coaches. The study employed the corresponding observer-report psychometric questionnaires which covered the Big Five personality traits, emotional intelligence, hardiness, and the dark triad, and used a series of one-way MANOVAs with follow-up univariate F-tests to detect differences between the two groups. The findings demonstrated that the swimmers perceived that the world-leading coaches were more conscientious, higher on openness to experience, better at perceiving emotion and managing other emotion, and less narcissistic in comparison with the world-class coaches. Study Four used a qualitative design to explore world-leading and world-class coaches' perceptions of psychosocial factors which potentially discriminate between the two groups, and this added important nuances to the previous quantitative studies and developed a more rounded appreciation of these coaches. Semi-structured interviews were conducted which covered their perceived motivation, behavior, communication, environment, relationships, luck, overcoming difficulties, and coping with pressure, and thematic analysis was used to analyze the findings. The results highlighted discriminating factors between the two groups within the themes of motivation (i.e. childhood adversity, the need to win and not to lose, striving for perfection, and obsession), underpinning personal bonds (i.e. deep caring, belief in your own abilities, attention to swimmer emotion, expression of appropriate emotion, and building mutual trust), their improvement orientation (i.e. utilization of sport science, innovation, provision of feedback, adaptability, and culture of excellence), and Olympic event management (i.e. knowledge and detailed preparation, and providing emotional stability). Finally, Study Five qualitatively explored swimmers' perceptions of world-leading and world-class coaches. Using semi-structured interviews and thematic analysis, the results demonstrated that the swimmers perceived discriminating factors across the themes of coach personal qualities (i.e. inspirational motivator, focus on winning and avoiding losing, self-assurance, holistic care, and trustworthiness), their creation of a stimulating environment (i.e. novelty, management of own and other emotions, consistency of engagement, focus of feedback, and training culture), and the management of emotions at the Olympic Games (i.e. management of own emotional expression, and management of swimmers' psychological state). The overarching applied implications of this thesis are that the factors which discriminate between these two groups of coaches are likely to be advantageous for coaching a swimmer to win an Olympic gold medal, and that they can be used to inform coach development programs.

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Chapter One

Introduction

Sport plays a central role within society and the importance and identity attached to sporting success is exemplified by the vast media coverage devoted to it. National governments recognize the significance of sport at the highest level, with events such as the Olympic Games becoming cultural spectacles that are supported by significant financial investment. This has moved sport to a level where it can no longer be regarded as just a game, and the requirement to deliver winning sport performances has led to close attention on all of the factors underpinning success. This in turn has prompted a rapid growth in disciplines such as sport science and coaching science which offer the potential of delivering cutting edge innovation and a competitive advantage. Coaching has historically been viewed as a “clichéd picture of people in tracksuits shouting instructions from the side-lines” (Sport England, 2017, p. 11), but the understanding that coaches are essential individuals in maximizing athletes’ sporting potential has led to a paradigm shift in this approach, and high level coaching is now fast approaching full professionalization. Sport is characterized by close, frequent, and direct interactions which produce immediate objective outcomes, and this provides coaches with many opportunities to influence performance outcomes. Indeed, sports commentators frequently directly correlate the athletic outcome with the coach’s performance. In victory they laud the tactical guile of the coach who masterminded the team or athlete to the championship or podium, whereas in defeat they blame the coach for being ineffective. Athletes also recognize their coach’s importance and given the opportunity almost always acknowledge the role of their coach in the outcome. This is exemplified by two-time Olympic gold medal winner Sir Andrew Murray. On the 7th July 2013, Andy won his maiden Wimbledon title, becoming the first British man in 77 years to achieve this feat, and the first person he thanked during his on-court victory speech was his coach, Ivan Lendl.

This one is especially for Ivan...He’s a fantastic person, he’s worked extremely hard with me, and he’s been very patient because I’m not easy at times. Thank you very much. (BBC, 2013)

This grateful acknowledgement highlights the influential role that coaches play in an athlete's achievements. Coaching can be regarded as a social process involving a dynamic interaction between coaches, athletes, and the environment (Cushion, 2010). While coaching is best conceptualized as an interpersonal process (Jowett, 2017), at the heart of this relationship is the coach, playing a pivotal role and exerting great influence on athlete outcomes. The importance of focusing on the coach was recently noted by McCarthy and Giges (2016) who stated that "research on the psychology of coaching in sport overwhelmingly favors the act of coaching over the person who does the coaching. It seems sensible that, for the betterment of coaching in all sports, the research emphasis should begin with the person who does the coaching and recognize how the person can best be supported to coach and from there enrich their own lives and the many thousands who pass before them from playground to podium" (p. 108). This approach is built on an understanding that the coach's own cognitions, attitudes, and behaviors influence whether athletes learn, thrive, and achieve at the highest level. Four-time Olympic gold medal winner Serena Williams certainly recognized the influence of her coach, stating in her on-court speech immediately after winning the 2015 Australian Open:

I can't leave without thanking my friends and my family, and my coach, Patrick, for getting me through this. You really believed in me Patrick. There were moments when I didn't believe in me and you did, and you really were able to help me get through this week, these two weeks, and everything. I am so grateful to have you in my life and on my team. (Eurosport, 2015)

1.1 Why is Coaching Research Important?

Coaching researchers have dedicated many articles to the challenges faced by coaching scientists (e.g. Abraham & Collins, 2011; Abraham, Collins, & Martindale, 2006; Lyle, 2018). A recurrent theme is the questioning of the relevance of their research output to the intensely practical world of coaching. This can be summarized as "why is research important? I know it works and that's enough" (Passmore & Fillery-Travis, 2011, p. 72).

There are a multitude of reasons for conducting coaching research. To continually improve and find new ways to deliver medal-winning performances, coaches need to ensure that they can demonstrate positive outcomes which in turn can influence financial investment in further coach development. Like the other sport science disciplines, tangible costs should not be

the whole story. A price cannot be placed on giving an individual a positive sporting experience, or the improvement in their self-esteem, resilience, or ability to work with others. Relative to other science disciplines, comparatively little is known about coaching, and research can act as a vehicle to support coaching as a recognized field of study with sequential benefits to coaches as knowledge in the field increases. Research can also inform relevant coach education. Many coaching researchers have commented on the gap between the extant literature and coach development, and research can provide the evidence for educational initiatives and enhance the credibility of the practice as well as the training organization (Farrow, Baker, & MacMahon, 2013). Research can also develop coach specific theories focusing on real-world issues that directly impact on coaching practice. Finally, with much being written about the professionalization of coaching, research can and must support this, with the opportunity to enrich the knowledge base of coaching providing the potential to enhance the performance of current coaches. This research imperative was reflected in a recent Sport England statement regarding the need to “invest in innovative projects and solutions that will help coaches become even more effective” (Sport England, 2017, p. 27). Many governments have openly declared an interest in investing in coach research which could enhance their countries sporting success, and the UK Department for Culture, Media, and Sport stated:

The international sporting stage is becoming increasingly competitive – other nations are continually devising and revising their own programmes of support for their Olympians and Paralympians driving an expensive international market in coaches. The most pressing question for Olympic and Paralympic sport after Rio 2016 is how to sustain our success. (Department for Culture, Media, and Sport, 2015, p. 34)

1.2 Why Research Psychosocial Aspects of Coaching in Olympic Sport?

From a personal perspective, my interest in the psychosocial aspects of coaching in Olympic sport has been driven by several factors. I played tennis from a young age and experienced first-hand the influence that coaches have on technical and tactical progression, alongside psychological and personal development and growth. Ian Woodcraft, my tennis coach throughout my teens, hugely impacted my motivation through his enthusiasm and positivity which was apparent in every training session. I completed my first LTA tennis coaching qualification when I was 16, and subsequently completed two more tennis qualifications

alongside gaining a coaching qualification in ski instructing. I enjoyed each of these courses, and developed the knowledge required to teach the technical and tactical aspects of the sports. However, what subsequently struck me was the lack of training regarding the psychosocial aspects of coaching, and the lack of acknowledgement that coaching is more than the osmosis of technical and tactical knowledge from the coach to the athlete. I also developed a strong relationship with British Swimming during my MSc at Loughborough University, with my thesis investigating coaches' and managers' perceptions of the sport psychology service prior to the 2012 Olympic Games, and exploring their requirements and preferences for a future service. The coaches discussed the importance of sport psychology not only for athletes, but also for themselves. Finally, alongside my PhD, I successfully completed the British Psychological Society's Qualification in Sport and Exercise Psychology (Stage 2). My work with elite athletes from a range of sports highlighted the tremendous impact of the coach on their performance, psychological development, and thriving. I have also worked closely with elite coaches to collaboratively identify the factors which influence their performance and then delivered the appropriate interventions, which further reinforced my belief that coaching, like athletic performance, is a mental as well as physical endeavor.

From a scientific perspective, coaches working with Olympic athletes are at the very pinnacle of their profession and so constitute an excellent cohort to investigate factors that lead to coaching success. The Olympic Games are acknowledged to be a unique sporting occasion (Gould & Maynard, 2009; Henriksen, 2015; McCann, 2008), with no other sporting event combining so many nations and different competitions at the same time and in the same place, creating an unparalleled sense of size and spectacle. The Olympic Games occur only once every four years, and sports which seldom receive media coverage are thrust into the media glare, ensuring that success or failure is a very public event at home and internationally (Kristiansen, Hanstad, & Roberts, 2011). The harsh reality is that a successful performance can secure funding for the future and compensate for the long periods of intense work, whereas failure can conversely lead to disinvestment and breaking up of support teams (Haberl & Peterson, 2006). Distant friends and family members of coaches and athletes clamor for tickets to accompany them to the Olympic Games, and the atmosphere is laced with exhilaration and excitement, but also exhaustion (McCann, 2008). Compounded by the weight of the additional security required due to the threat of terrorist incidents (Haberl & Peterson, 2006), and the event itself being the

culmination of four years training with the outcome possibly over in a matter of seconds, it is clear that there is a very strong mental side to the Olympic Games for both athletes *and* coaches. Therefore, it is no surprise that researchers are increasingly interested in what it takes psychologically for coaches to prepare for, and then perform at, the Olympic Games.

Coaches are recognized as performers in their own right (Gould, Greenleaf, Guinan, & Chang, 2002). They are expected to perform optimally within a highly pressurized and results-oriented climate, and extensive international travel with long working hours is required. Coaching is both an intrapersonal and interpersonal process, with roles including facilitating athletes' well-being and performance, negotiating environmental and organizational issues, and managing ever-growing teams of support staff (Rynne, Mallett, & Rabjohns, 2016; Thelwell, Wagstaff, Rayner, Chapman, & Barker, 2017). The volatile and stressful nature of coaching is laid bare by employment contracts often predicated on performance outcomes (Fletcher & Scott, 2010), and all of these issues highlight that coach psychosocial factors are clearly a matter of importance. Given that coaching is acknowledged to encompass many psychosocial elements (e.g. Hodgson, Butt, & Maynard, 2017), and given that the Olympic environment is unique, there is an imperative to build a knowledge base regarding psychosocial aspects of coaching in Olympic sport. The emphasis within sport psychology has historically related to the factors which enable athletes to perform successfully. Recent research has continued to emphasize this and focused on the psychosocial factors which discriminate multiple Olympic medal winning athletes from others (Hardy et al., 2017). Many sport psychology researchers have now begun to expand their focus beyond athletes, and coach research has gathered momentum. Mirroring the athlete research line of inquiry of identifying factors that discriminate medal winning athletes from others, one dominant unanswered question for coaching research is which psychosocial factors discriminate world-leading coaches from world-class ones. This is also a real-world issue for coaches, as illustrated by former England football manager, Roy Hodgson:

If we're talking about magic in football, the only magicians I know are people like Sir Alex [Ferguson]. Year after year he keeps producing incredible performances from his teams and his players, and keeps being able to rebuild sides from the ashes of the previous team. There's not so much you can say other than we'd all like to know how he does it. We'd all like to know what the secret is. (BBC, 2013)

1.3 Purpose and Structure of this Thesis

The purpose of this thesis is to research the psychosocial aspects of coaching in Olympic sport. More specifically, this thesis aims to (i) systematically review the research investigating the psychosocial aspects of coaching in Olympic sport, and (ii) investigate the psychosocial factors that discriminate world-leading (i.e. Olympic gold medal winning) from world-class (i.e. Olympic non-gold medal winning) swimming coaches.

This thesis comprises eight chapters, beginning with this introduction as chapter one. Chapter two includes a literature review of conceptualizations of coaching and psychosocial models of sport coaching, and chapter three presents a systematic review of psychosocial aspects of coaching in Olympic sport. Chapter four comprises a quantitative examination of the psychosocial characteristics which discriminate between 36 world-leading and world-class swimming coaches. Acknowledging the vital role of athlete perspectives in shaping coaching outcomes, chapter five reports a quantitative examination aiming to understand 38 Olympic swimmers' perceptions of the psychosocial discriminators between world-leading and world-class coaches. In order to develop a more nuanced understanding of Olympic coaching, chapter six presents a qualitative study which explored 38 Olympic coaches' perceptions of the psychosocial factors that discriminate between world-leading and world-class swimming coaches. Building on this research, chapter seven reports a qualitative study of 38 Olympic swimmers and examines their perceptions of the psychosocial discriminators between world-leading and world-leading coaches. Finally, chapter eight presents a summary and discussion of the studies included within this thesis, and provides an overall conclusion.

Chapter Two

Literature Review

In the previous chapter, I highlighted the relevance of sport coaching research and explored my personal interest in the field, discussing the importance of researching the psychosocial aspects of coaching in Olympic sport. Chapter Two comprises a literature review with conceptualizations of coaching, psychosocial models of sport coaching, and a critical summary of the research.

2.1 Introduction

Sport psychologists have long been interested in the psychosocial aspects of coaching. Coleman Griffith, widely regarded as the father of modern sport psychology (Wright & Gould, 2012), stated that a key role of sport psychologists was to observe effective coaches with the aim of disseminating this information to less experienced coaches, and sport psychology had a scientific obligation to enhance and rigorously research coaching practice (Griffith, 1925, 1934). The term coaching itself has an interesting history, originating from the Hungarian village of Kocs, where comfortable wheeled carriages (koczi) were developed to carry passengers over difficult terrain and protect them from the elements (Stern, 2004). The term has evolved over the centuries and is now used in a number of contexts, extending from sport coaching and more recently expanding to executive coaching (Kampa-Kokesch & Anderson, 2001).

Several papers have reviewed and debated the definition of coaching, with Stober and Grant (2006) suggesting that coaching involves “a collaborative and egalitarian relationship between a coach, who is not necessarily a domain-specific specialist, and client, which involves a systematic process that focuses on collaborative goal setting to construct solutions and employ goal attainment process with the aim of fostering the on-going self-directed learning and personal growth of the client” (p. 2). A more recent definition proposed by Passmore and Fillery-Travis (2011) contends that “coaching is a Socratic based future focused dialogue between a facilitator (coach) and a participant (client), the purpose is to stimulate the self-awareness and personal responsibility of the participant” (p. 74). A consistent thread throughout

the literature is that coaching is a human change methodology, wherein a coach stretches and develops a client's capacity or performance.

2.2 Conceptualizations of Coaching

Coaching research can be traced back to 1937, with Gorby's (1937) study of coaches' impact within manufacturing. Notwithstanding its methodological limitations, it was the first study to highlight the positive impact of coaches within organizations. Research activity increased in the 1970s, with an initial focus on sport coaching, drawing on psychology, pedagogy, and biomechanics to consider coaching, learning, and instructional processes (Gilbert & Trudel, 2004). In the 1990s authors such as Kilburg (1996, 2000) and Kampa-Kokesch and Anderson (2001) recognized the potential application of coaching within other settings, such as the workplace. Broadly, the research has established that coaching is a collaborative and interpersonal process between a coach and a client with the purpose of achieving a desired goal (Spence & Grant, 2007). The coaching process typically facilitates goal attainment by (1) identifying desired outcomes, (2) establishing goals, (3) identifying strengths and weaknesses to enhance motivation and build self-efficacy, (4) identifying current resources and developing an action plan, (5) monitoring and evaluating progress towards the desired goal, and (6) altering actions plans based on the evaluation and feedback (Grant, Passmore, Cavanagh, & Parker, 2010).

Coaching can be categorized under one of three headings: skills coaching, performance coaching, and developmental coaching (Grant et al., 2010). Skills coaching is concerned with developing a specifically defined set of attributes. Generally, the coach will use role-modeling to demonstrate the required skills or behaviors, followed by a process of rehearsal and feedback. Performance coaching focuses on improving performance in a designated timeframe, which may range from weeks to years. This form of coaching is concerned with setting goals, overcoming obstacles, and evaluating and reflecting on performance. It is more focused and strategic than skills coaching, and may be in relation to a specified workplace issue or following a performance review. Developmental coaching is the broadest form of coaching, and relates to personal and professional development. It emphasizes the enhancement of an individual's ability to meet current and future challenges in a more effective manner through introspection and an increased awareness of the self, others, and the environment.

Executive coaching is primarily developmental in nature. It is defined as “a helping relationship formed between a client who has managerial authority and responsibility in an organization and a consultant who uses a wide variety of behavioral techniques and methods to help the client achieve a mutually identified set of goals to improve his or her professional performance and personal satisfaction and, consequently, to improve the effectiveness of the client’s organization within a formally defined coaching agreement” (Kilburg, 2000, p 142). The related research has primarily investigated coach behaviors, client behaviors, and the coach-client relationship. Many studies have attempted to identify the attributes of effective coaches. Researchers have emphasized the importance of interpersonal skills such as communication and instrumental support, with Hall, Otazo, and Hollenback (1999) highlighting behaviors which included challenging, listening, reflecting, and checking for understanding. Jarvis, Lane, and Fillery-Travis (2006) identified three key attributes, which were self-awareness, core coach competencies, and an in-depth knowledge of the ethics and management of relationships. The research has continued to provide broadly similar findings which gives a good understanding of the core attributes and behaviors that new coaches should look to develop. Other researchers have focused on the impact of the client and their attributes on the coaching relationship. Motivation to learn has been highlighted as a critical factor, including the belief that coaching is relevant, beneficial, and important for performance enhancement (Reynolds, Caley, & Mason, 2002). Research has also explored the influence of gender and personality on receptivity to coaching and although the results were inconclusive, the authors highlighted the importance of researching the influence of the wider network and culture on coaching outcomes (Dawdy, 2004; Singh & Vinnicombe, 2005). Finally, the coach-client relationship has been widely researched, demonstrating that warmth and empathy typically correlate more with outcomes than the particular form of intervention (Lambert & Barley, 2002). Wasylyshyn (2003) found that the most frequently reported characteristic of effective coaches was the ability to establish strong interpersonal relationships, although the surveyed individuals were all working with one specific coach which limited the generalizability of the results. Boyce, Jackson, and Neale (2010) worked in a military coach-client relationship context and demonstrated that rapport, trust, and commitment positively predicted outcomes including the client’s reaction, behavioral change, and overall results. The authors highlighted the utility of future research examining the matching hypothesis between coach and client.

Coaching research has continued to strengthen and evolve, particularly within sport. The sport environment differs from the organizational context. It can operate within the skills, performance or developmental categories, there are individual and team formats, participants vary from young to old, and the participants level ranges from recreational to professional and Olympic athletes. Despite nearly five decades of research, there is no definitive definition of sports coaching (Cooper & Allen, 2017), and the lack of coherency and specificity limits the empirical progression of the field (Jowett, 2017). Cushion (2010) and Potrac, Jones, and Armour (2002) both state that coaching is a goal-oriented social process which results from the dynamic interaction between the coach, athlete, and the environment, with the aim of positively influencing athlete learning, development, and performance. This definition draws upon Lyle's (2002) earlier work contending that a coach fulfils a leadership role characterized by goal attainment, and that the coaching process incorporates multiple behaviors, activities, interactions, processes, individuals, and organizational functions. While these definitions provide a description of the multifactorial nature of coaching, they do not detail the factors which contribute to the coaching process. Coaching has also been described as a complex and dynamic activity with coaches working "at the edge of chaos" (Bowes & Jones, 2006, p. 235), negotiating ambiguities and intricacies. Jones and Ronglan (2017) expanded on this definition and stated that coaches manage this complexity through a process of orchestration. The authors described orchestration as a process which provides a sense of order via interpersonal interactions such as communication, empathy, perspective taking, collaborating, communicating, empowering, and trusting. However, the definitions encompass both chaos and order, and the breadth of the definitions provides little direction regarding what exactly sport coaching is and how it differs from other forms of coaching. Jowett (2017) described coaching as an interpersonal process involving both the coach and athlete, which can only be understood through the quality of the coach-athlete interaction. Although coaching may be best conceptualized as an interconnected relationship, at its core lies the coach, and their behaviors, cognitions, and attitudes heavily influence the process. The lack of an agreed definition and parameters surrounding sport coaching represents an obstacle to empirical progress (Barnson, 2014; Cushion, 2007).

Cruickshank and Collins (2015) described the various tasks which coaches are required to perform, including organizing training sessions, supporting the development of tactical, technical, and physical skills for competition, supporting wider social development beyond the

training environment, and leading performers throughout a season. However, the tasks which a coach performs will vary depending on their context or domain. Lyle (2002) outlined two coaching domains. The first is participation coaching, where the dominant focus lies on a positive and engaging sport experience. Therefore, participation coaches typically emphasize training rather than competition, the goal is characterized by short-term satisfaction, and the focus is on individual episodic sessions rather than an integrated and progressive process. In contrast, performance coaching involves both short- and long-term objectives with specific competition goals identified, an intense commitment to preparing training programs, an obvious attempt to influence performance variables, and there is substantial interpersonal contact between the coach and athlete. Cushion (2014) stated that for the betterment of coaching, researchers need to capture the subtlety of the coaching process in specific contexts, and create a clear set of concepts and principles which reflect coaches' actual practice (Cushion, Armour, & Jones, 2006).

2.3 Psychosocial Models of Sport Coaching

Following the pioneering observational work of Tharp and Gallimore (1976) with eminent basketball coach John Wooden, the interest in identifying and modeling definitive coaching principles has burgeoned (Vella, Oades, & Crowe, 2010). These models allow coaches to base their practice and behaviors on a specific set of principles rather than from intuition, emotion, and experience, and provide coach development programs with a set of evidence-based practice guidelines (Saury & Durand, 1998). Nonetheless, some researchers have argued that these models are too simplistic and reductionist, and are consequently limited in their ability to represent and influence coaching practice (Cushion, 2007; Cushion et al., 2006; Lyle, 2002). However, many of the models were not developed for immediate use by coaches, but rather to inform researchers of the relevant factors which affect coach behavior, and to enable them to study the impact of these behaviors on athlete performance and development (Vella et al., 2010). The majority of these models are situated within the theoretical perspectives of leadership, coach-athlete relationships, and coach effectiveness, and the main areas of research are outlined below.

2.3.1 Leadership models. Much of the sport leadership literature has concentrated on Smoll and Smith's (1989) cognitive-mediational model and Chelladurai's (1977, 2007) multidimensional model of sport leadership. The cognitive-mediational model of leadership was

developed from studies of youth sport coaches, and suggests that situational factors, individual difference variables, and cognitive processes mediate the relationship between the antecedents, behaviors, and outcomes. Simply put, the interactions of the coach's psychosocial characteristics and the situation will determine their behaviors. However, the ultimate effect of these behaviors is determined by how the athlete perceives them. Change-oriented or promotion-oriented feedback, for example, will have different effects on an athlete's performance, motivation, and self-esteem depending on their interpretation of this behavior. A series of studies has provided evidence for this model, demonstrating youth coaches' varied impact on youth athletes' participation, motivation, self-esteem, satisfaction, and anxiety (Smoll & Smith, 2002). Chelladurai's (2007) multidimensional model of sport leadership combined several theories of leadership to conceptualize leadership behaviors and processes. The model postulates that athletes' performance outcomes and satisfaction are dependent on two clusters of related factors. The first includes antecedent factors relating to the coach's characteristics (e.g. personality or experience), the athlete's characteristics (e.g. age, gender, or experience), and the situational constraints (e.g. the strength of the opposition). The second cluster includes the required coach behavior for the situation, the athlete's preferred behavior, and the actual behavior of the coach. Each antecedent factor will have a different influence on the coach's behavior. The basic assertion of the model is performance and satisfaction will be enhanced when there is a match between the behavior required for the situation, the athlete's preferred behavior, and the coach's actual behavior. Research has generally supported the predictions of the model, for example, finding that older athletes prefer autocratic and socially supportive leadership, with performance and satisfaction related to the congruence between the coach's behavior and the athlete's preference (Horn, 2002).

More recently, research has begun to examine transformational theories of leadership within coaching. Transformational leadership is described as a process through which leaders use behaviors such as idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration to positively impact follower outcomes (Bass, 1985). Although only relatively recently applied to sport, there is a growing body of research which has demonstrated that transformational behaviors affect athlete outcomes (e.g. Arthur, Woodman, Ong, Hardy, & Ntoumanis, 2011; Price & Weiss, 2013). Indeed, the research has demonstrated that transformation behaviors predict athletes' intrinsic motivation (Charbonneau, Barling, &

Kelloway, 2001), well-being and need satisfaction (Stenling & Tafvelin, 2014), and effort (Arthur et al., 2011). However much of the research has relied on quantitative questionnaires from the same source using the same method, otherwise referred to as common-source common-method bias. Taken together, the leadership literature has provided a broad understanding of coach behavior, although more research is required which tests the specific antecedents and outcomes of these models.

2.3.2 Coach-athlete relationship models. The coach-athlete relationship has also been used to study coaching. Coaching is a co-created process between the coach and athlete, and these models contend that the quality of these interpersonal processes determine athlete outcomes. Jowett and Shanmugam (2016) conceptualized the coach-athlete relationship as a social situation that is continuously shaped by the interpersonal thoughts, feelings, and behaviors of both the coach and athlete. Jowett and Shanmugam's (2016) operational model contends that the quality of the coach-athlete relationship is determined by the interpersonal feelings of closeness between the coach and athlete, the interpersonal thoughts of maintaining a strong and committed relationship over time, complimentary interpersonal behaviors, and co-orientation through the interdependence between the coach and athlete. These thoughts, feelings, and behaviors are underpinned by the coach's and athlete's individual difference characteristics (e.g. personality), wider socio-cultural sport context (e.g. norms), and relationship type (e.g. same/other sex). Research has demonstrated that high quality coach-athlete relationships enhance athlete motivation (Adie & Jowett, 2010), improve athlete self-concept (Jowett, 2008), and influence athletes' subjective evaluations of their performance (Rhind & Jowett, 2010). Although research has used Bowlby's Attachment Theory (Bowlby, 1982) to understand athletes and coaches interaction orientations, finding that attachment style impacts upon the perceived quality of the relationship (Davis & Jowett, 2014), more work is required which examines the antecedent factors to better explore and explain the process. Indeed, Yang and Jowett (2017) stated that "further research is warranted to explore the relative contributions of personality factors to the quality of the coach-athlete relationship and to explore the way in which personality influences relationship quality" (p. 59).

Mageau and Vallerand (2003) developed the coach-athlete relationship model of motivation. They asserted that coaches use of autonomy-supportive behaviors will increase athletes' intrinsic and self-determined motivation by meeting their basic psychological needs of

autonomy, relatedness, and competence. Examples of these coaching behaviors include providing choice to athletes, providing a rationale for tasks and decision making, providing athletes with opportunities for independent work, asking athletes facilitative questions, and acknowledging athletes' feelings and perspectives. In a study with high school coaches, Amorose and Anderson-Butcher (2007) found that autonomy-supporting leadership predicted athletes' self-determination, leading to higher persistence, effort, and a greater sense of autonomy. In a case study of an Olympic track and field relay team, Mallett (2005) suggested that the use of autonomy-supporting behaviors enhances athlete performance outcomes. However, further work is required which directly tests this model and examines the specific contexts in which coaches are most likely to employ these behaviors.

2.3.3 Coaching effectiveness models. The majority of psychosocial studies have attempted to understand coach effectiveness (Flett, Carson Sackett, & Camiré, 2017). Horn (2008) developed a working model of coaching effectiveness in which the antecedents of coach behavior were socio-cultural factors, organizational factors, the athlete's personal characteristics, and the coach's personal characteristics. The link between these antecedent factors and behaviors is mediated through the coach's expectations, beliefs, values, and goals. She contended that a coach's behavior directly influences athletes' motivation, self-perceptions, beliefs and attitudes, and indirectly influences athletes' through their perceptions and interpretations of those coaching behaviors. In a review of the literature, Côté and Gilbert (2009) noted that coaching effectiveness has been defined in a myriad of ways, including win-loss percentages, athletes' positive psychological responses such as self-confidence or satisfaction and enjoyment, or via a coach's cumulative experience of 10 years or 10,000 hours. Drawing the literature together, they defined coaching effectiveness as "the consistent application of integrated professional, interpersonal, and intrapersonal knowledge to improve athletes' competence, confidence, connection and character in specific coaching contexts" (p. 316). Their integrative definition of coaching effectiveness asserts that effectiveness is context specific and dependent on whether the coach is operating in recreational, developmental, or elite sport. They stated that effective coaching results in positive changes in athlete outcomes of competence, confidence, connection, and character, and these changes occur through coaches' application and integration of both declarative and procedural knowledge. Declarative knowledge includes sport-specific professional and pedagogical knowledge. Procedural knowledge includes

interpersonal knowledge regarding working successfully with others in complex environments, and intrapersonal knowledge that relates to a coach's understanding of themselves and is concerned with introspection and reflection.

The behaviors associated with effective coaching were initially of primary interest to researchers. Tharp and Gallimore (1976), who observed leading basketball coach John Wooden, found that his behaviors were characterized by verbal instruction (50%), encouraging players to hustle (13%), scolding and re-instructing (8%), praising and encouraging (7%), scolding statements emphasizing displeasure (7%), modeling positive performance (3%), modeling negative performance (2%), and uncodable or other (10%). Côté, Salmela, Trudel, Baria and Russell's (1995) examined elite gymnastics coaches to determine coach effectiveness, and found that they created supportive training environments through the use of positive feedback, technical instruction, mental skills training, and simulated competition. In an interview study with expert rowing coaches and athletes, Côté and Sedgwick (2003) identified seven behaviors including coaches' extensive planning for training and competition, attempting to enhance athlete self-confidence, facilitating athlete goal setting, teaching technical and physical skills, recognizing athlete differences, establishing positive coach-athlete relationships, and attempting to create a positive training environment.

A range of studies have examined coaches' opinions of their perceived effectiveness. In a series of seminal studies, Gould and colleagues (Gould, Greenleaf, Guinan, Dieffenbach, & McCann, 2001; Gould, Greenleaf, Chung, & Guinan, 2002; Gould, Guinan, Greenleaf, & Chung, 2002; Gould, Guinan, Greenleaf, Medbery, & Peterson, 1999; Greenleaf, Gould, & Dieffenbach, 2001) explored coaches' characteristics and their perceived relationship with athletes' performances at the Olympic Games. Utilizing coaches and athletes from a range of sports, they found that coaches had both positive and negative effects on athletes at the Olympic Games. The positively related factors included trust and friendship with athletes, planning, staying calm under pressure, and making decisive decisions, and the negative influences included coaches' inability to handle pressure, avoid distraction, deal with crises, poor communication, and setting unrealistic expectations. More recently, Mallett and colleagues (Lara-Bercial & Mallett, 2016; Mallett & Coulter, 2016; Mallett & Lara-Bercial, 2016) qualitatively and quantitatively examined psychosocial aspects of coaching from a range of team and individual Olympic and professional sports, with the coaches all having won a major championship with multiple

individuals or teams. Using both coach and athlete data, the research examined the coaches' Big Five personality traits of conscientiousness, agreeableness, openness, extraversion, and neuroticism, as well as their personal strivings, and the interviews explored the coach's values, beliefs, and behaviors. The results demonstrated that the coaches were conscientious with a strong work ethic, confident, approached problems in a positive manner, athlete-centred and holistic, morally virtuous, and effective communicators, planners, decision makers, and relationship builders. Finally, Hodgson, Butt, and Maynard (2017) examined the psychosocial attributes of coaches from a variety of sports, who had at least 10 years of coaching experience and had led athletes to medal success at either the Olympic Games or World Championships. Using qualitative interviews, they found that the coaches had tough and positive attitudes, were confident, resilient, focused, driven to develop personally, athlete-centred, emotionally aware, could understand emotions, and could manage emotions. The body of work relating to coach effectiveness provides a broad understanding of coach variables which affect athlete outcomes, but much of the existing research has relied upon self-report assessments of coach behavior, which is problematic because coaches have been found to lack of self-awareness of their own behaviors (Jolly, 2010). Further, this research has predominantly used samples consisting of participants from multiple sports, and it is possible that the coach's effectiveness may vary dependent on a team or individual sport context.

2.4 Critical Summary

Coaching research is increasing in extent and scope and is evolving and expanding into new settings such as organizations. The literature provides a basis for understanding the definitions of what coaching is and the processes of coaching. Within the domain of sport coaching, there is evidence that particular behaviors are related to effective performance and satisfaction outcomes, with research spanning all coaching contexts. There has however been an identification that more research with better design is needed to address unexplored issues. This includes a requirement for theories which can explain when, how, and why coaches are more or less effective, as well as identifying the key factors which influence the coaching process. The current research predominately involves descriptive interviews, sometimes with successful coaches, but not involving comparisons with less successful coaches. Thus, although a knowledge base has developed around what successful coaches do, it is unclear whether less successful coaches employ the same techniques. It has been argued that the research also needs

to be more theoretically driven, and examine factors descriptively found to be related to coaching success in more depth. Mallett and colleagues (Lara-Bercial & Mallett, 2016; Mallett & Coulter, 2016; Mallett & Lara-Bercial, 2016) underpinned their research with the Big Five theory, and this work requires to be developed using other constructs hypothetically related to coach performance. Further, Lara-Bercial and Mallett (2016) highlighted that coaches and athletes often provide rose-tinted views of their practice, and given the recent exposing of darker elements associated with sport (e.g. Cruickshank & Collins, 2016), it is important that future research expands beyond the bright and begins to illuminate the dark. Many of the existing studies rely on self-report data from coaches, but it is known that coaches have limited self-awareness regarding their own behaviors, and athlete ratings have been found to correlate more strongly with actual behaviors than coaches own self-ratings (Smoll & Smith, 2006). Therefore, including individuals such as athletes in the research process in addition to the coach will help to build a clearer picture of coaching practice. Gould et al. (2001), for example, has utilized both coach and athlete data, and future work comparing the different perspectives may help to provide theoretical explanations as to why coach and athlete perceptions differ, and thus provide a more sophisticated understanding of coaching practice. In addition, many studies have been conducted as though the coach-athlete interaction has no antecedent factors. Coaches' thoughts, feelings, attitudes, and behaviors impact both their own performance and the athlete, and it is important that we first understand the coach prior to developing a picture of the coach-athlete relationship. Further, the majority of studies have included participant pools from multiple sports. Notwithstanding the strengths that this approach provides, such as developing a broad understanding of coaching, at a theoretical level, it is difficult to draw valid conclusions from studies which have included individuals from both team and individual sports as preferences for coach behaviors markedly differ depending on sport type (Baker, Yardley, & Côté, 2003). The limited research addressing these points perhaps helps to explain the research-practice gap which currently exists within coaching (Lyle, 2018). Performance coaches in particular narrowly focus on sport-specific knowledge and nuances, and therefore future work should attempt to compressively examine one sport to enhance the potential impact of the work. Finally, given the context specific nature of coaching (Cushion, 2007), it is surprising that there are a lack of systematic reviews relating to a specific context. Although narrative reviews have been conducted, such as Rynne, Mallett, and Rabjohns (2016) review of high performance coaching, it

is important that this is undertaken on a systematic basis to comprehensively bring research findings together and provide a current state of play.

In summary, this review explored conceptualizations of coaching, providing an understanding of the coaching literature across different domains. It then critically discussed conceptualizations and definitions of sport coaching, and reviewed psychosocial models of sport coaching, finding that the research has broadly utilized underlying theoretical frameworks relating to coach leadership, coach-athlete relationships, or coach effectiveness. However, this research has cut across many sporting contexts. Given the critical influence of the context, a systematic review is required which synthesizes the research related to a specific context, thus amalgamating and evaluating overarching findings that can provide contextualized future research directions.

Chapter Three: Study One

A Systematic Review of the Psychosocial Aspects of Coaching in Olympic Sport

Following Chapter Two, which reviewed conceptualizations of coaching, psychosocial models of sport coaching, and provided a critical summary of the research, Chapter Three will systematically review the research relating to psychosocial aspects of coaching in Olympic sport.

3.1 Literature Review

Coaching involves a collaborative relationship between a coach and client with the coach systematically focusing on goal-attainment to expand and enhance a client's current capacity or performance (Stober & Grant, 2006; Kilburg, 2000; Passmore & Fillery-Travis, 2011). Coach expertise is being harnessed across an ever increasing range of professional environments including business, health, and finance (Athanasopoulou & Dopson, 2018). One of the most well-known types of coach is the sport coach, whose primary purpose is to support athlete development and enhance their performance (Jones, Edwards, & Viotto Filho, 2016). Numerous definitions of sport coaching exist, but for the purpose of this review it is defined as a dynamic, social, and interpersonal process whereby coaches attempt to positively influence athletes' physical, technical, tactical and psychological development (see e.g. Abraham, Collins, & Martindale, 2006; Chelladurai, 2007; Côté & Gilbert, 2009; Cushion 2007, 2010; Horn, 2008; Jowett & Shanmugam, 2016; Lyle, 2002). Coaching is highly context specific (Cushion, 2010; Lyle, 2002), with recreational coaches emphasizing the enhancement of participant enjoyment and engagement, and performance coaches aiming to optimize athletes' goal-attainment, motivation, learning, and well-being. Within a performance setting, coaching requires considerable investment of time and effort, a strong emphasis on controlling performance variables and data management, and participation in recognized competition structures, such as the Olympic Games (Lyle, 2002; Rynne & Mallett, 2012). The Olympic Games take place once every four years and represent the most challenging and prestigious sporting competition in the world (Gould & Maynard, 2009). This is due to the global nature of the event, its unique size

and scale, and the multi-sport format, which results in enormous public interest and media scrutiny (Arnold & Sarkar, 2015; Fletcher & Sarkar, 2012). Performing at the Olympic Games has therefore been likened to competing in a crucible, with extraordinary pressure for every individual involved (Haberl & Peterson, 2006). The prolonged duration of the Games, combined with other coach stressors such as their continued employment being contingent on their athlete's performance, creates an environment that is both physically and psychologically draining (Fletcher & Scott, 2010; Mallett & Lara-Bercial, 2016).

Although sport coaching is a dynamic relational process (Cushion, 2010), it is important to understand the individual coach's psychosocial attributes as these will affect the coaching process. Following this argument, McCarthy and Giges (2016) stated that "research on the psychology of coaching in sport overwhelmingly favors the act of coaching over the person who does the coaching. It seems sensible that, for the betterment of coaching in all sport, the research emphasis should begin with the person who does the coaching" (p. 108). A psychosocial lens holds great promise as a framework for better understanding coaching given that how people act is a function of who they are (Hogan, Hogan, & Roberts, 1996; Mount & Barrick, 1998; Ployhart, Lim, & Chan, 2001; Smither, London, & Richmond, 2005). Within the related field of leadership, researchers have emphasized the study of leaders' individual difference characteristics in order to understand who they are, and these studies have provided a wealth of knowledge regarding leader functioning and effectiveness (e.g. Judge, Bono, Ilies, & Gerhardt, 2002).

While the primary role of Olympic coaches is to facilitate athletes' performances at competitions (Jones et al., 2016), coaches are also performers in their own right (Gould, Greenleaf, Guinan, & Chang, 2002). Coaches are expected to optimize their own performance within a highly pressurized results-oriented culture, and the year-round competition and training schedules necessitate a relentless investment of time and resource. They are required to facilitate athletes' well-being and performance, cope with and overcome environmental and organizational issues, and select and manage teams which include both athletes and support staff (Rynne, Mallett, & Rabjohns, 2016; Thelwell, Wagstaff, Rayner, Chapman, & Barker, 2017). Coaches' traits, states, and behaviors not only influence their own performances, but they demonstrably influence athletes' motivation, discretionary effort, performance accomplishments, well-being, and learning (Amorose, 2007; Jowett & Meek, 2000; Lyle, 2002; Mageau & Vallerand, 2003;

Smith, Smoll, & Cumming, 2007; Vealey, Armstrong, Comar, & Greenleaf, 1998). The importance of the psychosocial aspects of coaching was highlighted in Côté and Gilbert's (2009) integrative definition of coaching effectiveness. They proposed that coaching is underpinned by three forms of knowledge: professional (e.g. pedagogical, technical, and tactical knowledge), interpersonal (e.g. the ability to relate to and connect with others), and intrapersonal (e.g. self-evaluation). They stated that professional knowledge alone will not lead to effectiveness as coaching is not performed in isolation. Rather, interpersonal and intrapersonal knowledge is also required to inform and navigate simultaneous relationships with athletes, directors, and sport science support staff, and the ability of coaches to understand themselves will impact upon their own development and learning, which is crucial for their own and their athlete's performance.

Numerous researchers have attempted to understand the psychological principles contributing to Olympic athletes' performances (see e.g. Gould & Maynard, 2009; Hardy et al., 2017; Rees et al., 2016), and research investigating the corresponding psychological underpinnings of Olympic coaches' performance is now gathering momentum. There is a requirement for a contemporary review which comprehensively amalgamates, evaluates, and summarizes the evolving body of research to highlight research trends and identify overarching messages which are not apparent in individual studies. As coaching is approaching professionalization (Lyle, 2002; Rynne & Mallett, 2012; Trudel & Gilbert, 2006), it is important to fully understand coaches' behaviors and the psychological drivers that inform their practice. This knowledge will offer sporting organizations, sport psychologists, and researchers evidence-based suggestions for development programs to enhance coach performance, and provide directions for future research. Accordingly, the purpose of this study is to systematically review the research investigating the psychosocial aspects of coaching in Olympic sport.

3.2 Method

Reviews underpin primary research by synthesizing knowledge and identifying gaps within the extant literature. There are a variety of methodologies and types of review (see Dixon-Woods, Agarwal, Jones, Young, & Sutton, 2005; Gough, Thomas, & Oliver, 2012; Grant & Booth, 2009), and they are either subjective (e.g. narrative review) or explicit and criteria-based (e.g. systematic review). Narrative reviews typically involve the selection, chronicling, and ordering of individual research studies to provide a critical discussion and interpretation of a topic (Dixon-Woods et al., 2005). They have, however, been criticized for lacking transparency,

selectively citing literature, and are subject to the idiosyncratic judgements of the reviewer (Dixon-Woods et al., 2005; Greenhalgh, Thorne, & Malterud, 2018; Winterbottom, Bekker, Conner, & Mooney, 2008). In contrast, systematic reviews use a rigorous and explicit technical approach to identify, appraise, and synthesize the results of primary research addressing a specific topic (Cook, Mulrow, Haynes, 1997; Shamseer et al., 2015). Due to this methodological rigor, systematic reviews are regarded as the gold reference standard for reviews (Moher et al., 2015). They help to answer specific questions through the review of comprehensive information sources, the criteria-based selection of participants, the critical appraisal and synthesis of all relevant studies, and the provision of evidence-based inferences (Grant & Booth, 2009). Therefore, a systematic rather than narrative review was deemed the most appropriate approach to enrich our understanding of psychosocial aspects of Olympic coaching.

Systematic reviews may be conducted using meta-analysis, meta-synthesis, or meta-integration techniques (Hong, Pluye, Bujold, & Wassef, 2017). Meta-integration involves combining evidence and results from quantitative, qualitative, and mixed method studies to gain a multidimensional and comprehensive understanding of a topic (cf. Frantzen & Feters, 2016), and has been used for this review. When conducting reviews, Gough (2015) argued that “explicit methods should be used to enable transparency of perspectives driving research and to open up access to and participation in research” (p. 181). The methodology for this systematic review using meta-integration techniques was therefore informed by Preferred Reporting Items for Systematic Reviews and Meta-Analysis guidelines (Moher et al., 2015) and followed the recommendations of Van Tulder et al. (2003), Harris, Quatman, Manring, Siston, and Flanigan (2013), and Frantzen and Feters (2016). Van Tulder et al. (2003) identified the following five steps for conducting a systematic review: literature search, inclusion criteria, methodological quality assessment, data extraction, and data analysis.

3.2.1 Literature Search

The literature search strategy involved two stages to identify articles relating to psychosocial aspects of coaching in Olympic sport. An online search of the research literature was conducted by interrogating the following seven electronic databases: SPORTDiscus, PsycINFO, PsycARTICLES, ScienceDirect, Scopus, Web of Knowledge, and Medline. There were no constraints on the year of publication. The search protocol outlined a process which included a search of title, abstracts, and full papers using the following terms: (“athlete,” OR

“coach,” OR “coach-athlete,” OR “elite,” OR “effective,” OR “expert,” OR “high performance,”) AND (“Olympic,” OR “sport,” OR “world,” OR “world-class.”) The second stage involved hand searching the reference lists of the studies which met the inclusion criteria (Centre for Reviews & Dissemination; CRD, 2009).

3.2.2 Inclusion Criteria

Studies were required to meet the following inclusion criteria: (i) present original empirical data relating to the psychosocial aspects of coaching in Olympic sport; (ii) the entire study population must be explicitly from Olympic sport or must make reference to Olympic sport, and (iii) peer-reviewed and English language journal articles only.

Sifting of papers was carried out in three stages. The titles were initially screened by the author for any indication that the study included data relating to psychosocial aspects of Olympic coaching. In instances where the title suggested the inclusion of psychosocial data, the abstracts were read to establish whether the three inclusion criteria were met, and then full texts were read to confirm this (see Figure. 1). At each stage of appraisal, articles were excluded if they did not satisfy the inclusion criteria. For example, studies were not included if they did not present original empirical data relating to psychosocial aspects of Olympic coaching (e.g. Chan & Mallett, 2011), the sample did not consist of entirely of Olympic participants (e.g. Lara-Bercial & Mallett, 2016), or were not peer-reviewed and English language journal articles (e.g. Filgueira, 2016).

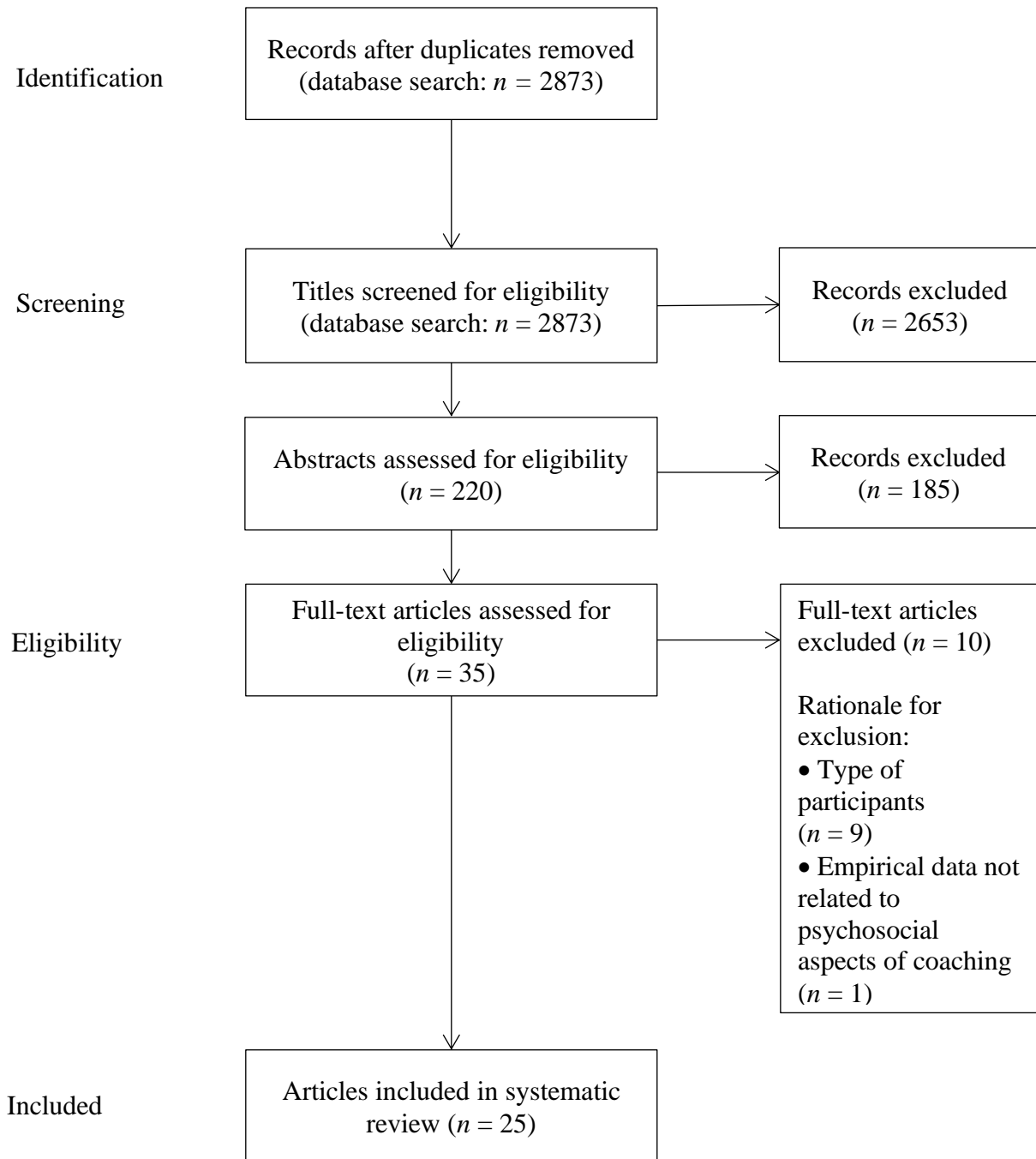


Figure 1. Study flow diagram following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines (Moher et al., 2015). N number of papers.

3.2.3 Methodological Quality Assessment

To enhance methodological rigor, and in accordance with systematic review guidelines (e.g. Harris et al., 2013; van Tulder et al., 2003) and recent reviews within sport psychology (e.g. Forsdyke, Smith, Jones & Gledhill, 2016; Gledhill, Harwood, & Forsdyke, 2017; Howells, Sarkar, & Fletcher, 2017), a peer-review team was formed to minimize bias and human error. The team included the author, the primary PhD supervisor, and a senior researcher from an external institution. Established methods for peer debriefing involve individuals who are either knowledgeable of the topic area and/or methodology supporting the process by providing methodological guidance, and by playing ‘devil’s advocate’ through the challenging of prior assumptions (Spillett, 2003).

The methodological quality of the studies was evaluated using the Mixed Methods Appraisal Tool (MMAT; Pluye, Gagnon, Griffiths, Johnson-Lafleur, 2009; Pluye et al. 2011). The MMAT is a valid and efficient tool that demonstrates excellent inter-rater reliability (Hong, Gondzalez-Reyes, Pluye, 2017; Pace et al., 2012; Souto et al., 2015). Crowe and Sheppard (2011) stated that the MMAT was the most reliable instrument to appraise mixed methods research, and the tool has recently been utilized in contemporary systematic reviews in sport psychology (viz. Bryan, O’Shea, & MacIntyre, 2017; Forsdyke et al., 2016; Gledhill, Harwood, & Forsdyke, 2017; Howells et al., 2017). The MMAT checklist is made up of two screening questions and 19 items for appraising the methodological quality of five categories of research study: (1) qualitative studies, (2) quantitative randomized controlled trials, (3) quantitative non-randomized studies, (4) quantitative descriptive studies, and (5) mixed methods studies. Each study was appraised using the corresponding methodology-domain specific criteria. All items were rated as “yes,” “no,” or “cannot tell,” and one point was given to each yes, and zero points for each no or cannot tell response. These scores produced an overall quality score ranging from 0-4, and this was converted into a percentage-based score. The MMAT was utilized in this study to provide a description of the overall quality of the included studies.

3.2.4 Data Extraction

Data describing study characteristics which included purpose, participants, sport(s), design, data collection, and the main findings were extracted from the papers and presented in Table 1.

Table 1

Summary of Studies Included in the Review

Author(s)	Purpose	Participants	Sport(s)	Design	Data collection	Main findings
Chroni, Abrahamsen, and Hemmestad (2016)	Explore stress experiences of coaches	$N = 7$ (7 males), age range of coaches = 28-53 years, coaching experience range = 4-30 years, type of participants = coaches, Olympic standard = not reported, country represented = Norway	Not reported	Qualitative	Semi-structured interviews	The findings indicated that coaches evaluated stressors as manageable (i.e. challenge appraisal) due to their positive response outcome expectancies and their specific defense mechanisms. Further, coaches were found to have both high ego and task orientations, cognitive flexibility, coaching-efficacy, and trait self-confidence.
Currie and Oates-Wilding (2012)	Investigate the factors that contribute towards coaching success and goal fulfilment	$N = 8$ (8 males), age range of coaches = not reported, mean years of coaching experience = 15 years, type of participants = coaches,	Beach volleyball, fencing, modern pentathlon, water polo, kayaking, and volleyball	Qualitative	Unstructured conversations	Coaches identified passion, commitment, desire to succeed, past athletic experience, and focusing on individual athlete's needs as integral factors contributing to their success.

D'Arripe-Longueville, Fournier, and Dubois (1998)	Investigate perceptions of effective coach-athlete interactions	Olympic standard = not reported, country represented = Not reported N = 9 (3 males, 6 females), age range of coaches = not reported, mean years of coaching experience = not reported, type of participants = coaches and athletes, Olympic standard = not reported, country represented = France	Judo	Qualitative	Semi-structured interviews	Coaches and athletes perceived the coaches' main interaction style as authoritative. This leadership style was operationalized using strategies and behaviors including: stimulating interpersonal rivalry, displaying indifference to athlete's needs, displaying favoritism, and developing specific team cohesion.
Din, Paskevich, Gabriele, and Werthner (2015)	Develop a detailed description of leadership in Olympic medal-winning sport	N = 22 (13 males, 9 females), age range of coaches = 39-68 years, mean years of coaching	Not reported	Qualitative	Semi-structured interviews	Coaches' leadership was described as demanding (i.e. directive coach behavior, and decisive decision making), relational (i.e. the coach-athlete relationship was characterized by trust and respect, teaching, and role

		experience = not reported, type of participants = coaches and athletes, Olympic standard = medalist, country represented = Canada				modeling) and solution focused leadership (i.e. vision, structured learning culture, role clarity and recognition, and analytic tenacity).
Dixon, Lee, and Ghaye (2012)	Explore how a specific Olympic diving coach operates in a high-performance environment, his background, and coaching philosophy	<i>N</i> = 1 (1 male), age of coach = not reported, mean years of coaching experience = not reported, type of participants = coach, Olympic standard = not reported, country represented = United Kingdom	Diving	Qualitative	Reflexive conversation	The findings identified that the coach defined achievement as helping individuals achieve their personal best, utilized an athlete-centered, empowering, and understanding approach, and inspired athletes through positivity and persistence.
Ge et al. (2016)	Understand the impact of the socio-cultural environment on Chinese Olympic athletes	<i>N</i> = 2 (2 males), age range of coaches = not reported, mean years of coaching	Trampoline	Qualitative	Discussion and co-authorship with two trampoline Olympic champions	Within their environment, the Olympic athletes perceived medal-oriented pressure, and discussed the difficulties associated with

		experience = not reported, type of participants = athletes, Olympic standard = gold medalists, country represented = China				their growing needs for autonomy.
Gould, Dieffenbach, and Moffett (2002)	Examine psychological characteristics and their development in Olympic champions	<i>N</i> = 30 (15 males, 15 females), age range of coaches = not reported, mean years of coaching experience = not reported, type of participants = coaches, athletes, parents, siblings, and significant others, Olympic standard = gold medalists, country represented =	Skiing, wrestling, swimming, ice hockey, speed skating, and track and field	Mixed methods	Questionnaires (i.e. The Sport Anxiety Scale (Smith, Smoll, & Schutz, 1990), Multidimensional Perfectionism Scale (Frost, Marten, Lahart, & Rosenblate, 1990), Revised Life Orientation Test (Scheier, Carver, & Bridges, 1994), The Adult Trait Hope Scale (Snyder, 1991; Snyder et al., 1999), Task Ego Orientation Scale Questionnaire	The findings indicated that coaches influenced athletes' psychological attributes by providing encouragement and unconditional support, setting expectations, meeting individual needs, being optimistic, trustworthy, and displaying confidence in athletes.

		United States of America			(Duda, 1989), The Test of Performance Strategies (Thomas, Murphy, & Hardy, 1999), and The Athletic Coping Skills Inventory (Smith, Schutz, & Smoll, 1995) and semi-structured interviews	
Gould, Greenleaf, Guinan, Dieffenbach, and McCann (2001)	Examine performance related lessons from Summer and Winter Olympic Games	N = 444 (not reported), age range of coaches = not reported, mean years of coaching experience = not reported, type of participants = coaches and athletes, Olympic standard = not reported, country represented =	Not reported	Mixed methods	Questionnaires (i.e. Atlanta survey, and Nagano survey) and individual and focus group interviews	Coaches and athletes identified many lessons for the future, including the importance of trust and team cohesion, detailed planning, enhanced fun and enjoyment during trials, and coach mental preparation strategies centering around coaching-efficacy and coping.

Gould, Greenleaf, Chung, and Guinan (2002)	Examine the variables perceived to have affected U.S. Olympic athlete performance	United States of America <i>N</i> = 379 (293 males, 86 females), age range of coaches = not reported, mean years of coaching experience = not reported, type of participants = athletes, Olympic standard = not reported, country represented = United States of America	Not reported	Quantitative	Surveys (i.e. USOC Atlanta Olympic Coach Survey, and USOC Nagano Olympic Coach Survey)	The performance influencing variables included positive coach-athlete relationships, coaches' ability to withstand pressure and crises, and coaches' expectations.
Gould, Guinan, Greenleaf, and Chung (2002)	Examine variables perceived to have influenced athlete performance and coach effectiveness in Olympic competition	<i>N</i> = 65 (53 males, 12 females), age range of coaches = 28-65 years, mean years of coaching experience = 17.29 years, type of participants =	Not reported	Quantitative	Surveys (i.e. U.S. Atlanta Olympic Games Athlete Survey, and U.S. Olympic Games Nagano Athlete Survey)	Variables perceived to have positively influenced athlete's performance included coaches' consistency of behavior, coping, setting realistic expectations, making fair but decisive decisions, and being trustworthy.

		coaches, Olympic standard = not reported, country represented = United States of America				
Gould, Guinan, Greenleaf, Medbery, and Peterson (1999)	Examine whether mental skills and strategies, as well as physical, social, and environmental factors affect Olympic performance	<i>N</i> = 33 (18 males, 15 females), age range of coaches = not reported, mean years of coaching experience = not reported, type of participants = coaches and athletes, Olympic standard = gold medalists, medalists, and non-medalists, country represented = United States of America	Not reported	Qualitative	Individual and focus group interviews	Coaches and athletes that did not meet their performance expectations identified planning and team cohesion concerns, and coaching problems including poor communication, limited coaching credibility, threat appraisal, and an unfocused demeanor. Coaches and athletes that met or exceeded performance expectations indicated that coaches' attributes included detailed planning, contentiousness, and knowledge of the sport.
Greenleaf, Gould, and	Investigate the factors perceived	<i>N</i> = 15 (4 males, 11 females), age	Not reported	Qualitative	Interviews	Coaching-specific positive performance influences

Dieffenbach (2001)	to influence Olympic athlete performance	range of coaches = not reported, mean years of coaching experience = not reported, type of participants = athletes, Olympic standard = not reported, country represented = United States of America				included being trustworthy, creating detailed plans, providing specific feedback, teaching psychological skills, and clarifying athlete roles. Negative coach-specific performance influences included valuing power, being unfocused, lacking emotional regulation, relaying inaccurate technical information, trait anxiety, threat appraisal, and neuroticism.
Jowett (2003)	Examine the nature of a coach- athlete dyad that experiences interpersonal conflict	<i>N</i> = 2 (1 male, 1 female), age of coach = not reported, years of coaching experience = 12 years, type of participants = coach and athlete, Olympic standard = silver medalist, country represented = Not reported	Not reported	Qualitative	Structured interviews	The findings revealed coach-specific themes relating to closeness (e.g. setting goals, showing commitment, trait self- confidence, coaching- efficacy, domineering, evaluating athlete on relative standing to others), co-orientation (e.g. acknowledging athlete's feelings and opinions, trait anxiety, state anxiety, ego involved, and ego oriented) and complementarity (e.g.

Jowett and Cockerill (2003)	Investigate the nature of the athlete–coach relationship	<i>N</i> = 12 (9 males, 3 females), age range of coaches = not reported, mean years of coaching experience = not reported, type of participants = athletes, Olympic standard = medalist, country represented = Brazil, Greece, Estonia, Latvia, Mexico, Russia, Spain, United States of America	Gymnastics, sailing, swimming, track and field athletics, and wrestling	Qualitative	Structured interviews	uncaring, inattentive, and lack of emotional support). Results identified coach-athlete dyad feelings of closeness (i.e. intimacy, trust, liking, respect, belief, and commitment), co-orientation (i.e. information exchange, common goals, and influence) and complementarity (i.e. roles and tasks, and support).
Kimiecik and Gould (1993)	Explore a specific coach's perceived behaviors	<i>N</i> = 1 (1 male), age of coach = 66 years, years of coaching experience = 42 years, type of participant = coach, Olympic standard = gold medalist,	Swimming	Qualitative	Interview	Findings revealed that the coach communicated enthusiasm, showed concern and understanding, demonstrated state and trait emotional intelligence, tailored communication to athletes, set realistic goals, showed

		country represented = United States of America				cognitive flexibility, provided positive and negative feedback, reinforced athlete's self-belief, and was intrinsically motivated. Within their environment, coaches and athletes identified the presence of autonomy-supportive coaching behaviors, the coach's autonomy supporting motivational style, both coach and athlete preferences for autonomy supporting behaviors, and the importance of the psychological need of relatedness.
Lyons, Rynee, and Mallett (2012)	Examine coach-athlete interactions, with a particular interest in the implementation of autonomy supportive coaching behaviors	N = 4 (1 male, 3 females), age of coach = not reported, mean years of coaching experience = 17 years, type of participants = coach and athletes, Olympic standard = not reported, country represented =	Olympic ski cross	Qualitative	Semi-structured interviews	
Mallett (2005)	Reports on the application of self-determination theory to coaching elite athletes	Not reported N = 1 (1 male), age of coach = not reported, mean years of coaching experience = not reported, type of participants = coach, Olympic standard =	Track and field athletics	Qualitative	Case study	Findings revealed that the participant coach's task orientation and autonomy supporting behaviors promoted an adaptive and enjoyable training environment, which was proposed to optimize athletes' performances.

Mallett and Coulter (2016)	Examine the personality (i.e. dispositional traits, personal strivings, and narrative identity) of a successful Olympic coach	finalist, country represented = Australia $N = 1$ (1 male), age of coach = not reported, mean years of coaching experience = 30 years, type of participant = coach, Olympic standard = multiple medalist, country represented = Not reported	Not reported	Mixed methods	Questionnaires (i.e. NEO-FFI-3, self report (Costa & McCrae, 2010) and Personal Strivings (Emmons, 1989)) and semi-structured interview	Results demonstrated that the coach was emotionally stable, agreeable, conscientious, open to new experiences, optimistic, passionate, task and ego oriented, extrinsically motivated, utilized emotion-focused coping, reinforced athlete self-belief, demonstrated other-efficacy, hardy, emotional intelligent, aimed to help and develop others, and strived for power and achievement.
Olusoga, Maynard, Hays, and Butt (2012)	Explored Olympic coaches' perceptions of the factors that enabled them to coach successfully in a stressful Olympic environment	$N = 8$ (8 males), age range of coaches = 33-53 years, mean years of coaching experience = 13.1 years, type of participants = coaches, Olympic standard = not reported, country	Not reported	Qualitative	Semi-structured interviews	Coaches reported that psychological attributes (i.e. emotional control, perception, confidence, athlete focus, communication, focus, passion, support, commitment, consistency, and fun), preparation (i.e. strategic approach, lifestyle choices, previous experience, contingency planning, team preparation, and athlete

		represented = United Kingdom				preparation), and coping (i.e. coach-specific strategies, team support, taking time out, drinking, and psychological skills) were essential for their own successful Olympic performance
Pensgaard and Roberts (2000)	Examine athlete perceptions of distress, with particular attention paid to the relative importance of dispositional and situational factors	<i>N</i> = 69 (49 males, 20 females), age range of coaches = not reported, mean years of coaching experience = not reported, type of participants = athletes, Olympic standard = not reported, country represented = Norway	Not reported	Quantitative	Questionnaires (i.e. Perceived Motivational Climate in Sport Questionnaire (Seifriz, Duda, & Chi, 1992), Perception of Success Questionnaire (Ommundsen & Roberts, 1996; Roberts, Treasure, & Balague, 1998), Sources of Distress Questionnaire (based on Scanlan, Stein, & Ravizza, 1991; Perception of Ability (based on Nicholls, Cobb, Wood, Yackel, &	Findings revealed the presence of both performance and mastery climates, indicating coaches possessed both task and ego orientations. Performance climates were associated with athlete cognitive stress, and the coach was perceived to be one sources of this distress.

Pensgaard and Roberts (2002)	Understand the importance of a mastery climate and the role of the coach in creating the climate	<i>N</i> = 7 (5 males, 2 females), age range of coaches = not reported, mean years of coaching experience = not reported, type of participants = athletes, Olympic standard = not reported, country represented = Norway	Not reported	Mixed methods	Patashnick, 1990). Questionnaires (i.e. Perception of Success Questionnaire (Roberts, Treasure, Balague, 1998) and Perception of Motivational Climate Questionnaire (Seifriz, Duda, & Chi, 1992), and structured interviews	Athletes reported a high mastery climate and low performance climate. Further, they stated a preference for a supportive and caring climate which coaches were instrumental in creating. Coaches demonstrated emotional intelligence and understanding, tailored their communication to athletes, utilized corrective feedback, provided praise/encouragement, and were task oriented.
Philippe and Seiler (2006)	Study athletes' perceptions of the quality of their relationships with their coaches	<i>N</i> = 5 (5 males), age range of coaches = not reported, mean years of coaching experience = not reported, type of participants = athletes, Olympic standard = not reported, country	Swimming	Qualitative	Structured interviews	Athletes reported that maintaining good relationships with their coach was a priority, and the elements of an effective coach-athlete relationship were as follows: closeness (i.e. respect, esteem, admiration, appreciation, professional relationship, friendship, and love), co-orientation (i.e. technical communication, savoir-être, verbal interchange,

		represented = Switzerland				problem resolution, common goals, and respect the goals set), and complementarity (i.e. seeing the positive side, using the differences, assuming responsibilities, and respecting the task). Results revealed coaches displayed an autonomy supporting motivational style, provided choice to athletes, asked facilitative questions, monitored sport science support, and created an enjoyable training environment.
Seanor, Schinke, Stamulova, Ross, and Kpazai (2017)	Investigate how athletes' training environments influence their subsequent Olympic accomplishments	<i>N</i> = 3 (2 males, 1 female), age range of coaches = not reported, mean years of coaching experience = not reported, type of participants = coach, assistant coach, and athlete, Olympic standard = medalist, country represented = Canada	Trampoline	Qualitative	Mobile conversational interview	

Sullivan and Nashman (1993)	Examine Olympic coaches' perceptions of job-related satisfactions and stressors	<i>N</i> = 10 (9 males, 1 female), age range of coaches = 35-65 years, mean years of coaching experience = not reported, type of participants = coaches, Olympic standard = not reported, country represented = United States of America	Water polo, bobsleigh, volleyball, baseball, soccer, basketball, ice hockey, and handball	Qualitative	Structured interview	Findings described coaches as exhibiting stress-induced behaviors, and under-utilizing stress-reduction techniques.
Trzaskoma-Bicsérdy, Bognár, Révész, and Géczi (2007)	Examine successful coach-athlete relationships	<i>N</i> = 5 (5 males), age range of coaches = not reported, mean years of coaching experience = not reported, type of participants = coaches and athletes, Olympic standard = medalist, country	Kayaking, swimming, and wrestling	Qualitative	Semi-structured interviews	Results identified that successful coach-athlete relationships were primarily contingent upon the coach tailoring their approach to the specific needs of the athlete.

represented =
Hungary

3.2.5 Data Analysis

Given that the majority (18 out of 25, 72 percent) of the included studies used a qualitative methodology, there was a requirement for a narrative approach to the analysis. Further, the included quantitative and mixed methods studies used heterogeneous measures, which prohibited conducting a meta-analysis on those studies. Therefore, the analytic approach utilized was a convergent qualitative meta-integration (Frantzen & Fretters, 2016; Hong et al., 2017). In order to perform this analysis, the results from all included studies were transformed into a qualitative format (Frantzen & Fretters, 2016; Pluye & Hong, 2014). For example, to transform the data from the quantitative studies into a qualitative format, the text from the paper's results section was used as opposed to the numerical outputs. The data from all of the studies was then synthesized using convergent thematic analysis (Centre for Reviews & Dissemination; CRD, 2009; Hong et al., 2017; Pope, Mays, & Popay, 2007). Convergent thematic analysis involves the identification of patterns or recurring themes through coding relevant findings from multiple studies in order to bring together, organize, and describe the findings (Frantzen & Fretters, 2016; Pope et al., 2007). The first stage involved the process of indwelling (Trumbull, Bonney, & Grudens, 2005), whereby the author repeatedly read each study to become fully immersed in the data and inferences. This was followed by coding the data, and then grouping similar codes together to form themes, which were denoted in relation to relevant psychosocial constructs, such as conscientiousness, coaching-efficacy, or acknowledging the feelings and perspectives of others. The relationships within the individual studies were then explored, followed by an examination of the relationships between the different studies.

3.3 Results

In line with systematic review guidelines, the literature search initially identified 2873 studies which potentially met the inclusion criteria. Study titles were screened for relevance, and following this, 2653 studies were removed. The abstracts of the remaining 220 studies were evaluated, and after the application of inclusion criteria, 185 studies were rejected. The remaining 35 studies were eligible for full-text retrieval, and subsequently, a further 10 studies were excluded. Hence, 25 studies were included in the systematic review (see Figure 1).

3.3.1 Study Characteristics

3.3.1.1 Purpose of the studies. The studies had a variety of purposes. Six studies were primarily focused on coach-athlete relationships (viz. D'Arripe-Longueville et al., 1998; Jowett, 2003; Jowett & Cockerill, 2003; Lyons et al., 2012; Philippe & Seiler, 2006; Trzaskoma-Bicsérdy et al., 2007), six on variables relating to coaching success (viz. Currie & Oates-Wilding, 2012; Gould et al., 1999; Gould et al., 2001; Gould, Guinan, Greenleaf, & Chung, 2002; Gould, Greenleaf, Chung, & Guinan, 2002; Greenleaf et al., 2001), five on coaching climate or environmental factors relating to athlete success (viz. Ge et al., 2016; Mallett, 2005; Pensgaard & Roberts, 2000, 2002; Seanor et al., 2017), three on coaches' stress experiences and/or responses (viz. Chroni et al., 2016; Olusoga et al., 2012; Sullivan & Nashman, 1993), three on coaches' leadership and/or coaching experiences (viz. Din et al., 2015; Dixon et al., 2012; Kimiecik & Gould, 1993), one on a specific coach's dispositional traits, personal strivings, and narrative identity (viz. Mallett & Coulter, 2016), and one on aspects of athletes' personality (viz. Gould, Dieffenbach, & Moffett, 2002).

3.3.1.2 Design of the studies. Eighteen of the studies utilized a qualitative design, with six of these using semi-structured interviews (viz. Chroni et al., 2016; D'Arripe-Longueville et al., 1998; Din et al., 2015; Lyons et al., 2012; Olusoga et al., 2012; Trzaskoma-Bicsérdy et al., 2007), four using structured interviews (viz. Jowett, 2003; Jowett & Cockerill, 2003; Philippe & Seiler, 2006; Sullivan & Nashman, 1993), two using undefined forms of interviews (viz. Greenleaf et al., 2001; Kimiecik & Gould, 1993), one using unstructured conversations (viz. Currie & Oates-Wilding, 2012), one using reflexive conversations (viz. Dixon et al., 2012), one using discussion and co-authorship (viz. Ge et al., 2016), one using mobile conversational interview (viz. Seanor et al., 2017), one using individual and focus group interviews (viz. Gould et al., 1999), and one utilizing a case study approach (viz. Mallett, 2005).

Four studies employed a mixed methods design. Mallett and Coulter (2016) used semi-structured interviews and questionnaires assessing personality traits and personal strivings utilizing the NEO Five-Factor Inventory-3 (Costa & McCrae, 2010) and Personal Strivings (Emmons, 1989). Greenleaf et al. (2001) included semi-structured interviews and questionnaires measuring trait anxiety, multi-dimensional perfectionism, optimism, hope, task ego orientation, test of performance strategies, and athletic coping skills using The Sport Anxiety Scale (Smith, Smoll, & Schutz, 1990), Multidimensional Perfectionism Scale (Frost, Marten, Lahart, & Rosenblate, 1990), Revised Life Orientation Test (Scheier, Carver, & Bridges, 1994), The Adult

Trait Hope Scale (Synder, 1991; Snyder et al., 1999), Task Ego Orientation Scale Questionnaire (Duda, 1989), The Test of Performance Strategies (Thomas, Murphy, & Hardy, 1999), and The Athletic Coping Skills Inventory (Smith, Schutz, Smoll, & Ptacek, 1995) respectively.

Pensgaard and Roberts (2002) utilized structured interviews and questionnaires measuring perception of success and perception of motivation climate using The Perception of Success Questionnaire (Roberts, Treasure, & Balague, 1998) and Perception of Motivational Climate in Sport Questionnaire (Seifriz, Duda, & Chi, 1992). Gould et al. (2001) used individual and focus group interviews and questionnaires measuring lessons learned for future Olympic Games (Atlanta survey and Nagano survey).

A quantitative design employing questionnaires was used by three studies. One study (viz. Pensgaard & Roberts, 2000) measured the perceived motivational climate, goal orientation, sources of distress, total distress, and perceived ability utilizing the Perceived Motivational Climate in Sport Questionnaire (Seifriz et al., 1992), Perception of Success Questionnaire (Ommundsen & Roberts, 1996; Roberts et al., 1998), Sources of Distress Questionnaire (based on Scanlan, Stein, & Ravizza, 1991), and Perception of Ability Questionnaire (based on Nicholls, Cobb, Wood, Yackel, & Patashnick, 1990), respectively. One study assessed variables identified as influencing athlete and coach performance utilizing the United States Olympic Committee Atlanta Olympic Coach Survey and the Nagano Olympic Coach Survey (viz. Gould, Greenleaf, Chung, & Guinan, 2002), and one study measured the variables identified as influencing performance utilizing the U.S. Atlanta Olympic Games Athlete Survey and the U.S. Olympic Games Nagano Athlete Survey (viz. Gould, Guinan, Greenleaf, & Chung, 2002).

3.3.2 Participant details of the studies. The participant data of each study is presented in Table 1.

3.3.2.1 Sample size. The 25 included studies comprised a total population size of 1143 participants, with 207 Olympic coaches, 925 Olympic athletes, 1 assistant coach, and 10 parents, and Olympic athletes' siblings or significant others. The sample sizes for each study ranged from one to 444 ($M = 45.7$, and $SD = 111.9$) participants. Sixteen studies had 10 or fewer participants, five studies had between 11 and 65 participants, and four studies had 66 or more participants.

3.3.2.2 Age. Six of the 25 studies provided details relating to the age range of the participants which was from 28 to 68 years (excluding participants from Currie & Oates-

Wilding, 2012; D'Arripe-Longueville et al., 1998; Dixon et al., 2012; Ge et al., 2016; Gould et al., 1999; Gould et al., 2001; Gould, Greenleaf, Chung, & Guinan, 2002; Gould, Dieffenbach, & Moffett, 2002; Greenleaf et al., 2001; Jowett, 2003; Jowett & Cockerill, 2003; Lyons et al., 2012; Mallett, 2005; Mallett & Coulter, 2016; Pensgaard & Roberts, 2000, 2002; Philippe & Seiler, 2006; Seanor et al., 2017; Trzaskoma-Bicsérdy et al., 2007 who did not provide details about the age range of the participants).

3.3.2.3 Gender. Twenty-four of the 25 studies reported the gender of the participants. In total, 185 (16.2%) were female, 514 (45.0%) were male, and 444 (38.8%) were unknown (viz. Gould et al., 2001). The participants of 10 studies were exclusively male (viz. Chroni et al., 2016; Currie & Oates-Wilding, 2012; Dixon et al., 2012; Ge et al., 2016; Kimiecik & Gould, 1993; Mallett 2005; Mallett & Coulter, 2016; Olusoga et al., 2012; Philippe & Seiler, 2006; Trzaskoma-Bicsérdy et al., 2007), and no studies were exclusively female.

3.3.2.4 Type of participant and country represented. All of the studies reported the type of participants included. Nine studies were comprised exclusively of coaches (viz. Chroni et al., 2016; Currie & Oates-Wilding, 2012; Dixon et al., 2012; Gould, Guinan, Greenleaf, & Chung, 2002; Kimiecik & Gould, 1993; Mallett, 2005; Mallett & Coulter, 2016; Olusoga et al., 2012; Sullivan & Nashman, 1993), seven studies were comprised exclusively of athletes (viz. Ge et al., 2016; Gould, Greenleaf, Chung, & Guinan, 2002; Greenleaf et al., 2002; Jowett & Cockerill, 2003; Pensgaard & Roberts, 2000, 2002; Philippe & Seiler, 2006), seven studies included both coaches and athletes in their sample (viz. D'Arripe-Longueville et al., 1998; Din et al., 2015; Gould et al., 1999; Gould et al., 2001; Jowett, 2003; Lyons et al., 2012; Trzaskoma-Bicsérdy et al., 2007), one study included a coach, an assistant coach and an athlete (viz. Seanor et al., 2017), and one study was comprised of coaches, athletes, parents, siblings, and significant others (viz. Gould, Dieffenbach, & Moffett, 2002). Twenty-two studies reported the countries the participants represented, which were the United States of America, United Kingdom, Australia, Norway, Greece, Canada, Russia, Brazil, China, Estonia, France, Latvia, Hungary, Mexico, Spain, and Switzerland (excluding participants from Currie & Oates-Wilding, 2012; Din et al., 2015; Jowett, 2003 who did not report the countries the participants represented).

3.3.2.5 Olympic participant's standard. Eleven of the 25 included studies reported the participants' Olympic standard. Four studies were comprised of Olympic medallists (viz. Din et al., 2015; Jowett & Cockerill, 2003; Seanor et al., 2017; Trzaskoma-Bicsérdy et al., 2007), three

studies included gold medallists (viz. Kimiecik & Gould, 1993; Ge et al., 2016; Gould, Dieffenbach, & Moffett, 2002), one comprised a multiple medallist (viz. Mallett & Coulter, 2016), one study included silver medallists (viz. Jowett, 2003), one included finalists (viz. Mallett, 2005), and one included a sample of gold medallists, medallists, and non-medallists (viz. Gould et al., 1999).

3.3.2.6 Coaching experience. Seven of the 25 included studies provided details about the coaches' mean years of experience, which was 20.9 years (SD = 11.04) (excluding participants from D'Arripe-Longueville et al., 1998; Din et al., 2015; Dixon et al., 2012; Ge et al., 2016; Gould et al., 1999; Gould et al., 2001; Gould, Greenleaf, Chung, & Guinan, 2002; Gould, Dieffenbach, & Moffett, 2002; Greenleaf et al., 2001; Jowett & Cockerill, 2003; Mallett, 2005; Pensgaard & Roberts, 2000, 2002; Philippe & Seiler, 2006; Seanor et al., 2017; Sullivan & Nashman, 1993; Trzaskoma-Bicsérdy et al., 2007 who did not provide mean years of coaching experience of their participants). One study reported the range of coaching experience which was between 4 and 30 years (viz. Chroni et al., 2016).

3.3.2.7 Sport. Participants represented 21 team and individual sports. These were swimming, diving, water polo, kayaking, track and field athletics, modern pentathlon, soccer, basketball, handball, volleyball, beach volleyball, gymnastics, trampoline, judo, wrestling, fencing, skiing, Olympic ski cross, bobsleigh, ice hockey, and speed skating. Five studies included participants from multiple sports (viz. Currie & Oates-Wilding, 2012; Gould, Dieffenbach, & Moffett, 2002; Jowett & Cockerill, 2003; Sullivan & Nashman, 1993; Trzaskoma-Bicsérdy et al., 2007), eight studies sampled participants in one sport only (viz. D'Arripe-Longueville et al., 1998; Dixon et al., 2012; Ge et al., 2016; Kimiecik & Gould, 1993; Lyons et al., 2012; Mallett 2005; Philippe & Seiler, 2006; Seanor et al., 2017), and 12 studies did not report participants' sports (viz. Chroni et al., 2016; Din et al., 2015; Gould et al., 1999; Gould et al., 2001; Gould, Greenleaf, Chung, & Guinan, 2002; Gould, Guinan, Greenleaf, & Chung, 2002; Greenleaf et al., 2001; Jowett, 2003; Mallett & Coulter, 2016; Olusoga et al., 2012; Pensgaard & Roberts, 2000, 2002).

3.3.3 Quality Appraisal

Details of the MMAT methodological quality criteria are provided in Table 2, and the assessment of each study against its relevant design criteria is reported in Table 3. The methodological quality of the eighteen qualitative studies ranged from 1 to 4 out of 4, the four

mixed methods studies scored from 1 to 2 out of 3, and the three quantitative studies ranged from 2 to 4 out of 4. All of the studies were given a quality percentage score. The methodological quality of all of the included studies ranged from 25% to 100% ($M = 71\%$), with the qualitative studies ranging from 25% to 100% ($M = 72.2\%$), mixed methods studies all scoring 75% ($M = 75\%$), and quantitative studies ranging from 50% to 100% ($M = 66.7\%$) (see Table 3).

Utilizing the MMAT quality criteria, it was found that few (four out of 18) of the qualitative studies reported details about the role of the researcher(s), how the research process was influenced by the researcher(s), or provided information about the researcher(s) epistemological stance (viz. Currie & Oates-Wilding, 2012; D'Arripe-Longueville et al., 1998; Din et al., 2015; Dixon et al., 2012; Gould et al., 1999; Greenleaf et al., 2001; Jowett, 2003; Jowett & Cockerill, 2003; Kimiecik & Gould, 1993; Lyons et al., 2012; Olusoga et al., 2012; Philippe & Seiler, 2006; Sullivan & Nashman, 1993; Trzaskoma-Bicsérdy et al., 2007). None of the four mixed methods studies reported the limitations associated with the integration of qualitative and quantitative data. Two out of the three quantitative studies did not use validated measures, and did not report a satisfactory response rate (viz. Gould et al., 2001; Gould, Guinan, Greenleaf, & Chung, 2002).

Table 2

Mixed Methods Appraisal Tool Criteria

Screening questions (for all types)	Qualitative	Quantitative randomized controlled (trials)	Quantitative non-randomized	Quantitative descriptive	Mixed methods
A. Are there clear qualitative and quantitative research questions (or objectives), or a clear mixed methods question (or objective)?	1.1. Are the sources of qualitative data (archives, documents, informants, observations) relevant to address the research question (objective)?	2.1. Is there a clear description of the randomization (or an appropriate sequence generation)?	3.1. Are participants (organizations) recruited in a way that minimizes selection bias?	4.1. Is the sampling strategy relevant to address the quantitative research question (quantitative aspect of the mixed methods question)?	5.1. Is the mixed methods research design relevant to address the qualitative and quantitative research questions (or objectives), or the qualitative and quantitative aspects of the mixed methods question (or objective)?
B. Do the collected data address the research question (objective)? E.g., consider whether the follow-up period is long enough for the outcome to occur (for longitudinal studies or study components).	1.2. Is the process for analyzing qualitative data relevant to address the research question (objective)?	2.2. Is there a clear description of the allocation concealment (or blinding when applicable)?	3.2. Are measurements appropriate (clear origin, or validity known, or standard instrument; and absence of contamination between groups when appropriate) regarding the exposure/	4.2. Is the sample representative of the population understudy?	5.2. Is the integration of qualitative and quantitative data (or results) relevant to address the research question (objective)?

-	1.3. Is appropriate consideration given to how findings relate to the context, e.g., the setting, in which the data were collected?	2.3. Are there complete outcome data (80% or above)?	intervention and outcomes? 3.3. In the groups being compared (exposed vs. non-exposed; with intervention vs. without; cases vs. controls), are the participants comparable, or do researchers take into account (control for) the difference between these groups?	4.3. Are measurements appropriate (clear origin, or validity known, or standard instrument)?	5.3. Is appropriate consideration given to the limitations associated with this integration, e.g., the divergence of qualitative and quantitative data (or results) in a triangulation design?
-	1.4. Is appropriate consideration given to how findings relate to researchers' influence, e.g., through their interactions with participants?	2.4. Is there low withdrawal/drop-out (below 20%)?	3.4. Are there complete outcome data (80% or above), and, when applicable, an acceptable response rate (60% or above), or an acceptable follow-up rate for cohort studies (depending on the duration of follow-up)?	4.4. Is there an acceptable response rate (60% or above)?	-

Studies Included in the Review Scored Against MMAT Criteria

[illegible]

Jowett (2003)	1	1	1	1	1	0	-	-	-	-	-	-	-	3	75%
Jowett and Cockerill (2003)	1	1	1	1	1	0	-	-	-	-	-	-	-	3	75%
Kimiecik and Gould (1987)	1	1	1	0	0	0	-	-	-	-	-	-	-	1	25%
Lyons et al. (2012)	1	1	1	1	1	0	-	-	-	-	-	-	-	3	75%
Mallett (2005)	1	1	1	0	1	1	-	-	-	-	-	-	-	3	75%
Mallett and Coulter (2016)	1	1	-	-	-	-	-	-	-	-	1	1	0	2	75%
Olusoga et al. (2012)	1	1	1	1	1	0	-	-	-	-	-	-	-	3	75%
Pensgaard and Roberts (2000)	1	1	-	-	-	-	1	1	1	1	-	-	-	4	100%
Pensgaard and Roberts (2002)	1	1	-	-	-	-	-	-	-	-	1	1	0	2	75%
Philippe and Seiler (2006)	1	1	1	1	1	0	-	-	-	-	-	-	-	3	75%
Seanor et al. (2017)	1	1	1	1	1	1	-	-	-	-	-	-	-	4	100%
Sullivan and Nasham (1993)	1	1	1	0	1	0	-	-	-	-	-	-	-	2	50%
Trzaskoma- Bicsérdy et al. (2007)	1	1	1	1	1	0	-	-	-	-	-	-	-	3	75%

Note. 1 = Yes; 0 = No or insufficient information provided in the study; - = Criteria not relevant to the study.

3.3.4 Analysis of the Psychosocial Aspects of Olympic Coaching Contained in the Studies

Psychosocial aspects of Olympic coaching refer to understanding the psychological and social characteristics of coaches. Barenbaum and Winter (2008) noted that three main layers of information have been utilized to examine psychosocial functioning, these being traits, states, and behaviors. Traits refer to an individual's characteristics that remain relatively stable throughout their lifespan, such as conscientiousness. States relate to characteristics which are situationally-specific and fluctuate from moment to moment, such as positive attentional bias, and behaviors refer to overt and observable actions, such as asking a question (Fleeson, 2012). The convergent thematic analysis identified 18 themes which related to traits, 28 themes which referred to states, and 38 themes which described behaviors. These themes were further categorized as having either a perceived facilitative, debilitative, or neutral, mixed, or unclear relationship with athlete performance based on the paper's description of the finding (see Figure 2).

Behaviors

- Demonstrate understanding and concern + 2, 3, 4, 5, 6, 11, 13, 14, 15, 19, 21, 22, 25
 Trustworthy + 4, 9, 11, 10, 12, 13, 14, 25
 Confident body language + 4, 11, 13, 14, 19, 25
 Create enjoyable training sessions + 4, 5, 15, 16, 23
 Reinforce athletes' self-belief + 15, 18
 Acknowledge the feelings and perspectives of others + 5, 6, 13, 14, 16, 17, 22, 25
 Provide choice to athletes' in training + 16, 17, 22, 23
 Provide a rationale for tasks and decision making + 16, 17
 Create detailed training programs + 1, 4, 6, 7, 8, 9, 10, 11, 12, 18, 22
 Teach psychological skills + 3, 5, 7, 9, 11, 12, 15
 Lead and/or monitor sport science support + 4, 5, 23
 Provide positive feedback + 11, 15, 16
 Emphasize process goals + 5
 Problem-focused coping strategies (e.g. planning) + 1, 19
 Visibly stressed at Olympic Games - 7, 8, 12
 Ignore athletes' feelings and perspectives - 3, 6, 13
 Set unrealistic expectations and goals - 10
 Authoritarian leadership style +/- 3, 6, 13, 25
 Democratic leadership style +/- 25
 Provide negative feedback +/- 3, 15
- Provide praise and encouragement + 3, 5, 11, 14, 15, 16, 18, 19, 21, 22, 25
 Tailor communication to athlete + 2, 9, 10, 15, 19, 21, 22
 Make fair and decisive decisions + 3, 4, 9, 10, 14, 25
 Communicate enthusiasm + 8, 15, 18
 Ask athletes' facilitative questions + 17, 23
 Provide athletes' with opportunities for independent work + 17
 Create detailed plans for Olympic Games + 1, 8, 18
 Demonstrate knowledge of sport + 2, 5, 8, 10, 16, 22
 Provide corrective feedback + 3, 4, 5, 11, 13, 14, 16, 17, 21, 22
 Set realistic expectations and goals + 7, 9, 13, 14, 15, 19, 22, 25
 Evaluate athletes' on personal development + 20
 Unfocused - 7, 8, 9, 12
 Uncaring - 3, 13, 14
 Demonstrate lack of sport knowledge - 8, 12, 14
 Evaluate athletes' on relative standing to others +/- 3, 6, 13, 20, 23
 Liberal leadership style +/- 25
 Emotion-focused coping strategies (e.g. socializing) +/- 9, 19, 24
 Create difficulties to build team spirit +/- 3

States

- Other-efficacy + 9, 11, 13, 14, 15, 18, 22, 25
 Learning + 1, 2, 5, 18, 23
 State emotional intelligence + 15, 18, 19, 21
 Resilience + 2
 Autonomy supporting motivational style + 16, 17, 23
 State pessimism - 8
 Cognitive flexibility +/- 1, 8, 15, 22
- Coaching-efficacy + 1, 2, 4, 9, 13, 14, 19
 Attentional control + 1, 7, 8, 10, 19
 Challenge appraisal + 1, 4, 5
 Task involved + 1, 4, 5, 17, 20, 21
 Achievement striving + 18
 Negative attentional bias - 8
 Extrinsic motivation +/- 6, 18, 24
- State self-confidence + 2, 4, 19
 Emotion regulation + 7, 9, 10, 18, 19
 Self-awareness + 9, 19
 Benevolence + 1, 2, 5, 11, 18
 State anxiety - 12, 13
 Cognitive rigidity - 8
 Power striving +/- 6, 12, 18
- State optimism + 4, 5, 11, 18, 22
 Positive attentional bias + 1, 4, 5, 22
 State self-control + 7, 19
 Intrinsic motivation + 1, 15, 16, 24
 Threat appraisal - 7, 8
 Ego involved +/- 1, 6, 13, 18, 20, 24
 External locus of causality +/- 2

Traits

- Conscientiousness + 1, 4, 5, 7, 8, 9, 10, 11, 18, 19, 25
 Task-orientation + 1, 4, 5, 16, 17, 20, 21
 Trait intelligence + 1, 8, 23
 Neuroticism - 12
- Agreeableness + 18
 Trait optimism + 4, 5, 11, 18, 22
 Perfectionism + 1, 8
 Trait pessimism - 8
- Openness + 18
 Passion + 1, 2, 5, 18, 19
 Trait self-control + 19
 Ego-orientation +/- 1, 6, 8, 13, 18, 20
- Moderate extraversion + 18
 Trait emotional intelligence + 15, 18, 19, 21
 Hardiness + 18
- Emotional stability + 18
 Self-esteem + 2, 4, 19
 Trait anxiety - 12, 13

Figure 2. Psychosocial aspects of Olympic coaching

Note. + denotes a perceived facilitative trait, state and/or behavior; - denotes a perceived debilitating trait, state and/or behavior; and +/- denotes a perceived neutral, mixed or unclear trait, state and/or behavior.

Reference numbers of studies that present data relating to this trait, state, and/or behavior: 1 = Chroni et al. (2016); 2 = Currie and Oates-Wilding (2012); 3 = D'Arripe-Longueville et al. (1998); 4 = Din et al. (2015); 5 = Dixon et al. (2012); 6 = Ge et al. (2016); 7 = Gould, Dieffenbach, and Moffett (2002); 8 = Gould et al. (1999); 9 = Gould et al. (2001); 10 = Gould, Greenleaf, Chung, and Guinan (2002); 11 = Gould, Guinan, Greenleaf, and Chung (2002); 12 = Greenleaf et al. (2001); 13 = Jowett (2003); 14 = Jowett and Cockerill (2003); 15 = Kimiecik and Gould (1993); 16 = Lyons et al. (2012); 17 = Mallett (2005); 18 = Mallett and Coulter (2016); 19 = Olusoga et al. (2012); 20 = Pensgaard and Roberts (2000); 21 = Pensgaard and Roberts (2002); 22 = Philippe and Seiler (2006); 23 = Seanor et al. (2017); 24 = Sullivan and Nashman (1993); 25 = Trzaskoma-Bicsérdy et al. (2007).

3.3.4.1 Traits. Twenty-two studies presented findings which were interpreted as referring to coaches' traits, which are defined as consistent patterns of thinking, feeling, and behaving (Barenbaum & Winter, 2008; Pervin, 2003).

3.3.4.1.1 Facilitative traits. Traits that had a perceived positive impact on performance were reported in 19 studies. In terms of the Big Five (cf. McCrae & Costa, 2003), eleven studies identified that Olympic coaches were conscientious (viz. Chroni et al., 2016; Din et al., 2015; Dixon et al., 2012; Gould et al., 1999; Gould et al., 2001; Gould, Guinan, Greenleaf, & Chung, 2002; Gould, Greenleaf, Chung, & Guinan, 2002; Gould, Dieffenbach, & Moffett, 2002; Mallett & Coulter, 2016; Olusoga et al., 2012; Trzaskoma-Bicsérdy et al., 2007). For example, Din et al. (2015) highlighted that a coach "would stay up until two in the morning thinking about one program – so, so methodical in terms of what we were doing each day and why...everything was so well thought out and planned to the most minute detail" (p. 596). Mallett & Coulter (2016) utilized the self-report NEO Five-Factor-3 inventory, and reported that the participant coach scored "high in agreeableness" (p. 117), "high in openness" (p. 117), "in the average range of extraversion" (p. 117), and "very low neuroticism" (p. 117).

Moving beyond the Big Five, a high task orientation was identified in seven studies (viz. Chroni et al., 2016; Din et al., 2015; Dixon et al., 2012; Lyons et al., 2012; Mallett, 2005; Pensgaard & Roberts, 2000; Pensgaard & Roberts, 2002). For example, Chroni et al. (2016) reported that "I do not get hung up on results...I am not bothered whether an athlete comes in sixth or tenth or twelfth place...I focus more on their development, and if they have developed, this is very positive for me" (p. 264). Five studies identified a "sense of optimism" (Gould, Dieffenbach, & Moffett, 2002, p. 193) as an essential component of Olympic coaching (viz. Din et al., 2015; Dixon et al., 2012; Gould, Guinan, Greenleaf, & Chung, 2002; Mallett & Coulter, 2016; Philippe & Seiler, 2006), and a "passion for coaching" (Dixon et al., 2012: p. 357) was detailed in five studies (viz. Chroni et al., 2016; Currie & Oates-Wilding, 2012; Dixon et al., 2012; Mallett & Coulter, 2016; Olusoga et al., 2012). Trait emotional intelligence was identified in four studies (viz. Kimiecik & Gould, 1993; Mallett & Coulter, 2016; Olusoga et al., 2012; Pensgaard & Roberts, 2002). Pensgaard and Roberts (2002) quoted an athlete stating that their coach "is sensitive to when an athlete is able to receive criticism" (p. 57), and Olusoga et al. (2012) reported that the coaches in their sample were "in control of their emotions" (p. 232). Three studies reported high self-esteem amongst participant coaches (viz. Currie & Oates-

Wilding, 2012; Din et al., 2015; Olusoga et al., 2012), and trait intelligence was identified in three studies (viz. Chroni et al., 2016; Gould et al., 1999; Seanor et al., 2017). Two studies reported perfectionism (viz. Chroni et al., 2016; Gould et al., 1999). To illustrate, Chroni et al. (2016) quoted a participant who was discussing the requirements of Olympic coaching:

I think that this is also the nature of the sport – there is a lot of training, and you need to go into the details. When this happens, “normal” people would freak out and be stressed if they had to watch their health all the time and be a perfectionist in their health and in their training and organizing their day to day lives and every single detail. There is no space for being lazy or not doing every single thing well (p. 268).

Trait self-control was identified in one study (viz. Olusoga et al., 2012), and finally, one paper reported the participant coach was “hardy” (Mallett & Coulter, 2016, p. 117).

3.3.4.1.2 *Debilitative traits.* Four studies reported characteristics that were perceived to be detrimental to performance. Trait anxiety was described in two studies (viz. Greenleaf et al., 2001; Jowett, 2003), with Jowett (2003) reporting that the participant coach was “trapped in his own preoccupations and personal obligations...and that causes anxiety in itself” (p. 453). One study described high neuroticism (viz. Greenleaf et al., 2001), and trait pessimism was also reported in one study (viz. Gould et al., 1999). To illustrate, the authors quoted an athlete who argued that “without [the coaches’] distractions and freak-outs and negativism, I think [the athletes] by ourselves would have medaled” (p. 381).

3.3.4.1.3 *Neutral, mixed, or unclear traits.* Six studies identified a single trait of ego orientation that was not consistently reported to have either a perceived positive or negative effect on performance (viz. Chroni et al., 2016; Ge et al., 2016; Gould et al., 1999; Jowett, 2003; Mallett & Coulter, 2016; Pensgaard & Roberts, 2000). To illustrate, Jowett (2003) reported that: “the coach was seemingly consumed with personal ambition and thoughts of maintaining and continuously trying to prove his athlete’s competencies” (p. 453). Mallett and Coulter (2016) stated that: “[Coach] is highly motivated for his athletes to be successful and by association, he will consider himself successful” (p. 118) and Chroni et al. (2016) quoted a coach stating: “I say that I am not stressed so much about the results, but that is possibly because we have the results. I mean that is also a motivation for me” (p. 265).

3.3.4.2 States. Twenty-four out of the 25 studies included findings which were interpreted as referring to coaches' states, which are defined as situational patterns of thinking, feeling, and behaving (Cattell, 1966, 1979; Mischel, 2013).

3.3.4.2.1 Facilitative states. Twenty studies were identified which discussed states that were perceived to have a positive effect on coaches' performance. Eight studies suggested that coaches demonstrated other-efficacy in order to reinforce the athletes' self-belief (viz. Gould et al., 2001; Gould, Dieffenbach, & Moffett, 2002; Jowett, 2003; Jowett & Cockerill, 2003; Kimiecik & Gould, 1993; Mallett & Coulter, 2016; Philippe & Seiler, 2006; Trzaskoma-Bicsérdy et al., 2007). For example, Gould, Dieffenbach and Moffett (2002) quoted an athlete expressing that "coach X, I mean, he just believed in me and that is all it takes. You know, I just feel he cared about me as a person and believed in me as an athlete" (p. 193). Seven of the included studies reported that coaches had high coaching-efficacy (viz. Chroni et al., 2016; Currie & Oates-Wilding, 2012; Din et al., 2015; Gould et al., 2001; Jowett, 2003; Jowett & Cockerill, 2003; Mallett, 2005). To illustrate, Din et al. (2015) quoted an athlete stating that their coach had "100% confidence with little or no ego. Never getting bogged down by ego. They have to be *very* confident in what they are doing and what their strengths are" (p. 595-596). The related concept of state self-confidence was reported in three studies (viz. Currie & Oates-Wilding 2012; Din et al., 2015; Olusoga et al., 2012). Five studies reported state optimism (viz. Din et al., 2015; Dixon et al., 2012; Gould, Guinan, Greenleaf, & Chung, 2002; Mallett & Coulter, 2016; Philippe & Seiler, 2006). To illustrate, Phillippe and Seiler (2006), in their study of coach-athlete relationships, quoted an athlete stating that their coach "always looks for the good side of other people." (p. 166). Five studies identified learning (viz. Chroni et al., 2016; Currie & Oates-Wilding, 2012; Dixon et al., 2012; Mallett & Coulter, 2016; Seanor et al., 2017), with Currie and Oates-Wilding (2012), for example, quoting a coach discussing a "commitment to keep learning and improving" (p. 429). Five studies described coaches with high attentional control (viz. Chroni et al., 2016; Gould et al., 1999; Gould, Greenleaf, Chung, & Guinan, 2002; Gould, Dieffenbach, & Moffett, 2002; Olusoga et al., 2012), and emotion regulation was identified in five studies (viz. Gould et al., 2001; Gould, Greenleaf, Chung, & Guinan, 2002; Gould, Dieffenbach, & Moffett, 2002; Mallett & Coulter, 2016; Olusoga et al., 2012). Olusoga et al. (2012), for example, quoted a coach stating:

I think I was pretty unflappable, you know, completely calm in a crisis, probably more measured than I should have been, very measured, very considered...you try not to react when things have gone wrong and an athlete's annoyed...wait for that emotional response to pass, until you can get down and say, "right, ok, let's sit down and talk this through properly" (p.232).

Four studies identified positive attentional biases (viz. Chroni et al., 2016; Din et al., 2015; Dixon et al., 2012; Philippe & Seiler, 2006), and state emotional intelligence was identified in four studies (viz. Kimiecik & Gould, 1993; Mallett & Coulter, 2016; Olusoga et al., 2012; Pensgaard & Roberts, 2002). Three studies documented challenge appraisals (viz. Chroni et al., 2016; Din et al., 2015; Dixon et al., 2012). Chroni et al. (2016), for example, quoted a coach explaining that "when the results are not OK, underperformance is a challenge, especially when changes do not bring better performances. This is the good part!" (p. 265). Two studies reported self-awareness (viz. Gould et al., 2001; Olusoga et al., 2012), and self-control was identified in two studies (viz. Gould, Dieffenbach, & Moffett, 2002; Olusoga et al., 2012). Finally, one study discussed the participant coaches' "resilience" (Currie & Oates-Wilding, 2012, p. 429).

Moving on from cognitive and affective states to motivational ones, six studies identified high task involvement (viz. Chroni et al., 2016; Din et al., 2015; Dixon et al., 2012; Lyons et al., 2012; Mallett, 2005; Pensgaard & Roberts, 2000; Pensgaard & Roberts, 2002). To illustrate, Mallett (2005) reported that the participant coach ensured "athletes were able to self-reference their personal target times with their performance times" (p. 425). Additionally, Pensgaard and Roberts (2002) reported that the "athletes perceived a high mastery climate" (p. 56) which was created by the coach. Five studies described coaches' benevolent values (viz. Chroni et al., 2016; Currie & Oates-Wilding, 2012; Dixon et al., 2012; Gould, Guinan, Greenleaf, & Chung, 2002; Mallet & Coulter, 2016), with Dixon et al. (2012) stating that "the satisfaction gained from helping young athletes and seeing them develop into adults resonates most powerfully throughout this reflexive conversation and emerges as a key facet in maintaining passion for coaching" (p. 358). Four studies discussed coaches' intrinsic motivation (viz. Chroni et al., 2016; Kimiecik & Gould, 1993; Lyons et al., 2012; Sullivan & Nashman, 1993). Kimiecik and Gould (1993) reported that in response to the question "what keeps you motivated?" the participant coach replied "a simple law: we tend to repeat a pleasant experience and avoid an

unpleasant experience. Swimming has always been a pleasant experience for me” (p. 352). Three studies (viz. Lyons et al., 2012; Mallett, 2005; Seanor et al., 2017) identified an autonomy supporting motivational style. Lyons et al. (2012), for example, stated that “the data showed that both the coach and the athletes were primarily oriented towards a self-determined motivational profile and a preference for an autonomy supportive approach to coaching” (p. 367). Finally, one study identified an achievement striving, with Mallett and Coulter (2016) utilizing the personal strivings measure, reporting that the participant coach “strongly seeks to create an achievement-based environment. Moreover, the use of language to “challenge” and “improve” athletes implies an achievement goal focused on improvement” (p. 118).

3.3.4.2.2 *Debilitative states.* Four studies were identified that discussed states which had a perceived negative impact on coaches’ performance. State anxiety was reported in two studies (viz. Greenleaf et al., 2001; Jowett, 2003). To illustrate, Greenleaf et al. (2002) reported that one athlete stated that “there was an atmosphere of stress and tension among the staff, coaching staff, and it kind of permeated the whole atmosphere where all the athletes were living” (p. 174). Threat appraisal was reported in two studies (viz. Gould et al., 1999; Gould, Guinan, Greenleaf, & Chung, 2002), and state pessimism, negative attentional bias, and cognitive rigidity were each reported by one study (viz. Gould et al., 1999). With respect to cognitive rigidity, the authors stated that “the athletes and coaches were so “locked” into [their] goals that they had difficulty adjusting to better than expected performance by other teams” (p. 379).

3.3.4.2.3 *Neutral, mixed, or unclear states.* Eleven studies reported states of which there was little consistency or consensus regarding their perceived impact on performance. Six studies reported coaches as ego involved (viz. Chroni et al., 2016; Ge et al., 2016; Jowett, 2003; Mallett & Coulter, 2016; Pensgaard & Roberts, 2000; Sullivan & Nashman, 1993). To illustrate, Mallett and Coulter (2016) described the participant coach as having “an emphasis on attainment (“create a winning environment”)...highly motivated for his athletes to be successful and, by association, he will consider himself successful” (p. 118). Cognitive flexibility was identified in four studies (viz. Chroni et al., 2016; Gould et al., 1999; Kimiecik & Gould, 1993; Philippe & Seiler, 2006). Kimiecik and Gould (1993), for example, in a case study of a successful Olympic swimming coach, reported that “you have to be flexible and realistic” (p. 354), and Philippe and Seiler (2006) quoted an athlete stating that their coach: “is a flexible person who is open to change. I think his laid-back attitude gives him this flexibility” (p. 166). Extrinsic motivation

was identified in three papers (viz. Ge et al., 2016; Mallett & Coulter, 2016; Sullivan & Nashman, 1993), and three studies reported power strivings (viz. Ge et al., 2016; Greenleaf et al., 2001; Mallett & Coulter, 2016). Finally, an external locus of causality was reported in one study, with success attributed to “opportunity, luck” (Currie & Oates-Wilding, 2012, p. 428).

3.3.4.3 Behaviors. The included 25 studies all reported data which referenced coaches’ behaviors, which are defined as overt and observable actions (Kelly & Agnew, 2012).

3.3.4.3.1 Facilitative behaviors. All of the included 25 studies identified behaviors that were perceived to have a positive impact on performance. In terms of behaviors that conveyed warmth, positivity, and promoted feelings of affiliation between the coach and athlete, thirteen studies reported that coaches demonstrated understanding and concern (viz. Currie & Oates-Wilding, 2012; D’Arripe-Longueville et al., 1998; Din et al., 2015; Dixon et al., 2012; Ge et al., 2016; Gould, Guinan, Greenleaf, & Chung, 2002; Jowett, 2003; Jowett & Cockerill, 2003; Kimiecik & Gould, 1993; Olusoga et al., 2012; Pensgaard & Roberts, 2002; Philippe & Seiler, 2006; Trzaskoma-Bicsérdy et al., 2007). To illustrate, Philippe and Seiler (2006) reported coaches “provide a sympathetic ear when needed” (p. 165). Eleven studies reported that coaches provided praise and encouragement (viz. D’Arripe-Longueville et al., 1998; Dixon et al., 2012; Gould, Guinan, Greenleaf, & Chung, 2002; Jowett & Cockerill, 2003; Kimiecik & Gould, 1993; Lyons et al., 2012; Mallett & Coulter, 2016; Olusoga et al., 2012; Pensgaard & Roberts, 2002; Philippe & Seiler, 2006; Trzaskoma-Bicsérdy et al., 2007). Eight studies identified that coaches demonstrated trustworthy behaviors (viz. Din et al., 2015; Gould et al., 2001; Gould, Guinan, Greenleaf, & Chung, 2002; Gould, Greenleaf, Chung, & Guinan, 2002; Greenleaf et al., 2001; Jowett, 2003; Jowett & Cockerill, 2003; Trzaskoma-Bicsérdy et al., 2007), for example, Gould et al. (2001) describing coaches as creating “credibility and trust” (p. 25). Seven studies identified that coaches tailored their communication to athletes (viz. Currie & Oates-Wilding, 2012; Gould et al., 2001; Gould, Greenleaf, Chung, & Guinan, 2002; Kimiecik & Gould, 1993; Olusoga et al., 2012; Pensgaard & Roberts, 2002; Philippe & Seiler, 2006). To illustrate, Olusoga et al. (2012), reported a coach stating that:

It’s absolutely about tailoring the communication between athlete and the coach in a form that is mutually acceptable to both parties. You have to use a communication style which is appropriate to the athlete you’re working with and the message you’re trying to get over. People say to me, “I’ve told them four times and they still haven’t listened.” And I

say “if you’ve told them four times, and they still haven’t got the message, frankly, it’s because you’re delivering the message wrong” (p. 233).

Six studies highlighted coaches displaying confident body language (viz. Din et al., 2015; Gould, Guinan, Greenleaf, & Chung, 2002; Jowett, 2003; Jowett & Cockerill, 2003; Olusoga et al., 2012; Trzaskoma-Bicsérdy et al., 2007). Din et al. (2012), for example, in a study of Olympic medal winning leadership, described an athlete discussing “his coach, within the context of a critical Olympic situation, as portraying confidence in the face of adversity” (p. 596). Six studies identified that coaches made fair and decisive decisions (viz. D’Arripe-Longueville et al., 1998; Din et al., 2015; Gould et al., 2001; Gould, Greenleaf, Chung, & Guinan, 2002; Jowett & Cockerill, 2003; Trzaskoma-Bicsérdy et al., 2007), and five studies reported coaches creating enjoyable training sessions (viz. Din et al., 2015; Dixon et al., 2012; Kimiecik & Gould, 1993; Lyons et al., 2012; Seanor et al., 2017). Three studies described coaches as communicating enthusiasm (viz. Gould et al., 1999; Kimiecik & Gould, 1993; Mallett & Coulter, 2016), and two studies highlighted that coaches explicitly reinforced athlete’s self-belief (viz. Kimiecik & Gould, 1993; Mallett and Coulter, 2016). Mallett and Coulter (2016), for example, describing the participant coach prior to the final at the Olympic Games “telling the athlete what they had done to give themselves the opportunity to win” (p. 120).

In terms of behaviors that were aligned with self-determination theory and were autonomy-supporting, eight studies reported that coaches acknowledged the feelings and perspectives of others (viz. Dixon et al., 2012; Ge et al., 2016; Jowett, 2003; Jowett & Cockerill, 2003; Lyons et al., 2012; Mallett, 2005; Philippe & Seiler, 2006; Trzaskoma-Bicsérdy et al., 2007). To illustrate, Ge et al (2016) quoted an athlete stating that:

Thanks to the injury, my coach started to ask about my feelings about my injury and even listened to my opinions about techniques. Gradually, I gained the initiative over my training. Since then I started to focus on my body sensations. I changed my technique, and I think that’s one of the reasons I experienced a big performance improvement before the Olympics and won the medal at last (p. 5).

Four studies described coaches providing choices to athletes in their training (viz. Lyons et al., 2012; Mallett, 2005; Philippe & Seiler, 2006; Seanor et al., 2017). Mallett (2005), for example, reported that “the relay athletes were provided choice in a number of management and performance areas. For example, decisions on training content, training times, training venues,

and uniforms for training and competition were negotiated” (p. 422). Two studies reported that coaches asked facilitative questions (viz. Mallett, 2005; Seanor et al., 2017), with Seanor et al. (2017) in a study investigating the development of Olympic trampoline champions, stating that “coaches ask facilitative questions in order to facilitate their development rather than tethering the athlete to the coaches input and influence” (p. 103). Two studies identified coaches providing a rationale for tasks and decision making (viz. Lyons et al., 2012; Mallett, 2005), and one study described the coach providing athletes’ opportunities for independent work (viz. Mallett, 2005).

Regarding behaviors relating to planning, and sport-specific and sport-science knowledge, eleven studies identified that coaches created detailed training programs (viz. Chroni et al., 2016; Din et al., 2015; Ge et al., 2016; Gould et al., 1999; Gould et al., 2001; Gould, Guinan, Greenleaf, & Chung, 2002; Gould, Greenleaf, Chung, & Guinan, 2002; Gould, Dieffenbach, & Moffett, 2002; Greenleaf et al., 2001; Mallett & Coulter, 2016; Philippe & Seiler, 2006). Another reported behavior concerning planning was the creation of detailed plans for the Olympic Games, which was reported in three studies (viz. Chroni et al., 2016; Gould et al., 1999; Mallett & Coulter, 2016). Gould et al. (1999), in a study investigating the factors that were perceived to affect Olympic performance, reported that a specific team “anticipated the potentially negative side effects of participating in Opening Ceremonies and created a plan to maximize the benefits and minimize the negative impact” (p. 382). Seven papers reported that coaches actively taught psychological skills to athletes (viz. D’Arripe-Longueville et al., 1998; Dixon et al., 2012; Gould et al., 2001; Gould, Guinan, Greenleaf, & Chung, 2002; Gould, Dieffenbach, & Moffett, 2002; Greenleaf et al., 2001; Kimiecik & Gould, 1993), with Gould et al. (2001) stating that the specified coach “taught athletes to take responsibility for their own performance, and developed and implemented a sound physical and mental preparation program” (p. 168). Six studies reported that coaches demonstrated knowledge of the sport (viz. Currie & Oates-Wilding, 2012; Dixon et al., 2012; Gould et al., 1999; Gould, Greenleaf, Chung, & Guinan, 2002; Lyons et al., 2012; Philippe & Seiler, 2006), and three studies described coaches leading and/or monitoring sport science support (viz. Din et al., 2015; Dixon et al., 2012; Seanor et al., 2017). Dixon et al. (2012) suggested that “whilst the coach leads and monitors that provision of sport science support, [coach’s name] recognizes the importance of expertise

(probably influenced by his own study of sport science) and encourages practitioners to use their own initiative” (p. 356).

In terms of feedback, evaluation-focus, and coping behaviors, ten studies discussed the provision of corrective feedback (viz. D’Arripe-Longueville et al., 1998; Din et al., 2015; Dixon et al., 2012; Gould, Guinan, Greenleaf, & Chung, 2002; Jowett, 2003; Jowett & Cockerill, 2003; Lyons et al., 2012; Mallett, 2005; Pensgaard & Roberts, 2002; Philippe & Seiler, 2006), and three studies reported that coaches provided positive feedback (viz. Gould, Guinan, Greenleaf, & Chung, 2002; Kimiecik & Gould, 1993; Lyons et al., 2012). Gould, Dieffenbach, and Moffett (2002), for example, stated that “coaches provided positive and helpful feedback and critiques that helped guide athletes’ development as well as provided positive growing environments and opportunities” (p. 193). Eight studies reported that coaches set realistic expectations and goals which served to strengthen motivation (viz. Gould et al., 2001; Gould, Dieffenbach, & Moffett, 2002; Jowett, 2003; Jowett & Cockerill, 2003; Kimiecik & Gould, 1993; Olusoga et al., 2012; Philippe & Seiler, 2006; Trzaskoma-Bicsérdy et al., 2007). Gould, Greenleaf, Guinan, and Chung (2002), in a survey of variables perceived by coaches to affect Olympic performance, reported that “Atlanta coaches who indicated that they had realistic expectations for their athlete’s performance felt this had a positive influence on their ability to coach” (p. 240). One study reported that the coach emphasized process goals. To illustrate, Dixon et al. (2012) highlighted that “maintaining a process focus in a results-driven environment reflects not only persistency, but a high degree of coaching expertise” (p. 357), and one study reported that the coaches evaluated athletes on their personal development (viz. Pensgaard & Roberts, 2000). Finally, two studies highlighted coaches’ utilization of problem-focused coping strategies, such as planning (viz. Chroni et al., 2016; Olusoga et al., 2012).

3.3.4.3.2 *Debilitative behaviors.* Nine studies reported behaviors that had a perceived negative impact on performance. Four studies identified that coaches were unfocused, which became particularly pronounced and debilitating for athletes at the Olympic Games (viz. Gould et al., 1999; Gould et al., 2001; Gould, Dieffenbach, & Moffett, 2002; Greenleaf et al., 2001). To elaborate, Gould et al. (1999), reported that “it was felt that the coaches and support staff lost their focus on the players and were not able to handle the stress of the Games and panicked and this negatively influenced performance” (p. 381). Three studies reported visible stress amongst coaches which caused difficulties at the Olympic Games (viz. Gould et al., 1999; Gould,

Dieffenbach, & Moffett, 2002; Greenleaf et al., 2001), and three studies highlighted coaches displaying uncaring behaviors (viz. D'Arripe-Longueville et al., 1998; Jowett, 2003; Jowett & Cockerill, 2003). To illustrate, Jowett and Cockerill (2003), quoted an athlete stating that they had worked with a “coach who couldn’t care less for you... [He] did not explicitly express an interest in me personally, nor in my training sessions...the worst of all I felt I was being used by him” (p. 321), and D'Arripe-Longueville et al. (1998) reported that coaches showed “an intentional lack of interest in the athletes and complete lack of communication with them” (p. 323). Three studies (viz. D'Arripe-Longueville et al., 1998; Ge et al., 2016; Jowett, 2003) highlighted that coaches ignored athletes feelings or perspectives. For example, Ge et al. (2016) reported that “I tried to discuss my training with my coach. He [coach] rejected me at first because he believed what I needed to do was just listen to him. We had a lot of quarrels at that period (p. 4).” Three papers identified that coaches demonstrated a lack of sport knowledge which reduced the trust required between coach and athlete (viz. Gould et al., 1999; Greenleaf et al., 2001; Jowett & Cockerill, 2003). Jowett and Cockerill (2003), for example, in their study of Olympic medallists’ perspectives of the coach-athlete relationship, quoted an athlete stating that:

At times I felt that I knew much more than the coach about the sport... I felt that the training plan was not always the best. A coach must always reassure the athlete that he and his plans are right. So there were times where I could sense his weaknesses...He was hesitant, indecisive, doubtful, and as a result I did not feel positive around him (pp. 324-325).

Finally, one paper reported coaches setting unrealistic expectations and goals, with Gould, Greenleaf, Chung and Guinan (2002) stating that “a minority of Atlanta athletes indicated that their coach had unrealistic expectations for athletes’ performance and felt this negatively affected their performance” (p. 180).

3.3.4.3.3 *Neutral, mixed, or unclear behaviors.* Ten studies reported behaviors of which there is little consensus or consistency regarding their perceived effect on performance outcomes. Five studies highlighted that coaches evaluated athletes on their relative standing to others (viz. D'Arripe-Longueville et al., 1998; Ge et al., 2016; Jowett, 2003; Pensgaard & Roberts, 2000; Seanor et al., 2017). The following two quotes provide an example of how this behavior was interpreted as either facilitative or debilitating. Jowett (2003) quoted an athlete stating that “I have come to believe that [my coach] does things just to annoy me, to create

problems; for example, he compares me with other athletes in a degrading way” (p. 449), and Seanor et al. (2017) stated that:

The degree of difficulty wall has the names and difficulties of every national level routine performed. The wall helps to keep current athletes motivated and focused on their development as they try to raise their name higher on the wall by performing more difficult routines (p. 102).

In terms of leaderships style, four studies reported an authoritarian leadership style (viz. D’Arripe-Longueville et al., 1998; Ge et al., 2016; Jowett, 2003; Trzaskoma-Bicsérdy et al., 2007). To illustrate, D’Arripe-Longueville et al. (1998) described “the dominant interaction style adopted by expert judo coaches was authoritarian and was manifested by exerting control over athletes, unilateral decision making, maintaining a continuous presence in training and competition, establishing a disciplined rigid climate, and using negative feedback” (p. 321). One study identified both “liberal” (Trzaskoma-Bicsérdy et al., 2007, p. 492) and “democratic” leadership styles amongst Hungarian Olympic coaches (Trzaskoma-Bicsérdy et al., 2007, p. 492). Moving to coping behaviors, three studies highlighted that coaches utilized emotion-focused coping strategies (i.e., alcohol consumption, socializing, taking time out, exercising, and psychological skills) (viz. Gould et al., 2001; Olusoga et al., 2012; Sullivan & Nashman, 1993). Two studies reported coaches providing negative feedback (viz. D’Arripe-Longueville et al., 1998; Kimiecik & Gould, 1993), with D’Arripe-Longueville et al. (1998), for example, stating that the coaches used “aggressive or ironic tones during verbal exchanges, or negative feedback in training or just before competition” (p. 323). Finally, one study reported coaches creating difficulties to build team spirit which “was evident in the organization of pre-competition training camps based on dangerous physical activities. Facing the same difficulties was supposed to build a team spirit” (D’Arripe-Longueville et al., 1998, p. 324).

3.4 Discussion

The purpose of the study was to synthesize the research investigating the psychosocial aspects of coaching in Olympic sport, and this involved reviewing both the psychological and social characteristics of coaches. The convergent thematic analysis identified three themes from the literature, namely traits, states, and/or behaviors. The theme of traits refers to the Olympic coaches’ cognitive, motivational and affective processes which are stable across time and situation, and states represent the context-specific manifestations of traits. The final tier of

coaches' psychosocial attributes relates to their behaviors, which are socially meaningful overt or observable actions.

Beginning with general observations of the literature, the lack of consistent conceptualization across the studies and lack of common language made the results problematic to synthesize and interpret. Olympic coaching research is both multi-paradigmatic and multi-disciplinary, containing a very large number of related concepts. The multi-disciplinary nature of the research means that many of the concepts originate from different knowledge bases, such as psychology or sociology. Despite the strengths that this offers coaching research through viewing similar topics from different perspectives, the fragmentation hinders the different streams from communicating effectively with each other and impedes the development of Olympic coaching research. The 'bright' characteristics of Olympic coaches that describe their socially desirable attributes (cf. Judge, Piccolo, & Kosalka, 2009) were emphasized in many of the papers, and this may paint an unrealistic and somewhat simplistic picture of Olympic coaching. Indeed, there has been a recent shift within the related field of organizational leadership towards understanding leaders dark side characteristics and the primarily derailing, although sometimes advantageous, effects of these on organizational outcomes (e.g. Furnham, Trickey, & Hyde, 2012; Harms & Spain, 2015; Judge et al., 2009). Dark side characteristics represent an individual's socially undesirable attributes (Hogan & Hogan, 2001), and research within sport has begun to highlight the presence of dark side behaviors across sport leaders, managers, and coaches (Bennie & O'Connor, 2012; Cruickshank & Collins, 2015, 2016, 2017; Fletcher & Arnold, 2011). It has been suggested that research examining these characteristics would create practically meaningful knowledge within sport (Cruickshank & Collins, 2017), and therefore future Olympic coaching research should investigate the full spectrum of coaches' psychosocial attributes alongside their short- and long-term consequences for athlete and organizational outcomes.

3.4.1 Traits

Eighteen separate traits, which are the enduring patterns of thoughts feelings, and behaviors which distinguish between individuals (Pervin, 2003), were identified across the included studies. Traits were the least examined characteristics across the body of research, which is surprising given that personality traits have strong predictive capabilities and they indicate how an individual will behave across situations (Roberts, Hill, & Davies, 2017). Of the

papers which did identify traits, there was a narrow focus on specific traits and lack of apparent empirical progression beyond these attributes. Eleven studies identified conscientiousness, seven reported task-orientation, six identified ego-orientation, and five papers reported trait optimism and passion. Conscientiousness was perceived to have a positive relationship with athlete performance because it confers a tendency to be controlled, persistent, and industrious (John, Naumann, & Soto, 2008; MacCann, Duckworth, & Roberts, 2009). It was suggested that coaches who are responsible, organized, and willing to work hard are likely to cope well, and even thrive, with the demanding and often relentless requirements of Olympic sport. The other commonly identified traits also highlighted characteristics of positive, committed, and focused individuals. It is surprising that only Mallett and Coulter (2016) utilized the Big Five theory to understand coaches' personality traits. This contrasts with research from the related field of organizational leadership, where a substantial literature base has been built demonstrating the relationship between the Big Five traits and leadership emergence and effectiveness, with many meta-analyses demonstrating the strength of these relationships (e.g. Judge et al., 2002; Judge et al., 2009). Although emotional intelligence has been widely examined within the organizational leadership literature (e.g. Harms & Credé, 2010; Miao, Humphrey, & Qian, 2016), none of the included studies quantitatively examined coaches' emotional intelligence which is very surprising as it has a strong hypothesized connection with coaching (Chan & Mallett, 2011) and lends itself to a trait-like assessment (Petrides, Pita, & Kokkinaki, 2007). Other constructs which have been explored in the wider leadership literature, such as hardiness, were also lacking from the coaching literature. Given that many studies have examined stress within Olympic coaching (e.g. Chroni et al., 2016; Olusoga et al., 2012; Sullivan & Nashman, 1993), it was unexpected that no research had examined Olympic coaches' hardiness as this has been found to act as a personality buffer against stress (Bartone, Ursano, Wright, & Ingraham, 1989). Although a small number of traits have been repeatedly identified within Olympic coaching research, thus giving confidence to those findings, many traits are underrepresented and it is important that future research broaden the focus to capture more individual difference characteristics.

3.4.2 States

States are context-specific thoughts, feelings, and behaviors which fluctuate from moment to moment (Mischel, 2013), and 28 states were identified across the literature. Much of the research regarding states has highlighted coaches' other-efficacy and coaching-efficacy, with

eight studies identifying the former and seven studies identifying the latter. Both of these states were perceived to enhance athlete outcomes by improving the coach-athlete relationship and increasing commitment, effort, and perseverance when faced with difficulty. There was a noticeable trend towards identifying whether coaches were task- or ego-involved, which reflects the importance that the wider sport psychology literature has placed upon these constructs (e.g. Harwood, Keegan, Smith, & Raine, 2015). As ego-involvement was perceived to have a neutral, mixed, or unclear effect on performance outcomes, further work is required which explores this construct, possibly through an experimental design, to fully understand the effects on Olympic level athletes. Few of the studies examined the context and the situational-cues which activated the coach's states. This is an important omission from the literature as there may be certain environmental factors which trigger specific states, and this knowledge is required if researchers begin to pursue intervention studies. Taken together, many of the states identified in the literature were replicated across a number of studies, thus progressing knowledge and providing a platform for future research.

3.4.3 Behaviors

Moving onto the theme of behaviors, 38 behaviors were highlighted across the studies. Behaviors are defined as overt and observable actions (Kelly & Agnew, 2012), and research examining coach behaviors represented the largest body of work across the studies. There was a significant trend towards understanding the behaviors which underpinned the coach-athlete relationship, with 13 studies highlighting that coaches demonstrated understanding and concern towards athletes, and 11 studies reporting that coaches provided praise and encouragement. It was suggested that coaches' expressions of warmth were perceived as signals of affiliation, promoting psychological safety and enhancing athletes' willingness to openly share information, which facilitated performance outcomes. There was also a trend towards investigating coaches use of autonomy supporting behaviors, which were suggested to facilitate Olympic athlete's motivation, performance, and well-being. However, there was very limited discussion of the context in which specific coaching behaviors occurred. It is important that future research gives more space to explaining and examining the context so that the findings can be, where appropriate, generalized or transferred. It was surprising that none of the studies used systematic observation of coaches given that these methods represent one of the most common forms of research within coaching as a whole (Cope, Partington, & Harvey, 2017). Greater use of these

tools would provide a wealth of knowledge regarding Olympic coaches behaviors, and would facilitate the use of a common language which would enhance the development of Olympic coaching research.

3.4.4 Methods

The vast majority of the studies utilized a qualitative design, with semi-structured interviews being the most used data collection method. Although this methodology provides many insights and nuances into Olympic coaching, there is a requirement for more studies to employ quantitative or mixed methods designs to create testable hypotheses and measure theoretically relevant constructs with validated instruments. The studies examined psychosocial aspects of Olympic coaching from a range of athlete and coach perspectives. This is encouraging as coaches self-reported perceptions of their own characteristics and performance provides an insight into their internal world, and athlete observer-reports represent an additional and important source of information regarding coaches behaviors and reputations. Surprisingly, there was limited use of longitudinal studies, and greater use of this design would facilitate an understanding of the relationship between coaches' characteristics and performance outcomes. There was also a lack of research which used comparative designs. This is an important point for future researchers to address so that a greater understanding of which factors may discriminate between more or less successful Olympic coaches can begin to be built. Finally, the majority of studies provided a very limited description of coaches' characteristics, such as the sport coached, their age, or years of coaching experience. This restricts the ability of future studies to replicate these findings. Recently, the need to replicate studies has attracted considerable attention within the field of psychology (Maxwell, Lau, & Howard, 2015), and it is important that future research within coaching reports the participant characteristics (whilst accounting for confidentiality) so that we can begin to understand whether patterns within the data are just noise or whether they reflect a deeper meaning.

3.4.5 Limitations of This Review

This was the first review to systematically synthesize and evaluate the research relating to psychosocial aspects of coaching in Olympic sport, and allows a growing body of literature to become easily accessible. It has provided original information regarding research trends which may not be apparent from any individual study, and provides inferences and conclusions based on the collation of these findings. However, there are some important limitations which require

consideration when interpreting the results of this review. Firstly, the focus of the studies was rarely to identify coaches' psychosocial characteristics through the lens of established psychological constructs. This means that many of the results had to be translated into psychosocial terminology, for example findings which highlighted a coach's stable anxiety across contexts were interpreted as trait anxiety. Secondly, this review did not use a comparison group as the purpose was to examine the Olympic coaching literature, and so it is unclear whether the psychosocial characteristics outlined in this review are different from the characteristics exhibited by coaches from other levels of sport. It would be interesting to understand whether certain characteristics are dominant in specific contexts, as each level of sport has its' own set of internal and external pressures. The review was limited to peer-reviewed and English language journal articles, meaning that information from non-English language studies may have been missed, and therefore these findings may not reflect the global body of coaching research.

3.4.6 Future Research Directions and Applied Implications

In terms of future research directions, there are a number of avenues that this systematic review has highlighted which would benefit from further exploration. Personality traits do not exist within a vacuum, instead they function collectively with other personality subsystems to enable the expression of psychological individuality (Coulter, Mallett, Singer, & Gucciardi, 2016; Roberts & Woodman, 2017). Rather than examining traits in isolation, multi-variate designs might be a useful next step towards understanding the role of theoretically relevant constructs in Olympic coaching. This research would not only facilitate an understanding of the relative importance of each trait, but also how they interact together to produce behavioral, performance, and health-related outcomes. It is also important that future research begins to examine whether there are any psychosocial factors which discriminate between coaches who have coached athletes to distinct performance outcomes. For example, there may be discriminating characteristics between coaches who have coached athletes to win Olympic gold medals and those who have not. As opposed to comparing Olympic coaches as a single cohort with non-Olympic coaches, it is important to use an appropriate comparator group to examine any potentially discriminating factors unique to these world-leading Olympic coaches. This would develop the empirical research base and help to determine the factors which may be advantageous towards coaching an athlete to win an Olympic gold medal.

The results of this review have several applied implications that arise from the findings that there are many traits, states, and behaviors which have a perceived facilitative, debilitating, or neutral, mixed or unclear effect on athlete performance. These results provide coach educators, National Governing Bodies, and applied sport psychologists with an outline of the characteristics which may be important for Olympic coaches to develop. Applied sport psychologists often monitor individuals across training and competitions in order to identify maladaptive patterns which may require intervention. Identifying the characteristics which are likely to have a debilitating effect on coaches' performance is important for applied sport psychologists, and recent research has demonstrated that many characteristics, including traits, are modifiable through evidence-based interventions (see Roberts & Woodman, 2017). Taking an example, this review highlighted a link between coaching-efficacy and athlete performance in a perceived facilitative manner. Using Bandura's (1977, 1997) work and, where required, helping coaches to (i) observe role models (i.e. vicarious learning); (ii) develop and practice new coaching skills (i.e. direct experience); and (iii) seek instruction and encouragement from mentors (i.e. verbal persuasion) will develop their coaching-efficacy and enhance their functioning. The results of this study demonstrate that there is much more to Olympic coaching than sport-specific technical and tactical knowledge, and it is important that formal learning programs reflect this alongside the focus on professional knowledge (Langan, Blake, & Lonsdale, 2013). Providing guidance and support regarding psychosocial aspects of coaching, such as ways to optimize the coach-athlete relationship (Jowett, 2017), represents an important area for formal, non-formal, and informal learning to capture.

3.5 Conclusion

The results of this review highlight that Olympic coaches express a variety of traits, states, and behaviors, which related to their performance in a perceived facilitative, debilitating, or neutral, mixed, or unclear manner. The literature supports the important influence that psychosocial characteristics have on Olympic coaching performance, but work is required to provide a more complete understanding. This work should be theoretically driven, follow a coherent empirical progression, and explore both dark as well as bright characteristics. Notwithstanding these points, our understanding of coaching in Olympic sport continues to develop, and building our knowledge of coaches will enhance interventions and formal coach development programs, and contribute to improved performance and health outcomes.

Chapter Four: Study Two

A Quantitative Study of Psychological Aspects of Olympic Swimming Coaches

Chapter Three comprised a systematic review of the research evidence investigating psychosocial aspects of coaching in Olympic sport, and highlighted that no previous research has investigated potential psychological differences between sub-populations of Olympic coaches. Therefore, Chapter Four examines whether any psychological factors discriminate world-leading (i.e. Olympic gold medal winning) from world-class (i.e. Olympic non-gold medal winning) coaches by utilizing self-reported psychometric questionnaires covering the Big Five personality traits, emotional intelligence, hardiness, and the dark triad.

4.1 Literature Review

The Olympic Games have been recognized as the most demanding and prestigious sporting competition in the world (Gould & Maynard, 2009), and winning an Olympic gold medal represents the pinnacle of sporting excellence (Haberl & Peterson, 2006). The Olympics have a supreme international significance due to their globalized, multi-sport nature, and occurrence only once every four years (Arnold & Sarkar, 2015). Alongside athletes, Olympic coaches are performers in their own right (Gould, Guinan, Greenleaf, & Chung, 2002) as they function under immense media, public, and organizational scrutiny to deliver the best possible results (Fletcher & Scott, 2010; Mallett, 2010; Mallett & Lara-Bercial, 2016). This has led researchers to increasingly argue that in addition to focusing on the technical aspects of coaching, there is a requirement to understand coaches' psychosocial attributes (Giges, Petipas, & Vernacchia, 2004; Gilbert & Trudel, 2004; Gould & Wright, 2012; Kelly, Thelwell, Barker, & Harwood, 2018; McCarthy & Giges, 2016). This changing emphasis has also been seen within the parallel scientific field of leadership psychology, where there has been a resurgence of interest in the personalities of the leaders. Personality theorists had been fragmented for years around issues of philosophy and measurement, but they have now converged around the typology of the Big Five model. This model provides an organizing framework of personality, with a small but meaningful set of personality constructs (Costa & McCrae, 1992). The advancement of theory and methodology enabled a re-examination of previously held assumptions about the futility of personality in leadership

research, and has suggested that previous researchers over-estimated the variability of the data and underestimated the central tendencies. The resultant personality research has produced powerful insights into many leadership behaviors and organizational outcomes (see Judge, Bono, Ilies, & Gerhardt, 2002; Judge, Piccolo, & Kosalka, 2009; Ones, Dilchert, Viswesvaran, & Judge, 2007).

These more recent findings have led to a renewed exploration of the role of personality in other areas of applied psychology, such as job performance and job satisfaction (Barrick & Mount, 1991; Judge, Heller, & Mount, 2007), and athletes' and coaches' behaviors (Allen, Greenlees, & Jones, 2013; Jackson, Dimmock, Gucciardi, & Grove, 2011; Allen & Laborde, 2014; Yang, Jowett, & Chan, 2015). In particular, the Big Five model with its five personality traits has received considerable research attention across organizational and applied psychology. The conscientiousness trait refers to the extent to which individuals are organized, thorough, disciplined, and hardworking (Bradley, Klotz, Postlethwaite, & Brown, 2013; Turban, Stevens, & Lee, 2009). Agreeableness refers to the extent to which individuals are trusting, cooperative, caring, and tolerant (Witt, Burke, & Mount, 2002), and openness reflects an individual's tendency towards imagination, tolerance of ambiguity, and preference for complexity (Chernyshenko et al., 2011; McCrae & Costa, 1985). Extraversion is the extent to which individuals are sociable, gregarious, and dominant (Chamorro-Premuzic & Furnham, 2004), and neuroticism reflects an individual's tendency towards experiencing negative emotions (Chamorro-Premuzic & Furnham, 2004).

Study One, a systematic review of the psychosocial aspects of coaching in Olympic sport, identified traits that were related to Olympic athletes' performance in a perceived facilitative, debilitating, or neutral, mixed, or unclear manner. The study found that conscientiousness, a trait that reflects dependability and an achievement orientation (Colbert Judge, Choi, & Wang, 2012), was the most frequently highlighted personality trait amongst Olympic coaches. Mallet and Coulter (2016), Lara-Bercial and Mallett (2016) and Mallet and Lara-Bercial (2016) have also worked to identify a personality profile of serial medal winning professional, Olympic and Paralympic coaches from a variety of sports. Across these studies, the authors found that the coaches were conscientious, open to new experiences, agreeable, extraverted, and emotionally stable in comparison with normalized population scores. They argued that this personality profile reveals that these coaches are active, optimistic individuals with high impulse control, and that this amalgam of characteristics is likely to help coaches guide athletes towards the achievement of their goals. However, given that their sample comprised serial medal winning Olympic and professional

coaches, it remains unclear whether any psychological factors discriminate between world-leading and world-class coaches.

Understanding differently performing cohorts within an already elite group may have important implications. In their examination of exceptional human performance, O'Boyle and Aguinis (2012) demonstrated that a small number of elite individuals account for the majority of performance results, and argued that both theory and practice should adjust to account for their significant impact. The authors suggested that more research should be devoted to differentiating the tail end of the distribution curve to identify these elite performers as they have a substantial impact on organizational outcomes. "Our work indicates that superstars exist, but does not address the motivations, behaviors and individual differences of the superstars" (O'Boyle & Aguinis, 2012, p. 113). Further, in a commentary on eminent individuals, Simonton (2014) argued that "the factors that distinguish athletes from non-athletes do not have to be equivalent to those that distinguish the rare competitors who won multiple gold medals from those in the same Olympic event who earned only a single bronze medal. Some of those factors might even be antithetical" (Simonton, 2014, p. 478). In other words, the variables that discriminate world-leading coaches from the general population may not be identical with those that discriminate them from world-class coaches. This study therefore examined the psychological factors that discriminate between world-leading coaches, defined as Olympic gold medal winning coaches, and world-class coaches, defined as non-gold medal winning Olympic coaches, and each of the subsequent 15 hypotheses include this element in their formulation.

The first set of hypotheses are based on the previously highlighted range of Big Five personality considerations:

Hypothesis 1a: The world-leading coaches will be higher on conscientiousness in comparison with the world-class coaches.

Hypothesis 1b: The world-leading coaches will be higher on openness to experience in comparison with the world-class coaches.

Hypothesis 1c: The world-leading coaches will be higher on agreeableness in comparison with the world-class coaches.

Hypothesis 1d: The world-leading coaches will be higher on extraversion in comparison with the world-class coaches.

Hypothesis 1e: The world-leading coaches will be lower on neuroticism in comparison with the world-class coaches.

In order to fully understand the effect of psychological attributes on Olympic coaching, it is important to consider wider elements as behaviors are driven by more than the Big Five personality constructs. Emotional intelligence refers to an individual's response to interpersonal or intrapersonal emotional information, and comprises the identification, interpretation, expression, and regulation of both own and other emotions (Mayer & Savoy, 1997; Petrides & Furnham, 2003). Emotional intelligence has been conceptualized as either a trait, reflecting an individual's emotional self-perceptions (Petrides, Pita, & Kokkinaki, 2007), or an ability, reflecting an individual's emotion related cognitive abilities (Mayer, Roberts, & Barsade, 2008). Study One identified emotional intelligence as an important trait within Olympic coaching, and in their qualitative study of Olympic and Paralympic coaches, Hodgson, Butt, and Maynard (2017) discussed the influence of emotional intelligence on coaches' perceptions and reactions to events in training and competition. The role that emotions play in coaching has received increasing attention (Chan & Mallett, 2011). Emotions convey a range of thoughts, feelings, and attitudes, and an athlete's expression of emotion is a critical source of knowledge for coaches. Creating a positive and challenging emotional climate contributes towards successful coach-athlete relationships (O'Neil, 2011), and guiding athletes to optimal performances is contingent upon coaches' displaying empathy and understanding as well as adapting to athletes' emotional needs (Laborde, Dosseville, & Allen, 2016). Yet, despite the hypothesized importance of this trait, it has received limited research attention within the coaching literature, and there remains a need for empirical studies (Laborde et al., 2016). Given that emotions permeate sports performance and coaching is an emotionally laden process, it is hypothesized that this will be an important factor in world-leading coaching. Hence, the second set of hypotheses predict the following:

Hypothesis 2a: The world-leading coaches will be higher on perception of emotion in comparison with the world-class coaches.

Hypothesis 2b: The world-leading coaches will be higher on management of own emotion in comparison with the world-class coaches.

Hypothesis 2c: The world-leading coaches will be higher on management of other emotion in comparison with the world-class coaches.

Hypothesis 2d: The world-leading coaches will be higher on utilization of emotion in comparison with the world-class coaches.

Hardiness, a multidimensional personality trait that protects individuals against the harmful effects of stressors and contributes towards effective stressor-strain-coping in demanding environments (Eschleman, Bowling, & Alarcon, 2010; Hull, Van Treuren, &

Virnelli, 1987; Kobasa, 1979; Kobasa, Maddi, & Kahn, 1982), is likely to be a key variable within Olympic coaching. Hardiness combines the three attitudes of commitment, control, and challenge (Kobasa, 1979). Hardy individuals are committed to life with a high sense of purpose, believe they have control over the outcome of events, and have a tendency to interpret unexpected events as a challenge rather than a threat (Maddi, 2006). Study One highlighted that hardiness had not been empirically studied within Olympic coaching, and would be a fruitful avenue for future researchers seeking to understand Olympic coaching success. Mallett and Coulter (2016) discussed the potential contribution of hardiness to the participant coach's ability to experience few negative emotions and remain emotionally stable during the Olympic Games. Coaching is an inherently stressful occupation (Fletcher & Scott, 2010), and in a recent systematic review of stressors within coaching, Norris, Didymus, and Kaisler (2017) demonstrated that coaches experience numerous organizational, contextual, interpersonal, and intrapersonal stressors. Coaches continued employment routinely depends on athletes' Olympic performance outcomes (Fletcher & Scott, 2010), and research has highlighted that coaches experience of stress impacts on athletes' performances as well as their own (Thelwell, Wagstaff, Rayner, Chapman, & Barker, 2017). Hardiness is therefore expected to be an influential factor in determining whether coaches can remain composed under the enormous pressure of guiding an athlete to win an Olympic gold medal, and the third set of hypotheses predict the following:

Hypothesis 3a: The world-leading coaches will be higher on commitment in comparison with the world-class coaches.

Hypothesis 3b: The world-leading coaches will be higher on control in comparison with the world-class coaches.

Hypothesis 3c: The world-leading coaches will be higher on challenge in comparison with the world-class coaches.

Another set of traits not captured within the Big Five is that of the dark traits of Machiavellianism, psychopathy, and narcissism (Paulhus & Williams, 2002). The Machiavellianism construct was derived from Niccolo Machiavelli's political handbook entitled *The Prince* (1532/1950) which suggested that morally righteous men must sometimes act in immoral and duplicitous ways to effectively manage others and gain political power. Christie and Geis (1970), drawing heavily on Machiavelli's principles, described Machiavellianism as the propensity to lie and manipulate, hold a cynical view of human nature, and exploit others (Christie & Geis, 1970; Spain, Harms, & LeBreton, 2014). This construct has been found to have a negative relationship with leadership effectiveness,

primarily due to the interpersonal difficulties inherent when working with an individual high in Machiavellianism (Belschak, Den Hartog, & Kalshoven, 2015; O'Boyle, Forsyth, Banks, & McDaniel, 2012). Psychopathy is marked by low empathy and anxiety, and a lack of remorse or guilt (Lilienfeld, Watts, & Smith, 2015; O'Boyle et al., 2012), and is also negatively related to leadership effectiveness and associated with poor follower satisfaction (O'Boyle et al., 2012). Narcissism is characterized by a grandiose sense of self, a pre-occupation with success, and a demand for admiration (Ames, Rose, & Anderson, 2006). The construct has a relatively long history within the field of psychology, and some have suggested that narcissism is a core component of leadership success. Freud (1921), for example, wrote "the leader himself needs to love no one else, he may be of a masterful nature, absolutely narcissistic, self-confident, and independent" (p. 23-124). However, the majority of the literature suggests that although narcissism is positively related to leadership emergence, it is negatively related to leadership effectiveness (Braun, 2017; Judge, Piccolo, & Kosalka, 2009; O'Boyle et al., 2012). Within sport, Fletcher and Arnold (2011) were the first scholars to acknowledge the dark-side of leadership, with Cruickshank and Collins (2015) and Arnold, Fletcher, and Hobson (2018) providing evidence of the strategic employment of dark-side behaviors of sport leaders and managers, although importantly, their samples did not include Olympic gold medalists. These observations lead to the fourth and final set of hypotheses:

Hypothesis 4a: The world-leading coaches will be lower on Machiavellianism in comparison with the world-class coaches.

Hypothesis 4b: The world-leading coaches will be lower on psychopathy in comparison with the world-class coaches.

Hypothesis 4c: The world-leading coaches will be lower on narcissism in comparison with the world-class coaches.

The purpose of this research is to examine whether any psychological factors discriminate between world-leading and world-class coaches. More specifically, this study examines whether any differences exist across the personality constructs of the Big Five, emotional intelligence, hardiness, and the dark triad. The Olympic Games represents the pinnacle of excellence within the sport of swimming. The Olympics is a multi-sport event which attracts a global audience, and swimmers who win gold medals can expect to gain lucrative sponsorship deals. Many national governments have an openly stated aim of achieving gold medals at the Olympic Games, and taken together, coaching an athlete to win an Olympic gold medal represents world-leading coaching in the sport of swimming. Given

that there are psychological differences between athletes who have won multiple Olympic medals in comparison to those who have not (Hardy et al., 2017), it may also be that specific psychological characteristics discriminate between coaches who have coached athletes to win Olympic gold medals and those who have not. Building on the call from Hodgson et al. (2017) to solely examine coaches from one sport, this study focuses on the sport of swimming in order to minimize the confounding factor of sport type on the role of psychological factors in Olympic coaching success. This research will contribute towards sporting bodies and organizations understanding of successful Olympic coaches, and drive the identification, recruitment, and development of these superstar coaches.

4.2 Method

The methods are reported in accordance with Appelbaum et al.'s (2018) reporting standards for quantitative research in psychology and comprise the following sections: Inclusion and exclusion, participant characteristics, participant selection, sample size and precision, measures, data collection, quality of measurements, instrumentation and psychometrics, conditions and design, data diagnostics, and analytic strategy.

4.2.1 Inclusion and Exclusion

Inclusion criteria required participants to be active coaches and have been a swimmer's main coach for least two years prior to competing at an Olympic Games.

4.2.2 Participant Characteristics

Participants were 36 Olympic swimming coaches (33 males, 3 females), who ranged in age from 32 to 79 years old ($M = 49.6$, and $SD = 9.04$). Collectively, these participants had coached 169 swimmers to win 352 Olympic medals, of which 90 swimmers had won 155 Olympic gold medals. Fourteen of the participants coached within Great Britain, 13 within Australia, eight within America, and one within the Netherlands. Participants were all active coaches, and reported between six and 53 years of swimming coaching experience ($M = 25.90$, and $SD = 12.60$), with between two and 39 years of Olympic level coaching experience ($M = 17.14$, and $SD = 11.22$). They reported taking between two and 25 years to coach a swimmer to an Olympic medal ($M = 12.80$, and $SD = 6.80$), and between two and 26 years to coach a swimmer to an Olympic gold medal ($M = 13.30$, and $SD = 7.62$). The participants had predominantly swimming backgrounds, with eight Olympic swimmers, six international swimmers, 10 national swimmers, two regional swimmers, and one recreational swimmer, with others reporting backgrounds in ice hockey, soccer, surfing, surf-lifesaving, judo, water polo, and Australian Rules Football. Participants had achieved various education levels, from five with school certificates, five with national vocational qualifications, 20 with

undergraduate degrees, five with Masters degrees to one with a doctoral degree. Twenty participants were married, two were in civil partnerships, nine were in relationships, two were divorced, and three were single. Twenty-three participants reported having children, and 13 reported having no children.

4.2.3 Participant Selection

A non-probability criterion sampling technique was utilized to select and group participants. Ninety percent of the individuals approached agreed to participate. The world-leading group included 21 participants who had coached one or more swimmers to win at least one Olympic gold medal, and the world-class group included 15 participants who had coached one or more swimmers to an Olympic Games and/or coached one or more swimmers to win at least one Olympic bronze or silver medal (but not coached a swimmer to win an Olympic gold medal). The data was collected between April 2015 and December 2016 across 16 cities in three continents, and ethical approval was obtained from the Loughborough University ethics committee.

4.2.4 Sample Size and Precision

Due to the inclusion criteria requiring that participants had coached at least one swimmer to win an Olympic gold medal and with the comparator group having coached at least one swimmer to the Olympic Games and/or coached one or more swimmers to win at least one Olympic bronze or silver medal, the potential sample size was restricted. An acceptable sample size of eminent individuals is smaller in comparison with typical research studies which generally consist of an interchangeable sample of individuals drawn from an indefinitely large population (Simonton, 1999, 2014). Indeed, Simonton (2014) asserted that “because the creators at the upper end are so terribly rare, the odds of obtaining even one person among the sample size typical of most research of this type can become essentially zero” (p. 477). Therefore the sample size of 36 was deemed to be acceptable as these participants represent a high proportion of the population who are active swimming coaches and have either coached a swimmer to the Olympic Games, or to win an Olympic bronze, silver, or gold medal, and it is consistent with the sample sizes of previous research with this specialist population (e.g. Lara-Bercial & Mallett, 2016, Mallett & Lara-Bercial, 2016).

4.2.5 Measures

Primary measures consisted of the Big Five Inventory (John, Donahue, Kentle, 1991; see Appendix A), the Schutte Emotional Intelligence scale (Schutte et al., 1998; see Appendix B), the Dispositional Resilience Scale (Bartone, 1995; see Appendix C), and the Dirty Dozen (Jonason & Webster, 2010; see Appendix D).

4.2.6 Data Collection

Following institutional ethics approval, a pilot study was undertaken with an international level athletics coach, and the layout of the questionnaires was then finalized. Potential participants were approached and invited to participate in the study either at the 2015 Australian Coaches and Teachers Association Convention in the Gold Coast, the 2015 American Swimming Coaches Association World Clinic in Cleveland, or via direct correspondence. During this initial contact, participants were informed of the purpose of the study, their right to withdraw at any time, and it was clarified that their identity would be anonymized. After providing written informed consent, participants were asked to complete the questionnaires, which included a demographic questionnaire (see Appendix E) and the primary measures. When responding to each item, participants were asked to reflect upon their general cognitions and motivations when coaching, as opposed to their personal life.

4.2.7 Quality of Measurements

To enhance the quality of measurements, all data was collected by the author, who is trained to post-graduate level in quantitative research methods.

4.2.8 Instrumentation and Psychometrics

4.2.8.1 Big Five personality traits. The Big Five personality traits were measured using the 44-item Big Five Inventory (BFI; John & Srivastava, 1991). Using the stem “I am someone who...”, participants were asked to respond to items such as: “Perseveres until the task is finished,” “Is original, comes up with new ideas,” “Likes to cooperate with others,” “Is outgoing, sociable,” and “Is depressed, blue.” Participants reported the degree to which they agreed with the statements on a 5-point scale anchored by 1 (*disagree strongly*) to 5 (*agree strongly*). The BFI has been used in studies with coaches (Jackson et al. 2011), and has demonstrated good reliability, test-retest reliability, factor structure, and convergent and discriminant validity in previous research (John & Srivastava, 1999). Cronbach’s alpha in the present sample for conscientiousness, openness, agreeableness, extraversion, and neuroticism were acceptable.

4.2.8.2 Emotional intelligence. Emotional intelligence was measured using the 33-item Schutte Emotional Intelligence Scale (EIS; Schutte et al., 1998) which consists of four subscales assessing perception of emotion, management of own emotion, management of other emotion, and utilization of emotion. The scale consists of questions such as: “I know what other people are feeling just by looking at them,” “I have control over my emotions,” “I help other people feel better when they are down,” and “When I experience a positive emotion, I know how to make it last.” Participants were instructed to indicate the extent to

which they agreed with each statement on a 5-point scale anchored by 1 (*disagree strongly*) to 5 (*agree strongly*). The EIS is the most utilized emotional intelligence questionnaire in sport (cf. Laborde, Dosseville, & Allen, 2016), and the scale has demonstrated high reliability and validity in previous research (Marks et al., 2016; Schutte et al., 1998), with Van Rooy and Viswesvaran's (2004) meta-analysis indicating that the EIS had the highest predictive validity of all the included emotional intelligence measures. It has also demonstrated discriminant validity with respect to personality traits and cognitive intelligence (Schutte et al., 1998). Cronbach's alpha in the present sample for perception of emotion, management of own emotion, management of other emotion, and utilization of emotion were acceptable.

4.2.8.3 Hardiness. Hardiness was measured using the Dispositional Resilience Scale (DRS-15; Bartone, 2007), which consists of three subscales that assess commitment, control, and challenge. The scale includes 15 positively and negatively valenced items, and comprises questions such as: "By working hard you can always achieve your goals," "How things go in my life depends on my own actions," and "I don't like changes in my regular activities." Participants were instructed to indicate the extent to which they agreed with each statement, on a 4-point scale anchored by 0 (*not at all true*) to 3 (*completely true*). The DRS-15 has been utilized in sport (Madrigal, Gill, & Eskridge, 2016), and has demonstrated acceptable internal reliability and predictive validity in previous research (Erbes et al., 2011). Cronbach's alpha in the present sample for commitment, control, and challenge were acceptable.

4.2.8.4 Dark triad. The dark triad was assessed using the 12-item Dirty Dozen (Jonason & Webster, 2010) which consists of 3 subscales that measure Machiavellianism, psychopathy, and narcissism. Participants were instructed to respond to items such as: "I tend to manipulate others to get my way," "I tend to lack remorse," and "I tend to seek prestige or status." Participants reported the extent to which they agreed with each statement on a 5-point scale anchored by 1 (*strongly disagree*) to 5 (*strongly agree*). This measure has been widely used in previous studies of leadership as a concise assessment tool to examine the dark triad (Landay, Harms, & Credé, 2019) and has demonstrated acceptable reliability and predicative validity (Spurk, Keller, & Hirschi, 2016; Wisse, Barelds, & Rietzschel, 2015; Wisse & Sleebos, 2016) with good convergent validity with the HEXACO model of personality (Jonason & McCain, 2012). Cronbach's alpha in the present sample for Machiavellianism, psychopathy, and narcissism were acceptable.

4.2.9 Conditions and Design

This study utilized a nonexperimental correlational design with multiple-group comparisons.

4.2.10 Data Diagnostics

In line with recommendations for studies which include eminent individuals, outliers were not excluded and the data was not transformed (O'Boyle & Aguinis, 2012; Simonton, 2014). Contrary to the assumptions of normality in standards models, the distribution of eminent individuals is considered to be non-normal (Den Hartigh, Van Dijk, Steenbeek, & Van Geert, 2016; O'Boyle & Aguinis, 2012; Simonton, 2014). More specifically, research has demonstrated that eminent individuals produce a highly-skewed distribution, in which exceptional individuals are found in the right tail (Den Hartigh et al., 2016; Simonton, 1999, 2000, 2014; Simonton & Baumeister, 2005). These distributions do not follow a Gaussian distribution, but rather are governed by Parentian distributions (O'Boyle & Aguinis, 2012; Simonton, 2014; Walberg, Strykowski, Rovai, & Hung, 1984). In contrast to a normal curve where a value exceeding three standard deviations from the mean would ordinarily be considered an outlier, a Parentian distribution would predict that these values are common and the elimination of these outliers or their transformation would be highly questionable (O'Boyle & Aguinis, 2012). Indeed, as O'Boyle and Aguinis (2012) state, "influential cases should be retained in the data set unless there is clear evidence that their value is incorrect (i.e. typographical error) or belong to a population to which the researcher does not wish to generalize" (p. 110).

4.2.11 Analytic Strategy

Given that the aim was to determine whether statistical differences existed between two groups of coaches, and due to the theoretical relationships among the Big Five personality variables, the emotional intelligence variables, the hardiness variables, and the dark triad variables, four multivariate analysis of variances (MANOVAs) were conducted. MANOVAs test the mean differences and statistical significance between groups on a combination of dependent variables, and determine whether these are likely to have occurred by chance. MANOVAs offer several advantages over a series of standard analysis of variances (ANOVAs), including a reduction in the probability of a type I error compared with multiple univariate ANOVAs (Tabachnick & Fidell, 2014), and improved power (Warne, 2014).

4.3 Results

4.3.1 Statistics and Data Analysis

The Statistical Package for Social Sciences (SPSS; Version 24.0) was used for all statistical analyses. Table 4 reports the means and standard deviations among the study variables for the world-leading ($n = 21$) and world-class ($n = 15$) subgroups, and Table 5 presents correlations among the theoretically related variables across the groups.

Table 4

Means and Standard Deviations for Variables

Variable	Group			
	World-leading		World-class	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
The Big Five				
Conscientiousness	3.90	.649	3.95	.609
Openness	4.00	.495	3.77	.495
Agreeableness*	4.14	.462	3.79	.434
Extraversion	3.67	.608	3.98	.654
Neuroticism	1.99	.402	2.24	.590
Emotional Intelligence				
Perception of emotion*	41.57	4.18	38.00	5.14
Managing own emotion*	37.67	3.73	34.60	4.66
Managing other emotion	32.00	3.99	31.53	3.54
Utilization of emotion	21.90	3.66	23.33	2.58
Hardiness				
Commitment	13.48	1.54	12.67	2.19
Control	10.19	3.06	10.67	2.32
Challenge	12.86	1.85	12.20	2.65
The Dark Triad				
Machiavellianism*	13.81	3.93	16.73	3.41
Psychopathy	11.76	3.09	13.40	2.59
Narcissism*	13.57	3.87	16.87	2.88

Note. * $p < .05$

Table 5

Correlations Among Theoretically Related Variables

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
The Big Five															
1. Conscientiousness	-														
2. Openness	-.03	-													
3. Agreeableness	.19	.13	-												
4. Extraversion	.13	.13	.09	-											
5. Neuroticism	-.36*	-.22	-.28	-.28	-										
Emotional Intelligence															
6. Perception of emotion						-									
7. Managing own emotion						.73*	-								
8. Managing other emotion						.51*	.51	-							
9. Utilization of emotion						.27	.21	.47*	-						
Hardiness															
10. Commitment										-					
11. Control										.05	-				
12. Challenge										.51*	.01	-			
The Dark Triad															
13. Machiavellianism													-		
14. Psychopathy													.53*	-	
15. Narcissism													.59*	.26	-

Note. * $p < 0.05$

4.3.1.1 Big Five personality traits. A one-way multivariate analysis of variance (MANOVA) with one independent variable (world-leading vs. world-class) was conducted with the Big Five dependent variables of conscientiousness, openness, agreeableness, extraversion, and neuroticism (hypothesis 1a, b, c, d, and e). Variances and covariances were homogenous across the variables of conscientiousness, openness, agreeableness, extraversion, and neuroticism (Levene's and Box's test $p > 0.05$). A significant multivariate test statistic was obtained: Wilks's Lambda = .676, $F(5, 30) = 2.88$, $p = .031$, $\eta^2 = .324$, indicating that a significant difference existed in the Big Five between the two groups, and a large effect size was found with respect to individual differences research (Gignac & Szodorai, 2016). Follow-up univariate F-tests identified significant group differences in agreeableness $F(1, 34) = 5.13$, $p = .030$, $\eta^2 = .131$, but not conscientiousness $F(1, 34) = .041$, $p > 0.05$, $\eta^2 = .134$, openness $F(1, 34) = 2.02$, $p > 0.05$, $\eta^2 = .056$, extraversion $F(1, 34) = 2.11$, $p > 0.05$, $\eta^2 = .058$, or neuroticism $F(1, 34) = 2.25$, $p > 0.05$, $\eta^2 = .062$. Mean scores revealed that world-leading coaches scored higher on agreeableness ($M = 4.14$) in comparison with world-class coaches ($M = 3.79$) (see Figure 3).

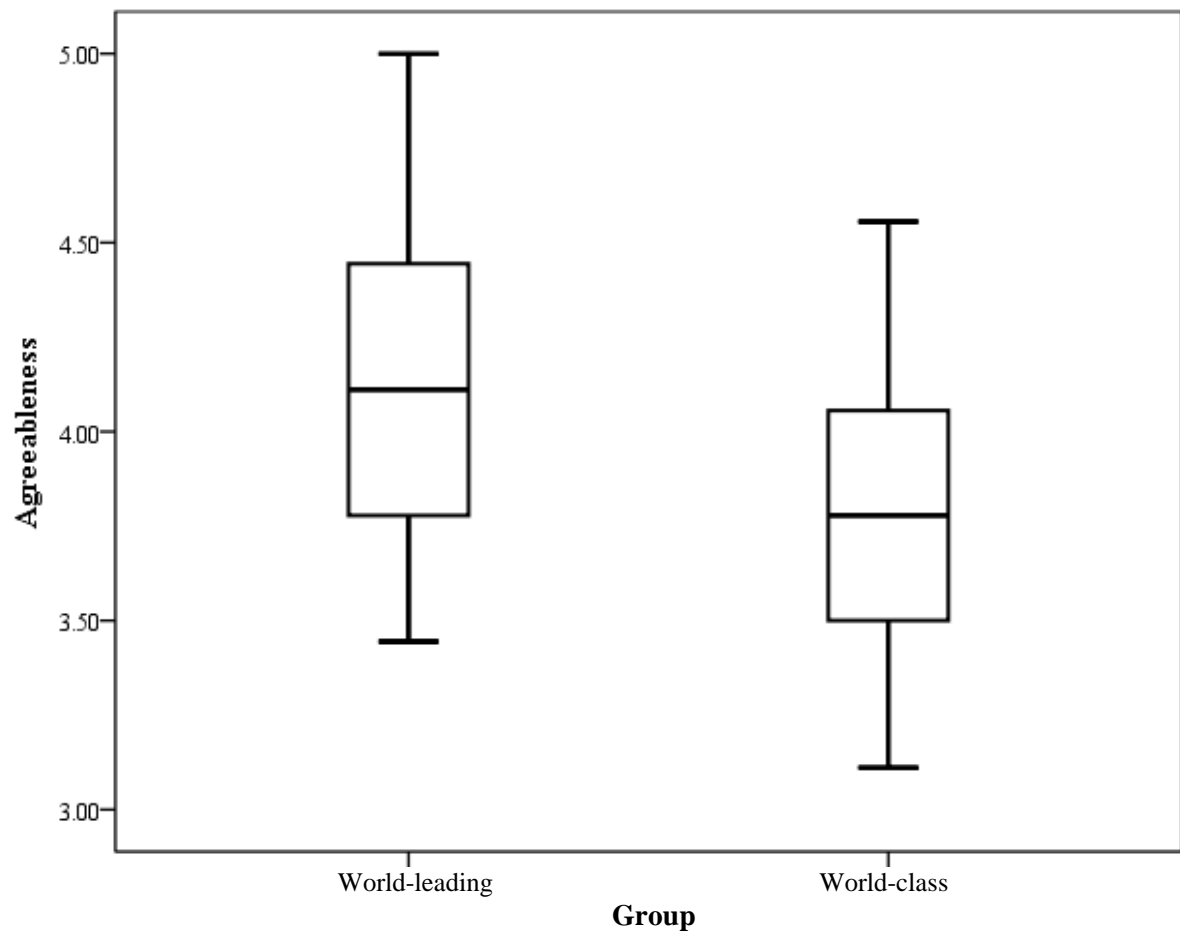


Figure 3. Boxplot for agreeableness scores from the Big Five Inventory demonstrating a significant difference between the world-leading and world-class coaches.

4.3.1.2 Emotional intelligence. A one-way multivariate analysis of variance (MANOVA) with one independent variable (world-leading vs. world-class) was performed with the four emotional intelligence dependent variables of perception of emotion, management of own emotion, management of other emotion, and utilization of emotion (hypothesis 2a, b, c, and d). Variances and covariances were homogenous across the variables of perception of emotion, management of own emotion, management of other emotion, and utilization of emotion (Levene's and Box's test $p > 0.05$). A significant multivariate test statistic was obtained: Wilks's Lambda = .739, $F(4, 31) = 2.74$, $p = .046$, $\eta^2 = .261$ indicating that a significant difference existed in emotional intelligence between the two groups, and a medium effect size was found with respect to individual differences research (Gignac & Szodorai, 2016). Follow-up univariate F-tests identified significant group differences in perception of emotion, $F(1, 34) = 5.28$, $p = .028$, $\eta^2 = .134$, and managing own emotion, $F(1, 34) = 4.81$, $p = .035$, $\eta^2 = .124$, but not managing other emotion, $F(1, 34) = .131$, $p > 0.05$, $\eta^2 = .004$, or utilization of emotion, $F(1, 34) = 1.68$, $p > 0.05$, $\eta^2 = .047$. Mean scores revealed that world-leading coaches scored higher on perception of emotion ($M = 41.57$) in comparison with world-class coaches ($M = 38.00$) (see Figure 4), and world-leading coaches scored higher on managing own emotion ($M = 37.67$) in comparison with world-class coaches ($M = 34.60$) (see Figure 5).

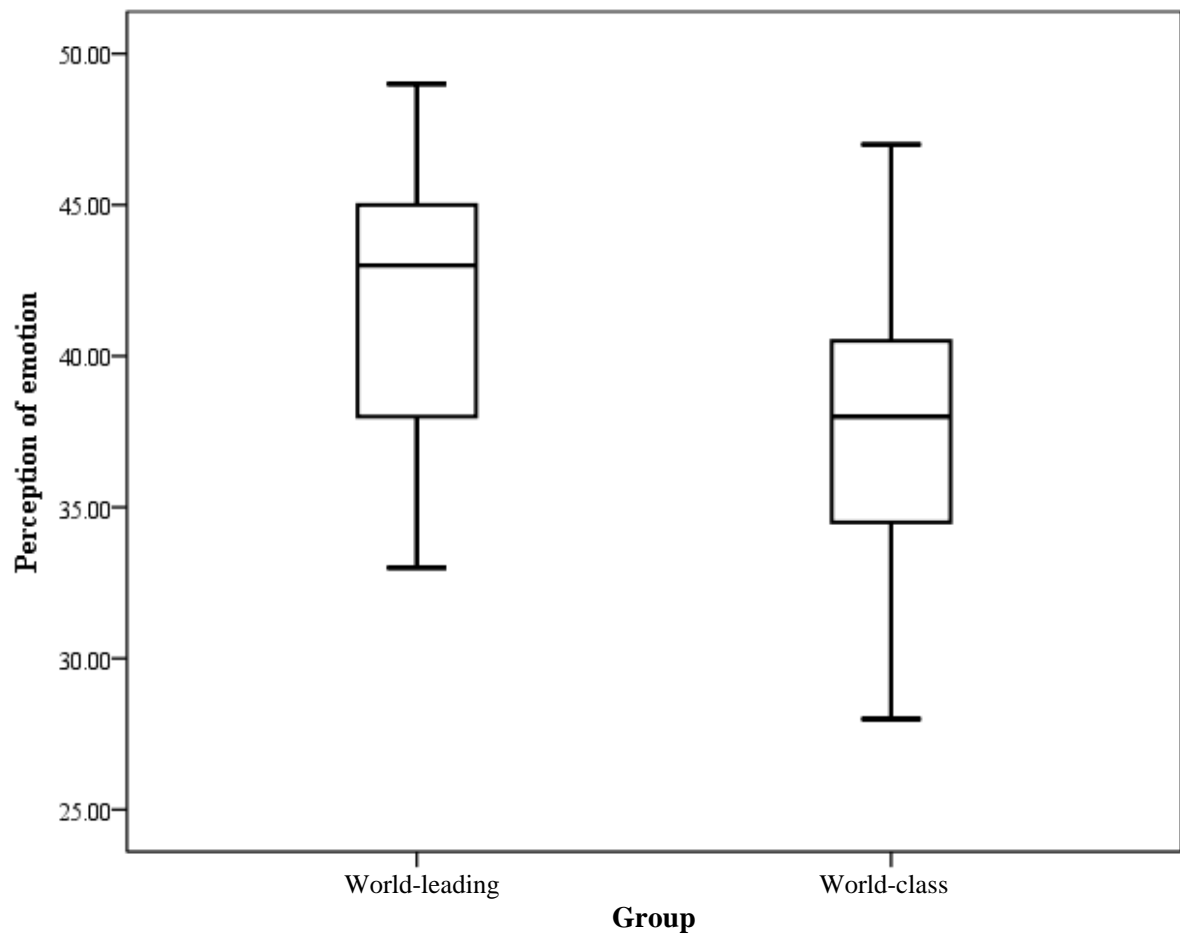


Figure 4. Boxplot for perception of emotion scores from the Schutte Emotional Intelligence Scale demonstrating a significant difference between the world-leading and world-class coaches.

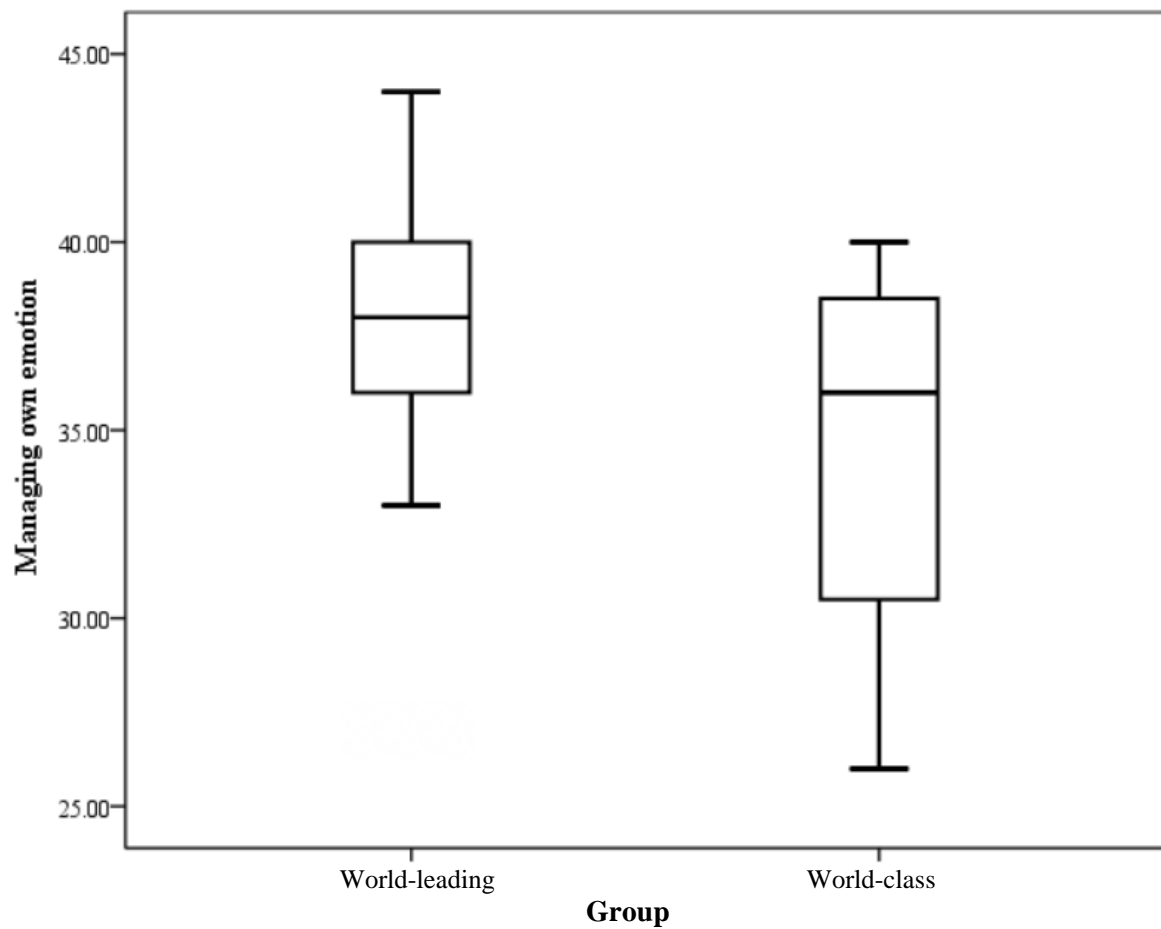


Figure 5. Boxplot for managing own emotion scores from the Schutte Emotional Intelligence Scale demonstrating a significant difference between the world-leading and world-class coaches.

4.3.1.3 Hardiness. A one-way multivariate analysis of variance (MANOVA) with one independent variable (world-leading vs. world-class) was performed with the three hardiness dependent variables of commitment, control, and challenge (hypothesis 3a, b, and c). Variances were homogenous across the variable of challenge (Levene's $p > 0.05$), but commitment and control were not normally distributed (Levene's $p < 0.05$). However, following Kang and Jin's (2016) recommendation, a visual inspection of the histogram revealed sufficient evidence for normality. Indeed, Seo, Kanda, and Fujikoshi (1995) demonstrated that the MANOVA is robust to departures from normality with 10 or more participants per group. Further, Finch (2005) reported that the parametric statistic outperforms the non-parametric statistic in terms of type I error and power when assumption of normality is violated when using MANOVAs. Covariances were homogenous across the variables of commitment, control, and challenge (Box's test $p > 0.05$). A non-significant multivariate test statistic was obtained: Wilks's Lambda = .941, $F(3, 32) = .669, p > 0.05, \eta^2 = .059$, indicating that no significant difference existed in hardiness between the two groups. Follow-up univariate F-tests identified no significant group differences in commitment $F(1, 34) = 1.70, p > 0.05, \eta^2 = .048$, control $F(1, 34) = .257, p > 0.05, \eta^2 = .007$, or challenge $F(1, 34) = .769, p > 0.05, \eta^2 = .022$.

4.3.1.4 Dark triad. A one-way multivariate analysis of variance (MANOVA) with one independent variable (world-leading vs. world-class) was conducted with the three dark triad dependent variables of Machiavellianism, psychopathy, and narcissism (hypothesis 4a, b, and c). Variances and covariances were homogenous across the variables of Machiavellianism, psychopathy, and narcissism (Levene's and Box's test $p > 0.05$). A significant multivariate test statistic was obtained: Wilks's Lambda = .774, $F(3, 32) = 3.11, p = .040, \eta^2 = .226$, indicating that a significant difference existed in the dark triad between the two groups, and a medium effect size was found with respect to individual differences research (Gignac & Szodorai, 2016). Follow-up univariate F-tests identified significant group differences in Machiavellianism, $F(1, 34) = 5.39, p = .026, \eta^2 = .137$, and narcissism, $F(1, 34) = 7.79, p = .009, \eta^2 = .186$, but not psychopathy, $F(1, 34) = 2.78, p > 0.05, \eta^2 = .076$. Mean scores revealed that world-leading coaches scored lower on Machiavellianism ($M = 13.81$) in comparison with world-class coaches ($M = 16.73$) (see Figure 6), and world-leading coaches scored lower on narcissism ($M = 13.57$) in comparison with world-class coaches ($M = 16.87$) (see Figure 7).

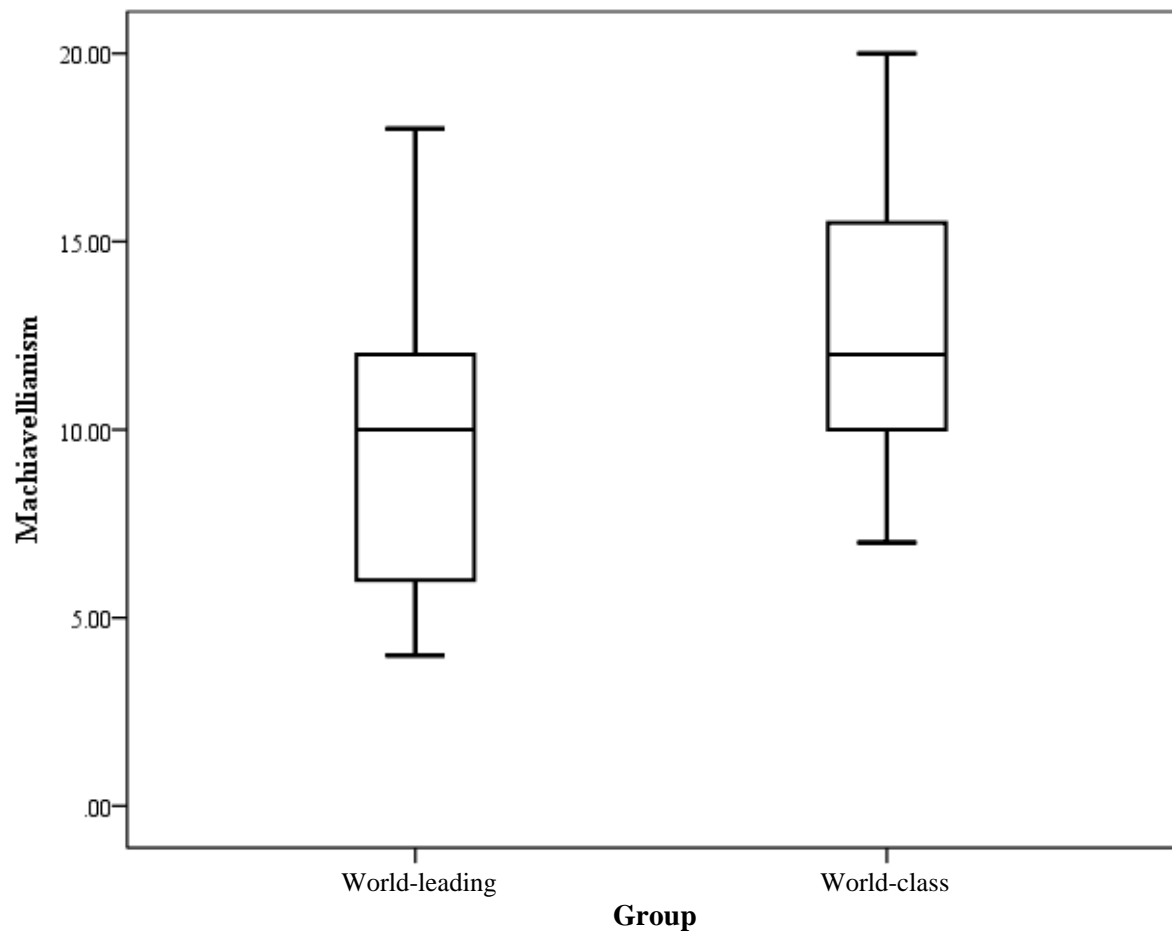


Figure 6. Boxplot for Machiavellianism scores from the Dirty Dozen demonstrating a significant difference between the world-leading and world-class coaches.

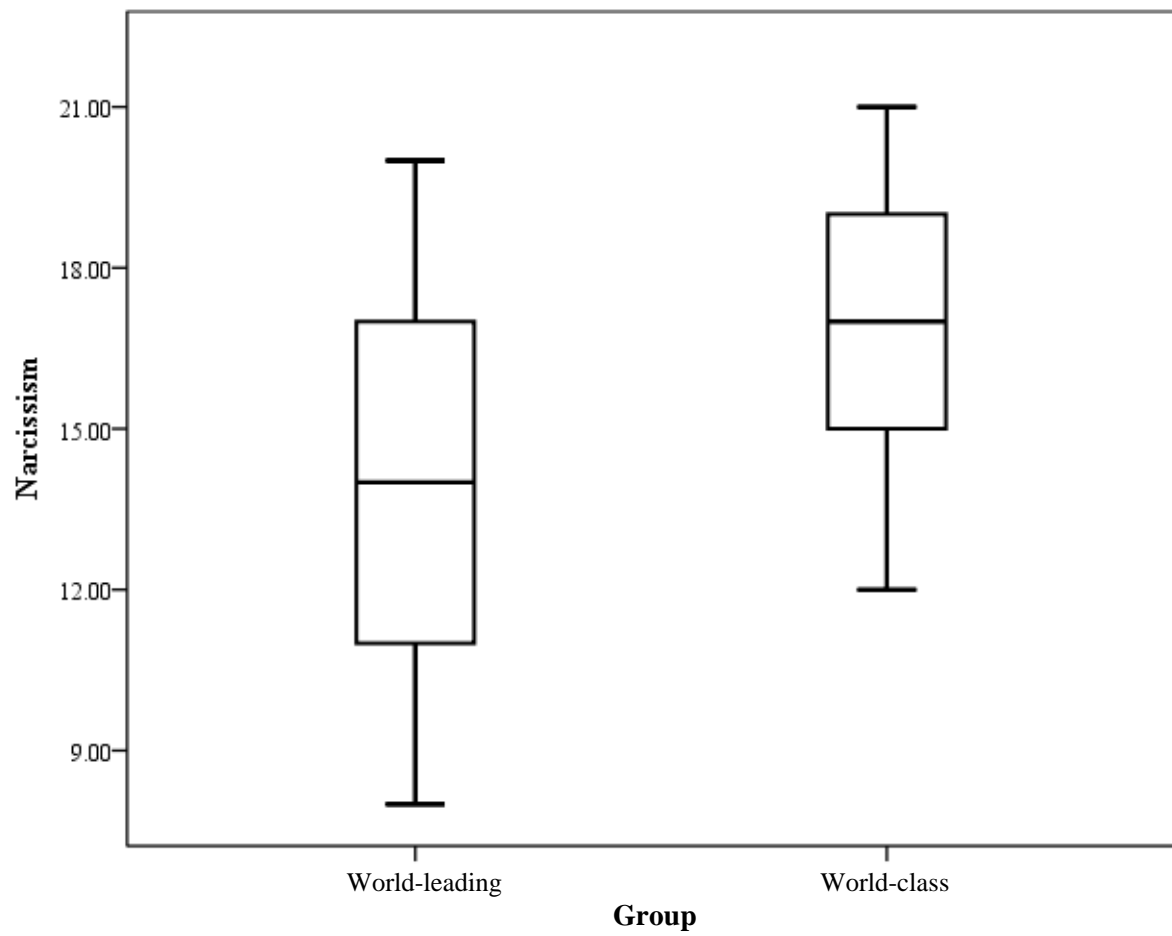


Figure 7. Boxplot for narcissism scores from the Dirty Dozen demonstrating a significant difference between the world-leading and world-class coaches.

4.4 Discussion

Sport psychology researchers have increasingly called for research that examines the psychological underpinnings of successful Olympic coaches (e.g. Hodgson, Butt, & Maynard, 2017; Lara-Bercial & Mallett, 2016; Olusoga, Maynard, Hays, & Butt, 2012) and therefore the aim of this work was to understand which psychological characteristics discriminate between world-leading and world-class swimming coaches. Specifically, the study examined whether any differences existed between world-leading and world-class coaches on the constructs of the Big Five personality traits, emotional intelligence, hardiness, and the dark triad. Five of the 15 hypotheses were confirmed, with differences found between the world-leading and world-class coaches on one of the Big Five traits of agreeableness, two of the emotional intelligence components of perceptions of emotion and management of own emotion, and two of the dark traits of Machiavellianism and narcissism. However, no differences were found between the groups across the remaining Big Five traits of conscientiousness, extraversion, openness to experience, or neuroticism, the emotional intelligence components of management of others emotion or utilization of emotion, the hardiness components of commitment, control, or challenge, or the dark trait of psychopathy.

In terms of the significant findings, the world-leading coaches were found to be higher on agreeableness in comparison with the world-class coaches. This contrasts with findings across the business and organizational leadership literature which has demonstrated an ambiguous or negative relationship between agreeableness and effective leadership (e.g. Barrick, 1991; Judge et al., 2002). It does however parallel Mallett and Coulter's (2016) finding of high agreeableness in their case study of a single Olympic coach. Agreeableness will be beneficial in a high-performance environment as coaching requires joint action and collaboration with both athletes and sport science support staff. Within their 3 + 1Cs model, Jowett and Shanmugam (2016) stated that closeness, which is manifested in mutual trust and respect, as well as interpersonal appreciation, are core elements of a high-quality coach-athlete relationship. These characteristics are reflective of agreeableness, and the communal motivation to get along, rather than just get ahead, will enhance this key sporting relationship. Indeed, Organ and Lingl (1995) noted that agreeableness "involves getting along with others in pleasant, satisfying relationships" (p. 340). Further, if a coach is agreeable, it is likely that the swimmer will be able to commit more discretionary effort towards their performance as they will not be wasting resources ruminating about a previous disagreement or contemplating whether a decision was taken in their best interest. Taking all of these factors into account, agreeableness contributes towards forming and maintaining close and positive

relationships (Chiaburu, Oh, Berry, Li, & Gardner, 2011; Judge, Piccolo, & Kosalka, 2009; Witt, Burke, Barrick, & Mount, 2002), and given that coaching requires high levels of interpersonal interactions, this trait will be beneficial towards coaching an athlete to win an Olympic gold medal.

Moving onto emotional intelligence, this is the first study within Olympic coaching research to quantitatively examine emotional intelligence, and the hypotheses that world-leading coaches would be higher on perception of emotion and management of own emotion in comparison with world-class coaches was confirmed. The propensity to regulate and manage emotions will be highly advantageous, particularly as swimming has a limited off season and has a highly demanding training schedule. The world-leading coaches will be able to appropriately manage their own motivation, passion, and fatigue, thus ensuring an optimal and consistent performance throughout the season. Indeed, it is vital that coaches can handle emotion *within* themselves in order to be effective, such as during a particularly difficult and challenging training session. Due to the process of emotional contagion, it is important that coaches themselves display positivity in order for the swimmers to remain in a similar state. Emotional contagion has been described as an automatic, unintentional, and unassuming tendency to mimic or synchronize with another person (Tee, 2015). A positive emotion expressed by the coach is “caught” by the athlete and a positive emotional climate is created. Indeed, coaches who can evoke positive emotions in others will inspire athletes to take on challenging tasks. World-leading coaches will be able to utilize interpersonal emotional management strategies and emotional contagion to harness and transmit their emotions to their athletes which will then enhance their mood and energy. Research from organizational psychology has found that individuals tend to recall more negative emotional displays from leaders and rate them as being less effective (Dasborough, 2006), therefore incentivizing coaches to regulate their displayed emotion. The ability to regulate the appropriate expression of emotion will also ensure a psychologically safe environment in which athletes are able to effectively communicate their needs and reach their joint goals or objectives (Miao, Humphrey, & Quin, 2016). Turning to the accurate perception of emotion, this will enable world-leading coaches to understand and respond to different events in training and competitions, enabling them to consistently act in a way which they believe to be the most effective. As an example, they will be able to recognize when they need to empathize with a swimmer who is experiencing a problem, thus enabling them to respond appropriately to the situation and adapt their communication or behavior. The accurate perception of emotion will enable the world-leading coaches to determine whether an athlete

is expressing honest or dishonest feelings (e.g. understanding a particular training drill), allowing them to comprehend the reality of the situation and alter their actions if necessary. The combination of these factors will enable emotionally intelligent coaches to motivate and connect with their athletes as they will have a greater insight into their experiences.

In relation to the dark triad, the world-leading coaches were found to be lower on the traits of Machiavellianism and narcissism in comparison with the world-class coaches. This represents an original finding as previous studies within sport coaching and sport management have either qualitatively examined dark traits or commented about their presence (Arnold, Fletcher, & Hobson, 2018; Cruickshank & Collins, 2015, 2016, 2017; Fletcher & Arnold, 2012). Beginning with Machiavellianism, several authors have proposed that Machiavellian individuals are social chameleons who are able to form genuinely adaptive and cooperative relationships with others when it is in their interest, and that they are effective at using pro-social tactics to attain their goals (Judge et al., 2009). However, the benefits of Machiavellianism are more often counterbalanced by the interpersonal risks one takes by regularly manipulating another person, and if the other suspects they are being manipulated, the relationship will be weakened (O'Boyle et al., 2012). Further, the willingness to manipulate does not necessarily coincide with the ability to manipulate (Austin et al., 2007). The world-leading coaches were found to have moderate levels of Machiavellianism, and the attainment of coaching an athlete to an Olympic gold medal suggests that the coach is capable of moderating or hiding many of the relationally damaging effects of Machiavellianism. The moderation of behavior relates to the concept of emotional labor which was originally conceptualized within Hochschild's (1983) seminal work *The Managed Heart*. Emotional labor describes the expression of socially desirable emotions during service interactions. This requires the effortful attempt to create and manage the expression of emotion and enactment of behaviors in oneself and towards others in order to achieve the desired goal (Tee, 2015). Within the leadership literature, Ashkanasy and Daus (2005) and Gardner, Fischer, and Hunt (2009) proposed that the regulation of behavior is important for follower satisfaction and perception of leadership quality and effectiveness. Thus, the world-leading coaches may be able to attenuate and manage their Machiavellianism in order to achieve optimal outcomes. Aristotle mused that individuals should aim for "an intermediate between excess and defect...that which is equidistant between the extremes" (Aristotle, trans. 1999, p. 26; Pierce & Aguinis, 2013) and it may be that regulating and strategically managing a manipulative tendency is advantageous for coaching an athlete to win an Olympic gold medal.

Moving onto narcissism, the finding that the world-class coaches were higher in comparison with the world-leading coaches indicates that high levels of narcissism are disadvantageous for coaching athletes to win an Olympic gold medal. The world-leading coaches had more moderate levels of narcissism, and therefore a narcissistic tendency is seen within these coaches. One can speculate that narcissism has a curvilinear or an inverted U-shaped relationship with world-leading coaching, such that the relationship is initially positive but becomes more negative as narcissism increases. Indeed, a recent meta-analysis within the organizational psychology literature indicated that a curvilinear relationship existed between narcissism and leadership, with the authors suggesting moderate levels of narcissism being optimal for effectiveness (Grijalva, Harms, Newman, Gaddis, & Fraley, 2015). There are several advantageous components of narcissism, including assertiveness, an intense desire to succeed, and a supreme confidence, which, within the uncertain Olympic context, will enable coaches to provide a sense of guidance and direction to others. However, when possessed in excess, coaches will act in insensitive ways towards others and put their own needs first (Matosic, Ntoumanis, Boardley, Sedikides, Stewart, & Chatzisarantis, 2017; Roberts, Woodman, & Sedikides, 2018). This will translate into awkward interpersonal interactions and detract from the coach-athlete relationship, which is instrumental towards athlete success (Jowett, 2017). Therefore, narcissism is a potentially positive trait when expressed in moderation, and very low or very high levels of narcissism is not conducive to world-leading coaching. Indeed, Simonton (1995) stated that, “because the bulk of leadership research has relied heavily on linear measures of statistical association, the empirical literature may seriously underestimate the predicative value of many measures of personal attributes” (p. 750). Therefore, what is traditionally assumed as a negative trait, when expressed in moderation, may actually be advantageous towards coaching athletes to win an Olympic gold medal.

In addition, other variables may temper the negative effects of narcissism, such as the higher agreeableness found within the sample of world-leading coaches in comparison with the world-class coaches. World-leading coaches who are able to attenuate their narcissism with agreeableness may be more likely to coach athletes to win gold medals, as the empathy and modesty inherent in agreeableness may have a countervailing effect on their moderate narcissism. Although it may seem paradoxical that a coach can be both narcissistic and agreeable at the same time, possessing seemingly opposing traits is not in conflict with competing values theory (Cameron & Quinn, 2011), trait affectivity theory (Watson & Clark, 1984), or behavioral motives research (Konrath, Bushman, & Grove, 2009). Indeed, recent

findings within the leadership literature have evidenced a relationship between narcissism and humility, a construct closely related to agreeableness (Owens, Wallace, & Waldman, 2015). It may be that the integration of paradoxical or incongruent traits can lead to positive outcomes, and opens up the possibility that changes in agreeableness may have a large impact for narcissistic coaches.

In terms of the non-significant findings, no support was found for the hypotheses that the hardiness components of commitment, control, or challenge would be higher for world-leading coaches. Further, no evidence was found to support the hypotheses that conscientiousness, extraversion, or openness to experience scores would be higher for the world-leading coaches, or that neuroticism scores would be lower for world-leading coaches in comparison with the world-class coaches. Finally, there were no differences in utilization of emotion or management of others emotion, and there was no difference in psychopathy scores between the two groups of coaches. The lack of significant differences between the groups on the constructs of hardiness suggests that all Olympic coaches are hardy individuals. This is, perhaps, not surprising given that numerous stressors have been documented within Olympic coaching (Chroni et al., 2016; Olusoga et al., 2012; Sullivan & Nashman, 1993), and hardiness is an essential component of remaining healthy and performing well under stress (Eschleman et al., 2010). Alternatively, the measure which utilized a four point likert scale may not have been sensitive enough to capture differences at the tail-end of performance. The findings that the coaches do not differ on conscientiousness, openness to experience, extraversion, or neuroticism indicates that these traits are similar in both groups, and are not a discriminator between world-leading and world-class coaching. The lack of difference between the groups on the trait of conscientiousness is particularly surprising because this is the most consistently related trait with leadership effectiveness (Judge et al., 2002; Judge et al., 2009; Judge & Zapata, 2015). Given that Olympic environments often demand discipline, dutifulness, and competence, it is proposed that conscientiousness is an important trait for all Olympic coaches to possess. Finally, psychopathy is characterized by a callous disregard for others (O'Boyle et al., 2012), and it may be difficult for these individuals to form the interpersonal relationships necessary to successfully guide an athlete to the Olympic Games, let alone to win an Olympic gold medal.

At this juncture, it is worth noting the strengths and limitations of this study, and considering future research directions. The study has several methodological strengths which enhance confidence in the findings. The first is the distinctive and significant nature of the sample and the success attained by this group of coaches. As Simonton (2014) and O'Boyle

and Aguinis (2012) contended, psychological science can only benefit when stand-out performers are studied and compared with suitable comparators in order to understand the factors which enable this group of individuals to be successful. Indeed, these superstar coaches will have a substantial role in determining the funding received by sports, and the ability to identify these elites is important as the nature and competitiveness of sport changes in the 21st century. Although the sample size may be considered small in comparison with a typical quantitative study, ninety percent of the individuals that were approached agreed to take part in the study, and with so few individuals globally fulfilling the inclusion criteria, to have tried to coerce the few remaining individuals to participate would have been impractical and unethical. Secondly, the study focused on a single sport as sport coaching is highly contextual in nature (Cushion, 2007), and this controls for sport specific confounding effects. This addresses Hodgson et al.'s (2017) previous work which concluded that "future research may wish to examine the psychological attributes of coaches from individual sports to gain more detailed evaluation of the psychological attributes required in particular sports" (p. 449). At the same time, the nature of the single-sport sample suggests some caution regarding the generalization of the findings. The third strength was the extensive combination of quantitative measures which enabled the identification of traits which discriminated between world-leading and world-class coaches. However, the focus on main effects and not interactive effects limits the interpretation of the influence of these factors, as reflected by Zaccaro (2007): "although many recent studies have taken a multivariate approach to maximize explained variance in leadership, few studies have taken an integrated approach to describe how multiple traits are combined in optimal ways to jointly influence leadership" (p. 12). It is likely that an accumulation of factors determines world-leading coaching and this interactionist perspective would help to determine which variables interact with one another as well as how these variables interact with external factors, such as environmental dynamism (Lewin, 1936).

Turning to limitations, as this study is cross-sectional, it cannot determine causation between the examined psychological aspects and Olympic success. However, I am not aware of any strictly casual studies within either the Olympic coaching or leadership literature. Indeed, the evidence within Olympic coaching is entirely correlational or qualitative rather than experimental (e.g. Jowett & Cockerill, 2003; Mallett & Coulter, 2016). No study has randomly assigned a heterogeneous group of coaches to one of two groups, with one instructed to behave in a particular manner for an extensive period of time and the other obliged to do the reverse. Quite the opposite: each coach has self-selected the behavior and

decided whether to engage in the hypothesized requirement. Notwithstanding this, a longitudinal or experimental study could strengthen conclusions and establish causality. Another limitation is that this study was based exclusively on coach self-reports, which may be problematic as they may be prone to self-deception bias (Colbert, Judge, Choi, & Wang, 2012) and can be a source of common-method bias (Wall, Jackson, Mullarkey, & Parker, 1996). Future research should seek to replicate and extend the findings with observer reports from athletes. As coaching is inherently relational and dependent on the perceptions of others (Jowett, 2017), a coach's reputation and how they are perceived is as important as their own self-perceptions.

In terms of practical implications, these results suggest that it would be prudent for coach development programs to include emotional intelligence training. A small number of rigorous, experimental studies have found that emotional intelligence skills can be trained and enhanced, yielding positive effects on well-being, health, and employability (e.g. Nelis et al., 2011). This training should emphasize managing and expressing emotions as this is linked with world-leading coaching. Second, training should be tailored to the development needs of the individual as each coach will have a unique set of requirements for their stage of development, their current challenges, and their coaching context. The results indicate that coach educators should explore ways to enhance coaches' self-awareness of their own personal characteristics, and to help those with overly Machiavellian or narcissistic tendencies to identify practical methods to minimize the behaviors associated with these traits. Emotional labor was suggested as one of the methods that coaches may utilize to minimize these behaviors, which is a form of self-regulation. Sport psychologists are therefore encouraged to help coaches examine their own self-regulation mechanisms under conditions such as stress, fatigue, or other forms of ego-depletion (Baumeister, 2002) which impact on the extent to which they can regulate their behavior. This would enable coaches to become cognizant of their own circumstances and thus be proactive as opposed to reactive when faced with challenging circumstances.

4.5 Conclusion

In conclusion, this study sought to understand the psychological factors which discriminate between world-leading and world-class coaches across a range of psychological characteristics. This is the first study that I am aware of to examine these discriminators and to understand which factors may be advantageous towards coaching an athlete to win an Olympic gold medal. Consistent with the hypotheses, differences were found across the Big Five trait of agreeableness, the emotional intelligence constructs of perception of emotion and

management of own emotion, and dark triad components of Machiavellianism and narcissism. Future researchers are encouraged to examine the influence of psychological factors on performance in order to enhance our understanding of factors which enable world-leading performance.

Chapter Five: Study Three

A Quantitative Study of Olympic Swimmers’ Perceptions of their Coaches

Chapter Four examined the self-reported psychological factors which discriminate between world-leading and world-class coaches. Given that athletes represent an important source of information about coaches, Chapter Five investigates swimmers’ perceptions of the psychological characteristics which discriminate between world-leading and world-class coaches across the Big Five personality traits, emotional intelligence, hardiness, and dark triad constructs.

5.1 Literature Review

The competition to win medals at the Olympic Games has intensified, and investment in high performance systems has reached unprecedented levels (Hardy et al., 2017; Lara-Bercial & Mallett, 2016). UK Sport (the UK’s high performance system) has been credited with increasing Great Britain’s medal haul from one gold medal in the 1996 Atlanta Olympic Games to 27 gold medals in the 2016 Rio Olympic Games, with the latter Olympic cycle alone being supported by £335M of public money to fund established sport work streams that improve athlete performance. Recently, Hardy et al. (2017) and Rees et al. (2016) have emphasized the critical role that the coach plays in determining Olympic athletes’ performance, and Mallett and Lara-Bercial (2016) stated that it is increasingly necessary to develop an evidence based understanding of coaches who contribute to the results that are expected from this public financing. Little is known about Olympic athletes’ perceptions of coaches, and no research has examined athletes’ perceptions of Olympic gold medal winning coaches in comparison with Olympic non-gold medal winning coaches. This is surprising given that athletes’ perceptions affect the coach-athlete relationship (Jowett, 2017), which is recognized as a critical driver of athlete performance (Rhind & Jowett, 2010), motivation (Isoard-Gautheur, Trouilloud, Gustafsson, & Guillet-Descas, 2016), and physical and psychosocial development (Davis & Jowett, 2014).

The coach-athlete relationship is defined as the unique interpersonal relationship in which the coach and athlete develop mutually and causally inter-related emotions, thoughts, and behaviors (Jowett & Shanmugam, 2016), and these are captured within Jowett’s (2007)

3+1Cs framework. The framework characterizes closeness as the affective bond between the coach and athlete which manifests in liking, mutual trust, respect, and appreciation. Commitment represents the coach's and athlete's intent to maintain the relationship over a long period of time, and complementarity refers to the coach's and athlete's corresponding and cooperative behaviors. Finally, co-orientation reflects the coach's and athlete's interpersonal perceptions of the quality of the coach-athlete relationship. Reflecting these constructs, Jowett and Poczwardowski (2007) developed an integrated research model of the coach-athlete relationship which highlighted its antecedents and consequences. The antecedent variables comprised the wider socio-cultural context, relationship characteristics, and individual differences including personality. Although the research investigating the personality traits of high performance coaches has been limited, four recent papers have sought to redress this balance, with Lara-Bercial and Mallett (2016), Mallett and Coulter (2016), Mallett and Lara-Bercial (2016), and Hodgson, Butt, and Maynard (2017) examining the psychosocial characteristics of professional, Olympic, and Paralympic coaches. In a series of related studies, Lara-Bercial and Mallett (2016), Mallett and Lara-Bercial (2016), Mallett and Coulter (2016) suggested that their sample of successful Olympic and professional coaches exhibited higher conscientiousness, extraversion, agreeableness, emotional stability, and openness to new experiences in comparison with normative data. Further, Hodgson et al.'s (2017) qualitative study of Olympic and Paralympic coaches identified attributes including confidence, resilience, emotional awareness, emotional understanding, and emotional management. Despite making advances towards understanding psychosocial aspects of high-performance coaches, with the exception of Study Two, no research has examined the psychological characteristics that discriminate between world-leading and world-class coaches.

Study Two utilized a quantitative design to compare the psychological characteristics of world-leading coaches who had coached one or more swimmers to win at least one Olympic gold medal, with world-class coaches who had coached one or more swimmers to the Olympic Games but had not won a gold medal. Collectively, the coaches in the sample had coached swimmers to win over 350 Olympic medals, of which over 150 were Olympic gold medals. The coaches completed a range of psychometric measures which examined: (i) the Big 5 personality traits of conscientiousness, openness to experience, agreeableness, extraversion, and neuroticism, (ii) the trait emotional intelligence components of perception of emotion, management of own emotion, management of other emotion, and utilization of emotion, (iii) hardiness, which is an amalgam of commitment, control, and challenge, and

(iv) the dark triad, which comprises Machiavellianism, psychopathy, and narcissism. The study found that the world-leading coaches were higher in comparison with the world-class Olympic coaches on the Big Five trait of agreeableness, the emotional intelligence components of both perception of emotion and management of own emotion, and they were lower on the dark traits of Machiavellianism and narcissism. However, a limitation of this study was the reliance on self-report measures, which may be prone to self-deception bias (Colbert, Judge, Choi, & Wang 2012). In other words, coaches' perceptions of their own personalities may differ from their actual psychological tendencies because they may lack the necessary self-insight to accurately report their traits (Paulhus & Reid, 1984).

Cervone and Pervin (2008) defined personality as the “psychological qualities that contribute to an individual’s enduring and distinctive patterns of feeling, thinking, and behaving” (p. 8). Examinations of personality have typically utilized self-report measures (cf. Morgeson et al., 2007) even though accurate self-assessment may be hindered by an individual’s lack of perspective. Funder (1995) referred to this as the fish and water effect wherein individuals may not be able to accurately perceive their traits because they are accustomed to them – just as a fish does not register that it is swimming in water. An adjunct to self-reports of personality are observer ratings, which are widely used in organizational psychology. Observer-ratings and self-ratings measure and reflect unique information about an individual (Colbert et al., 2012; Oh, Wang, & Mount, 2011). According the Hogan’s (1991) socioanalytic theory, self-reports of personality capture an individual’s identity and their perceptions of themselves, and are based on inward perceptions of traits and intrapersonal processes. In contrast, observer-ratings capture an individual’s reputation and other’s perception of the individual, and are based on an individual’s outward expression of traits and behavioral cues. Given that leadership, and by extension coaching, is a process that is co-created in social and relational interactions between people (Fairhurst & Grant, 2010; Fairhurst & Uhl-Bien, 2012; Jowett, 2017), athletes’ perceptions provide an important source of information about coaches. Indeed, coaches cannot be fully understood without considering the perspectives of athletes.

The purpose of this study was therefore twofold. The first was to identify the factors which discriminate between Olympic athletes’ perceptions of world-leading and world-class coaches. More specifically, following Study Two, this study examines athletes’ perceptions of their coach’s: (i) Big 5 personality traits, (ii) trait emotional intelligence, (iii) hardiness, and (iv) dark triad. The second aim was to develop a more rounded understanding of the discriminating characteristics of world-leading coaches by comparing the results of the

current study with Study Two's findings of coaches self-reported perceptions of their psychological characteristics.

Building on previous research within coaching, organizational psychology, and Study Two, the hypotheses predict the following:

Hypothesis 1a: The world-leading group will rate their coaches higher on conscientiousness in comparison with the world-class group.

Hypothesis 1b: The world-leading group will rate their coaches higher on openness to experience in comparison with the world-class group.

Hypothesis 1c: The world-leading group will rate their coaches higher on agreeableness in comparison with the world-class group.

Hypothesis 1d: The world-leading group will rate their coaches higher on extraversion in comparison with the world-class group.

Hypothesis 1e: The world-leading group will rate their coaches lower on neuroticism in comparison with the world-class group.

Hypothesis 2a: The world-leading group will rate their coaches higher on perception of emotion in comparison with the world-class group.

Hypothesis 2b: The world-leading group will rate their coaches higher on management of own emotion in comparison with the world-class group.

Hypothesis 2c: The world-leading group will rate their coaches higher on management of other emotion in comparison with the world-class group.

Hypothesis 2d: The world-leading group will rate their coaches higher on utilization of emotion in comparison with the world-class group.

Hypothesis 3a: The world-leading group will rate their coaches higher on commitment in comparison with the world-class group.

Hypothesis 3b: The world-leading group will rate their coaches higher on control in comparison with the world-class group.

Hypothesis 3c: The world-leading group will rate their coaches higher on challenge in comparison with the world-class group.

Hypothesis 4a: The world-leading group will rate their coaches lower on Machiavellianism in comparison with the world-class group.

Hypothesis 4b: The world-leading group will rate their coaches lower on psychopathy in comparison with the world-class group.

Hypothesis 4c: The world-leading group will rate their coaches lower on narcissism in comparison with the world-class group.

5.2 Method

The methods are in line with Appelbaum et al.'s (2018) reporting standards for quantitative research in psychology and include the following sections: Inclusion and exclusion, participant characteristics, participant selection, sample size and precision, measures, data collection, quality of measurements, instrumentation and psychometrics, conditions and design, data diagnostics, and analytic strategy.

5.2.1 Inclusion and Exclusion

Inclusion criteria required that the participant's coach was active at the time of data collection, and they had worked with their coach for at least two years prior to competing at the Olympic Games in a swimming event.

5.2.2 Participant Characteristics

The sample consisted of 38 Olympic swimmers (18 males, 20 females), who ranged in age from 19 to 36 years old ($M = 26.37$, and $SD = 4.60$). The swimmers had collectively won 59 Olympic medals, of which 31 were Olympic gold medals. Participants reported working with their coaches for between two and 10 years prior to their first Olympic Games ($M = 4.23$, and $SD = 2.54$), and had competed in between one and four Olympic Games ($M = 2.14$, and $SD = 0.90$), spanning from the Sydney 2000 Olympic Games, through Athens 2004, Beijing 2008, and London 2012, to the Rio 2016 Olympic Games. Sixteen participants had represented Australia at the Olympic Games, 11 represented the United States of America, 10 represented Great Britain, and one represented the Netherlands.

5.2.3 Participant Selection

Participants were selected and grouped using a non-probability criterion sampling technique. One hundred percent of individuals approached agreed to participate. Group one (world-leading group) included 25 participants who had competed at the Olympic Games, and whose coach had coached one or more swimmers to win at least one Olympic gold medal. Group two (world-class group) included 13 participants who had competed at the Olympic Games, and whose coach had coached one or more swimmers to the Olympic Games and/or coached one or more swimmers to win at least one Olympic bronze or silver medal (but had not coached a swimmer to win an Olympic gold medal). All data was collected by the author between May 2015 and December 2016, across 14 cities in three continents, and institutional ethical approval was obtained from Loughborough University.

5.2.4 Sample Size and Precision

The pool of potential participants was restricted due to the inclusion criteria which required each participant's coach to be currently active, and for them to have worked with

their coach for at least two years prior to competing at an Olympic Games. Further, the sample comprised participants whose coaches had coached at least one swimmer to the Olympic Games, and/or coach at least one swimmer to win one or more Olympic bronze, silver, or gold medals. The number of worldwide individuals who fulfil these criteria is very small and Simonton (1999, 2014) has stated that conventional sample sizes for specialized groups such as this are not appropriate. In more conventional research studies participants can be drawn from an indefinitely large pool of participants and “one subject is as good as any other” (Simonton, 1999, p. 425). However, when researching eminent or significant individuals, “it would be problematic to suggest that these notables are completely interchangeable...on the contrary, these individuals are presumably selected precisely because they are, at least to some extent, *sui generis*” [*translation: in a class of their own*] (p. 425). Therefore, the sample of 38 Olympic swimmers was deemed to be acceptable, and this is also consistent with the sample sizes of previous studies with this specialized population (e.g. Lara-Bercial & Mallett, 2016; Mallett & Lara-Bercial, 2016).

5.2.5 Measures

Primary measures included the Big Five Inventory (John, Donahue, Kentle, 1991; see Appendix F), a modified version of the Schutte Emotional Intelligence scale (Schutte et al., 1998; see Appendix G), a modified version of the Dispositional Resilience Scale (Bartone, 1995; see Appendix H), and a modified version of the Dirty Dozen (Jonason & Webster, 2010; see Appendix I).

5.2.6 Data Collection

Following approval from the Loughborough University ethics committee, potential participants were contacted via direct correspondence and invited to participate. Participants were informed of the purpose of the study, and it was confirmed that their involvement was anonymous and voluntary. After signing an informed consent form, participants were asked to complete a demographic questionnaire (see Appendix J) and the primary measures. When responding to the items, they were asked to reflect on their coach’s behavior at training and in competitions.

5.2.7 Quality of Measurements

To increase the quality of measurements, the author, who has received post-graduate level training in quantitative research methods, collected all of the data.

5.2.8 Instrumentation and Psychometrics

5.2.8.1 Big Five personality traits. The participants measured their coach’s Big Five personality traits of conscientiousness, openness to experience, agreeableness, extraversion,

and neuroticism using the 44-item Big Five Inventory (BFI; John & Srivastava, 1991, 1999). Using the contextualized stem “My coach is someone who...”, participants were asked to indicate the degree to which they agreed with statements such as: “Keeps working until things are done,” “Is creative and inventive,” “Is considerate and kind to almost everyone,” “Is full of energy,” and “Gets nervous easily.” Participants reported the degree to which they agreed with the statements on a 5-point scale anchored by 1 (*disagree strongly*) to 5 (*agree strongly*). The BFI can be utilized as an observer-report measure (John & Srivastava, 1999), has been widely used in sport (Kaiseler, Levy, Nicholls, & Madigan, 2012), and has demonstrated acceptable reliability and predicative validity in previous research (Camps, Stouten, & Euwema, 2016). Cronbach’s alpha in the present sample for conscientiousness, openness, agreeableness, extraversion, and neuroticism were acceptable.

5.2.8.2 Emotional intelligence. The participants assessed their coach’s emotional intelligence using a modified version of the 33-item Schutte Emotional Intelligence Scale (EIS; Schutte et al., 1998) which comprises four subscales measuring perception of emotion, management of own emotion, management of other emotion, and utilization of emotion. The scale consists of questions such as: “By looking at their facial expressions, your coach can recognize the emotions people are experiencing,” “Your coach knows when to speak about their personal problems to others,” “Other people find it easy to confide in your coach,” and “When your coach is in a positive mood, they are able to come up with new ideas.” Participants indicated the extent to which they agreed with each statement on a 5-point scale anchored by 1 (*disagree strongly*) to 5 (*agree strongly*). The EIS is the most widely used emotional intelligence scale within sport research (Laborde, Dosseville, & Allen, 2016), has been utilized as an observer-rating measure (Ölçer, Florescu, Năstase, 2014), and demonstrated acceptable reliability and predictive validity in previous research (Marks, Horrocks, & Schutte, 2016; Schutte et al., 1998). Cronbach’s alpha in the present sample for perception of emotion, management of own emotion, management of other emotion, and utilization of emotion were acceptable.

5.2.8.3 Hardiness. The participants assessed their coach’s hardiness using a modified version of the Dispositional Resilience Scale (DRS-15; Bartone, 1995), which comprises three subscales that measure commitment, control, and challenge. The scale includes 15 positively and negatively keyed items, and consists of questions such as: “Your coach really looks forward to their work activities,” “Your coach doesn’t think there is much they can do to influence their own future” and “Your coach likes having a daily schedule that doesn’t change very much.” Participants reported the degree to which they agreed with the

statements on a 4-point scale anchored by 0 (*not at all true*) to 3 (*completely true*). The DRS-15 (Bartone, 1995; 2007) was derived as a shortened alternative to the 45-item measure (Bartone, 1989), which has been used in previous research as an observer-report measure with acceptable consistency and predictive validity (O'Rourke et al., 2010). Cronbach's alpha in the present sample for commitment, control, and challenge were acceptable.

5.2.8.4 Dark triad. The participants measured their coach's dark triad using a modified version of the 12-item Dirty Dozen (Jonason & Webster, 2010) which is comprised of 3 subscales that assess Machiavellianism, psychopathy, and narcissism. Participants responded to items such as: "Your coach has used flattery to get their way," "Your coach tends to be callous or insensitive," and "Your coach tends to want others to admire them." Participants reported the degree to which they agreed with each item on a 5-point scale anchored by 1 (*strongly disagree*) to 5 (*strongly agree*). This measure has been used in previous research as an observer report and has demonstrated high reliability and predicative validity (Volmer, Koch, & Göritz, 2016). Cronbach's alpha in the present sample for Machiavellianism, psychopathy, and narcissism were acceptable.

5.2.9 Conditions and Design

This study used a nonexperimental correlational design with multiple-group comparisons.

5.2.10 Data Diagnostics

This study followed the recommendations of Simonton (2014) and O'Boyle and Aguinis (2012), who stated that studies which include eminent individuals should not exclude outliers or conduct transformations. This is due to research demonstrating that the data distribution of eminent samples is skewed with a heavy tail to the right (Den Hartigh, Hill, & Van Geert, 2018; O'Boyle & Aguinis, 2012; Simonton, 1999, 2000, 2005, 2014). Eminent samples produce an output which does not conform to a Gaussian distribution, instead they follow a Paretian distribution which produces a flatter tail and allows for a greater number of extreme values (O'Boyle & Aguinis, 2012). O'Boyle and Aguinis (2012) stated that "whereas a value exceeding three standard deviations from the mean is often thought to be an outlier in the context of a normal curve, a Paretian distribution would predict that these values are far more common and that their elimination or transformation is a questionable practice" (p. 84).

5.2.11 Analytic Strategy

Due to the methodological and theoretical relationships among the Big Five personality variables, the emotional intelligence variables, the hardiness variables, and the

dark triad variables, four multivariate analysis of variances (MANOVAs) were used to test hypotheses 1a, b, c, d, and e, 2a, b, c, and d, 3a, b, and c, and 4a, b, and c. MANOVAs test whether the mean differences between groups on a combination of dependent variables is likely to have occurred due to chance. The alternative statistical method to conducting MANOVAs was to produce a series of analysis of variances (ANOVAs) for each dependent variable. However, this approach would inflate the type I error rate (Tabachnick & Fidell, 2014), and reduce the statistical power (Warne, 2014).

5.3 Results

5.3.1 Statistics and Data Analysis

The Statistical Package for Social Sciences (SPSS; Version 24.0) was used for all statistical analyses. Table 6 presents the means and standard deviations computed for each of the variables across the world-leading ($n = 25$) and world-class ($n = 13$) subgroups, and Table 7 reports the correlations among the theoretically related variables across the groups.

Table 6

Means and Standard Deviations for Variables

Variable	Group			
	World-leading		World-class	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
The Big Five				
Conscientiousness*	4.31	.483	3.76	.753
Openness*	4.25	.503	3.87	.570
Agreeableness	4.00	.649	3.87	.816
Extraversion	4.18	.630	4.30	.595
Neuroticism	2.17	.780	2.53	1.03
Emotional Intelligence				
Perception of emotion*	40.83	4.75	36.40	8.01
Managing own emotion	38.30	4.00	36.33	3.99
Managing other emotion*	31.52	4.02	27.27	3.43
Utilization of emotion	24.17	2.29	23.67	3.04
Hardiness				
Commitment	13.13	1.42	12.67	1.79
Control	12.22	1.41	12.27	2.05
Challenge	9.00	2.83	9.80	3.05
The Dark Triad				
Machiavellianism	7.52	3.30	9.80	3.91
Psychopathy	7.74	2.94	8.00	3.55
Narcissism*	7.57	3.01	10.87	4.42

Note. * $p < .05$

Table 7

Correlations Among Theoretically Related Variables

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
The Big Five															
1. Conscientiousness	-														
2. Openness	.07	-													
3. Agreeableness	.39*	.09	-												
4. Extraversion	.06	.28	.23	-											
5. Neuroticism	-.38*	-.23	-.56*	-.16	-										
Emotional Intelligence															
6. Perception of emotion						-									
7. Managing own emotion						.63*	-								
8. Managing other emotion						.72*	.72*	-							
9. Utilization of emotion						.22	.19	.24	-						
Hardiness															
10. Commitment										-					
11. Control										.29	-				
12. Challenge										.11	.05	-			
The Dark Triad															
13. Machiavellianism													-		
14. Psychopathy													.65*	-	
15. Narcissism													.58*	.50*	-

Note. * $p < .05$

5.3.1.1 Big Five personality traits. A one-way MANOVA was conducted on the Big Five dependent variables of conscientiousness, openness, agreeableness, extraversion, and neuroticism (hypothesis 1a, b, c, d, and e). The independent variables were world-leading and world-class groups. Variances and covariances were homogenous across the variables of conscientiousness, openness, agreeableness, extraversion, and neuroticism (Levene's and Box's test $p > 0.05$). The results revealed a significant multivariate difference between the world-leading and world-class groups ($F(5, 32) = 2.97, p = .026, \eta^2 = .317$, Wilks' $\lambda = .733$), and a medium effect size was found with respect to individual differences research (Gignac & Szodorai, 2016). Follow-up univariate F-tests identified significant group differences in conscientiousness $F(1, 36) = 7.44, p = .010, \eta^2 = .171$, and openness $F(1, 36) = 4.53, p = .040, \eta^2 = .112$, but not agreeableness $F(1, 36) = .278, p > 0.05, \eta^2 = .008$, extraversion $F(1, 36) = .347, p > 0.05, \eta^2 = .010$, or neuroticism $F(1, 36) = 1.47, p > 0.05, \eta^2 = .039$. Mean scores revealed that the world-leading group scored higher on conscientiousness ($M = 4.31$) in comparison with world-class group ($M = 3.76$) (see Figure 8), and the world-leading group scored higher on openness ($M = 4.25$) in comparison with world-class group ($M = 3.87$) (see Figure 9).

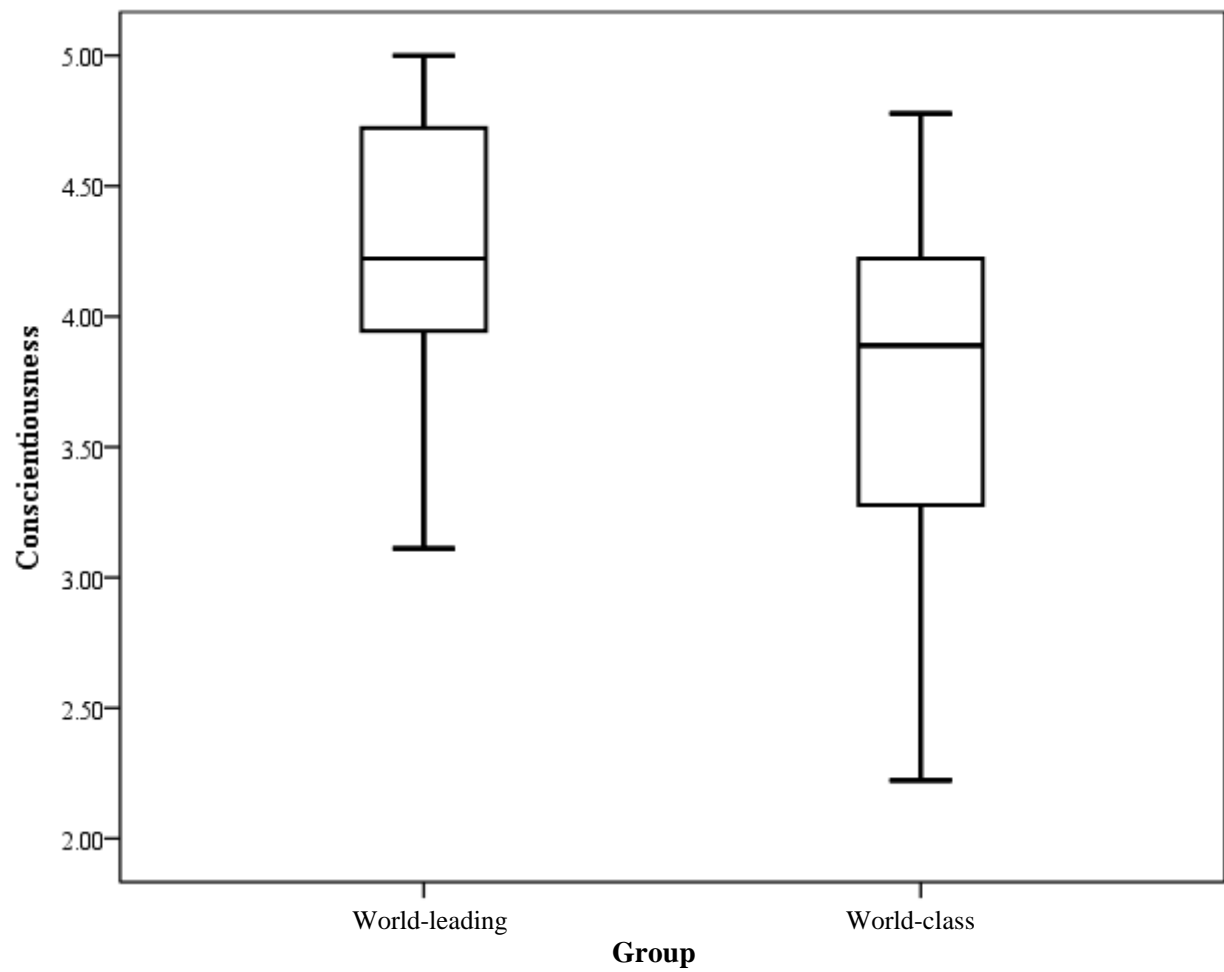


Figure 8. Boxplot for conscientiousness scores from the Big Five Inventory demonstrating a significant difference between the world-leading and world-class groups.

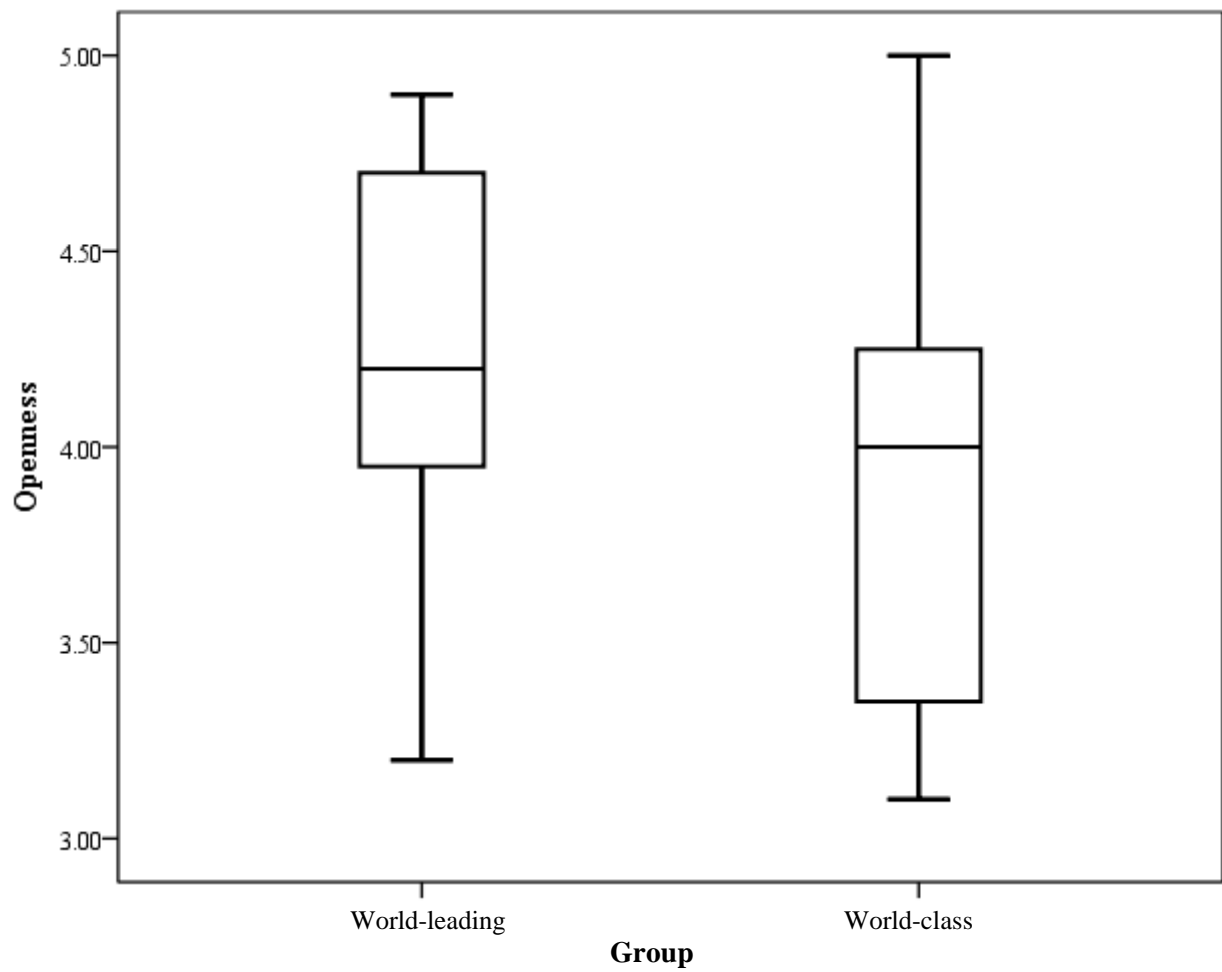


Figure 9. Boxplot for openness scores from the Big Five Inventory demonstrating a significant difference between the world-leading and world-class groups.

5.3.1.2 Emotional intelligence. A one-way MANOVA was performed on the four dependent emotional intelligence variables of perception of emotion, management of own emotion, management of other emotion, and utilization of emotion (hypothesis 2a, b, c, and d). The independent variables were world-leading and world-class groups. Variances and covariances were homogenous across the variables of perception of emotion, management of own emotion, management of other emotion, and utilization of emotion (Levene's and Box's test $p > 0.05$). The results revealed a significant multivariate difference between the world-leading and world-class groups ($F(4, 33) = 3.01, p = .032, \eta^2 = .267$, Wilks' $\lambda = .733$), and a medium effect size was found with respect to individual differences research (Gignac & Szodorai, 2016). Follow-up univariate F-tests identified significant group differences in perception of emotion, $F(1, 36) = 4.56, p = .040, \eta^2 = .112$, and managing other emotion, $F(1, 36) = 11.37, p = .002, \eta^2 = .240$, but not managing own emotion, $F(1, 36) = 2.20, p > 0.05, \eta^2 = .058$, or utilization of emotion, $F(1, 36) = .344, p > 0.05, \eta^2 = .009$. Mean scores revealed that the world-leading group scored higher on perception of emotion ($M = 40.83$) in comparison with the world-class group ($M = 36.40$) (see Figure 10), and the world-leading group scored higher on managing other emotion ($M = 31.52$) in comparison with the world-class group ($M = 27.27$) (see Figure 11).

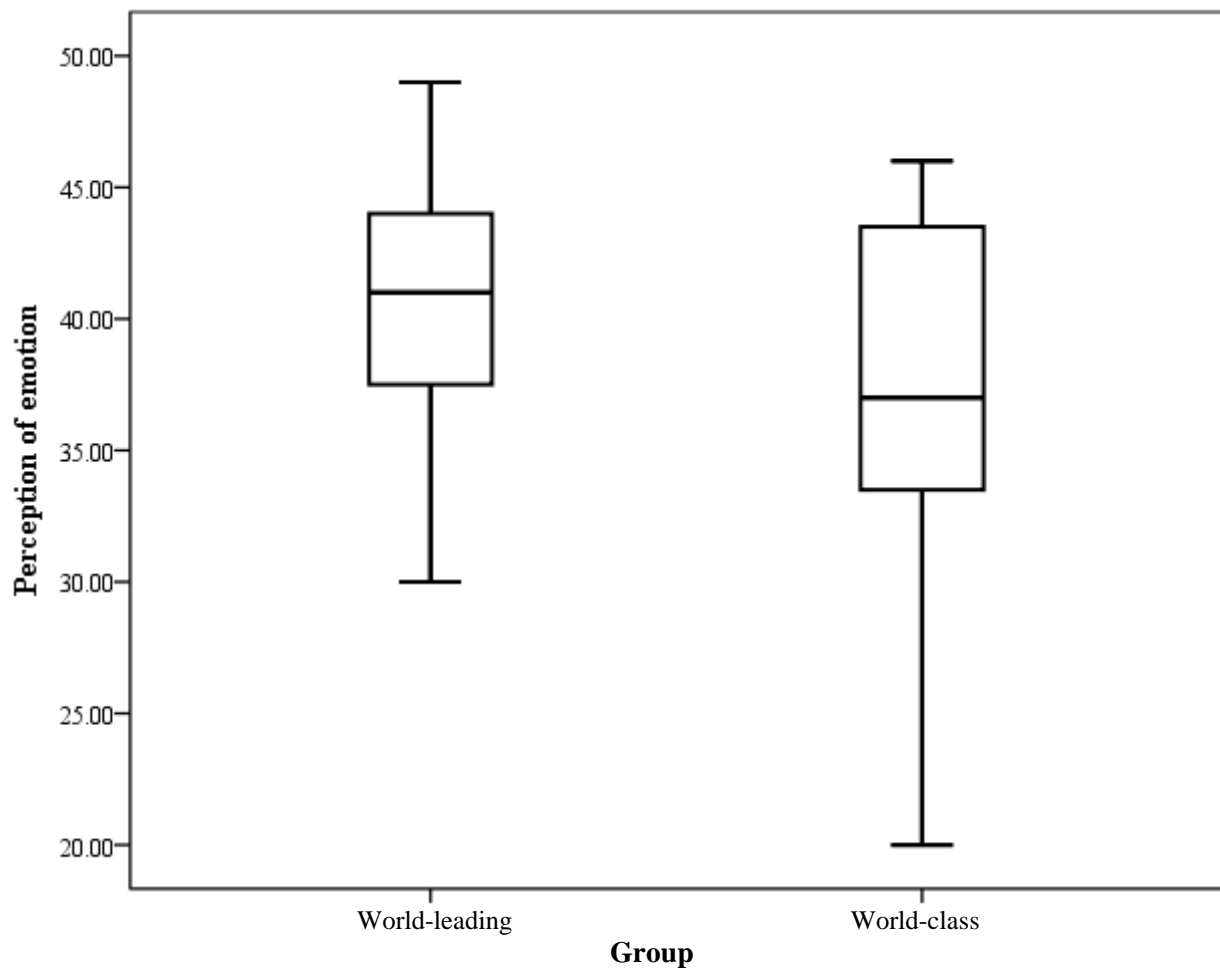


Figure 10. Boxplot for perception of emotion scores from the Schutte Emotional Intelligence Scale demonstrating a significant difference between the world-leading and world-class groups.

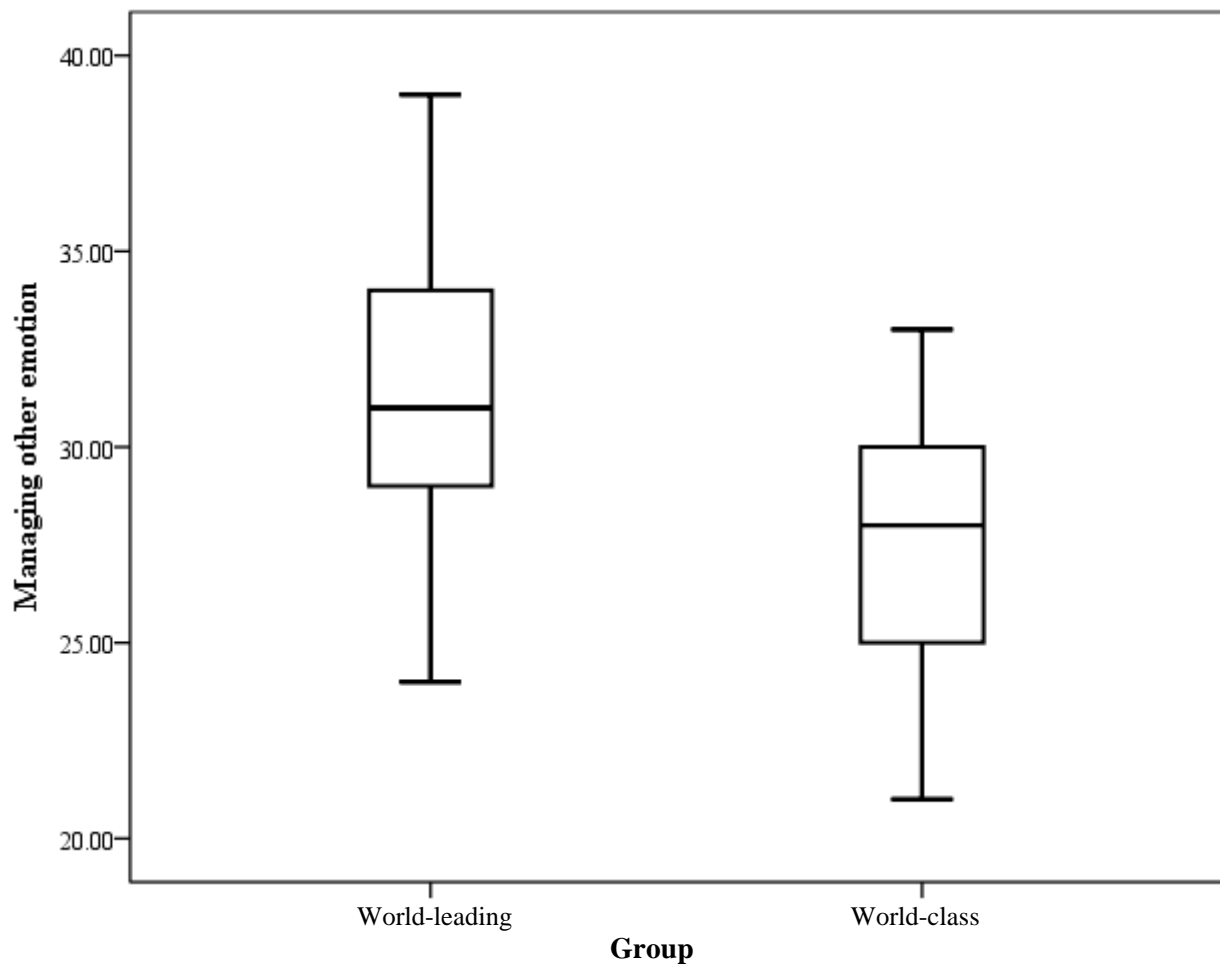


Figure 11. Boxplot for managing other emotion scores from the Schutte Emotional Intelligence Scale demonstrating a significant difference between the world-leading and world-class groups.

5.3.1.3 Hardiness. A one-way MANOVA was performed on the three dependent hardiness variables of commitment, control, and challenge (hypothesis 3a, b, and c). The independent variables were world-leading and world-class groups. Variances and covariances were homogenous across the variables of commitment, control, and challenge (Levene's and Box's test $p > 0.05$). The results revealed no significant multivariate difference between the world-leading and world-class groups ($F(4, 34) = .583, p > 0.05, \eta^2 = .049$, Wilks' $\lambda = .951$). Follow-up univariate F-tests identified no significant group differences in commitment $F(1, 36) = .782, p > 0.05, \eta^2 = .021$, control $F(1, 36) = .008, p > 0.05, \eta^2 = .000$, or challenge $F(1, 36) = .683, p > 0.05, \eta^2 = .019$.

5.3.1.4 Dark triad. A one-way MANOVA was conducted on the three dark triad dependent variables of Machiavellianism, psychopathy, and narcissism (hypothesis 4a, b, and c). The independent variables were world-leading and world-class groups. Variances and covariances were homogenous across the variables of Machiavellianism, psychopathy, and narcissism (Levene's and Box's test $p > 0.05$). The results revealed a significant multivariate difference between the world-leading and world-class groups ($F(3, 24) = 3.85, p = .018, \eta^2 = .254$, Wilks' $\lambda = .746$), and a medium effect size was found with respect to individual differences research (Gignac & Szodorai, 2016). Follow-up univariate F-tests identified significant group differences in narcissism, $F(1, 36) = 7.43, p = .010, \eta^2 = .171$, but not Machiavellianism, $F(1, 36) = 3.74, p = .061, \eta^2 = .094$, or psychopathy, $F(1, 36) = .061, p > 0.05, \eta^2 = .002$. Mean scores revealed that the world-leading group scored lower on narcissism ($M = 7.57$) in comparison with the world-class group ($M = 10.87$) (see Figure 12).

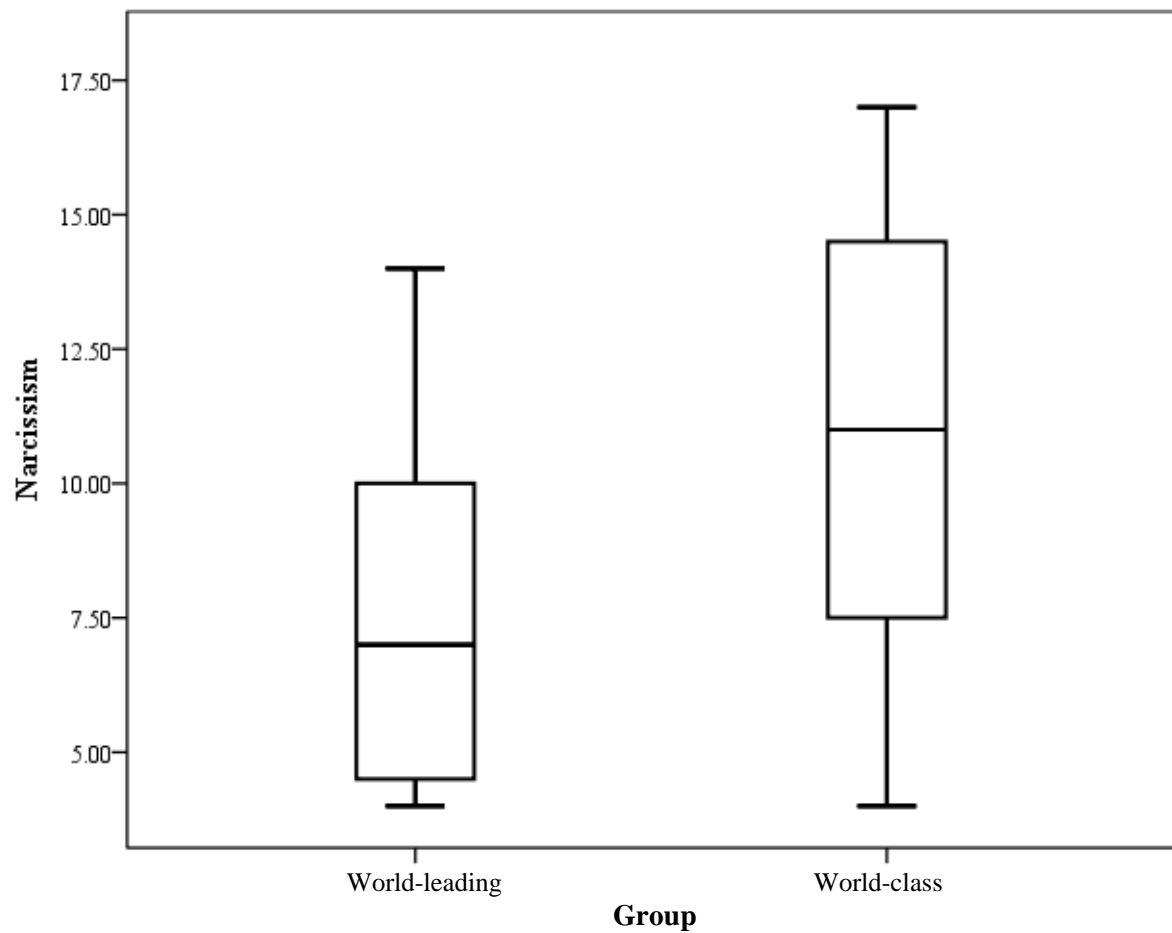


Figure 12. Boxplot for narcissism scores from the Dirty Dozen demonstrating a significant difference between the world-leading and world-class groups.

5.4 Discussion

The purpose of this research was to investigate swimmers' perceptions of the psychological characteristics that discriminate between world-leading and world-class coaches. To achieve this, the study compared swimmers' observer-ratings of world-leading and world-class coaches in order to understand the traits that discriminated between the two groups. Five of the 15 hypotheses were confirmed, with the world-leading coaches being rated higher by their swimmers on the two Big Five traits of conscientiousness and openness to experience, the two emotional intelligence components of perception of emotion and management of other emotion, and lower on the dark trait of narcissism in comparison to the world-class coaches. No differences were found between the world-leading and world-class groups on the Big Five traits of neuroticism, agreeableness, or extraversion, the emotional intelligence components of management of own emotion or utilization of emotion, the hardiness components of commitment, control or challenge, or finally, the dark traits of Machiavellianism or psychopathy.

In terms of the Big Five traits, the world-leading coaches were perceived by their swimmers to be more conscientious in comparison with the world-class coaches. This original finding extends the extant literature in Olympic coaching research as it demonstrates that athletes perceive world-leading coaches to be more conscientious than world-class coaches. Interestingly, this result does not replicate Study Two's finding of no differences between the world-leading and world-class coaches on self-rated conscientiousness, with the coaches in both groups rating themselves equally. When compared with the current study, this suggests that some world-class coaches may have a mirage, in that they perceive themselves to have qualities that are not observed by the athletes, and it may also mean that the coaches ratings were biased by self-enhancement motives (Burris, Detert, & Romney, 2013; Lee & Carpenter, 2018). The finding that swimmers perceive greater conscientiousness amongst world-leading coaches could relate to several beneficial behavioral tendencies that are characteristic of conscientious individuals. Conscientious individuals are typically dutiful and thorough, exerting extra effort and persistence when faced with challenges. Given that winning an Olympic gold medal is regarded as the highest accolade in sport, in part due to its inherent difficulty (Gould & Maynard, 2009), the diligence and discipline perceived by the swimmers will enable the coaches to persist through the many challenges and difficulties encountered on the road to Olympic success (Mallett & Coulter, 2016). Further, coaches act as role models for desirable behaviors (Short & Short, 2005), and as coaches attempt to motivate swimmers to exert extra effort towards achieving a

common goal, their own goal-striving will encourage swimmers to exhibit similar behaviors. As Kirkpatrick and Locke (1991) noted, “leaders must be tirelessly persistent in their activities and follow through with their programs” (p. 51), and the outward expression of conscientiousness, such as keeping the swimmers on task and striving for challenging goals, will be highly advantageous for world-leading coaching.

Turning to openness to experience, the world-leading coaches were perceived by their swimmers to be higher on this in comparison with the world-class coaches. This is the first study within Olympic coaching research to psychometrically demonstrate that athletes perceive world-leading coaches to be higher on this aspect of the Big Five. Further, this represents a contrasting finding as the world-leading and world-class coaches within Study Two did not perceive any differences in openness to experience. The coach’s self-perceptions, with both world-leading and world-class coaches showing no difference in their own internal assessment of their tolerance for ambiguity and curiosity, contrasts with the swimmers’ ratings which reflect observable behaviors. Although the world-leading coaches may not internally feel more creative in comparison with others, their actions appear to suggest otherwise. Openness to experience is beneficial towards coaching an athlete to win an Olympic gold medal because one of the main characteristics of this trait is divergent thinking (Chernyshenko, Stark, & Drasgow, 2011; Costa & McCrae, 1988), which can help coaches attain a competitive advantage. Indeed, openness to experience has been described as “the catalyst that leads to creative expression and exploration” (King, Walker, & Broyles, 1996, p. 190), and coaches who are able to challenge traditional practice and communicate an innovative training program to their swimmers are more likely to outperform their rivals. Further, Bono and Judge (2004) found that individuals who score highly on openness to experience also score highly on inspirational motivation, which helps coaches to inspire swimmers to exert more discretionary effort when attempting to complete challenging practices. One can speculate that being perceived as original and being able to create new and challenging practices will be a highly advantageous trait for coaching a swimmer to win an Olympic gold medal.

In relation to emotional intelligence, this is the first study across Olympic coaching research to quantitatively examine athletes’ perceptions of their coach’s emotional intelligence. The world-leading coaches were perceived by their swimmers to be higher on both perception of emotion and management of other emotion in comparison with the world-class coaches. The finding regarding perception of emotion extends the results of Study Two and indicates that not only do coaches internally believe that they can accurately perceive

emotion, but that observers can also recognize this through their behavior. It has been suggested that one of the main mechanisms through which coaches' influence performance is by perceiving and managing athletes' emotion (Chan & Mallett, 2011). Drawing upon interpersonal emotion management (Little, Gooty, & Williams, 2016) and emotion regulation theory (Grandey, 2000), it is hypothesized that perceiving and managing swimmers' emotions will be advantageous for two primary reasons. The first is that if a coach can perceive that a situation is having a negative emotional impact on a swimmer, they can then actively modify the situation in order to change the emotional response. For example, a coach may see that a swimmer is struggling with a specific practice in training, and altering the practice would enable the swimmer to attain the desired level of performance and result in a positive mood. Individuals in a positive emotional state are likely to be more optimistic, cooperative, and motivated, thus producing higher performance (Baas, De Dreu, & Nijstad, 2008; Wang & Seibert, 2015). Secondly, if a coach is able to perceive an emotion and then help a swimmer reappraise or reinterpret a situation, they will be able to mitigate any harm to future goals and reduce concerns (Gross, 1998). A swimmer, for example, may be distressed that they did not win their race prior to the Olympic final, and if the coach appreciates this emotion and helps to reframe it, perhaps as a normal and important step in the build-up preparation to the ultimate goal, this will help the swimmer to see the situation in a more positive light. The emotional impact of the event will be mitigated, and the resultant positive emotion invoked in the swimmer will provide them with greater physical and cognitive resources for their performance in the final (Ilies et al., 2009). Therefore, being sensitive to athletes needs and emotions and being able to regulate their emotional responses will be beneficial for coaching a swimmer to win an Olympic gold medal.

Finally, the world-leading coaches were perceived by their swimmers to be less narcissistic in comparison with the world-class coaches. This is an original finding within the literature as this is the first study to psychometrically assess athlete's perceptions of their coaches' dark traits. This finding extends Study Two which demonstrated that world-leading coaches were lower in self-reported narcissism in comparison with the world-class coaches. While self-ratings better reflect an individual's traits, observer ratings measure the behavioral tendencies of an individual. This indicates that the world-class coaches are displaying greater narcissistic grandiose and arrogant dispositions than the world-leading coaches, which will detract from their ability to establish long term coach-athlete relationships, hamper the building of commitment to their vision, and hinder the creation of a positive training environment. All of these factors are related to coaching effectiveness (Jowett & Cockerill,

2003) and the tactics that a coach uses to self-aggrandize and gain the admiration of others, such as aggression and low intimacy strivings, will undermine the coach-athlete relationship in the long term. Further, narcissists characteristically lack empathy, and given the centrality of empathy to coaching (Jowett, 2017), this will hinder their ability to coach an athlete to an Olympic gold medal. Although narcissistic coaches may view themselves as superior, their swimmers may form a different conclusion.

Moving onto the non-significant findings, the lack of difference between the world-leading and world-class groups on the Big Five traits of extraversion and neuroticism, the hardiness components of commitment, control, and challenge, and the dark trait of psychopathy, reflects Study Two's findings of the world-leading and world-class coaches self-perceptions. No differences were found between the groups on perceived Machiavellianism, contrasting with Study Two which identified lower Machiavellianism in the world-leading coaches. One can speculate that being perceived as behaving in an outwardly manipulative manner will detract from the coach-athlete relationship (Jowett, 2003), and therefore will be a disadvantage. It is surprising that there was no difference between the world-leading and world-class groups on management of own emotion as this contrasts with Study Two's finding that world-leading coaches showed higher management of own emotion than world-class coaches. The process of managing own emotion is an internal one and not necessarily observable by others, and therefore it may not be possible for swimmers to detect this trait. Finally, in contrast with Study Two, no differences were found on agreeableness, which suggests that the tendency to get along rather than get ahead was not observed by the athletes. This may be because Olympic level sport inherently emphasizes beating your opposition, and so all of the coaches may stress competition rather than cooperation, even if this does not reflect the world-leading coaches' internal belief.

The results of this study should be interpreted in light of several strengths and limitations. In terms of strengths, the multi-national nature of the sample enables generalizability across different countries about the traits which are advantageous for coaching an athlete to win an Olympic gold medal. The sample of gold and non-gold medal winning Olympic swimmers represents a significant and distinctive sample (Simonton, 2014), and this hard-to-reach population offers novel insights for the disciplines of coaching and sport psychology. Further, the inclusion of the swimmers who were coached by the coaches in Study Two has enabled the development a more rounded understanding of these coaches. Indeed, not only has an understanding of coaches' internal processes been developed from their self-reports, but also of their behaviors and reputations from the swimmer observer-

reports. Turning to limitations, although this study has ascertained that a number of psychological characteristics discriminate between world-leading and world-class coaches, it is unclear how these traits are expressed or why they may lead to coaching an athlete to win an Olympic gold medal. Therefore, qualitative studies are required which can answer these questions and provide in depth knowledge about the process of coaching an Olympic athlete to win an gold medal. A further limitation of this study is that swimmer self-ratings were not collected. An individual's rating of others is based partly upon their own traits (Hansbrough, Lord, & Schyns, 2015), for example, agreeable individuals are predisposed to view others positively and as such may provide socially desirable appraisals (Bernardin, Cooke, & Villanova, 2000). As coaching is a co-constructed relational process (Cushion, 2010), it is important that future research includes athlete's self-ratings, not only to understand the role of the athlete in the coaching process, but also understand how the athlete's traits interact with the coach's traits to produce more or less favorable outcomes.

The findings of this study hold a number of implications for practice. Perhaps most importantly, coaches need to understand that athletes are aware of the coach's efforts to manage the swimmer's emotions. Thus, it is important that coach development and training programs provide information regarding the different strategies which can alter others' emotions, and which of these strategies are likely to be effective (Little et al., 2016). Strategies which successfully manage own emotions are different from those which successfully regulate other emotions, for example, distracting oneself from the event or attentional deployment may be effective for managing own emotion but not for other emotion management (Little et al., 2016). Therefore, education regarding situational modification or cognitive change will be beneficial for coaches (Gross, 1998). Further, the finding that world-leading coaches are lower on the trait of narcissism in comparison with the world-class coaches suggests that National Governing Bodies should be cautious about coach selection processes which cater to narcissists strengths. Situations such as unstructured interviews should be avoided as narcissists will likely be charming and perform well under these conditions (Grijalva, Harms, Newman, Gaddis, & Fraley, 2015). However, low narcissism is not necessarily advantageous, and training coaches to be aware of their narcissistic tendencies would be beneficial (Grijalva et al., 2015; Study Two).

5.5 Conclusion

In conclusion, this study aimed to further our understanding of the psychological factors which discriminate between world-leading and world-class swimming coaches by examining swimmers' perceptions. Significant differences were found between the groups,

with the world-leading group scoring higher on the Big Five traits of conscientiousness and openness to experience, the emotional intelligence components of perception of emotion and management of other emotion, and lower on the dark trait of narcissism in comparison with the world-class group. Combined with Study Two, this suggests that the psychological aspects of coaches have an impact on Olympic outcomes, and future researchers should seek to further our understanding of these factors in order to attain greater Olympic success.

Chapter Six: Study Four

A Qualitative Study of Psychosocial Aspects of Olympic Swimming Coaches

Chapters Four and Five examined coaches' and swimmers' perceptions of the factors which discriminate between world-leading and world-class coaches across the Big Five personality traits, emotional intelligence, hardiness, and the dark triad. Building on these studies, Chapter Six explores the world-leading and world-class coaches' self-perceived behaviors, experiences, values, motivations, beliefs, and emotions to further elucidate any discriminating characteristics. This will develop an understanding of who these coaches are, how they do what they do, what they do, why they do it, and what drives their behavior.

6.1 Literature Review

One of the aims of sport science is to examine the factors which contribute to elite performance, and more specifically, understand which attributes enable some individuals to perform optimally during critical events, such as at the Olympic Games (Hardy et al., 2017). Within the discipline of sport psychology, researchers have traditionally focused on the psychological and social factors which underpin athletes' success (e.g. Gould & Maynard, 2009; Hardy et al., 2017; Rees et al., 2016). However, over the past few decades, researchers have widened their attention from the performance of athletes, and have begun to focus on other performers, such as coaches. Coaches are considered performers in their own right (Gould, Guinan, Greenleaf, & Chung, 2002), and are central actors in the coach-athlete relationship (Cushion, 2010; Jowett, 2017). Olympic coaches are required to optimize athletes' technical, tactical, and psychological skills, and are held accountable for performance outcomes (Kristiansen & Roberts, 2010; Mallett & Côté, 2006; Mallett & Lara-Bercial, 2016). They perform in a highly pressurized results-oriented culture, select and organize athletes and support staff, and encounter numerous personal, environmental, and organizational challenges (Rynne, Mallett, & Ranjohns, 2016; Thelwell, Wagstaff, Rayner, Chapman, & Barker, 2017). In order to develop an understanding of Olympic coaches beyond the act of coaching, researchers have

studied their intrapersonal as well as interpersonal characteristics (Chroni, Abrahamsen, & Hemmestad, 2016; Currie & Oates-Wilding, 2012; D'Arripe-Longueville, Fournier, & Dubois, 1998; Din, Paskevich, Gabriele, & Werthner, 2015; Dixon, Lee, & Ghaye, 2012; Ge et al. 2016; Gould, Dieffenbach, & Moffett, 2002; Gould, Greenleaf, Chung, & Guinan, 2002; Gould, Guinan, Greenleaf, & Chung, 2002; Gould, Greenleaf, Guinan, Dieffenbach, & McCann, 2001; Gould, Guinan, Greenleaf, Medbery, & Peterson, 1999; Greenleaf, Gould, & Dieffenbach, 2001; Jowett, 2003; Jowett & Cockerill, 2003; Kimiecik & Gould, 1993; Lyons, Rynee, & Mallett, 2012; Mallett, 2005; Mallett & Coulter, 2016; Olusoga, Maynard, Hays, & Butt, 2012; Pensgaard & Roberts, 2000; Pensgaard & Roberts, 2002; Philippe & Seiler, 2006; Seanor, Schinke, Stamulova, Ross, & Kpazai, 2017; Sullivan & Nashman, 1993; Trzaskoma-Bicsérdy, Bognár, Révész, & Géczi, 2007). However, none of these studies examined the attributes which discriminate between world-leading and world-class coaches, and the overarching aim of this study was therefore to explore the discriminating psychosocial factors between these two groups of coaches.

The psychology of sport coaching literature has tended to focus on the process of coaching, although more recently, the research lens has shifted towards understanding the coach as a person (Lara-Bercial & Mallet, 2016; Mallett & Coulter, 2016; Mallett & Lara-Bercial, 2016). Study One, a systematic review which synthesized the existing research on psychosocial aspects of coaching in Olympic sport, identified traits, states, and behaviors which were related to athlete performance in a perceived facilitative, debilitative, or neutral, mixed, or unclear manner. The review found that conscientiousness, task-orientation, and trait passion were the most frequently highlighted traits, and the most frequently identified states were other-efficacy, coach-efficacy, and task-involved. The review also highlighted that the extant research had predominantly examined coaches' behaviors, and these included demonstrating understanding and concern, providing praise and encouragement, and providing different forms of feedback. However, it was noted that the research was concentrated around a limited number of attributes with little empirical progression, many of the research studies were not theory driven, and there was an apparent bias towards coaches bright (i.e. socially desirable) characteristics. Further, in comparison with sport psychology research examining Olympic athletes (Hardy et al., 2017), there had been no research which aimed to understand which factors discriminate between world-leading and world-class coaches.

Building on this systematic review, Study Two investigated the self-reported psychological discriminators between world-leading and world-class swimming coaches using a quantitative methodology with four psychometric measures. These measures examined the coaches Big Five traits of conscientiousness, openness to experience, agreeableness, extraversion, and neuroticism, the trait emotional intelligence components of perception of emotion, management of own emotion, management of other emotion, and utilization of emotion, the hardiness components of commitment, control, and challenge, and the dark traits of Machiavellianism, psychopathy, and narcissism. The study found that world-leading coaches were higher on the Big Five trait of agreeableness, and the emotional intelligence components of perception of emotion and management of own emotion in comparison with the world-class coaches. In addition, the world-leading coaches were lower on the dark traits of Machiavellianism and narcissism in comparison with the world-class coaches. In order to further develop these results, Study Three examined Olympic swimmer's perceptions of their coach's psychological characteristics, and investigated whether there were any perceived discriminators between world-leading and world-class coaches. This study utilized observer ratings of the psychometric measures employed in Study Two. It was found that the swimmers who had been coached by world-leading Olympic coaches rated their coaches higher on the Big Five traits of conscientiousness and openness to experience, and the emotional intelligence components of perception of emotion and management of other emotion in comparison with the swimmers who had been coached by world-class coaches. Further, the swimmers in the world-leading group rated their coaches lower on the dark trait of narcissism in comparison with the world-class group. These studies highlighted that a number of traits discriminate between world-leading and world-class coaches, and the need for coaches to be cognizant of these areas and develop their competence across trainable psychological attributes, such as emotional intelligence, was discussed. However, coaches are simply more than a constellation of traits, and expanding beyond these quantitative methodologies can uncover new understandings of psychosocial aspects of Olympic coaches. Knowing that world-leading coaches score highly on agreeableness and perception of emotion, for example, says little about why they chose to coach in the first place, their formative experiences, how they relate to others, or the meaning of a loss or victory to them.

Over the last two decades, personality psychologists have moved towards integrated theories of personality in order to better understand and explain human functioning (Barenbaum & Winter, 2008). Integrative perspectives emphasize how various personality theories complement one another, and perhaps the most well-received theory is McAdams' three-layered framework of personality (McAdams, 1995; McAdams & McLean, 2013; McAdams & Pals, 2006). This theory has recently garnered attention from sport psychologists (Coulter, Mallett, Singer, & Gucciardi, 2016), and has been applied to sport coaching research (Lara-Bercial & Mallet, 2016; Mallett & Coulter, 2016; Mallett & Lara-Bercial, 2016). In his integrated personality framework, McAdams argued that to understand a person as a whole and account for conditional, dynamic, and contextual behaviors, it is important to understand three layers of information: i) dispositional traits, (ii) characteristic adaptations, and (iii) narrative identity. Dispositional traits represent an individual's most basic and stable characteristics, such as the Big Five, and characteristic adaptations describe an individual's motivational, social-cognitive, and developmental stage, which are shaped by time, place, situation, and social role. Examples of these characteristic adaptations include motives, values, and beliefs. The final layer of personality is narrative identity, which represents the internal stories individuals construct about their past, present, and future self, such as self-defining memories. Therefore, in order develop a more complete understanding of Olympic coaches, it is important to go beyond the trait focus of Studies Two and Three, and explore the areas which encompass motivation and meaning.

There is a paucity of research which specifically aims to understand coaches as integrated whole people, going beyond the act of coaching. Evidence has suggested that personality is an important predictor of coaches' behavior (Balch & Scott, 2007; Laborde, Mosley, & Thayer, 2017), although despite this, a recent systematic review of personality research in sport psychology highlighted that coaches were underrepresented across personality research (Laborde, Allen, Katschak, Mattonet, & Lachner, 2019). Further, in their examination of the characteristics of serial medal winning Olympic and professional coaches, Lara-Bercial and Mallett (2016) stressed the need to "build an empirical base in knowing coaches better. This research is important to assist coach developers and sports psychologists in supporting the learning and development of high performance coaches" (p. 49). Building on Studies One, Two, and Three, the purpose of this study was to explore the psychosocial factors that discriminate between world-leading and world-class swimming coaches. More specifically, the aim was to

explore the self-perceived discriminators between world-leading and world-class coaches across behaviors, experiences, values, motivations, beliefs, and emotions. This will develop our understanding of who these coaches are, how they do what they do, what they do, why they do it, and what drives their behavior.

6.2 Method

The methods are reported in accordance with Levitt et al.'s (2018) reporting standards for qualitative research in psychology and comprise the following sections: Research design overview, study participants, participant recruitment, data collection, and analysis.

6.2.1 Research Design Overview

Qualitative research methods were deemed appropriate for this study given that the research question aimed to develop an in-depth understanding of Olympic coaches' perceptions of their behaviors, experiences, values, motivations, beliefs, and emotions (Levitt, Motulsky, Wertz, Morrow, & Ponterotto, 2017; Parker, 2004). Qualitative research refers to a set of scientific practices that analyze data in the form of natural language and expression of experience to produce knowledge about the nature of the experience or action (Levitt, Motulsky, Wertz, Morrow, & Ponterotto, 2017; Levitt et al., 2018). In terms of data collection strategies, semi-structured interviews were used because they "allow for an in-depth examination of an individual's attitudes, opinions, beliefs and values with respect to a particular phenomenon" (Purdy, 2014, p. 162). Semi-structured interviews were also considered to be particularly appropriate due to their flexibility, which enabled the eminent participants to share novel and additional insights. Schaller (1997) demonstrated that eminence enhances individual's self-consciousness and self-awareness, which facilitates participants ability to provide rich, thick descriptions of their experiences and the meanings they attribute to them. The data-analytic strategy utilized within this study was thematic analysis, which is a method of identifying patterns of meaning across a data-set (Braun & Clarke, 2006; 2012; 2013; Braun, Clarke, & Weate, 2016).

In terms of approach to inquiry, the study was underpinned by pragmatism, which is a system of philosophy that emphasizes the problem-driven nature of inquiry and learning (Feilzer, 2010; Giacobbi, Poczwadowski, & Hager, 2005; Morgan, 2014). Dewey (1920/2008; 1925/2008) advocated refocusing philosophy away from metaphysical concerns (i.e. epistemology and ontology), and instead towards the nature of human experience. According to

Dewey's cyclical model, experience involves a process of interpretation in which our beliefs are interpreted to inform our actions, and our actions are interpreted to inform our beliefs (Morgan, 2014). These experiences are either based upon habit, which is a semi-automatic state that does not require self-conscious decision making, or inquiry, which is a process of careful, reflective decision making (Dewey, 1922/2008). Research is a form of inquiry that is undertaken in response to an identified problem, and pragmatists' methodological choices, due to their focus on the nature of human experience, are determined by their practical utility in answering a specific research problem, rather than metaphysical principles (Denscombe, 2008; Johnson & Onwuegbuzie, 2004; Morgan, 2007). Finally, pragmatism has been recognized to align with the process of coaching and how coaches view themselves (Bachkirova, Jackson, Gannon, Iordanou, & Myers, 2017).

6.2.2 Study Participants

6.2.2.1 Researcher description. The author is a 29-year-old British female who holds a BSc degree in Psychology, an MSc in the Psychology of Sport and Exercise, and is a Chartered Sport and Exercise Psychologist with the British Psychological Society, and a Health and Care Professions Council registered Practitioner Psychologist. She has received postgraduate-level training in qualitative research methods, undertaken Olympic level interviewing as part of her MSc thesis, and has conducted quantitative investigations on the psychological aspects of Olympic swimming coaching. She values honesty, transparency, and integrity. The first supervisor is a 41-year-old British male who holds a BSc degree in Sport and Exercise, an MSc in Sport Science, a PhD in sport and organizational psychology, and is a Chartered Sport and Exercise Psychologist with the British Psychological Society, and a Health and Care Professions Council registered Practitioner Psychologist. He has published papers on Olympic sport and Olympic coaching, teaches on the qualitative methods MSc module at Loughborough University, and has supervised PhD students using qualitative methods. He is a former elite level swimmer who competed at international level, and values evidence based practice. The second supervisor is a 53-year-old Scottish and British male who holds a BA in human movement, an MSc in Sport Science, and a PhD in exercise physiology. He is a British Association of Sport and Exercise Sciences accredited sport scientist with a specialism in exercise physiology and has worked as a coach and sports scientist with the British swimming team for fifteen years. He has received postgraduate level training in qualitative research methods, holds the highest British swimming

coaching qualification, is a former elite level swimmer with 5 years of senior international experience. He values hard work, high quality work, and attention to detail.

6.2.2.2 Participants. The sample consisted of 38 Olympic swimming coaches (35 males, 3 females), who ranged in age from 32 to 79 years old ($M = 48.42$, and $SD = 8.93$). Collectively, these individuals had coached 171 swimmers to win 354 Olympic medals, of which 91 swimmers had won 156 Olympic gold medals. Fifteen of the participants had coached within Great Britain, 13 within Australia, nine within the United States of America, and one within the Netherlands. All of the participants were active coaches. They had a variety of educational levels (six having school certificates, five with national vocational qualifications, 21 with undergraduate degrees, five with Masters degrees, and one with a doctoral degree), were in a variety of relationship statuses (22 were married, two were in civil partnerships, nine were in relationships, two were divorced, and three were single), and 25 participants had children and 13 participants had no children. The majority of participants reported former swimming backgrounds, with eight Olympic swimmers, seven international swimmers, 11 national swimmers, two regional swimmers, and one recreational swimmer, with others having sporting backgrounds in ice hockey, soccer, surfing, surf-lifesaving, and Australian Rules Football. Participants reported between six and 53 years of swimming coaching experience ($M = 23.30$, and $SD = 13.95$), with between two and 39 years of Olympic level coaching experience ($M = 15.80$, and $SD = 12.50$). They reported taking between two and 25 years to coach a swimmer to an Olympic medal ($M = 13.50$, and $SD = 7.25$), and between two and 26 years to coach a swimmer to an Olympic gold medal ($M = 12.90$, and $SD = 7.82$).

6.2.2.3 Researcher-participant relationship. The author had no prior professional or social interactions with 35 of the 38 participants. She had previously interviewed 3 of the coaches as part of her MSc thesis, but had no further professional or social relationship.

6.2.3 Participant Recruitment

6.2.3.1 Recruitment process. Ethical approval was initially obtained from Loughborough University. A pilot interview was conducted with an international level athletics coach to provide the interviewer with initial familiarization with the interview guide. Potential participants were approached at the 2015 Australian Coaches and Teachers Association Convention, the 2015 American Swimming Coaches Association World Clinic, or were e-mailed with contact details retrieved via the author and second supervisor's sporting contacts. Potential

participants were informed of the purpose of the study and invited to participate. Thirty-eight of the 40 potential participants accepted the invitation, and a mutually convenient time and location to conduct the interview was arranged. The sample size was appraised using Malterud, Siersma, and Guassora's (2016) model of "informational power" (p. 1753). Thirty-eight participants were deemed sufficient given that the aim of the study involved understanding a rare experience with a limited number of target group participants, the research question was guided by established literature, the dialogue between the researcher and the participants was strong and clear, and the discourse details were analyzed in-depth (cf. Malterud et al., 2016).

6.2.3.2 Participant selection. This study utilized criterion and stratified purposeful sampling techniques (Guttermann, 2015; Patton, 2015; Robinson, 2014). Criterion sampling enables researchers to select information-rich participants, thus maximizing the development of knowledge about a topic of inquiry (Patton, 2015). Given the very small number, hard-to-reach nature, and influential position of this specialized population, random sampling methods were considered inappropriate (Mikecz, 2012). Stratified purposeful sampling was employed to allow for comparison between two groups of coaches (Guttermann, 2015; Robinson, 2014). The world-leading group included 22 participants who had coached one or more swimmers to win at least one Olympic gold medal, and the world-class group included 16 participants who had coached one or more swimmers to an Olympic Games and/or coached one or more swimmers to win at least one Olympic bronze or silver medal (but not coached a swimmer to win an Olympic gold medal).

All interviews were conducted by the author between April 2015 and December 2016 across 16 cities in three continents.

6.2.4 Data Collection

6.2.4.1 Data collection. The interviews ranged in duration from 59 to 183 min ($M = 129.50$, $SD = 24.25$). All interviews were undertaken in a face-to-face format, and participants were interviewed individually. Due to the exploratory nature of the research question, a semi-structured interview guide (see Appendix K) was developed to enable a series of relatively focused open-ended questions to be asked while maintaining flexibility to explore any additional areas which emerged during the discussion (King & Horrocks, 2010). Semi-structured interviews are co-constructed by both the researcher and participant, and enable the collection of rich, multi-layered information (Randall & Phoenix, 2009). Prior to data collection and in line

with best practice guidelines for interviewing elite individuals (Empson, 2018; Harvey, 2011; Mikecz, 2012), the author researched the participants backgrounds to enable in-depth and specific questions to be asked (Laurila, 1997). This enhanced knowledgeability reduces the status imbalance, which, along with an awareness of positionality, is essential for establishing trust with eminent individuals (Welch, Marschan-Piekkari, Penttinen, & Tahvanainen, 2002). The interview guide was divided in to five sections. The first section provided participants with information about the purpose of the study, explained their right to withdraw at any time, and confirmed that their identity would be anonymized. Participants provided informed consent in section two, and section three comprised preliminary questions which helped to build trust and rapport, and enabled the researcher to gauge the tone of the interview and adjust behavior, style of speaking, and mannerisms to ensure participant comfort (Harvey, 2011). Section four was developed from a review of the literature (e.g., Currie & Oates-Wilding, 2012; Gould, Guinan, Greenleaf, & Chung, 2002; Olusoga, Maynard, Hays, & Butt, 2012), and focused on participants perceptions of their motivations, behaviors, communication, environment, relationships, luck, overcoming difficulties, and coping with pressure (e.g. “What motivates you the most?” “What behaviors do you think you display?” “How do you get your message across to your swimmers?” “What is the environment like at training?” “Can you tell me the different skills you use to help create and maintain those relationships?” “Do you think you got lucky with your swimmers?” “Have you experienced any significant difficulties throughout your life” “Can you describe how you cope with the pressure of being an Olympic swimming coach?”). Richards (1996) and Harvey (2011) suggest that emotionally laden questions, such as the experience of childhood adversity, should be posed later in interview process once rapport has been established. Where appropriate, responses were followed up by periods of silence and also detail-oriented, elaboration, and clarification explorations to encourage further development and provide clarification or eliminate any ambiguity (Berry, 2002; Irvine, Drew, & Sainsbury, 2013; Smith & Sparkes, 2016). Section five invited participants to ask questions about the interview and add any further relevant information. A reflexive journal was kept throughout the study to maintain a reflexive stance and disciplined subjectivity (Wolcott, 2005). This involved recording, reflecting, and addressing thoughts, feelings, preconceptions, and biases that may impact upon the research process.

6.2.4.2 Recording and data transformation. The interviews were digitally recorded in their entirety and transcribed verbatim, yielding 500,189 words and 1,546 pages of double-spaced text. Any potentially identifiable information was subsequently removed from the transcripts to ensure anonymity.

6.2.5 Analysis

6.2.5.1 Data-analytic strategies. This study utilized a six-phase inductive thematic analysis, which is a method for identifying, analyzing, describing, and reporting themes across a data set (Braun & Clarke, 2006; 2012; 2013). Thematic analysis is a particularly useful method to examine different participants experiences, highlight similarities and differences, generate novel insights, and summarize large data sets (King, 2004; Nowell, Norris, White, & Moules, 2017). In line with Braun, Clarke, and Weate's (2016) guidelines, the author became immersed in the data by repeatedly re-reading the transcripts, and noted initial ideas and patterns in the data, such as participants provision of feedback. The second phase involved generating initial codes which identified key or meaningful features in the transcripts, for example, the death of a parent during adolescence. Next, the codes were reviewed to find areas of overlap, and similar codes were collapsed to form subthemes. In the fourth phase, connections were made between clusters of subthemes to generate themes that described similar subthemes. For example, childhood adversity, the need to win and not lose, striving for perfection, and obsession were grouped under the theme of motivation. Next, the subthemes and themes were reviewed against collated extracts from the data and refined to accurately reflect the data set as a whole. The sixth phase was writing the report. As part of the analysis procedure, the second supervisor acted as a critical friend to the author by engaging in critical dialogue, encouraging reflections, and exploring multiple explanations and interpretations of the findings (Morse, 2015; Smith & McGannon, 2018).

6.2.5.2 Methodological integrity. In line with the American Psychological Association's reporting standards for qualitative research (Levitt et al., 2018), the concept of methodological integrity was used as the underlying methodological basis for trustworthiness (Levitt et al., 2017). Methodological integrity can be evaluated through its two constituent processes: fidelity to the subject matter and utility in achieving research goals. Fidelity to the subject matter is conceptualized as consisting of four central features: (1) data adequacy, (2) perspective management in data collection, (3) perspective management in analysis, and (4)

groundedness. Data adequacy was achieved through the interview sample which enabled the collection of rich and encompassing data. Perspective management in data collection was enhanced through the use of a reflexive journal which enabled the researcher to identify prior assumptions and reflect upon how they may influence the data (Rennie, 2000). Perspective management in analysis was increased by asking the first and second supervisors to provide feedback on preliminary results, and groundedness was achieved by presenting rich exemplars from the data to enable the reader to judge the fidelity of the analysis (Freeman, 2014). Utility in achieving research goals is comprised of four central features: (1) contextualization of data, (2) catalyst for insight, (3) meaningful contribution, and (4) coherence among findings. Contextualization of data was delivered by providing demographic characteristics of the researchers and participants (Morrow & Smith, 2000; Rogers, 2000), and catalyst for insight was ensured as the author had extensive experience of interviewing elite individuals and held professional credentials (Josselson, 2013). Meaningful contribution was provided by utilizing semi-structured interviews which were particularly appropriate to expand current understandings and shed new light on the research question. Coherence among findings was addressed by utilizing a thematic diagram and presenting exemplars which conveyed the complexity of the data (Motulsky, 2010).

6.3 Results

The results represent a comparison of the responses between the world-leading and world-class coaches, highlighting the main areas of difference between the groups. In total, the transcripts yielded 1,292 initial codes, which were categorized into 16 subthemes, and then further developed into four themes. The main themes were termed motivation, underpinning personal bond, improvement orientation, and Olympic event management (see Figure 13).

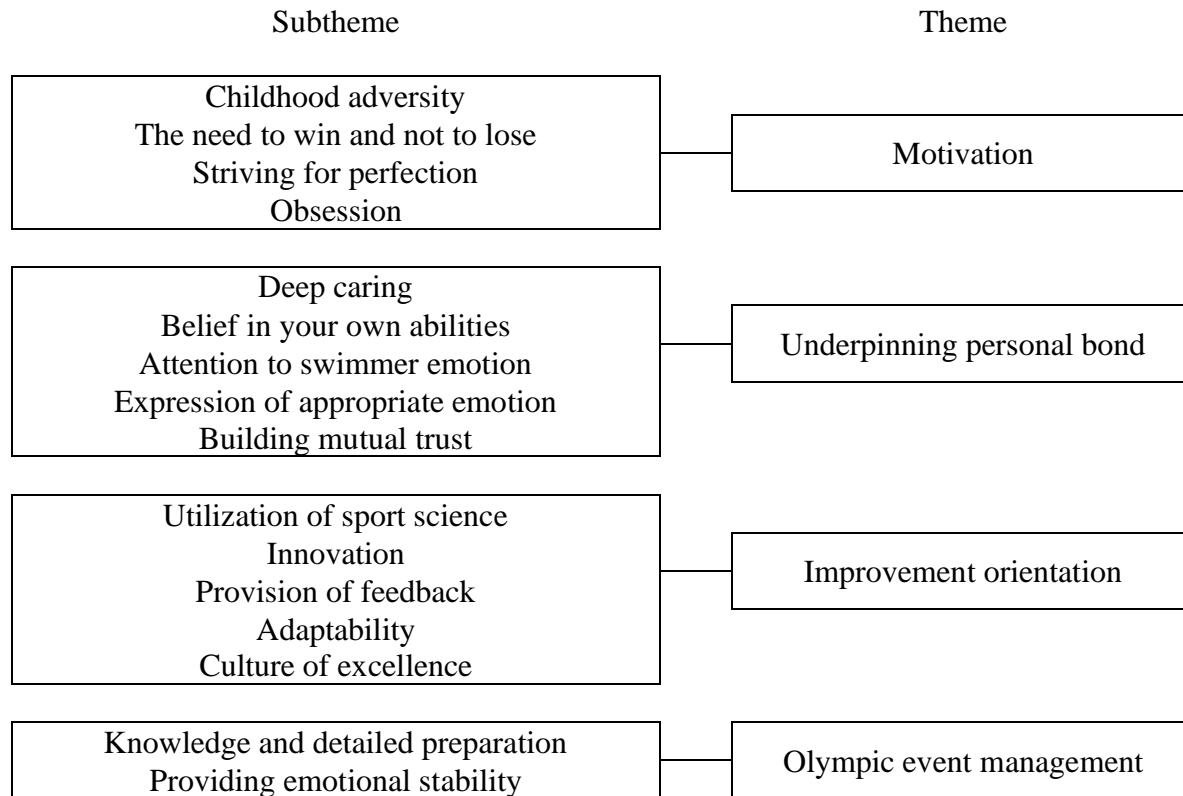


Figure 13. The psychosocial factors which discriminate between world-leading and world-class swimming coaches.

6.3.1 Motivation

The theme of motivation refers to the formative experiences and underlying needs which influenced the participants behavior. This theme consists of four subthemes: childhood adversity, the need to win and not to lose, striving for perfection, and obsession.

6.3.1.1 Childhood adversity. Childhood adversity relates to the difficult and highly stressful situations that the participants experienced during childhood. All but one of the world-leading coaches discussed negative childhood experiences which resulted in them “trying to overcome demons” (Participant 2, World-leading). Examples of these adversities included the death of parents, absent parents, a parent with a severe disability, primary carers with alcohol dependency issues, overcoming an eating disorder during adolescence, and prolonged bullying at school. For example: “My dad died early and as soon as he died I wasn’t able to do much” (Participant 3, World-leading). Some of the world-leading coaches described how their experiences of adversity helped them to relate to the swimmers, thus developing a deep bond: “We share the same drivers, our DNA matches. I’ve experienced what it was like to have depression, I’ve experienced what it was like to have anxiety...I have the capacity to have empathy for where he comes from” (Participant 12, World-leading). These coaches perceived that their own negative experiences led to a need be noticed: “I was bullied through school and I was a no-one. I wasn’t good at anything really, I was a doofus, and because of that I had a strong desire to be significant” (Participant 8, World-leading). It was felt that these formative experiences also resulted in a particularly strong work ethic:

I grew up with alcoholic [primary carer], my [primary carer] was a violent alcoholic...I had a close relationship with my [close relative] and he was always in trouble. He ended up going to prison and I didn’t want that, so I figured out how not to be a failure, and I just worked my butt off at getting out of my circumstances. I had trauma growing up, I was driven to not be a failure in life. (Participant 15, World-leading)

In contrast, the vast majority of the world-class coaches did not discuss negative childhood experiences. Instead, they described happy childhoods, and did not feel a need to prove themselves to others:

There’s been no trauma or anything bad in my life, in fact, my life has always been quite happy. And while I want to be admired by others and I want others to look up to me and I want my peers and my friends and family to respect and admire who I am and what I

do, I don't actually care at all what everybody else thinks! People can think what they want but that doesn't drive me. (Participant 4, World-class)

6.3.1.2 The need to win and not to lose. The subtheme of the need to win and not to lose refers to the participants predominant focus in competitive situations. All of the world-leading coaches emphasized a desire to be better than others: "I'm competitive, so as soon as I'm involved in something, I absolutely have to be the best at it. I absolutely hate being second best" (Participant 14, World-leading). Further, many of these coaches discussed this desire to win alongside a desire not to lose, which formed a complex combination of co-occurring motivations:

I think the standard answer is success motivates me, but that is not the reality, I think failure motivates me more than success. When I fail at something, it eats me alive, it burns me up, and I want to figure it out, so I spend a lot of time asking questions. If I'm going to do something, I want to be successful at it, and I don't want to fail, and when I do fail, I want to find a way to be better than I was. That's the thing that drove me as an athlete and that's the thing that drives me as a coach. I know the prestige of this program and I know the success that the program has had in the past, but it doesn't drive me to want to win, it drives me to not want to lose. That's what wakes me up in the morning, that is what motivates me, I want to be great because I don't want to be bad. (Participant 12, World-leading)

In comparison, the world-class coaches did not mention failure as a motivating factor, instead they described a sense of competitiveness: "I think it's just the competitive nature within me that makes me want to win" (Participant 1, World-class). Some of the world-class coaches discussed their realization that their desire to beat others was not realistic, and their focus had evolved towards wanting to beat their own self-referenced standards:

I was always so passionate about trying to be the best. Now, as you get older and realization sets in, you understand that the best might not be winning the Olympic Games, you might never get to the level that you once dreamed of, the best might be being better than you've ever been before... Ultimately, it's about being better than you were, and to be better you've got to put the work in and you've got to be dedicated. (Participant 32, World-class)

6.3.1.3 Striving for perfection. The subtheme of striving for perfection refers to the standards which the participants aimed to achieve. The majority of the world-leading coaches

described being: “a bit of a perfectionist, my hardest critic is probably me. I’m quite tough on myself and I don’t really need anyone to say, “you’ve got to do better,” because I’m already beating myself up” (Participant 30, World-leading). These coaches described their continual push for excellence, and an adverse reaction to perceived imperfection:

To other people it looked quite successful because I was on my first [country] coaching team at 23 and no one was doing that, and I was only 33 when [swimmer’s name] won [an Olympic gold medal], but it wasn’t enough. It wasn’t perfect and her performance wasn’t perfect, and I was beating myself up and saying this isn’t good enough...I have an extreme eye for detail, and I don’t leave any stone unturned. It’s finding what the athlete needs and being prepared to take that road, and some people are not prepared to take that road. (Participant 6, World-leading)

In contrast, the majority of the world-class coaches perceived that they had a balanced approach towards their daily activities: “the top coaches’ attention to detail is probably higher, they are probably trying to reach standards of performance that I’m not really sure is healthy” (Participant 20, World-class). Indeed, the preoccupation with self-criticism was not present, and the world-class coaches displayed more self-compassion:

There are days when I am absolutely knackered and it doesn’t work out as well as I thought it would. It’s just like a swimmer walks in the water and the session sometimes isn’t as good as they wanted it to be. We’re all human. But what I don’t do is go home and beat myself up about it. (Participant 21, World-class)

6.3.1.4 Obsession. The subtheme of obsession describes the participants compulsive engagement in coaching-related thoughts and activities. All of the world-leading coaches described the substantial amount of time and energy that they devoted to coaching, and some of these coaches experienced negative emotions due to this all-consuming focus:

There’s a willingness to devote your time and attention to it, it’s being unhealthily committed. I feel quite guilty at times because a lot of the time I spend more time thinking about [swimmer’s name] than I spend thinking about my own children. It’s a little bit twisted when you think about it, but I’d be thinking, what can we do here, and how can I do that, and then it’s like, “oh no, it’s my son’s birthday next week”, you know, it’s that kind of thing. Coaching is not a position where you stand on a deck or on a track, coaching is 24 hours a day, there is never an on or off switch. You are always

thinking as a coach how are you going to get them better, what is the next step, and when I have taken that step how do I make them better again. It is like a drug, you are always looking for something more, you are always trying to find that next high. (Participant 17, World-leading)

In contrast, the majority of the world-class coaches discussed their enthusiasm for coaching, which they perceived contributed to a balanced and purposeful life:

I think it does the human soul good to be passionate about something and to buy into something wholeheartedly. It's attending to the minutiae and enjoying it. So much of my life has revolved around being prepared for the next training session, and being that energy giver, that driving force, but you can't let it take over everything, you need to have a life as well! You're into it, but not too into it. You've got to have something else as well or it's too much, you've got to go one down on the volume dial. (Participant 33, World-class)

6.3.2 Underpinning Personal Bond

Underpinning personal bond refers to the coach's personal qualities which create a sense of understanding and togetherness with their swimmer. This theme consists of five subthemes: deep caring, belief in your own abilities, attention to swimmer emotion, expression of appropriate emotion, and building mutual trust.

6.3.2.1 Deep caring. The subtheme of deep caring relates to the extent of the friendliness, and interest in the swimmer as a whole person. All of the world-leading and world-class coaches described the affection that they felt towards the swimmers: "she would say that the relationship we had was pretty special, she used to say that I was like a second dad to her" (Participant 19, World-leading), and "I think it's important that they know that I really care about them as individuals, not just swimmers, but as people" (Participant 33, World-class). However, the world-leading coaches also discussed the depth of their feelings and the importance of expressing them:

I care unconditionally for them, its unconditional love. They know that I love them, and if they don't make the Olympic team, I still love them just as much. You know, "we tried everything we humanly could, and if it wasn't meant to be it wasn't meant to be, but I still have the same feeling for you and we will be friends forever." And it's more than just here in the pool, it's a deeper interaction. I know about their family, their cats and

dogs, you know about their boyfriends and the tears, and you know all about their hobbies, and you go to some of the things that they're interested in. It means a lot to the athlete when you watch them away from the pool, when you have a hobby and you know that your coach is going to come and watch your hobby. [Swimmer's name] likes to do paddle boarding on the beach, she's a beach woman, and I go over and do the paddle boarding with her, and so all those little things. (Participant 9, World-leading)

In comparison, although the world-class coaches provided a space for swimmers to share personal stories, in many cases they did not attempt to bond beyond the professional environment:

I'm spending 36 hours a week with each of my athletes. I'm seeing them more than their mums and dads, boyfriends and girlfriends, one of them is married, I saw more of him than his wife did. There's quite a lot of exposure there. You're with them as well at some of the most stressful, some of the most painful and some of the most pleasure inducing times of their life. They're going to confide in you, you know. I know a lot of stuff about my swimmers' personal lives because they need someone to share it with that's not going to be judgmental. But I don't impose myself on their life in any real way outside of the pool, the social contact is pretty minimal. (Participant 36, World-class).

6.3.2.2 Belief in your own abilities. The subtheme of belief in your own abilities describes the participants feelings that they would be successful in any task that they devoted their attention towards. All of the world-leading coaches spoke of their self-belief and their absolute conviction that they could achieve any desired outcome:

I think there are people that are gifted in the sense that they have something that other people don't necessarily have, and I've always felt that way about myself. I've always felt like I can achieve anything that I wanted to achieve, I have an enormous belief in myself, and if I can't achieve it then I'll figure out how I'll get it done. I think there are certain people that think like that. When you meet other coaches that have coached Olympic champions, there is a certain confidence that they have in themselves and their abilities, that other people lack under extreme pressure. The athlete's got to believe 100 percent in what you're doing. And as a coach, if you don't believe 100 percent in what you're doing, you're not going to be able to get the athletes to go one hundred percent into it. (Participant 11, World-leading)

In contrast, the vast majority of the world-class coaches described a lack of self-belief due to their perception of their relative ability. They felt that a coach's confidence directly contributed to the swimmer's discretionary effort:

I think a big difference is a lack of confidence or belief in yourself, and faith in your own ability. Because you realize that, with the more exposure you get, you're not as creative as you thought we were, and you're not as good as you thought you were. The top coaches ooze confidence, they've got to ooze, "I know what I'm talking about, follow me, we're on our way," the Pied Piper. And if the swimmer is totally engrossed or totally believes that, one, the coach knows what they're talking about, and two, that coach cares about me and believes in me just like I believe in them, then you've got a good mixture. (Participant 1, World-class).

6.3.2.3 Attention to swimmer emotion. Within the subtheme of attention to swimmer emotion, the participants described a focus on the swimmers' thoughts and feelings. All of the world-leading coaches recalled occasions when swimmers' moods were not conducive to performance, and how they "found and pressed [the swimmers] button" (Participant 7, World-leading) to provoke a response: "Sometimes I compare them to earlier or to another swimmer that I know they hate...I'll flash up a quote from [swimmer's rival] on the score board. He won't say anything, but I know what it does" (Participant 13, World-leading). These coaches discussed how they continually monitored and managed the swimmer's moods in order to help athletes perform at their best:

The psychology is the one that really overrides everything. So that's a big thing, when you rock up on pool deck, there's a screening going on: your eyes, your body language, what do you tell me, how do you interact with other people, and how do you normally interact with other people. Is there a change? It's for me to become great at recognizing what's your mood, is that a good one to perform, or not a good one to perform. It's learning to shift these little mood aspects to get the best out. What triggers you will be different from what triggers someone else at particularly challenging moments. (Participant 2, World-leading)

In contrast, the vast majority of the world-class coaches did not actively adapt to the swimmer's emotions. Indeed, there was a feeling amongst some world-class coaches that a swimmer's mood did not impact upon performance:

I don't care, not because I'm cold hearted, but because it's not relevant. If they turn up and they've got a job to do, it's not really relevant whether they're not in the mood to do it or not, they've just got to do it. Although we don't want to be cold and callous, we've also got to recognize that if you want to be the best in the world, which is what an Olympic gold medal is, you've almost got to be robotic in your actions and be able to deliver things on a day to day basis even when you know you don't want to. (Participant 4, World-class)

6.3.2.4 Expression of appropriate emotion. The subtheme of expression of appropriate emotion relates to the participants ability to display emotions which they may not feel but which they think align correctly with the situational context. All of the world-leading coaches described how they, when required, portrayed a more appropriate emotion than that which they were feeling, and how they managed their emotions in order to provide a secure platform for the swimmers:

We as coaches can't ever have a bad day, and if we are having one, it needs to stay on the inside and not be on the outside. There's times when you come in and you've had some bad news, or you've had an argument with your partner, but you can't carry that on to deck. And even though inside that might be going around in your system and in your head, your athletes can't sense that, because if they do, they'll think they've done something wrong, they'll think it's them, "why is he being a bit strange today, why is he being a bit off?" So, in certain circumstances you have to be a pretty good actor, you have to have a façade of happiness, positivity, "let's go, let's get this done today, it's going to be a great day," even though inside you personally might not feel that way. (Participant 15, World-leading)

In comparison, the majority of world-class coaches stated that their display of emotion and their performance was contingent upon their current state. Some of these coaches recalled times when they lost control of their emotions: "I got so frustrated one day that I lost my temper with a swimmer because they were just not doing what I'd asked. I just let my frustration go too far. I apologized to him later on" (Participant 25, World-class). There was a perception that their daily schedules were demanding, and they expressed a difficulty in regulating their performance in the presence of emotional or physical strains:

A lot of my effectiveness on a day to day basis is dictated by sleep. I've got to do five early mornings at half past four and I'm never effective at that time in the morning. I really struggle to think lively and be lively and all that sort of stuff. If I haven't had a good night's sleep I really don't operate as well as I'd like. So, some days I would look very different if I'd had a good enough sleep and I would suggest that from talking to most swimming coaches a lot of them are in the same position. (Participant 34, World-class)

6.3.2.5 Building mutual trust. Within the subtheme of building mutual trust, the participants described the importance of the swimmer and coach trusting each other, and described how that trust was developed. All of the world-leading coaches described the vital importance of mutual trust: "Trust is a two-way affair. I need to be able to trust the athlete. If they say they can't do a set, you have to trust that. If you have a pang of doubt, you've got a problem" (Participant 14, World-leading). These coaches described the systematic building of trust, starting with explicitly asking the swimmers to trust them:

I cannot talk my swimmers into trusting me, with every swimmer I have to earn the right for them to trust me. So that is part of my journey, communicating that "I do know that I have to earn and gain your trust, but right now act like you trust me, because otherwise if you change what I tell you then we will never find out what could have happened. So right now trust me and live by this, and then we can adjust." And the buy-in comes from continually explaining, educating, having a discussion, giving the evidence, and from my ability to get that over to the swimmer that, "God he really knows what he is doing, he really believes in this and I believe in him." And on top of all that, it's important for them to know that I'm looking out after their best interest. I think the swimmer needs to know that I really care and my effort is honest and complete. (Participant 7, World-leading)

In comparison, the vast majority of the world-class coaches did not reciprocate the trust that they felt the swimmers had in them: "I wouldn't even trust them as far as I could throw them" (Participant 37, World-class). These coaches described their perception that the swimmers automatically trusted them due to their position of authority:

For me, they've already bought in before they walk through the door, before they start with you, you don't need to sell anything. And then as long as they've understood it, I

think buy-in has happened before the day has started. If you've got an athlete that's questioning the program and going, "actually, I'm not buying into this, I'm not really too sure about this," then that's a problem and not a direction that's good to go down.

(Participant 21, World-class)

6.3.3 Improvement Orientation

Improvement orientation refers to the continual push for progress using all avenues to get better across all aspects of preparation and performance. This theme consists of five subthemes: utilization of sport science, innovation, provision of feedback, adaptability, and culture of excellence.

6.3.3.1 Utilization of sport science. Within the subtheme of utilization of sport science, participants described their active involvement with other specialists. The world-leading coaches discussed relinquishing control: "I do think that other coaches aren't as successful because they think they need to prove themselves by being bossy and the only influence around the swimmer" (Participant 9, World-leading). These coaches described creating a team of experts around the swimmer, and stressed the importance of embracing other people's opinions:

I am heavily influenced by experts. I've surrounded myself with the experts and that is something that I explained to the athletes. You've got to be open and receptive to what other people think. When you are working in this environment, you aren't just working with that athlete, you are working with a cohort of other service providers, like your psychologist and physiologist, and sometimes they may tell you things that you don't want to hear, like, "this isn't the right for work for them," but that is part of a collaborative working environment. It's not just one person that coaches a result, there are many people that coach a result, so a coach is a conductor, bringing the right people in at the right times for that athlete to step forward. (Participant 10, World-leading)

In contrast, the majority of the world-class coaches described a more distant relationship with sport scientists. Indeed, there was skepticism regarding the benefits and validity of sport science knowledge:

I'm touchy feely and not particularly sports science driven, but that's because I don't accept most of it. One of the things that we did was forget low fat diets, eat real food. So, sport science was telling us low fat, if you want a girl to lose skin fold you put her on sugar substitutes, sweeteners, and stuff like that, and I was like, "no chance." The stuff I

was reading wasn't academic papers, it was more heresay that was saying we've not got this right. So that was a rejection of the standard [national sport science provider] nutritional model, and I was known as a bit of a rebel. So, sport science can be good, but it doesn't mean I'm going to use it. (Participant 29, World-class)

6.3.3.2 Innovation. The subtheme of innovation refers to the perception of designing and delivering a unique program. The vast majority of world-leading coaches described an “explosion of ideas” (Participant 22, World-leading) driven by learning and perceived risk taking: “I spent time looking and thinking, and I was poring over every science article before I invented something. The good coaches are innovative. Right or wrong, they come up with ideas and they can think out of the box a little” (Participant 18, World-leading). These coaches felt that this approach, although effortful, created a competitive advantage:

My way of thinking is that if I am doing the same as everybody else then how are my guys going to beat them. You can't think that you've got a better athlete than them. You don't get a break, you make a break, you have to find new ways again and again. If this is what you want, then you have to make it happen, you have to find ways, a lot of different ways, to be innovative and creative, and you have to want to be the one that sets the standards. Like from *Evita* the musical, one of the lines goes “sometimes it's very difficult to keep momentum if it's you you are following.” (Participant 8, World-leading).

In comparison, the world-class coaches perceived that they followed conventional training methods. They felt that it was important to exert more effort instead of altering their approach: “My personal strength is that if I fail, or I'm unhappy with the outcome, then I go harder” (Participant 31, World-class). Due to external pressures, these coaches did not feel able to take risks:

If you do something completely off the wall and it results in negative outcomes, it is a massive issue. The head coach would be chopped, and you've only got to look at the professional sporting coaches now within the NHL, within football. If you go six months and put in a few poor performances, then you're out the door. Everyone is judged from a financial viewpoint on this Olympic performance, and it makes you more risk averse, and that creativity will obviously dampen a little bit. (Participant 35, World-class)

6.3.3.3 Provision of feedback. Within the subtheme of provision of feedback, participants described their tendency to provide feedback that was either focused on areas of potential improvement or focused on the positive strengths already being achieved. All but one of the world-leading coaches described feedback that relentlessly highlighted areas for improvement: “It’s always thinking how do we get the best start, how do we get the best turn, how do we become the fittest athlete, how do we become the strongest athlete, every day it’s selling and improving” (Participant 24, World-leading). Indeed, they perceived that a very high proportion of the feedback provided would help the swimmers to get better:

Constructive ninety percent, and praise ten. Maybe a little bit less praise, but this is, I think, my job as a coach. It is not to praise people all day, but give them feedback that they can work with. I don’t do very many superficial comments, basically if you don’t do something good I don’t say that just to placate you, and I’m sure this is something that you’ll find this with all your top people. It’s part of the trust thing, if they can trust that if I make a big deal out of something they just did, it’s a damn big deal. And I also think that feedback should be about specific action points and a timescale, so in order to address that, I want you to concentrate on A and B on these next twelve 50s or whatever it might be. (Participant 16, World-leading)

However, the world-class coaches emphasized their inclination to provide encouraging feedback on areas of strength: “Unless you’ve got an athlete that actually wants you to be critical on them, my natural gut would be to go positive” (Participant 20, World-class). There was a perception amongst the non-gold medal winning coaches that an important element of their role was to motivate the swimmers:

I think the praise has to be given on a consistent and quite regular basis. We’re in a sport where these guys stare at a black line for thirty hours a week, and it’s very, very difficult. And we’ve got to just make sure that these guys are in the right mindset to deliver on a day to day basis in training, but more importantly, it’s for their own self-worth. And the improvement is driven through questions, rather than direct criticism or constructive criticism, “how did you think that went, where do you think you could be better?” We’re always kind of turning the negative into a positive. So, I’d be about 80 percent positive and praise, and 20 percent on the more critical side. (Participant 29, World-class)

6.3.3.4 Adaptability. Within the subtheme of adaptability, participants described a willingness to alter training sessions in order for the swimmers to perform optimally. A slight majority of the world-leading coaches described a process of flexible planning, which involved changing session plans according to the swimmer's demeanor and/or performance:

I'm probably on the radical side. I go to the deck with a weak session idea, I know the main thing I want out of that practice, but I'll just create the practice. There is a certain openness in my mind, and a certain attention to the present tense, responding to things that are in front of me. There are a million ways to skin the cat, especially on different people, and just being continually aware of that to get the most out of every session.
(Participant 5, World-leading)

In comparison, the world-class coaches described creating and then disseminating detailed training plans: "We're organized and they can see that we've put time and effort into thinking about what we're doing, and we circulate it at the start of the week so they know when the key sets are going to be" (Participant 27, World-class). These coaches discussed rigidly working to their session plans regardless of how the swimmers were operating:

I spend a lot of the time ignoring signs from swimmers because a lot of the times they're like "I'm tired, I don't want to do this today I don't feel good about things," and so I ignore those signs. You know, because they've just got to do it. But then afterwards I'll talk to them and say "oh you look like you were struggling a little bit in there" and then we can have a conversation but nine times out of 10 they don't want the conversation. What they are trying to do is get your attention and say, "please take it easy on me because I'm struggling," but I'm not interested in those signs so I'll ignore them. It's about being functional and doing what needs to be done at a given time. (Participant 38, World-class)

6.3.3.5 Culture of excellence. The subtheme of culture of excellence refers to the culture that the coaches created and standards that they communicated to the swimmers. All of the world-leading coaches expressed high expectations of the swimmers, and described navigating them through the peaks and troughs of high performance sport:

It's a culture of expectation where the where the unusual is the norm, because normal people don't win medals. It's people that have an intense desire to do something at a completely different level and a support organization is there for that to happen. And it's

understanding the improvement cycle. There's sometimes a setback and you bounce back, there's mistakes that have got to be corrected. You expose them to situations in training, in competition, that are a stretch, a stress, but at the same time, when it doesn't go well, you've got to give them the support. (Participant 23, World-leading)

In contrast, the vast majority of the world-class coaches described a welcoming and compassionate environment:

We create a family environment down here. Down here it's a place where they can express themselves, they can be the person they want to be, it makes them feel happy, and accepted. We provide an environment which is what I would call family, it allows them to be the person that they want to be, whether that be someone that is probably not going to swim at the Olympics, or whether that's going to be someone that's going to go on and win the Olympic Games, they have the opportunity to develop within the structure of the squads that we've got to that point. So how do they feel? I think they feel happy. (Participant 37, world-class)

6.3.4 Olympic Event Management

Olympic event management refers to the coach's preparation for, and their behavior during, the Olympic Games. This theme comprises two subthemes: knowledge and detailed preparation, and providing emotional stability.

6.3.4.1 Knowledge and detailed preparation. Within the subtheme of knowledge and detailed preparation, the participants described their consummate planning processes. All of the world-leading coaches discussed identifying what each swimmer needed to do in order perform optimally at the Olympic Games: "To get them to perform in that moment, you have that extra percentage of understanding about what that particular athlete needs to do, and prepare them for that" (Participant 6, World-leading). These coaches described the detailed preparation which enabled the swimmers to perform optimally under extreme pressure:

We've done three years of simulations, and it was all in a proper suit, proper hat, coat on, everything that we could get to be as close to competitive simulation as possible. I even recorded the audio from the World Championships the year before so that he could hear what it was like to hear his name being announced, the crowd, the people coming out, all that sort of stuff. And we talked about being in control, being in the moment, and so I'd had these conversations with him all the way through, and it was the same language that I

was going to use at the Games...and we rehearsed, rehearsed, rehearsed. It was about him being able to be him, him accessing everything he was capable of, using his speed with a great stroke...and to get that to be his dominant response. (Participant 26, World-leading)

In contrast, the world-class coaches described a more hands-off approach, allowing the athletes to independently understand what was required in order to perform under pressure:

To get genuine, world beating performance, these people have got to be pretty extraordinary human beings, not just physical specimens, but mental strength, they've got to have real resilience, resilience that you and I can only dream of. They need to find that themselves, we can't instruct that, they have to go through that journey of self-discovery on their own because that's the only real way that they'll handle the fact that there's two billion people on TV watching them in a race. (Participant 36, World-class)

6.3.4.2 Providing emotional stability. The subtheme of providing emotional stability refers to the participants management of their own emotions in order to provide the appropriate support to the athletes. All of the world-leading coaches described the importance of absorbing pressure: "They want it badly enough, they are tense enough, there is enough pressure, so we have to take the steam off" (Participant 16, World-leading). These coaches discussed the impact of their emotions and their conscious awareness of their own behavior:

I really try to manage my moods in pressure situations because they truly do feed off your mood. If you're confident, they will be confident, if you're edgy, they will be edgy. And a big thing is not to end up here and then down there the next day. That is really important at a competition, because an athlete is going to have some major highs, some major lows, and you need to balance the athlete. And for me to stay stable I need to keep a balanced perspective and think of my outside life. And I'm actively conscious about what I'm doing, whether I get nervous, and I will always walk slowly, talk quietly, and concentrate on being really calm and really measured. (Participant 11, World-leading)

In comparison, the world-class coaches described the pressure that they felt at the Olympic Games: "You wouldn't believe the pressure. Sometimes I feel it, the same as everybody else, and I do get a little bit heated at times" (Participant 28, World-class). Further, some of these coaches described a change in their behavior and the effect this had on the athletes:

Sometimes I do come across as a bit anxious or stressed. I get to the Olympics, and for whatever reason, my personality turns. I don't know whether it's nerviness, but I tend to get very negative, and you can see that negatively affecting the swimmer's performance. Sometimes I become too hands on and lose perspective of how I treated the swimmers at other swimming meets and I don't treat them in the same way. (Participant 38, World-class)

6.4 Discussion

This study utilized semi-structured interviews and thematic analysis to explore self-perceived discriminators between world-leading and world-class swimming coaches. This is the first study that has qualitatively investigated the psychosocial factors that discriminate between these two groups of ultra-elite coaches. No other project within coaching or sport psychology has collated evidence from participants who have collectively won over 350 Olympic medals, and their combined experience and success provides the opportunity to build our current knowledge base. The data highlights the multifaceted set of psychosocial factors which the world-leading coaches perceived enabled them to achieve success on the Olympic stage, with four particularly original and significant findings emerging in comparison with previous leadership and Olympic-level coaching research.

The first original finding relates to the provision of feedback, with the world-leading coaches emphasizing change-oriented feedback, and the world-class coaches focusing on promotion-oriented feedback. Feedback is defined as the information conveyed to an athlete about whether their behaviors, actions, and performance conform to the expected standard (Carpentier & Mageau, 2013; Cusella, 1987; Hein & Koka, 2007), and it is one of the most influential factors in learning (Fong, Patall, Vasquez, & Stautberg, 2018; Van der Kleij, Feskens, & Eggen 2015). Feedback is a critical coaching behavior as it conveys messages and information about competence to athletes. While promotion-oriented, also termed positive or motivational feedback, aims to promote and reinforce existing behaviors, change-oriented feedback, also labelled constructive or negative feedback, indicates that the athletes' performance is not at the desired standard and behavior modification is required to reach the desired goal (Carpentier & Mageau, 2013; Deci, Koestner, & Ryan, 1999; Duijnhouwer, Prins, & Stokking, 2012; Weinburg & Gould, 2011). Research within coaching has identified that praise, encouragement, and reinforcement comprise the majority of observed feedback behaviors (e.g.

Partington & Cushion, 2013), and research and anecdotal evidence from business and leadership suggests that within high performing teams, the positivity: negativity feedback ratio is 80:20 (e.g. Losada & Heaphy, 2004), and this is widely reported to enhance intrinsic motivation and self-esteem (Elliot, Kratochwill, Littlefield Cook, & Travers, 2000). While the world-class coaches perceived that they provided a feedback ratio of 80:20, the world-leading coaches perceived that they provided feedback on a positivity: negativity ratio of 10:90. This represents a very significant finding across both the coaching and organizational literature. The literature has previously reported the negative consequences of change-oriented feedback, including decreased athlete performance, lower motivation and self-esteem, increased anxiety, and impaired coach-athlete relationship (Baron, 1988; Fisher, 1979; Jussim, Soffin, Brown, Ley, & Kohlhepp, 1992; Sansone, 1989; Tata, 2002). However, the results from the current study indicate that for this world-leading group, if the feedback is given at an appropriate time, with specific action points and timescales, in a non-personalized manner, by a coach who is deemed to be both credible and caring, then this change-oriented focus on relentless improvement will help athletes win Olympic gold medals. In this context, providing elite athletes with information about the discrepancy between their current and desired performance acts as a motivator, and to ensure that their competence needs are met, individuals will work hard to reduce any incongruence between their behaviors and goals (Cianci, Klein, & Seijts, 2010). Further, the world-leading coaches are providing information to swimmers and simultaneously identifying gaps in performance and providing specific directions for improvement, which will help them to reach the desired level of performance. Indeed, gold medal winning athletes may want and expect to receive change-oriented feedback in order to improve (Hardy et al., 2017). Persistent change-oriented feedback, given appropriately to individuals who expect to receive it, can provide a path to continual improvement and world-leading performance.

Potentially the most controversial finding from this study is the childhood adversity that was reported by the majority of the world-leading coaches, and the platform they felt this gave them to coaching an Olympic gold medal winner. The finding that the experience of adversity appears to discriminate between world-leading and world-class coaches is original within the coaching literature, and builds upon Mallett and Coulter's (2016) case study of a single Olympic coach who reported the experience of adversity. It also builds upon research with Olympic champions which has asserted that childhood adversity can contribute towards their success (e.g.

Hardy et al., 2017; Howells & Fletcher, 2015; Sarkar, Fletcher, & Brown, 2015). Luthar and Cicchetti (2000) defined adversity as “negative life circumstances that are known to be statistically associated with adjustment difficulties” (p. 858). The world-leading coaches described a number of childhood adversities, including but not limited to, parental death, parental disability, absent parents, primary carers with alcohol dependency issues, an eating disorder, and persistent bullying. Although research has typically focused on the negative aspects of adversity, recent research has begun to evaluate the positive psychological changes that some individuals may experience (e.g. Meyerson, Grant, Carter, & Kilmer, 2011). Not only did the world-leading coaches describe the experience of adversity acting as an extreme motivational trigger to achieve success at the highest level and leading to a “strong desire to be significant,” they also discussed some positive changes which resulted from their experiences. Within psychology, various terms have been used to describe these transformative experiences, such as posttraumatic growth (Tedeschi & Calhoun, 2004) and adversarial growth (Linley & Joseph, 2004). Although there are subtle differences between these concepts, there are three overlapping areas: self-improvement, a newfound appreciation of life, and enhanced interpersonal relationships (Joseph, Murphy, & Regel, 2012). One can speculate that due to the world-leading coaches own experiences of adversity, in addition to their own enhanced motivation, they are able to perceive others adversity and are equipped to provide appropriate support to the athlete through genuine empathy and compassion. Individuals who have experienced adversity have been found to be more comfortable with intimacy (Tedeschi & Calhoun, 2004), and taken together, this provides a platform for a stronger coach-athlete relationship. Further, Johnson et al.’s (2007) theory of action based growth suggests that the coaches are able to bring meaning to their own experience of adversity through helping others, and thereby giving themselves a renewed sense of purpose. This study highlights that a silver lining may come from the dark cloud cast by adverse experiences, giving some coaches an intense desire for success and equipping them with superior interpersonal skills which will enable them to develop Olympic champions.

A further original finding to emerge from the data was the world-leading coaches exceptionally high standards combined with extreme self-criticism, which relates to the concept of perfectionism (Flett & Hewitt, 2002; Frost, Marsten, Lahart, & Rosenblate, 1990). Research across psychology has demonstrated that perfectionism is a multi-dimensional construct comprising two higher order dimensions, most recently termed excellence-seeking perfectionism

and failure-avoiding perfectionism (Harari, Swider, Steed, & Breidenthal, 2018). Individuals high on excellence-seeking perfectionism impose flawless standards upon themselves, and are unwilling to reduce those standards even when good enough will do (Harari et al., 2018), whereas individuals high on failure-avoiding perfectionism have an aversion to, and deep concern with, the possibility to failing to reach those high standards, which they perceive others expect of them (Harari et al., 2018). Previous meta-analyses have found that excellence-seeking perfectionism is linked with improved performance, and in contrast, failure-avoiding perfectionism leads to poorer performance (Gotwals, Stoeber, Dunn, & Stoll, 2012; Harari et al., 2018; Hill & Curran, 2016). However, the data suggests that whereas the world-class coaches do not present with either dimension of perfectionism, the world-leading coaches present with both excellence-seeking and failure-avoiding perfectionism. Perfectionism in sport has garnered mixed findings, with some researchers asserting it as a key characteristic of Olympic champions (Gould et al., 2002; Hardy et al., 2017), and others asserting that it undermines athletic development and performance (e.g., Flett & Hewitt, 2005). Within Olympic sport, flawless performance may be necessary for success (Hill & Curran, 2016), and it is hypothesized that the coaches' excellence-seeking and failure-avoiding perfectionism will act as an energizing and motivating agent, ensuring that there is no complacency within training and that no stone is left unturned, thereby providing the swimmer with the best platform for success. Indeed, there may be a complex interaction between the perfectionism of the athletes and that of their coaches. Previous research has found that Olympic champions are perfectionistic (Gould et al., 2002; Hardy et al., 2017) and therefore the coaches' excellence-seeking and failure-avoiding perfectionism will not only be tolerated by the athletes, but may also be wanted as it aligns with the athletes own performance expectations and worldviews.

The fourth novel finding relates to the world-leading coaches' expression of appropriate emotions during training and at the Olympic Games. Emotional labor refers to the management of expressions and emotions in public spaces, and in order to display the correct emotion, individuals are required to induce or suppress their own underlying emotions (Hochschild, 1983; Hülshager & Schewe, 2011; Humphrey, Pollack, & Hawver, 2008; Gardner, Fischer, & Hunt, 2009; Grandey & Melloy, 2017). This is achieved by utilizing either surface acting (i.e., individuals mask their feelings in order to display the expected emotion), deep acting (i.e., individuals modify their emotions in order to match the expected emotion), or genuine emotions

(i.e., individuals experience and express genuine emotions which correspond with the expected emotion) (Ashforth & Humphrey, 1993; Grandey, 2000, 2003; Hochschild, 1983). One can speculate that the world-leading coaches use emotional labor in order to influence the moods, emotions, motivations, and performance of swimmers. These coaches described continually ensuring that they were displaying the appropriate emotions in order to facilitate swimmers' performances. Emotions have a profound impact on athletes' performances, and if coaches are able to influence swimmers emotional reactions, they will be able to enhance their discretionary effort and improve their performance (Chan & Mallett, 2011). Emotional labor was originally discussed in relation to service workers who are required to display the same emotion in a repetitive manner, for example, "service with a smile" (Pugh, 2011, p. 1018). Beyond this, however, Olympic coaches are required to make decisions about which emotion to display in specific moments. Studies Two and Three found that world-leading coaches were higher on perception of emotion in comparison with the world-class coaches. This will enable them to accurately judge and then determine which emotion to display at specific times, for example, by recognizing when frustrated swimmers require sympathy, and when they require other forms of motivation and support. Indeed, coaching with emotional labor and producing the correct emotion in order to influence or motivate swimmers will be a highly advantageous skill for coaching a swimmer to win an Olympic gold medal.

When interpreting the findings of this study, it is important to recognize some of the strengths and limitations. A notable strength is the significant nature of the sample. The participants have collectively coached swimmers to win 354 Olympic medals, of which 156 were Olympic gold medals, and they represent some of the most respected figures within sport. Indeed, Simonton (1999) stated that "one of the best ways of demonstrating the broader relevance of psychology is to show that it helps to explain the...important people of the real world, including leaders, creators, champions, and sages" (p. 442). In addition, the results section incorporated quotes from all 38 participants, with the maximum number of quotes from any individual participant being two. This gave a balanced and representative distribution of quotes which valued all of the participants input and ensured that a few participants did not dominate the narrative. A further strength is the inclusion of a coach (i.e. the second supervisor) in the research team, which enabled the research to be situated within real world Olympic coaching and a greater depth of understanding to be developed. Notwithstanding these strengths,

a limitation of this study is that the swimmers were not sampled. Swimmers' perceptions of coaches are important and as coaching is a co-constructed process, their views would provide an additional layer of understanding (Cushion, 2010; Jowett, 2017). Future research should seek to understand athletes' perceptions in order to further develop our knowledge of Olympic coaches. Another limitation is the retrospective nature of the data and recall bias. Future researchers should conduct longitudinal studies with Olympic coaches in order to develop a greater understanding of the development of a world-leading coach, and to understand whether their practice changes over time. The monumental experience of coaching an athlete to win an Olympic gold medal may, for example, alter a coach's motivation, behavior, or indeed their personality.

These findings have a number of applied implications for sport psychologists and coach educators working in Olympic sport. In terms of feedback, it is important that this finding is interpreted with respect to the sample population. Although it may be appropriate and beneficial to provide Olympic athletes with predominantly change-oriented feedback, it may not be advisable to focus on this form of feedback when working with young athletes. However, for Olympic coaches, providing a rationale and justification for change-oriented feedback, and delivering it in an appropriate and non-ego threatening manner (Carpentier & Mageau, 2013), will facilitate the continual improvements required to win an Olympic gold medal. Furthermore, it would be advisable for sporting organizations to integrate emotional labor training as part of their continued development packages for Olympic coaches. Not only will the athletes benefit from the enhanced emotional climate, but if focused on deep acting and genuine emotion, coaches will benefit through enhanced well-being and decreased exhaustion (Hülshager & Schewe, 2011). Initiating positive emotions is not only pleasurable, but it also creates an upward spiral as a positive mindset broadens attention and cognition, and enhances personal resources and coping mechanisms (Fredrickson & Joiner, 2002).

6.5 Conclusion

In conclusion, this study aimed to understand the psychosocial factors that discriminate between world-leading and world-class swimming coaches. Sixteen distinct discriminators were found between the two groups of coaches ranging from motivating factors to their expressed behaviors during training and at the Olympic Games. These represent exciting findings, and provide a platform for future researchers to further understand coaches as individuals beyond

their practice. Sporting organizations and coach developers can utilize these findings to inform their coach development programs, and researchers can build on this study to understand why some coaches coach athletes to win Olympic gold medals and others do not.

Chapter Seven: Study Five

A Qualitative Study of Olympic Swimmers’ Perceptions of their Coaches

Chapter Six explored the discriminating factors between world-leading and world-class coaches’ perceptions of their own behaviors, experiences, values, motivations, beliefs, and emotions. Given that athlete’s other-oriented perceptions are an important element of understanding a coach’s performance, Chapter Seven explores swimmers’ subjective experiences and perceptions of their coaches to further explore psychosocial factors that discriminate between world-leading and world-class coaches.

7.1 Literature Review

Understanding the coaching process and identifying key coaching attributes has been one of the most debated subjects in sport coaching research (Cooper & Allen, 2017). Sport coaches are central actors in the coach-athlete-performance relationship, and they aim to optimize athletes’ performance, motivation, learning, and development (Côté & Gilbert, 2009; Cushion 2007, 2010; Horn, 2008). The outcome from these aims is thrown into sharp focus at the Olympic Games where competition is inexorably increasing due to ever higher national funding and enhanced sport participation rates worldwide (Lara-Bercial & Mallett, 2016; Rees et al., 2016). Researchers have recently begun to focus their attention on better understanding Olympic coaches in order to gain a competitive advantage in this sporting arms race (e.g. Chroni, Abrahamsen, & Hemmestad, 2016; Din, Paskevich, Gabriele, & Werthner, 2015; Mallett & Coulter, 2016). Although the extant literature has provided some important insights into Olympic coaching, these studies have largely examined coaches’ perceptions of themselves. However, coaches’ perceptions of their own skills, behaviors, and performance may not align with the perceptions of others, and self-perceptions are generally not considered to be accurate predictors of outcomes as they are likely to be inflated by leniency bias (Fleenor, Smither, Atwater, Braddy, & Sturm, 2010; Halverson, Tonidandel, Barlow, & Dipboye, 2005). The overarching aim of this study was therefore to investigate athletes’ perceptions of the

psychosocial attributes of world-leading and world-class swimming coaches to provide a more rounded understanding of these individuals.

Since the series of studies conducted by Gould and colleagues examining the factors related to athlete success at the Olympic Games (Gould, Dieffenbach, & Moffett, 2002; Gould, Greenleaf, Guinan, Dieffenbach, & McCann, 2001; Gould, Greenleaf, Chung, & Guinan, 2002; Gould, Guinan, Greenleaf, & Chung, 2002; Gould, Guinan, Greenleaf, Medbery, & Peterson, 1999; Greenleaf, Gould, & Dieffenbach, 2001), studies which aim to examine coaches as performers in their own right have gathered momentum. These studies have identified that Olympic coaches typically appraise stressors as challenges rather than threats (Chroni et al., 2016), are emotionally stable (Olusoga et al., 2012; Mallett & Coulter, 2016), are passionate and committed to coaching (Currie & Oates-Wilding, 2012), utilize specific coping strategies (Olusoga et al., 2012), create both performance and mastery climates (Dixon, Lee, & Ghaye, 2012; Ge et al., 2016), and acknowledge athletes' feelings and concerns (Din, Paskevich, Gabriele, & Werthner, 2015; Jowett & Cockerill, 2003; Phillipe & Seiler, 2006). Building on this body of work, Study Four utilized semi-structured interviews with world-leading and world-class swimming coaches to examine the psychosocial factors which discriminated between these two groups of coaches. The study focused on aspects such as their formative childhood experiences, how they related to others, the coach created motivational climate, the provision of feedback, and behavior at the Olympic Games. The results indicated that the world-leading coaches perceived that their motivations, underpinning personal bonds, training cultures, and Olympic event management differed in comparison with world-class coaches. However, it was noted that a limitation of this study was the lack of athlete involvement.

Given that coaching reflects a dynamic, co-constructed, and relational process between the coach and athlete (Cushion, 2010; Jowett, 2017), athlete perceptions provide an important source of information about coaches. Indeed, leading personality theorists have regarded observer perceptions as the most accurate form of data (Kolar, Funder, & Colvin, 1996). Funder (1991) noted that "it is hard to imagine a higher court of evidential appeal that could over-rule observers' judgements, assuming that observers have ample opportunity to observe the target's behavior in daily life" (p. 35). According to Tsui and Ohlott (1988), individuals are not good judges of how they are seen or rated by others, and as John and Robins (1994) noted, "judgments about others will be more accurate than judgements about the self" (p. 216). Athletes work in

close proximity with coaches and this affords them many opportunities to observe their actions and understand their effect on others (Jowett & Cockerill, 2003; Lee & Carpenter, 2018; Rothstein, 1990). Coaching behavior involves, and is mostly directed towards, athletes, and this means that athletes should have the most knowledge about the motivation, the direction provided, relationship quality, and behaviors of the coach.

Collectively, the existing research provides some insights into the psychosocial attributes of Olympic coaches. However, there remains limited information regarding athletes' perceptions of these coaches. Indeed, Mallett and Coulter (2016) called for more studies which reflected athletes' perceptions and experiences: "Future research might consider complementary data from athletes of these consistently successful international coaches. These data might include...a semi-structured interview that seeks to capture a deeper understanding of these coaches. These complementary data might provide another "truth" to understanding these successful coaches in understanding the impact of their coaching from the athletes' experiential perspective. Alternatively, athletes' data might provide coherence to a coach's story" (p. 124). Therefore, building on the findings of Study Four which examined the discriminating factors between world-leading and world-class coaches perceptions of their own behaviors, experiences, values, motivations, beliefs, and emotions, this study seeks to provide a further layer of understanding via an examination of swimmers' perceptions of those same qualities. More specifically, the purpose of this study was to examine swimmers' perceptions of psychosocial factors that discriminate between world-leading and world-class coaches.

7.2 Method

The methods are in accordance with Levitt et al.'s (2018) reporting standards for qualitative research in psychology and include the following sections: Research design overview, study participants, participant recruitment, data collection, and analysis.

7.2.1 Research Design Overview

This study was deemed best suited to a qualitative interview design given that the purpose was to examine Olympic swimmers' subjective perceptions of their coaches. The focus on athletes' other-oriented perceptions is an important element of understanding a coach's performance. Feedback from athletes also aligns with the concept that the coaching process should be co-constructed and interactive (Cushion, 2010; Jowett, 2017) and answers Sheeney, Dieffenbach, and Reed's (2018) call to address the "lack of research positioning the coach as a

performing “other”” (p. 1). Semi-structured interviews were utilized because a directed but open-ended exchange allows participants to provide a rich, detailed, and multi-layered account of their experiences and perspectives (Kvale & Brinkmann, 2009). The flexibility of semi-structured interviews provides participants with the opportunity to “express their opinions, ideas, feelings, and attitudes” (Sparkes & Smith, 2014, p. 84) and develop attuned understandings of a relatively understudied group (Study One; Creswell, 2013). The data analytic strategy utilized in this study was thematic analysis, which is a method of identifying, describing and interpreting patterns across a data-set (Braun & Clarke, 2006; 2012; 2013). This method generates an in-depth understanding of “patterns in people’s (reported) practices or behaviors related to, or their views and perspectives on, a certain issue” (Braun, Clarke, & Weate, 2016).

The study adopted a pragmatic approach to inquiry. Contrary to its crude summary of *what works*, pragmatism is a system of philosophy which addresses the core question: what is the nature of human experience (Denzin, 2012; Dewey, 1920/2008; Morgan, 2014). Pragmatists accept that there are both singular and multiple realities which can be the subject of empirical inquiry, and emphasize the consequences and meanings of actions in social situations (Feilzer, 2010; Morgan, 2007).

7.2.2 Study Participants

7.2.2.1 Researcher description. The author is a British 29-year-old female, who is a British Psychological Society Chartered Sport and Exercise Psychologist, and Health and Care Professions Council registered Practitioner Psychologist. She has undertaken postgraduate-level training in qualitative research methods, has extensive experience interviewing eminent individuals regarding psychosocial aspects of Olympic swimming coaching, and values honesty, transparency, and integrity. The first supervisor is a 41-year-old British male, who is a Chartered Sport and Exercise Psychologist with the British Psychological Society, and a Health and Care Professions Council registered Practitioner Psychologist. He has published numerous papers in Olympic sport, teaches postgraduate-level qualitative methods, is a former elite level swimmer, and values evidence based practice. The second supervisor is a 53-year-old Scottish and British male, who is a British Association of Sport and Exercise Sciences accredited sport scientist with a specialism in exercise physiology. He has undertaken postgraduate-level training in qualitative research methods, holds extensive swimming coaching qualification, is a former international level swimmer, and values hard work, high quality work, and attention to detail.

7.2.2.2 Participants. The sample consisted of 38 Olympic swimmers (18 males, 20 females), who ranged in age from 19 to 36 years old ($M = 26.37$, and $SD = 4.60$). Collectively, these swimmers had won 59 Olympic medals, of which 31 were Olympic gold medals. Participants reported working with their coaches for between two and 10 years prior to their first Olympic Games ($M = 4.23$, and $SD = 2.54$), and competed across the Sydney 2000, Athens 2004, Beijing 2008, London 2012, and Rio 2016 Olympic Games. Sixteen participants were from Australia, 11 from the United States of America, 10 from Great Britain, and one was from the Netherlands.

7.3.2.3 Researcher-participant relationship. The author had no prior professional or social relationship with 37 of the 38 participants. She had previously interviewed one of the swimmers as part of a previous unrelated study, but had no further professional or social interaction.

7.2.3 Participant Recruitment

7.2.3.1 Recruitment process. Following Loughborough University ethical approval, potential participants were e-mailed or telephoned with contact details retrieved from the author. Participants were informed of the purpose of the study, and invited to participate. All of the potential participants accepted the invitation, and a suitable time and location to conduct the interview was agreed. The sample size was ultimately appraised using Malterud, Siersma, and Guassora's (2016) model of information power. A sample size of 38 was deemed appropriate given that the aim of the study concerned the rare experience of being coached to the Olympic Games and/or to an Olympic medal, the participants belonged to the specific target group, the dialogue was strong and clear, and there was an in-depth analysis of participants discourse (cf. Malterud et al., 2016).

7.2.3.2 Participant selection. This study utilized two types of purposeful sampling techniques to recruit participants: criterion sampling and stratified sampling (Gutterman, 2015; Patton, 2015; Robinson, 2014). Criterion sampling enables the identification and selection of participants who are especially knowledgeable about or experienced in the topic of inquiry, thus yielding depth of understanding and insight (Bennot, Hannes, & Bilsen, 2016). Stratified sampling enables a comparison between two groups of Olympic swimmers (Gutterman, 2015). The world-leading group included 25 participants who had competed as a swimmer at the Olympic Games, and whose coach had coached one or more swimmers to win at least one

Olympic gold medal. The world-class group included 13 participants who had competed as a swimmer at the Olympic Games, and whose coach had coached one or more swimmers to the Olympic Games and/or won at least one Olympic bronze or silver medal (but had not coached a swimmer to win an Olympic gold medal).

The interviews were all conducted by the author between May 2015 and December 2016, across 14 cities in three continents.

7.2.4 Data Collection

7.2.4.1 Data collection. The interviews ranged in duration from 52 to 148 min ($M = 108.4$, $SD = 10.08$). All interviews were conducted individually and in a face-to-face format. A semi-structured interview guide (see Appendix L) was developed to enable the researcher to adjust the series of questions or probe to seek greater understanding or additional information where necessary (Brinkmann, 2013). Semi-structured interviews also enable participants to have flexibility in expressing their opinions (King & Horrocks, 2010). Prior to commencing each interview, the author researched each participants life history and background to build knowledgeability. When interviewing elite individuals, enhanced knowledgeability and awareness of positionality facilitates trust, which is essential in order to generate high quality responses in elite interviewing (Empson, 2018; Harvey, 2011; Mikecz, 2012). The interview guide was divided into five sections. In the first section, the researcher explained the purpose of the study, informed participants of their right to withdraw at any time, and confirmed that all identifiable information would be removed from the transcripts. In section two, participants provided informed consent, and section three consisted of general questions that also helped to build rapport with the participant. Section four was developed from a review of the literature (e.g. Gould, Greenleaf, Chung, & Guinan, 2002; Jowett & Cockerill, 2003, Philippe & Seiler, 2006) and focused on participants perceptions of their coach's characteristics and behaviors, and the effects these had on the participants (e.g. "What traits do you think allowed your coach to become successful?" "How does your coach engage/influence you?" "What kind of environment does your coach create?" "What is your coach like in training, and what are they like in competition?" "What balance does your coach strike between nurturing your swimming performance, and nurturing you as a whole person?" "What effect did your coach's behavior have on you?"). Participants responses were followed up with short periods of silence or detail-oriented, elaboration-oriented, or clarification-oriented explorations to encourage further

development and additional insights (Berry, 2002; Irvine, Drew, & Sainsbury, 2013; Smith & Sparkes, 2016). Section five of the interview allowed participants to add any further information and ask questions about the interview or study in general. A reflexive journal was kept throughout the data collection and data analysis process to maintain a reflexive stance. This involves reflecting upon and addressing thoughts, feelings, and values which may affect the research (Bolton, 2010), and promotes informed and principled methodological choices and fair interpretations of the data (Sparkes & Smith, 2014).

7.2.4.2 Recording and data transformation. All of the interviews were digitally recorded in their entirety and transcribed verbatim, yielding 349,204 words and 891 pages of double-spaced text. All identifiable information was then removed from the transcripts to ensure anonymity.

7.2.4 Analysis

7.2.4.1 Data-analytic strategies. An inductive thematic analysis as outlined by Braun and Clarke (2006; 2012; 2013) was conducted on the transcripts. Thematic analysis is a method that describes the data collected in rich detail by identifying, analyzing, interpreting, and reporting patterns across a data-set (Braun, Clarke, & Weate, 2016). The first phase involves the process of immersion, and the author repeatedly re-read the transcripts and made initial notes about ideas and patterns in the data. Next, the data was systematically and rigorously coded to identify key or important features of the data, for example, the ways in which coaches demonstrated warmth towards the swimmers. The third phase refocused the analysis at a broader level, and involved clustering and collapsing similar codes to form sub themes. Relationships between subthemes were explored, and clusters of similar subthemes were connected together to form themes. For example, inspirational motivator, focus on winning and avoiding losing, self-assurance, holistic care, and trustworthiness were grouped under the theme of personal qualities. Next, the subthemes and themes were refined and checked against the data-set to ensure that they formed a coherent and plausible story. The second supervisor acted as a critical friend during the analysis procedure (Morse, 2015; Smith & McGannon, 2018). This encourages reflexivity through a process of critical dialogue with the second supervisor challenging interpretations, exploring alternative explanations, and providing critical feedback.

7.2.4.2 Methodological integrity. In accordance with the American Psychological Association's reporting standards for qualitative research (Levitt, Bamberg, Creswell, Frost,

Josselson, & Suárez-Orozco, 2018), this study used the concept of methodological integrity as the methodological basis of trustworthiness (Levitt, Motulsky, Wertz, Morrow, & Ponterotto, 2017). Methodological integrity is evaluated through its two composite processes: (a) fidelity to the subject matter and (b) utility in achieving research goals (Levitt et al., 2018). Fidelity to the subject matter is conceptualized as having four core components: (1) data adequacy, (2) perspective management in data collection, (3) perspective management in analysis, and (4) groundedness. Data adequacy was achieved through purposeful sampling techniques which enabled the researcher to recruit information-rich participants. Perspective management in data collection was addressed through the use of open-ended questions (Josselson, 2013), and asking participants to consider topics or experiences which had not been addressed (Levitt, 2015). Perspective management in analysis was enabled through self-reflective journaling (Rennie, 2000), and through the first and second supervisors providing feedback on the results. Groundedness was created by presenting rich exemplars within the results to enable the reader to judge fidelity (Freeman, 2014). Utility in achieving research goals is conceptualized as having four central features: (1) contextualization of data, (2) catalyst for insight, (3) meaningful contribution, and (4) coherence among findings. Contextualization of data was provided through appropriate participant and researcher information, and by considering the findings in their appropriate context (Levitt et al., 2016). Catalyst for insight was increased as the author has extensive experience of interviewing elite participants, and meaningful contribution was enhanced by forming questions which expand and challenge current understanding of psychosocial aspects of Olympic swimming coaching. Coherence among findings was addressed by presenting a thematic diagram to illustrate the relationships between the findings (Morrow, 2005).

7.3 Results

The results represent the differences in responses between the world-leading and world-class groups. In total, 619 initial codes were recorded from the transcripts, reflecting the participants' experiences and perceptions of their coaches. These codes were categorized into 12 subthemes, and then grouped further into three themes. These themes were labeled: personal qualities, stimulating environment, and management of emotions at the Olympic Games (see Figure 14).

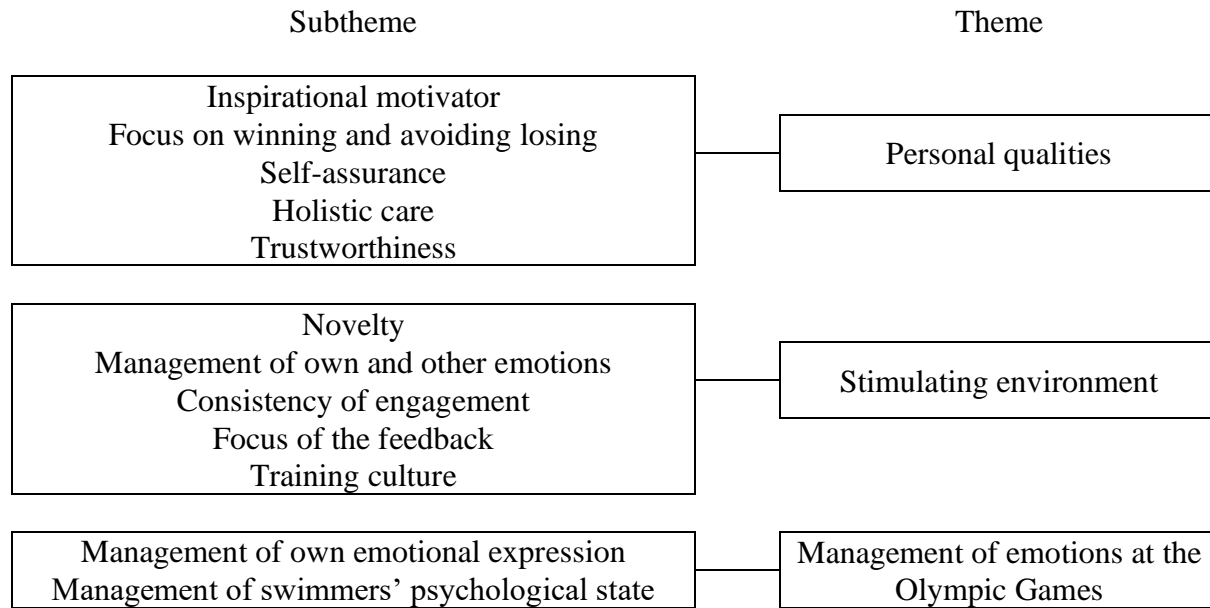


Figure 14. The swimmers' perceptions of the psychosocial factors which discriminate between world-leading and world-class swimming coaches.

7.3.1 Personal Qualities

The theme of personal qualities refers to the swimmers' perceptions of their coach's characteristics. This theme is comprised of five subthemes: inspirational motivator, focus on winning and avoiding losing, self-assurance, holistic care, and trustworthiness.

7.3.1.1 Inspirational motivator. The subtheme of inspirational motivator refers to the participants' perceptions of their coach's expressions of passion, enthusiasm, and their ability to communicate messages in a clear and vivid manner. All of the participants in the world-leading group described how their coach created a sense of affinity and positive affectivity: "He's very personable and he's magnetic. He draws people into his sphere, and you want to swim fast for him, to honor his efforts with your effort" (Participant 9, World-leading). These swimmers described their coach's "motivational skills" (Participant 18, World-leading) and the different ways in which they were able to inspire them on a daily basis: "He always finds a way to inspire you. He's passionate in his speeches and he has this dominant aura. He's this commanding guy, and very vocal, and almost a little aggressive, we love it" (Participant 12, World-leading). It was felt that their discretionary effort was enhanced by their coach's display of passion:

You've got to be passionate about what you do, you've got to love what you do and you've got to show it. If you're not very excited, people are not going to be inspired, people are not going to listen to you, people are not going to follow you, people are not going to want to perform for you. [Coach's name] is a very inspirational, intense guy. He will ask you to give 100 percent every day, he will ask you not to be afraid to be fast, he'll ask you not to be afraid to be challenged, he'll ask you to get out of your comfort zone and be comfortable being uncomfortable, and all these things. It's high intensity on a daily basis. (Participant 7, World-leading)

In contrast, the majority of the participants in the world-class group described the relaxed demeanor that their coach displayed: "He's always so laid back, he's practically horizontal! Unless someone's really angered him, then he's really, really calm, and I suppose that can sometimes make training a bit monotonous" (Participant 27, World-class). The swimmers felt that this sense of calm meant that they had to provide their own motivation during training sessions. Indeed, one participant who had been coached by both a world-leading and world-class coaches stated that:

“[World-leading coach’s name] has got a lot more energy around the pool deck. He tends to give a more energy to the swimmers. With [world-class coach’s name], he’s very calm, and the energy would have to come from the athletes themselves. So, he’s very good at calming people down, but in terms of giving them mental motivation and inspiring you to go harder, I think [world-leading coach’s name] is much better at that sort of thing. (Participant 2, World-class)

7.3.1.2 Focus on winning and avoiding losing. The subtheme of focus on winning and avoiding losing refers to the participant’s views of their coach’s focus during evaluative situations. The vast majority of the participants in the world-leading group described their coach’s co-emphasis on trying to win and striving not to lose, which mirrored the swimmers own focus:

He can’t stand to lose. He’s trying to win because he’s trying not to lose. And he really can’t stand being a failure. I remember when he sat in front of the men’s team at the Olympic Games and he goes, “you know, all of you guys aren’t here because you like to win, it’s because you guys hate to lose,” and it was like, he just hit the whole room, the whole room went quiet we were just like, “yeah we’re pretty sore losers.” It’s just like we, we wanted, yeah of course we want to win, but we hate to lose. (Participant 23, World-leading)

In contrast, the world-class group described their coaches focus on the swimmers achieving higher standards than they had previously set:

We’re targeting the same things in sport. I think everyone in the squad wants to, and is aiming to get, whether it’s at the world level or [national] level, we all have targets and we’re all wanting to do better than we’ve been before, and [coach’s name] really pushes that, he’s all about that. It’s about being better than your previous self, and it’s about hitting those targets, whether it’s outside of the pool and your diet, or in the pool and kind of working hard. (Participant 32, World-class)

7.3.1.3 Self-assurance. Within the subtheme of self-assurance, the participants described their coach’s belief that they could successfully achieve a desired outcome. All of the world-leading group participants felt that it was important that their coach had a strong belief in their own abilities: “You’re putting your dream, your life, your goal, in his hands. So, if you see he’s not confident about it, how will that make you feel? If he’s confident in what he’s doing, I’ll feel

confident as well” (Participant 22, World-leading). These swimmers described the myriad of verbal and non-verbal ways in which their coach communicated self-confidence:

It’s about his body language. You can see his confidence from his facial expressions. You can see that he’s dedicated, that he believes in himself, and that he believes in me. It’s his tone, the way he talks, the way he refers to me, the way he talks to me, the way he goes through the workout, the way he observes me, the kind of stuff he tells me prior, during, and post workout. He knows what he’s talking about and he has that experience and the proper way of delivering things and that confidence that he carries with him on a daily basis, and because of that people trust him and will follow him. (Participant 6, World-leading)

In contrast, some of the world-class participants felt that their coach did not always appear to believe in the sessions they were delivering, and they described the transference of this belief to them:

I’d say his level of confidence is sometimes good and sometimes not. I think he feels a little bit shaken if we try and ask him about why we are doing different things, he thinks it means we don’t want to trust him. And I personally don’t have any confidence at all. I still to this day don’t think I can make an Olympics, whereas I have already done it, you know, and I think it would help if [coach’s name] learned how to make me more confident in my abilities. (Participant 34, World-class)

7.3.1.4 Holistic care. The subtheme of holistic care refers to the extent that the swimmer felt their coach genuinely cared about every aspect of them as an individual person. All of the participants in the world-leading group described their coach’s rounded interest in their life which went beyond their swimming performance: “He wants you to be a successful human being, a good person, a good citizen. He wants to help you and listen to every facet of your life. And he’s clear that you need an education or another interest” (Participant 15, World-leading). These swimmers described their perception of consistent warmth, and recalled occasions when their coach had demonstrated their depth of care:

My older brother is over in [city], and he got surgery on his shoulder. He got an injury and [world-leading coach] drove me to the hospital to go see him right before he had surgery. And that definitely wasn’t in his job description as a coach. Well, it was something a friend would do, not something a coach would do. Yeah, we formed a very

close friendship, he's like my dad. And no matter what happens, we love each other, actually love each other. (Participant 1, World-leading)

In comparison, many of the world-class participants described fluctuations in friendliness and perceived care: "Some days he has a bad day...so in some sessions he can seem quite cold to me, quite distant, like he won't have that normal chat and banter with me" (Participant 36, World-class). These swimmers felt that their coach was not interested in their wider life, and they described their own desire for their professional and private life to remain separate:

Essentially, it's a place for training and both he and I would like to keep it that way. I don't want to talk about my problems with my girlfriend, and I don't want my coach to be involved in that. I don't even want him to know about that, that's not important to swimming. And he doesn't want to know about it all either, and I don't think it would be good for me as an athlete to have my coach too involved in my personal life. I prefer to keep those two worlds separate. (Participant 5, World-class)

7.3.1.5 Trustworthiness. Within the subtheme of trustworthiness, the participants discussed the extent to which they trusted their coach, and the factors which led to that trust. All of the participants in the world-leading group emphasized the importance of mutual trust: "There's mutual trust, he knows that my effort is honest, and I do what he's asking me to do because I trust that he knows my limits enough to formulate sets that are going to push them" (Participant 17, World-leading). These participants described how their coach built this trust, which included elements of genuine care, integrity, established reputation, competence, providing articulate explanations, and explicitly asking for trust:

[Coach's name] is a special person to swim for. He's very transparent, very honest, and you know he's always looking out for you even beyond swimming. And his track record's there, he's had swimmers that have been very, very successful, and he's very good at explaining things to us. Even if it's the smallest thing in the pool, like head position or arm position. So, you completely buy into it because you're like "he knows what he's talking about," and you see this success. You come in, [coach's name] figures you out, I mean, he's very good, he'll look at you, take a snapshot, sit back, and go, "this is what you need, this is why you need it," and he'll get you there if you do it. If you do the work you'll get there and that's what I did. He was like, "if you're going to come

here you've got to buy into it, you've got to do it," and I was like, "I don't feel like I'm going to make the Olympic team so I'll absolutely do whatever you need me to do." I went to every practice, I did everything he wanted me to do, and I made the team and got the gold. (Participant 9, World-leading)

In comparison, the participants in the world-class group felt that the factors driving their trust centered around their coach's qualifications and the swimmers achieving success: "I trust [coach's name] because I know [coach's name] has got the qualifications and [coach's name] has worked with me for so long as well, so I know that [coach's name] will know. I mean, I've had results in the past with it" (Participant 25, World-class). These swimmers described their fluctuating trust in their coaches, and how the lack of perceived mutual trust had led to injuries:

Sometimes I don't trust him, but that's definitely a two-way thing. It has resulted in injuries, and I constantly have the [side effects of these injuries], and that's because, "[coach's name], my [body part's] hurting," and he'll say, "oh you'll be fine, just get on with it." Also, just before the [international swimming competition] trials, I got [medical condition], and he was like, "oh it's fine, like they're just probably spots from stress" and I'm, I mean I'm lucky enough to barely ever get spots, so when I get big red marks, like I know somethings not right. And then what I mentioned before with the burpees challenge leading to the [medical condition], so, yeah. He needs to learn to trust that if I say it hurts, it hurts! (Participant 4, World-class)

7.3.3 Stimulating Environment

Within the theme of stimulating environment, participants discussed the culture the coach created and how they maintained it. This theme is comprised of five subthemes: novelty, management of own and other emotions, consistency of engagement, focus of the feedback, and training culture.

7.3.3.1 Novelty. The subtheme of novelty refers to the swimmers' perception that their coach was utilizing new and innovative methods. The participants in the world-leading group described their coach's "creativity" (Participant 16, World-leading), and their willingness to implement new ideas: "He likes to experiment. He's an artist, he's willing to be on the cutting edge of certain designs. If something works, he's all for it, and he's confident, and if something doesn't work, he throws it out pretty quickly" (Participant 20, World-leading). These swimmers

felt that this approach provided them with a competitive advantage, and it also fueled their engagement:

I don't think anyone is doing exactly what we're doing, so that's really good for us. The way we do [specific training method], [coach's name] created these, and they're used all around the world now. And he's developed a lot of things that people now do all the time, but he started it, he's like the creator and that's just, that's really cool. So maybe the best things are taken around the world, but they started here, and I like that. We have that advantage of the new drill or whatever it is that we are trying that's new, and we've had the ability to have that extra advantage there. He changes things up so much that we're never bored. (Participant 14, World-leading)

In comparison, the world-class group discussed their coach's preference for using tried and tested methods, which they felt diminished their enthusiasm: "He's not willing to try different things. He sticks to the programme and thinks, "it's worked so far, so it'll keep working." It can get a little boring, a little stagnant" (Participant 37, World-class). These swimmers described their perception that, in comparison with their own coaches, the world-leading coaches were engaging with experts and were receptive to new ideas:

I think the top coaches are more open to trying new things and, well, it's just my thoughts about what I think that they do, they kind of go to the top people constantly, it's not just at the pool but in other ways outside, they dedicate their life to finding new people and new views. So, constantly trying to get them better, instead of just sticking to the pool and doing the same set after set. It's not new, it's not different, it's not making us better. So, I think, yeah, that's what I've picked up, is they find what works, they find what doesn't, and they're constantly trying to turn the weaknesses into strengths through different avenues. (Participant 31, World-class)

7.3.3.2 Management of own and other emotions. Within the subtheme of management of own and other emotions, participants described their coach's capacity to control both their own emotions, and their swimmer's emotions. All of the swimmers in the world-leading group felt that their coach was able to remain composed in difficult situations, which enabled the swimmer to maintain a sense of calm: "He's not confrontational. He's very good at defusing situations, and I've never seen him in an argument with anyone. He has a way of de-escalating things and he's incredibly good at keeping his swimmers calm" (Participant 28, World-leading).

They spoke about how their coach was able to relate to many different people, and how they were able to adapt the swimmer's emotions to get the best out of them of any given day:

He takes the time to learn your language...it's like he's got multiple personalities, and I think that's one of his biggest strengths, the ability to know and adapt to 10 different people, but in a genuine way. He knows what I'm thinking without even having to talk to me. He can tell what mood I'm in, or if I'm motivated in the session. He's good at reading people's personalities and their character, and knowing what he needs to do to get them motivated. He's been able to understand how to get my reactions, how to turn my maybe, a dour demeanor, into a positive one. He's just able to control my emotions better than anyone else would be able to. And he does, he can see on my face, or if we're doing drills. He just, he can read me very easily and I love that. (Participant 33, World-leading)

In contrast, many of the swimmers in the world-class group recalled occasions when their coach had lost emotional control, which subsequently escalated the swimmer's emotion: "We can have fall-outs, but they don't even last an hour. Like we'll tell each other to "sod off," and storm off, and then within ten minutes we're talking again and then we'll calm down" (Participant 13, World-class). These swimmers felt that their coach did not tailor their behavior towards the swimmer's current feelings, and they did not feel that their coach managed to alter their emotions:

He makes this noise all the time, like he goes "yip yip hoo," and you're like, "oh [coach's name] is in a good mood," and sometimes in the mornings it can really grate on you. He's jumping round on pool side, making noises, sometimes dancing but it's so the opposite to how we're all feeling and it doesn't make you any happier, it just makes you annoyed! (Participant 25, World-class)

7.3.3.3 Consistency of engagement. Within the subtheme of consistency of engagement, the swimmers described their coach's attentiveness during training sessions. All of the participants in the world-leading group discussed their coach's unwavering energy: "I think he never, he never seems to be tired. So, on deck, he'll talk to people individually and he's aware, he doesn't sit in a chair, he's always walking around and talking, and critiquing technique and stroke" (Participant 26, World-leading). Indeed, this sense of purpose facilitated the swimmer's own engagement:

When he's coaching, he's engaged, like every second, he's completely focused on the task. And I think when you see that he's really into it, it makes you be more into it, and even if you come into practice tired, it kind of goes away. Yeah, I think you become more engaged because you feed off that, and because you know he's watching you, you want to work hard. (Participant 24, World-leading)

In contrast, the participants in the world-class group felt that their coach's behavior was inconsistent: "Sometimes he'll have a stopwatch in his hand, he'll be right next to you, but other days he'll watch from afar. Some mornings he'll sit on the side with his coffee, but most of the time he's engaged" (Participant 5, World-class). The swimmers described how their effort and mentality was influenced by their coach's engagement:

It's different every day. Like if he's having a long day or if he's had a busy day, his attitude towards training can be a little bit off. He can just sit there on his phone, and not really care. He just seems disinterested, and not really know what we're doing, and we might sit there for three or four minutes after the warm up and he's still not come over and told us what we're doing next. But obviously on a good day we would just get it bang, bang, bang. And I guess his moods bounce off onto me, so my mood all depends on what kind of day he's having. (Participant 29, World-class)

7.3.3.4 Focus of the feedback. The subtheme of focus of the feedback relates to the participants perceptions of the performance feedback provided by their coach, and whether this was predominately focused on highlighting areas that the swimmer could work on to improve, or highlighting areas of identified strength. All of the world-leading group participants felt that their coach predominately provided feedback which enabled them to improve on an area of relative weakness, and this aligned with their own views of the information they wanted to receive: "Ninety percent is corrective. He doesn't need to waste his time on saying good stuff when he has corrective stuff to say. I need to know what I'm doing wrong because I'm invested in wanting to be the best" (Participant 19, World-leading). They described the effect that this feedback had on their mentality, and their discretionary effort:

The lack of constant praise means that those moments when you do hear "good job" from [coach's name], it's so much better. Like it changes your day, and you're like "today's a great day." But I think it would lose its value if he was constantly saying it. When I first came here, I said, "am I doing this right?" And he said, "if I didn't say anything then

you're doing it right, I'll tell you when you're doing it wrong." I mean [coach's name] told me "great job" from time to time, but I've got three hugs from him: getting my silver medal, getting my other silver, and getting my gold medal for the first time. You see people come here from all different walks of life, and they might have been coached by different people, but you see them kind of fall into that suit of being like "damn [coach's name] doesn't think this is right, what do I do?" They just try to, not to impress [coach's name], I don't like thinking of it as trying to impress [coach's name], but he has the highest standard for you, and you just want to live up to that. You're always trying to be better to get the praise. (Participant 23, World-leading)

In comparison, the participants in the world-class group described receiving feedback which was predominantly positive and focused on areas of strength: "I think ninety percent would be positive. Because obviously, being the dedicated athlete that I was, he had no reason to criticize me, so all he could do was say, "good job, well done" (Participant 37, World-class). These participants described their desire to receive positive feedback, and they did not feel that focusing on areas of potential improvement would help their performance:

He never turns it negatively, because I think he knows that will make it worse. So, I think he tries to find a positive in everything. And yeah, if we do a personal best or anything, he's always going straight to praise, and he's one of those coaches that over-emphasizes it, which kind of makes us feel even better. He doesn't like, he doesn't hide his emotions, his happy emotions, that's for sure. He's ecstatic when we do well, and we love that. He emphasizes the positive and then just sort of adds in the negative, the constructive criticism sort of thing. Like sometimes coaches can give you negative comments and critical feedback, and you think, "well, why are you telling me this, it's not going to help me whatsoever." (Participant 30, World-class)

7.3.3.5 Training culture. Within the subtheme of training culture, swimmers described the climate that the coach created in training, and how these conditions impacted their performance. The vast majority of participants in the world-leading group felt that their coach created a potent team environment, with the swimmers encouraged to bond and support each other: "And then I come to this new environment, we all respect each other, and you feel like all these guys are behind you, cheering for you, that's the atmosphere, it's dudes helping each other

to reach greatness” (Participant 28, World-leading). They described the continued push for excellence, and if those standards were not being met, swimmers were asked to leave the squad:

No matter what issues you had before training you would feel good about yourself at the end because you know that you’re getting the best out of yourself. When I first started training with [coach’s name], I won’t lie, I was quite worried to train with him because he can be hard on the athletes, but as soon as I started training, I realized he’s hard on the athletes because he’s so motivated to get the best out of them. But he’s strict with his standards. He’s like “if I don’t see you producing, or if I don’t think that you’re doing right, and you’re not right for this team,” then click, you’re gone, you’re out the team. I mean it is as simple as that and we’ve seen people leave. We’ve seen people just have to go, “I’m sorry you’re not what this team needs. You’re negative, you don’t put the work in, no hard feelings, but go and try something else.” (Participant 3, World-leading)

In contrast, some of the participants in the world-class group described how the perceived lower quality and culture of their training group impacted their performance: “I’m with a lot of juniors and it does become difficult to perform every day...when I train with other squads that have more elite swimmers, you do train a bit harder and psychologically pick up another level” (Participant 30, World-class). Many of the participants felt that they trained in a welcoming environment, and they described a feeling of frustration when disruptive swimmers were allowed to remain in the squad:

He creates a very positive environment. We have music on in the sessions, so that kind of like, you know when you listen to music in a gym, that kind of like gets you pumping. So, he creates the environment that I love to train in, and it’s really, really positive and fun and we have a laugh and it’s very relaxed. Like if you swim badly, you swim badly, if you swim great, you swim great, and no one will knock you for it if you swim bad, it’s very relaxed it’s very, it’s not a pressured environment...The only downside is [coach’s name] keeps disruptive swimmers. So, if they are getting the results that he needs he isn’t going to kick them out. But obviously that creates frustration in the group, we’re saying “oh why is he doing that, why can’t he just kick them out?” I guess if it got to a certain point and they really frustrated him, then during a session he might kick them out, but he’d let them back in. But after a while you just learn to deal with it. (Participant 37, World-class)

7.3.4 Management of Emotions at the Olympic Games

Management of emotions at the Olympic Games refers to the participants' perceptions of their coach's propensity to control their own and others' emotions during the Olympic Games. This theme consists of two subthemes: management of own emotional expression and management of swimmer's psychological state.

7.3.4.1 Management of own emotional expression. The subtheme of management of own emotional expression refers to the coach's appropriate and controlled display of emotion at the Olympic Games. All of the participants in the world-leading group felt that their coach was "confident, and completely in control, I mean, no ups or downs, just steady and level" (Participant 8, World-leading). These swimmers described their coach's calm demeanor at the Olympic Games, and how they appreciated this approach:

It's really cool to see someone like that. And that's, I don't know, he's just very light-hearted, I call him a little guru, he's the zen master. He likes to be calm, he'll talk slowly, he'll walk slowly, and he just looks so in control of everything. He's not your football coach motivator, he doesn't yell or scream at you, he'll get you to laugh and make you smile. (Participant 11, World-leading)

In comparison, the participants in the world-class group felt that they could sense their coach's anxiety: "Obviously he's nervous as well, you always think it's just you, but [coach's name] is nervous because obviously what I do is being reflected on him, and you can tell he's slightly nervous" (Participant 35, World-class). They described the emotions which they perceived their coach experienced:

At the Olympics, his emotions sometimes get a little bit, he gets, he sets high expectations for himself as well, not just for me, he puts it on himself and that affects him. So, he can get quite, I guess, annoyed and angry. He can go from really happy, but he can also go down the other way when something's not going great and can get a little bit worried and he tries to hide it from me but he doesn't really manage. (Participant 13, World-class)

7.3.4.2 Management of swimmer's psychological state. Within the subtheme of management of swimmer's psychological state, the participants discussed the coaches' actions which shaped their mental state. All of the swimmers in the world-leading group discussed their preparation leading up to the Olympic Games, and the importance of the conversations that they

had with their coach: “To be truly confident you have to trust your preparation. He’s like, “there’s nothing to fix, I just want you to stay in shape, I want you to get mentally right, and just go out there and have fun” (Participant 10, World-leading). These swimmers described how their coach was able to reduce their anxiety and vulnerability at the Olympic Games, and further, how they enhanced their confidence:

[Coach’s name] is the ultimate confidence man. He needs people to feel confident, and he’s very good at it, he’s like a salesman, he’s a salesman with yourself, he sells you to you. He’s like, “you are good, you have what it takes, you have the talent, you’ve put in the work,” and he puts it into your brain. And he can also make you feel confident about what you’ve done, and feel good about it and have that confidence in your race. So, that’s a different type of confidence, not just that you’re the best, not about your talent, but he worked you so hard that you’re able to do anything. And that all helps me a lot and that developed me as a swimmer. I developed into this racer, every time I step on the blocks, I smell blood. (Participant 21, World-leading)

In contrast, some of the participants in the world-class group felt that their coach did not enhance their confidence: “All the stuff he was saying didn’t give me much in the way of confidence” (Participant 30, World-class). The participants remarked that their coaches had not directly addressed their anxiety, and they described the additional pressure they felt from their coach:

I went to [international swimming event] and I got a gold and a silver, and then he was like, “you’re actually pretty good, you could make it, I don’t see why you can’t make it, you’re ranked one of the fastest in the country, you just need to just do it.” And it felt like he was putting all this pressure on me. And the thing that I struggle with is that I just can’t do it, I struggle with nerves and pressure. I know that I’m good enough, I just can’t seem to do it. But he’s very good at changing the subject when I get nervous. So, like at the Olympics, I was very nervous, because my heat was so fast, it felt so easy, and I thought, “s***, I might actually make it here, I might actually win something,” and I was like, “s***.” And then this whole like, pressure, just comes on me, and [coach’s name] felt the same because he was like, “s*** she could actually do it.” And he walked off and he was like, “I’ll see you later,” he didn’t want me to feel like that, but I guess he didn’t know what else to say! (Participant 38, World-class)

7.4 Discussion

This study aimed to explore swimmers' perceptions of the psychosocial aspects of their coaches, and understand whether they perceived any discriminating factors between world-leading and world-class coaches. Utilizing semi-structured interviews, it was found that the swimmers described a variety of experiences and views regarding their coaches, and these factors discriminated between the world-leading and world-class coaches. This enabled the development of a broader understanding of world-leading coaches, and they form the main findings and implications of the study. Three themes and 12 subthemes which discriminated between the world-leading and world-class groups responses were found, and four particularly original and significant findings emerged to add to previous research.

The first novel finding is the world-leading groups description of their coaches as inspirational motivators and charismatic characters, which contrasts with the world-class groups descriptions of more "laid back" individuals. Charisma has been defined as "values based, symbolic, emotion-laden leader signaling" (Antonakis, Bastardo, Jacquart, & Shamir, 2016, p. 304). Charismatic individuals elicit strong emotions from others which encourage devotion, high engagement, and action (Banks, Engemann, Williams, Gooty, McCauley, & Medaugh, 2017). The world-leading coaches are masters of skillfully utilizing communication, actions, and emotional displays to elicit specific emotions in the swimmers, and they direct those emotions in a congruent manner with the swimmer's goals. Building on Studies Two, Three, and Four, this study has found that the world-leading coaches are evoking emotions in the swimmers through the implicit process of emotional contagion (Sy, Côté, & Saavedra, 2005). In the context of the coach-athlete relationship, by skillfully eliciting emotions in the swimmer and then delivering a training session which allows the swimmer to fulfil the elicited goals and motivations, coaches create a virtuous cycle that then further reinforces the swimmer's affection for their coach. The coach's success in eliciting a positive emotion in the swimmer means it is more likely that they will be inspired to produce actions that go beyond expectations (Sy et al., 2005). Positive emotions have been found to speed recovery from, or diminish, the experience of psychological and physiological pain (LePine, Zhang, Crawford, & Rich, 2016), therefore enabling the swimmers to exert more discretionary effort in training and improve their performance. The experience of fulfilment and reward enables the coach to keep eliciting emotion which acts as a

golden ticket, allowing the coach to repeatedly tap into a well of emotional motivation and inspire heightened effort.

The second original and significant finding relates to achievement goal theory (Elliot, Murayama, & Pekrun, 2011), with the world-leading groups description of their coaches emphasis on both other-approach and other-avoidance goals, whereas the world-class group described a focus on self-approach goals. This coincides with the findings of Study Four, wherein the world-leading coaches showed a marked interest in wanting to beat others (i.e. other-approach goal), but mostly in wanting to avoid, and a fear of, failure (i.e. other-avoidance goal). Fear of failure is described as the motivation to avoid failure in an achievement-based context because of the shame and negative emotions associated with failing (Atkinson, 1957; McGregor & Elliot, 2005; Murray, 1938). When confronted with the possibility of failing, Covington (1992) and Elliot (1999) have argued that failure motivated individuals are compelled to protect themselves by either physically or mentally quitting the activity (Elliot & Church, 2003), or by striving to attain success. One can speculate that when world-leading coaches entertain the thought of failing, they are compelled to work harder and smarter, and thus are not complacent in ensuring that the swimmers have done everything possible in training to achieve success. Therefore, the prospect of failure may act as a powerful catalyst for high performance. Further, it may be that there is a complex interaction between the athletes own goal motivations and the coaches. Gold medal winning athletes have been found to focus on both mastery and performance goals (Hardy et al., 2017), and combined with the coaches focus on performance and consummate preparation, this will give the athlete the best chance of success at the Olympic Games.

The third original finding relates to the creation of trust, and the discriminating explanations the two groups of participants gave as the foundational reasons for trusting their coach. Interpersonal trust is understood to be a multifaceted construct, and refers to an individual's willingness to be vulnerable based on the positive expectations of the intentions or behavior of another (Rousseau, Sitkin, Burt, & Camerer, 1998). Research has found that trust is based on three factors: ability refers to the extent to which the coach is perceived to have the required knowledge and skills to successfully coach the swimmer to an Olympic medal, integrity relates to the extent to which the coach is perceived to have sound morals and principles, and benevolence refers to the extent to which the coach genuinely cares for the swimmer beyond

their own self-motives (cf. Mayer, Davis, & Shoorman, 1995). The participants in the world-class group described trusting their coach predominantly due to a competence rationale, whereas the world-leading group discussed their belief that their coach was capable of coaching them to an Olympic gold medal (i.e. ability), that their coach was trying to do the right thing (i.e. integrity), and that their coach cared for them beyond the pool (i.e. benevolence). The elements of integrity and benevolence, also referred to as affect-based trust (McAllister, 1995), represent a sound reason to trust someone, as a sense of fairness or moral character provides long-term predictability (Lind, 2001), and benevolence creates an emotional attachment, with caring and supportiveness providing positive affect (Schaubroeck, Lam, & Peng, 2011). When swimmers have strong affective bonds with the coach, this will enhance psychological safety, which means that the swimmers will feel that they are able to open up about vulnerabilities. This open sharing of information has been found to enhance performance as the individuals do not need to divert energy into hiding sensitive information (Edmondson, 2004). Further, the world-leading group described the initial process of the coach explicitly asking the swimmers to trust them. This relates to psychological contracting, which is an individual's understanding of their expected contribution in terms of their commitment and effort, and what these contributions will entail in terms of job performance (Conway & Briner, 2002; Cullinane & Dundon, 2006; Guest, 2004). Therefore, the swimmer understands their obligations which creates a set of values and norms, and if the coach devotes time and effort to keeping their promise, then trust will be enhanced. The positive outcomes of trust in leaders are higher risk taking and enhanced performance (Colquitt, Scott, & Lepine, 2007; De Jong, Dirks, & Gillespie, 2016; Dirks & Ferrin, 2002). If a swimmer is willing to be vulnerable and trust the coach, then they are free to allocate their entire focus and energy onto the task, as opposed to diverting resources to monitoring the coach and which elements of the program to trust.

The fourth original finding is the novelty of training methods that the world-leading group described and which they felt enhanced their engagement, whereas the world-class group described their coaches as utilizing tried-and-tested techniques which did not lead to the same sense of excitement. Novelty is an underlying attribute of engagement (O'Brien & Toms, 2008), and in order to create a sense of novelty, it is important that coaches are creative and innovate. Creativity and innovation are central to achieving a sustained competitive advantage (Baer, 2012). These two elements are part of the same process, with creativity defined as the

production of new and useful ideas, and innovation defined as the successful implementation of those novel ideas (Amabile & Pratt, 2016; Drazin, Glynn, & Kazanjian, 1999). Creativity and innovation do not follow a linear path (Anderson, Dreu, & Nijstad 2004), but occur in an uncertain and long-winding fashion, with unrewarding outcomes in many instances. The world-leading group described their coach's experimentation with different ideas in order to increase the efficiency and effectiveness of their training. A coach who has the required knowledge, skills, and positive self-evaluation will be more likely to take calculated risks, and individuals who are prone to risk-taking behaviors are more likely to achieve successful results (Peterson, Smith, Martorana, & Owens, 2003). In order to successfully innovate, the world-leading coaches were described as continually appraising and then, if required, adapting their experimentations. Expectations of potentially high returns, such as winning an Olympic gold medal, appear to drive the coaches to opt for risky experimentation by focusing on the positive benefits of innovation rather than the potential losses (Study Four), and it is this possibility of reward which appears to be enhancing the swimmers own motivation and enjoyment. Further, one can speculate that it is the swimmers' perception that innovation is occurring which provides a competitive advantage. The world-leading group described exerting more effort as they believed they were performing tasks which were more advanced than others, and therefore it may be the perception, regardless of whether it is grounded in reality, which creates the enhanced work rate and thus higher performance.

At this juncture, it is important to recognize the strengths and limitations of this research. In terms of strengths, quotes were used from all 38 participants in the results section to give a full breadth of participant involvement, whilst the maximum number of quotes from any participant used was three to ensure no over-riding input from any one participant. Further, in-depth information was collated from a significant multi-national population, and a hard to reach population (i.e. Olympic athletes), was compared with an even harder to reach population (i.e. athletes who have been coached by Olympic gold medal winning coaches). This approach provided many insightful vignettes into Olympic coaches and enabled an understanding of what, from the swimmer's point of view, appears to differentiate between world-leading and world-class coaches. Turning to the limitations, the participants included in this study were all nominated by the coaches from Study Four. Due to time and resource constraints this was an effective recruitment strategy, however, it is not without limitations, such as the potential for

self-serving bias. Further, this study focused on the swimmer's perceptions of their coach, and did not focus on the swimmers themselves. Coaching can only occur if there are athletes – without athletes and athlete behaviors there is no coaching. This relates to the concept of followership, and as Uhl-Bien and Philai (2007) noted, “if leadership involves actively influencing others, then followership is allowing oneself to be influenced” (p. 196). The study of followership examines the nature and impact of followers in the leadership process (Fairhurst & Uhl-Bein, 2012; Oc & Bashshur, 2013; Uhl-Bien, Riggio, Lowe, & Carsten, 2014). The significance of athletes to the coaching process means that studying the athletes who occupy the follower roles, and examining the influence and impact of their characteristics on the coach, is a necessary next step. Little is known, for example, about the role of the athlete in the charisma process and whether the athlete's emotions in turn affect the coach's emotion, and there has been no research on the susceptibility of different athletes to charismatic coach's positive emotional expressions. This would not only reverse the lens (Shamir, 2007), but it would also acknowledge the role of athletes as co-producers in coaching and its outcomes.

In terms of applied implications, first and foremost, these results show that charismatic coaches help swimmers to thrive in the face of high challenge situations, and enable swimmers to achieve greater than expected results in training due to the continual inspiration, motivation, and communicated optimism. National Governing Bodies (NGBs) should therefore include charismatic coaching processes as part of their development and training programs. Examples include role modeling, articulating of the vision, frame alignment, and displaying conviction. Further, these findings underscore the benefits of coaches continually and explicitly building meaningful trust with the swimmers. The relationship between trust and performance is well established (Colquitt et al., 2007), and given this, it is important that NGBs provide guidance to coaches concerning the systematic building of trust. The results indicated that ability, benevolence, and integrity were three avenues through which the world-leading coaches gained the swimmers trust. The ability factors suggest that NGBs should pay special attention to their recruitment and professional development strategies, and the integrity and benevolence aspects indicate that coaches should aim to make fair and ethical decisions, and foster a deep and genuine relationship with the swimmers. Finally, this paper underlines the importance of NGBs creating a risk-supporting climate due to the positive effects of the innovation process, and of the importance of both performance-approach and performance-avoidance goals for Olympic

coaching success. Sport psychologists should be mindful that exclusively promoting mastery oriented and approach goals is not always associated with exceptional performance outcomes.

7.5 Conclusion

In conclusion, this study aimed to understand Olympic swimmers' perceptions of world-leading and world-class coaches. This is the first qualitative study to compare swimmers' perceptions of these coaches, and it is clear from the results that a number of factors are perceived to discriminate between world-leading and world-class swimming coaches. These discriminators span multiple psychosocial factors, and in order to enhance the probability of success at the Olympic Games, it is important that NGBs recognize these discriminators with the aim of enhancing and strengthening their coach training and development programs.

Chapter Eight

Summary, Discussion, and Conclusion

This thesis began with an introduction and literature review, and then presented five distinct but interlinked studies which examined psychosocial aspects of coaching in Olympic sport. Chapter Eight starts with a summary of Studies One, Two, Three, Four, and Five. It then comprises a discussion which considers the theoretical and empirical advances, methodological advances, and practical advances. This is followed by a discussion of the strengths and limitations of the body of work, the future research directions which derive from it, and it then finishes with concluding remarks.

8.1 Summary of the Five Studies

8.1.1 Study One

Study One, a systematic review of the research related to psychosocial aspects of coaching in Olympic sport, was informed by PRIMSA guidelines, and conducted by searching SPORTDiscus, PsycINFO, PsycARTICLES, ScienceDirect, Scopus, Web of Knowledge, and Medline databases. The literature search identified 2873 studies which were screened and assessed for eligibility, with the resultant 25 eligible studies being assessed for quality of evidence using the Mixed Methods Appraisal Tool. The quantitative and qualitative results covering the combined total of 207 Olympic coaches and 925 Olympic athletes were transformed into a qualitative format to present relevant themes, concepts and patterns. The convergent thematic analysis identified specific traits, states, and behaviors which were perceived to have either a facilitative, debilitative, or mixed, neutral, or unclear effect on athlete performance. The review highlighted several limitations of the included studies, namely the limited empirical progression, lack of coherent conceptualization, and the predominant focus on bright characteristics. Further, no previous research had examined whether there were psychosocial characteristics which discriminate between world-leading (i.e. Olympic gold medal winning) and world-class (i.e. Olympic non-gold medal winning) coaches, and these discriminating factors may be one of the elements influencing athletes' ultimate performance achievement.

8.1.2 Study Two

Although coaches are key figures within the Olympic environment and their performance influences athlete outcomes, no previous research has examined whether there are psychological characteristics which discriminate between world-leading and world-class coaches. These discriminating factors may be some of the elements influencing athletes' ultimate performance achievement. This study utilized a quantitative design, and self-report psychometric questionnaires were completed by 36 Olympic coaches who had collectively coached 169 swimmers to win 352 Olympic medals, of which 155 were Olympic gold medals. The questionnaires covered 15 variables within the Big Five personality traits, emotional intelligence, hardiness, and the dark triad, and the results were analyzed using a series of one-way multivariate analysis of variance and follow-up univariate F-tests. The results showed that the 21 world-leading coaches were significantly more agreeable, had greater perception of emotion, were better at managing their own emotion, and were less Machiavellian and narcissistic than the 15 world-class coaches. The two groups showed no differences in levels of conscientiousness, openness to experience, extraversion, neuroticism, managing other emotion, utilization of emotion, commitment, control, challenge, or psychopathy. The psychological characteristics which discriminate between world-leading coaches demonstrate that they perceive themselves in specifically distinct ways from world-class coaches. Their higher attributes within emotional intelligence and agreeableness, and their lower dark triad traits were discussed within the context of well-established psychology theories and potential linkages to their swimmer outcome achievements were explored.

8.1.3 Study Three

Athletes represent an important source of information about coaches, and no prior research has examined whether they perceive any psychological characteristics that discriminate world-leading from world-class coaches. This study quantitatively identified swimmers' perceptions of the psychological characteristics which discriminate between world-leading and world-class swimming coaches across the Big Five personality traits, emotional intelligence, hardiness, and the dark triad constructs. Observer-reported psychometric questionnaires were completed by the 25 swimmers in the world-leading coach group and the 13 in the world-class group, with the swimmers having collectively won 59 Olympic medals, of which 31 were gold. The results were analyzed through a series of one-way multivariate analysis of variance and

follow-up univariate F-tests. It was found that the world-leading coaches were perceived by their swimmers to be significantly higher on conscientiousness, openness to experience, perception of emotion, and managing other emotion, and lower on narcissism in comparison with the world-class group. No differences were found between the two groups on agreeableness, extraversion, neuroticism, managing own emotion, utilization of emotion, commitment, control, challenge, Machiavellianism, or psychopathy. This is the first research to investigate swimmers' perceptions of the psychological characteristics that discriminate between two groups of Olympic coaches at the very apex of coaching ability. The psychological discriminators were interpreted within the context of existing psychological theories, and potential mechanisms were discussed in terms of their impact on swimmers' emotions, behaviors, and performance.

8.1.4 Study Four

This study qualitatively explored the self-perceived psychosocial factors which discriminate between world-leading and world-class swimming coaches. The 38 participants had collectively coached swimmers to win 354 Olympic medals, of which 156 were Olympic gold medals. Semi-structured interviews were conducted with 22 world-leading and 16 world-class coaches. The open-ended questions covered coaches' perceptions of their own motivations, behaviors, communication, environment, relationships, luck, overcoming difficulties, and coping with pressure. The results were analyzed using inductive thematic analysis, and 16 sub-themes were identified, which were condensed into four themes. Direct quotes highlighted discriminating factors between the two groups, which, in the theme of motivation included childhood adversity, the need to win and not to lose, striving for perfection, and obsession. Discriminators in the underpinning personal bond theme were deep caring, belief in your own abilities, attention to swimmer emotion, expression of appropriate emotion, and building mutual trust. Within the theme of improvement orientation there were sub-theme discriminators in utilization of sport science, innovation, provision of feedback, adaptability, and culture of excellence, and the theme of Olympic event management identified discriminators in knowledge and detailed preparation, and providing emotional stability. Four particularly original findings, including world-leading coaches' emphasis on change-oriented feedback, experiencing greater childhood adversity, both excellence-seeking and failure-avoiding perfectionism, and their expression of emotional labor were explored and their implications assessed.

8.1.5 Study Five

Capturing athletes' perceptions of their coach provides a unique insight into how coaches function. This study qualitatively identified the psychosocial factors which Olympic swimmers perceived discriminated between world-leading and world-class coaches. Following semi-structured interviews with 25 Olympic swimmers who had been coached by world-leading coaches and 13 Olympic swimmers who had been coached by world-class coaches, three themes that discriminated between the two groups were identified. These themes were the world-leading groups personal qualities (i.e. inspirational motivator, focus on winning and avoiding losing, self-assurance, holistic care, and trustworthiness), their creation of a stimulating environment (i.e. novelty, management of own and other emotions, consistency of engagement, focus of feedback, and training culture), and the management of emotions at the Olympic Games (i.e. management of own emotional expression and management of swimmers' psychological state). The four particularly original findings were the swimmers' perceptions that the world-leading coaches were highly inspirational motivators, that they exhibited both other-approach and other-avoidance goals, they created trusting relationships based on ability, integrity, and benevolence, and they used novel methods in their training in a way that distinguished them from world-class coaches.

8.1.6 Composite Model of Discriminating Psychosocial Factors

Studies Two, Three, Four, and Five form a group of four related investigative studies which demonstrate that specific psychosocial factors discriminate between world-leading and world-class swimming coaches. The psychosocial factors from all of the studies have been collated into a composite diagrammatic representation of the results which has been built up from the identified discriminating experiences, traits, states, and behaviors. This is presented in Figure 15. One can speculate that the possession of a complex combination of these factors is advantageous towards coaching an athlete to win an Olympic gold medal, and it is proposed that there is a significant link between psychosocial aspects of coaching and Olympic outcomes.

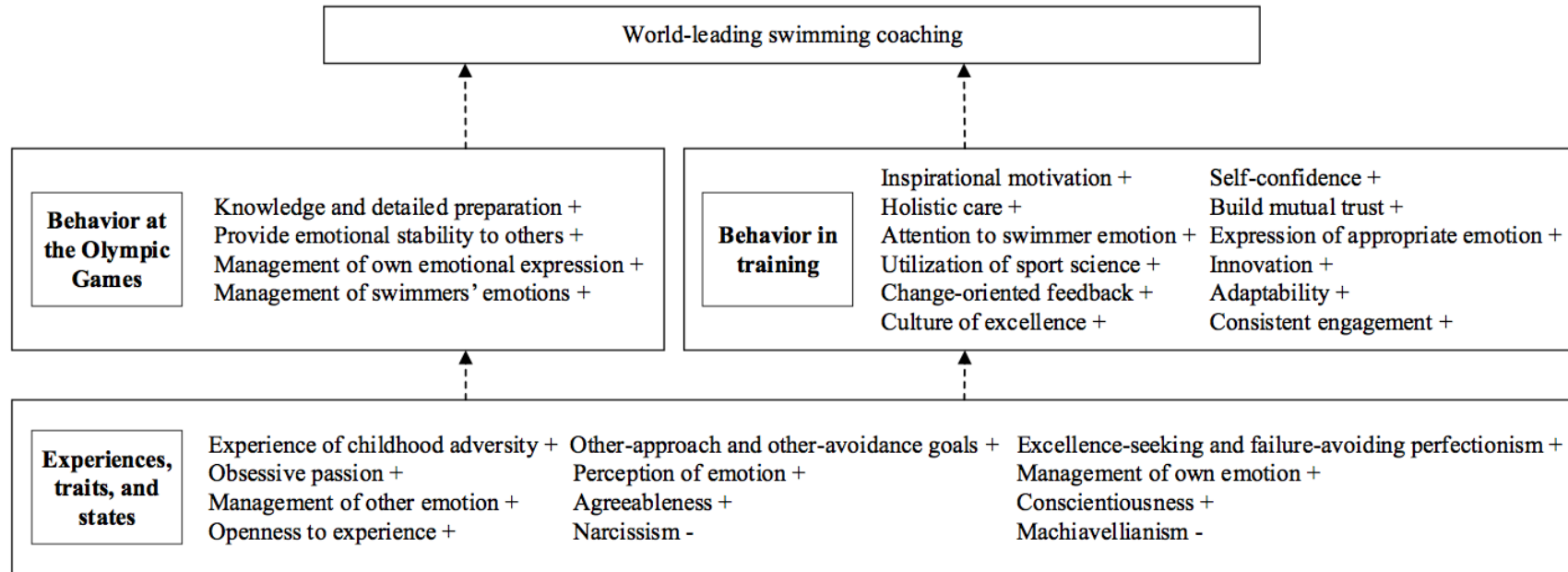


Figure 15. Psychosocial factors that discriminate between world-leading and world-class swimming coaches.

Note. + denotes a characteristic which was perceived to be higher in world-leading coaches in comparison with world-class coaches; and - denotes a characteristic which was perceived to be lower in world-leading coaches in comparison with world-class coaches.

8.2 Discussion

This section critically draws together the ways in which this thesis has advanced the literature related to Olympic coaching, with the narrative divided into three sections: (1) discussion of advances, (2) discussion of strengths and limitations, and (3) discussion of future research directions.

8.2.1 Discussion of Advances

8.2.1.1 Theoretical and empirical advances

8.2.1.1.1 Feedback advances. This empirical advance relates to the different emphasis that the world-leading and world-class coaches placed on the type of feedback they provided. This is the first body of research to examine differences in the provision of feedback between world-leading and world-class coaches, and as feedback is a critical factor in learning, it represents an important advance in our understanding of the factors which drive winning Olympic performance. The world-leading coaches and their swimmers perceived that 90 percent of the feedback given to swimmers was change-oriented, and only 10 percent was promotion oriented. This contrasts with the world-class coaches and swimmers who perceived that 20 percent of the feedback was change-oriented, and 80 percent of their feedback was promotion-oriented. The change-oriented feedback of the world-leading coaches represents a highly significant and novel finding across the coaching and organizational leadership literature. Indeed, it contrasts with coaching research suggesting coaches' emphasis is on praise, encouragement, and reinforcement (Cushion, 2010), and the often cited optimal 80:20 (promotion-oriented: change-oriented) feedback rule (e.g. Losada & Heapy, 2004). An important finding was that the world-leading swimmers stated that they wanted and expected to receive predominately change-oriented feedback, and they perceived this feedback as well-intentioned. This aligns with self-determination theory (Deci & Ryan, 2016), and previous research which has found that individuals who actively seek feedback information have an adaptive response to all types of feedback and report pleasant emotions when receiving negative feedback (Fong et al., 2016). The change-oriented feedback is therefore not viewed as an imposition, but rather the sense of personal causation will support the swimmers autonomy needs, the provision of possible solutions and improvement strategies will meet their competence needs, and their relatedness needs will be met through the feedback indicating high involvement and care (Carpentier & Mageau, 2013; Fong, Patall, Vasquez, & Stautberg, 2018).

One can speculate that the world-leading coaches' emphasis on change-oriented feedback will energize their performance driven swimmers for three primary reasons. The first is that when highly motivated individuals undertake a self-defining task, failure information will increase their effort as they will want to decrease the incongruence between their goal and their current behavior (Bélanger et al., 2013). When individuals care deeply about an activity and are highly committed, failure poses a direct threat to their self-identity and instils a sense of insecurity which will motivate them to correct the behavior and improve their subsequent performance (Bélanger et al., 2013). Secondly, feedback provokes a variety of emotions, and these emotional responses will mediate the effect of the feedback on subsequent performance (Baumeister, Vohs, DeWall, & Zhang, 2007; Fishbach, Eyal, & Finkelstein, 2010). Promotion-oriented feedback evokes pleasant emotions and signals that adequate progress is being made towards the goal, and this may induce complacency, whereas change-oriented feedback signals inadequate progress and results in enhanced motivation in receptive individuals (Cassidy, Ziv, Mehta, & Feeney, 2003; Ilies & Judge, 2005; Kamins & Dweck, 1999). Thirdly, the nature of change-oriented feedback and the focus on ways to improve will enhance the swimmer's feelings of hope about prospective outcomes. In contrast, promotion-oriented feedback keeps the swimmer's focus on retrospective outcomes, and it may therefore be more difficult to identify feelings of hope. This reflects Fong et al.'s (2016) finding in an educational setting that constructive criticism can lead to students feeling enhanced hope, and is in accordance with Pekrun's (2006) statement that "feedback implies information about probabilities of the future success or failure, thus having an impact on prospective control appraisals and prospective outcome emotions" (p. 226). Taken together, the focus on change-oriented feedback is likely to have an energizing effect on elite level swimmers which will be advantageous towards winning an Olympic gold medal.

8.2.1.1.2 Emotional advances. The emotional aspects of Olympic coaching have not been examined using quantitative methodologies, and this thesis has advanced our understanding of emotional factors by demonstrating differences quantitatively and qualitatively which had only previously been hypothesized. This line of inquiry reflects Potrac, Lee, and Nelson's (2017) assertion that there "was a clear need to develop a greater understanding of coaching as an emotional practice" (p. 137). By utilizing the Schutte Emotional Intelligence Scale, it was found that the world-leading coaches were higher on self-reported and observer-reported

perception of emotion in comparison with the world-class coaches. In addition, the world-leading coaches perceived that they were higher on management of own emotion in comparison with the world-class coaches, and the swimmers' perceived that the world-leading coaches were higher on management of other emotion in comparison with the world-class coaches. It is crucial to highlight the dual use of emotions by world-leading coaching. Not only do the coaches manage their own emotions, but they also use emotion-related skills to manage the swimmers' emotions in both training and at the Olympic Games. These findings indicate that the world-leading coaches directed more attention in training towards their own emotional displays, and closely monitored the swimmers to influence their emotions.

Before coaches can handle the emotions of others, it is important that they can handle emotions within themselves. The world-leading coaches described the process encapsulated within the concept of emotional labor to manage their emotional display, with the use of surface and deep acting, and genuine emotional expression (Grandey & Melloy, 2017). Emotional labor was first described by Hochschild (1983), and is defined as the expression of desirable emotions during public interactions. The ability to manage emotion is important due to emotional contagion, where something as simple as a smile can create a chain of events and positive meaning for others within the appropriate context (Fredrickson, 2004). As coaches' positive emotions are passed onto their swimmers, the training environment will become more positive and energized, with the positive emotions engendering higher optimism, creativity, cooperation, and motivation (cf. Baas, De Dreu, & Nijstad, 2008).

The world-leading coaches and swimmers reported that the ability to manage the swimmer's emotions, particularly at the Olympic Games, was a crucial skill. Researchers have noted that competing at the Olympic Games provokes heightened emotional responses due to factors such as the global audience and four-years of training culminating in an event which often lasts less than a minute (Gould & Maynard, 2009). The world-leading coaches described their close attention to, and management of, the psychological state of their athletes at the Games, and their swimmers also noted and appreciated this emotional side of coaching. One world-leading swimmer described his coaches impact on his psychological state prior to an Olympic final: "He can also make you feel confident about what you've done, and feel good about it and have that confidence in your race. So, that's a different type of confidence, not just that you're the best, not about your talent, but he worked you so hard that you're able to do

anything. And that all helps me a lot and that developed me as a swimmer. I developed into this racer, every time I step on the blocks, I smell blood.” The accurate perception of emotion will enable a coach to recognize and respond with the appropriate emotion, for example, by adapting their communication and style to enhance a swimmer’s confidence. Taken together, these findings demonstrate that world-leading coaching requires emotion-related competencies, and being able to regulate their own and other emotions is advantageous for coaching a swimmer to win an Olympic gold medal.

8.2.1.1.3 Motivational advances. This thesis has advanced an understanding of the underpinning motivational factors of world-leading and world-class coaches, and what they perceive to be driving their success. The world-leading coaches stated that they had experienced childhood adversity, which contrasted with the world-class coaches’ perceptions of relatively comfortable childhoods. This significantly extends Mallett and Coulter’s (2016) finding that their single Olympic medal winning coach experienced adversity in childhood, and highlights childhood adversity as a discriminating factor between world-leading and world-class coaches. This thesis is not arguing that the experience of adversity per se is required for world-leading coaching, indeed, the experience of adversity for most people most of the time will have negative outcomes (Luther & Cicchetti, 2002). It would be a misunderstanding to think that trauma is good, as it typically results in unpleasant and long-lasting responses and emotions, and may lead to the development of psychiatric disorders (Tedeschi, Calhoun, & Groleau, 2015). Rather, it is hypothesized that, in some people, it is the effects which adversity can have on other mechanisms which contributes towards world-leading coaching. Adversity can sometimes, for example, lead to improvements in interpersonal functioning and relationships. This is because individuals who have experienced adversity may need to talk about the adverse events, and this act of self-disclosure may result in comfort with intimacy, and in greater compassion and empathy for others (Tedeschi et al., 2015). The experience of empathy is likely to enhance the coach-athlete relationship, and can also help the coach to shape athlete emotions, including feelings of excitement, optimism, and enthusiasm (Lorimer & Jowett, 2009).

The world-leading swimmers perceived that their coaches were inspirational motivators, which they stated had an energizing effect on their day-to-day training performance. This reflects the construct of charisma, with charismatic individuals particularly excelling at motivating others to exhibit greater effort and achieve high performance outcomes which, is

likely to be advantageous towards coaching an athlete to win an Olympic gold medal. Previous research within organizational psychology has demonstrated a link between childhood experiences and leadership styles, with Ligon, Hunter, and Mumford (2008) finding that many historically significant charismatic leaders had experienced childhood adversity, and as a consequence of these re-orienting experiences, were more comfortable with change and ambiguity. This greater comfort with uncertainty and change may result in the motivation to innovate, which the world-leading coaches and swimmers perceived as one of the factors driving their success. Innovation is regarded as a critical source of competitive advantage (Hagtvedt, Dossinger, Harrison, & Huang, 2019), and if an individual has a high tolerance of ambiguity then it is likely that they have a higher propensity to explore and experiment with unsolved puzzles and generate novel ideas which, according to the swimmers, enhanced their effort and motivation in training. The excellence-seeking and failure-avoiding perfectionism which the world-leading coaches and swimmers described (i.e. the need to win and not to lose, and the need to demonstrate extraordinarily high competence), may be due to a strong desire not to re-experience adverse life circumstances that perceived failure can entail (Harari, Swider, Steed, & Breidenthal, 2018; Mascaret, Elliot, & Cury, 2015). Although failure-avoiding perfectionism and other-avoidance goals have previously been reported in the literature as having a negative relationship with attainment (e.g. Gotwals, Stoeber, Dunn, & Stoll, 2012; Harari et al., 2018), at the highest level of world performance, one can speculate that the perceived need not to lose and for the swimmer to perform flawlessly results in a strong drive to leave no stone unturned and enhances emotional and motivational qualities, which may not only be desirable, but may be required (cf. Bélanger, Lafrenière, Vallerand, & Kruglanski, 2013).

8.2.1.1.4 Bright advances. The novel insights into the bright aspects which discriminate between world-leading and world-class coaches represent a further theoretical and empirical advance of the literature. Some of the research within this thesis was underpinned by the theoretical construct of the Big Five traits which were examined using The Big Five Inventory. The results demonstrated the world-leading swimmers perceived that their coaches had higher openness to experience in comparison with the world-class coaches. Although the world-leading coaches did not perceive that they were more open, their observable behaviors indicate otherwise, and the swimmers stated the generation and implementation of perceived novel ideas enhanced their engagement in training. The world-leading group of swimmers also perceived

that their coaches were more conscientious in comparison with the world-class coaches, and the world-leading coaches perceived that they were more agreeable in comparison with the world-class coaches. This combination of agreeableness and conscientiousness reflects the underpinning factors of trust, namely ability, benevolence, and integrity (Colquitt, Scott, & LePine, 2007; Mayer, Davis, & Schoorman, 1995), and building mutual trust was identified by both coaches and swimmers as a discriminator between the world-leading and world-class coaches. This is the first identification of mutual trust as a discriminating factor between world-leading and world-class coaches, advancing Jowett and Cockerill's (2003) finding that trust is an important element within quality coach-athlete relationships. Trust is the willingness of the trustor to be vulnerable to the actions of the trustee (Mayer et al., 1995), enhancing athlete performance through the higher quality coach-athlete relationship (Jowett & Poczwardowski, 2007), and through the swimmers' higher allocation of resources towards their training performance as they are not monitoring the coach and contemplating which elements of the program to trust.

The explicit use of psychological contracting represents another novel advance within the literature. A psychological contract reflects the promises, expectations, and experiences made between an employee and an organization (Rousseau, 1995). The world-leading coaches emphasized that they discussed the reciprocal expectations with swimmers at the beginning of their relationship, and they perceived that the fulfillment of these contracts provided a platform on which to build mutual trust. Results from the organizational literature suggest that the fulfillment of psychological contracts results in enhanced commitment, with employees motivated to reciprocate the efforts of their employer (Bunderson, 2001; Sturges, Conway, Guest, & Liefoghe, 2005). Therefore, it is likely that alongside establishing mutual expectations, these contracts may enhance the swimmers' discretionary effort in training, which over time will be advantageous for performance.

8.2.1.1.5 Dark advances. This thesis examined the theoretical constructs which comprise the dark triad, namely Machiavellianism, psychopathy, and narcissism, in order to determine whether these psychological factors discriminate world-leading from world-class coaches. The dark traits associated with coaching have largely been ignored in previous research, and rarely have researchers considered the countervailing or paradoxical effects associated with positive outcomes in some circumstances but negative outcomes in others. This is the first quantitative

examination of these traits within the Olympic coaching literature. The world-leading coaches were found to be lower on self-reported Machiavellianism in comparison with the world-class coaches, although the swimmers did not report any discrepancy. A possible explanation for this is that, although Machiavellians harbor deep cynicism towards others (Furnham, Richards, & Paulhus, 2013), the world-class coaches are not acting on their Machiavellian feelings. The lack of expression of their perceived Machiavellian tendencies suggests that the destructive elements of this trait, such as manipulation, deception, and exploitation of others (Becker & O'Hair, 2007), which could undermine the coach-athlete relationship, are not occurring. The finding that both the coaches and swimmers perceived that world-leading coaches were lower on narcissism in comparison with the world-class coaches suggests that this may be a contributory factor towards Olympic gold medal winning outcomes. Narcissistic individuals typically act in self-aggrandizing ways, and this may be detrimental to the performance of world-class coaches as these displays are built on a foundation of fragile self-esteem, which is easily perturbed by failure and confers the tendency to excuse failure (Robins & Beer, 2001). This combination results in poorer performance due to the diminished pursuit of learning and poorer self-regulation (Crocker & Park, 2004). However, the world-leading coaches were not low on narcissism, as compared with normative data they were within the moderate range. This suggests that an inverted U-shaped relationship may exist with performance, with the relationship becoming more positive up to an optimal point, beyond which the relationship becomes negative. This reflects recent work within the organizational psychology literature and attests to mixed facets of narcissism, with advantages such as assertiveness and an intense desire to succeed, but disadvantages such as acting in insensitive ways towards others and putting their own needs first (Grijalva, Harms, Newman, Gaddis, & Fraley, 2015).

8.2.1.1.6 Identifying and exploring non-concordant findings between coach and swimmer perspectives. The world-leading and world-class coaches were examined from the differing perspectives of both their own viewpoints and that of their swimmers, which helps to build a more rounded view of the coaches. There is no doubt that listening to swimmers' views is critical to appreciate how coaches function (Jowett, 2017), and swimmers are well suited to report on outcomes such as motivation and the direction provided by their coach, the quality of their interactions with their coach, and their perception of the coach's behavior. The findings that were non-concordant between the coach and swimmer perspectives included agreeableness,

openness to experience, conscientiousness, provision of inspirational motivation, management of own emotion, management of other emotion, childhood adversity, excellence-seeking and failure-avoiding perfectionism, and Machiavellianism. Understanding the non-concordance between the world-leading and world-class coaches' and swimmers' perspectives represents an advance that enables a rare insight into the coaches intrapersonal and interpersonal worlds. A variety of theoretical arguments within the literature have suggested that non-concordant ratings may be due to the self-reporters misdiagnosing their own strengths and weaknesses (e.g. Atwater & Yammarino, 1997; Tsui & Ashford, 1994), and recognition of the actual lived reality can help to identify developmental opportunities.

The discriminating factors that the swimmers perceived, but the coaches themselves did not identify, represent an invaluable source of information for coach reflection and improvement. The first of these was openness to experience, which indicates that the world-leading coaches are perceived to act in creative and divergent ways and take risks. This aligns with the findings from Studies Four and Five that reported the world-leading coaches valued innovation. The swimmers also perceived that the world-leading coaches were higher on conscientiousness in comparison with the world-class coaches. This suggests that although the coaches may not perceive any differences in their intrapersonal worlds, the world-leading coaches are viewed as excelling in hard work, unrelenting commitment, and persistence in the face of obstacles. Thirdly, inspirational motivation was identified by swimmers alone as a discriminating factor, which, like beauty, lies in the eye of the beholder. Whether a coach has successfully communicated a message that inspires hope, influences, persuades, and engages a swimmer can only be appropriately judged through a swimmer's perception of their own states (Lovelace, Neely, Allen, & Hunter, 2019), indicating that the world-leading coaches are particularly adept at motivating swimmers to greater effort and higher levels of performance. Finally, regarding management of other emotion, the swimmers perceived that the world-leading coaches were higher on this construct in comparison with the world-class coaches. The swimmers are in the best position to confidently report and perceive whether a coach has understood their thoughts, feelings, and behaviors, and in interpersonal situations, acted appropriately on that understanding to successfully adapt those emotions.

Several factors were perceived by the coaches to be discriminating, but these were not recognized by the swimmers. Agreeableness was identified in this category, and as coaching is a

relational process requiring cooperation, being sensitive and generous towards others is likely to be important (Zaccaro et al., 2018). The enhanced social expertise of agreeable individuals will enable the coaches to navigate the dynamic training and competition environment where there is a requirement to balance concern for swimmers with the need to drive performance (Nadkarni & Herrmann, 2010). However, in the competitive Olympic environment where getting ahead is valued, it may be difficult for swimmers to perceive the coach's internal tendency to get along due to the continual push to enhance performance and beat the competition. Another factor was management of own emotion, with world-leading coaches perceiving they were able to better understand, interpret, and manage their own emotional expression in comparison with the world-class coaches, and this internal experience may not be easily viewed by swimmers. Finally, childhood adversity, excellence-seeking and failure-avoiding perfectionism, and Machiavellian non-concordant findings were discussed in the motivational and dark advances sub-sections.

8.2.1.3 Methodological advances

This body of research advances the literature methodologically in four ways. Firstly, it used a multi-method approach, drawing on both quantitative and qualitative methodologies. This builds on previous research which has primarily relied on qualitative methodologies, which limited their findings to one form of information (e.g. Seanor et al., 2017). Although the use of multi-methods within Olympic coaching research is not novel per se (e.g. Mallett & Coulter, 2016), this is the first body of work that has used validated questionnaires beyond the Big Five personality traits to examine other theoretically relevant personality constructs. By utilizing a range of validated psychometric measures and collecting rich, thick, and nuanced interview data, the strengths of each approach were incorporated into the thesis. This helped to develop a more complete and rounded understanding of the coaches, increased the validity of the results (Johnson & Onwuegbuzie, 2004), and gave a better understanding of coaching as a complex phenomenon.

Secondly, this thesis examined the psychosocial factors discriminating world-leading from world-class coaches from both their own and their swimmers' perspectives. The use of self- and other-perceptions aligns with Arthur and Lynn's (2016) view that "a balanced approach that adopts multiple perspectives would seem to offer the optimum way forward for coaching-related research" (p. 195). This extends previous research by comprehensively examining self- and other-perspectives through both quantitative and qualitative methodologies, which gives a

fully balanced perspective of the coach. Researchers have demonstrated the reliability and validity of self- and other-ratings of psychological constructs (Connelly & Ones, 2010; Oh, Wang, & Mount, 2011), and the use of multiple perspectives enabled the capture of unique and broad information about the coaches. Coaching is a relational process (Cushion, 2010; Jowett, 2017), and the impact of a coach is influenced by an athlete's perception of their behaviors (Smoll & Smith, 1989). Therefore, understanding a coach's reputation and how they are perceived, alongside how the coach perceives him or herself, builds and advances our empirical knowledge of world-leading and world-class coaches.

The use of a high level world-class comparator group to understand the psychosocial factors which discriminate the world-leading coaches is unique within the Olympic coaching literature. Although many insights have been developed from studying Olympic coaches as a homogeneous group, it is important to enhance our understanding of the subset of world-leading coaches given that funding for Olympic sport is often predicated on winning Olympic medals, particularly Olympic gold medals (Rees et al., 2016). The choice of world-class coaches as the comparison group in the study design was important as the factors which discriminate Olympic coaches from the general population of coaches may be very different to the factors that discriminate the rarer world-leading coaches from world-class coaches (Simonton, 2014). This design enabled information on the discriminating features of this group of world-leading coaches to be examined and explored, thus enhancing our understanding of these coaches.

Finally, this thesis builds on Hodgson et al.'s (2017) assertion that "future research may wish to examine the psychological attributes of coaches from individual sports to gain more detailed evaluation of the psychological attributes required in particular sports" (p. 449). Previous research examining Olympic or high-performance coaching has typically combined participants from multiple sports (e.g. Gould et al., 2002; Jowett & Cockerill, 2003; Lara-Bercial & Mallett, 2016), and this approach does not take account of the potentially differing demands and expectations of each sport. Cognizant of the importance of the coaching context (Lyle, 2002), the focused examination of swimming enabled a deep understanding of the world-leading and world-class swimming coaches to be developed, and these findings are not confounded by variables such as sport type. Although this research cannot exclude the possibility that other confounding variables were contributing to the results, the findings offer valuable information on

whether certain psychosocial factors discriminate between world-leading and world-class coaches in this sport.

8.2.1.3 Practical advances

In terms of applied implications, this thesis demonstrates that there are psychosocial factors which discriminate between world-leading and world-class swimming coaches. One can speculate that the possession of these factors is likely to be advantageous towards coaching a swimmer to win an Olympic gold medal, and it is highly probable that Olympic coaches would benefit from possessing these characteristics. This leads to applied implications regarding the enhancement of Olympic coach performance through development programs. Coach development programs involve altering coaches' perceptions, motivations, competencies, and patterns of behavior in order to help them function more effectively (Gould & Wright, 2012; Lefebvre, Evans, Turnnidge, Gainforth, & Côté, 2016). This can be achieved via either formal or non-formal methods, and timescales can range from days to several years. Previous coach development programs have included formats such as workshops, one-to-one coaching, mentoring programs, learning communities, and structured reflection (Lefebvre et al., 2016).

Given the crucial role of emotions within coaching, it is important that coaches are made aware of and receive training in areas pertaining to emotional intelligence and emotional labor. Targeted interventions can develop coaches' emotion-related skills, with Wagstaff, Hanton, and Fletcher (2013) demonstrating the utility of one-to-one coaching interventions to enhance emotional intelligence and emotion regulation skills. Hülshager, Lang, Schewe, and Zijlstra (2015) demonstrated that a workshop approach is a time- and cost-effective method to train emotion regulation skills. The workshops incorporated written instructions, brief daily exercises, and reflective assignments regarding cognitive change and attentional deployment. Mindfulness interventions have also been found to improve emotional regulation strategies (Hülshager, Alberts, Feinholdt, & Lang, 2013), and given the increased use of mindfulness practices within sporting contexts (Bühlmayer, Birrer, Röthlin, Faude, & Donath, 2017), this may represent a fruitful development approach. In addition, the results demonstrate that world-leading coaches continually foster mutual trust with their swimmers, and National Governing Bodies, coach developers, and sport psychologists should provide recognized guidance and support on the strategies that enhance trust. Ability, benevolence and integrity represent the three core avenues to develop trust (Colquitt et al., 2007). The ability facet highlights the importance of coaches

continually learning and building their expertise, and benevolence and integrity can be promoted through individual learning as well as structured and personalized team-building programs. Given the importance of change-oriented feedback for performance, designing tools to help coaches provide that feedback in a supportive yet challenging manner is likely to be beneficial. To facilitate this process, athletes would also require training and guidance in how to interpret feedback, and facilitating their positive appraisal of feedback would enhance their motivation to implement the strategies (Fong et al., 2018).

It is important that Olympic coaches are self-aware of any dark-side tendencies and the influence that these may have on their practice. Several theorists within the organizational psychology literature have suggested different methods to reduce dark side behaviors (e.g. Harms, Spain, & Hannah, 2011). Drawing on this work, sport psychologists should incorporate dark trait evaluation in their wider 360° assessments to understand the coach's strengths and weaknesses, and plan and deliver the appropriate development program incorporating, as required, plans to reduce any identified destructive behaviors. The maintenance stage would ensure that the coach can consistently deliver these behaviors in stressful situations, such as national and international competitions. Brookmire (2007) suggested that dark side behaviors are unlikely to be fully eliminated, and combined with the findings that indicate moderate narcissism may be advantageous, a program to enhance the coach's awareness of these behaviors and limit their destructive impact would be beneficial. Finally, to enhance the success of coach development programs it is important to consider the context that the coach is operating in, with previous research from business coaching demonstrating the importance of the organizational context (Blackman, Moscardo, & Gray, 2016). Therefore, there is a requirement for National Governing Bodies to share responsibility for coaching goals and outcomes, and this can be achieved by working on aligning the coach's and the organization's goals, ensuring commitment from the senior leadership team, and facilitating a supportive learning environment.

In terms of actual impact, this PhD thesis has influenced sport psychology, coach learning, and wider organizational learning in a number of ways. Firstly, I won the 2018 Association for Applied Sport Psychology's Student Award for Excellence in Science Practitioner Endeavors, in part for the research included within this thesis. This international award recognizes the student who has demonstrated excellence in the science of applied sport psychology and the practice of applied sport psychology. The award helped to highlight the

thesis to a wider audience, and after my presentation of part of the work at the annual Association for Applied Sport Psychology's conference, I have received requests for information about it. In terms of research dissemination, I have given invited presentations to the National Health Service's Delivering the Future program, and to British Swimming's senior leadership team and the swimming Home Nations leadership team. These presentations detailed the scope of the research, the preliminary results, and the practical implications deriving from the thesis. The findings have also been incorporated into British Swimming's Olympic coach development programs. The preliminary results formed the basis of the Team Coach Behaviors document which was used at poolside during the 2016 Olympic Games, and provided coaches with practical advice to enhance their performance. This document was mentioned in *The Talent Lab* book, and in *The Sunday Times* and *The Daily Telegraph* newspapers prior to the Olympic Games.

8.2.2 Discussion of Strengths and Limitations

The results of this research must be interpreted in light of several strengths and limitations. In terms of strengths, all of the 38 coaches were currently active, thus reducing potential memory bias limitations associated with retrospective studies (Brewer, Vose, Van Raalte, & Petitpas, 2011). The use of face-to-face interviews as opposed to telephone interviews enabled more detailed insights to be generated and promoted a greater likelihood of information sharing from participants (Sturges & Hanrahan, 2004). The coaches themselves represent a highly distinctive and significant sample having collectively coached athletes to win 354 Olympic medals, of which 156 were Olympic gold medals. Developing an understanding of the factors which contribute towards the success of significant individuals is recognized to enhance the relevance of psychological science (Simonton, 1999, 2014).

This was not a relative elite sample, a common comparison method utilized within sport science literature (e.g. Nash & Sproule, 2011), which compares novices and experts with each group defined in relative terms with the other. The sample of world-leading coaches within this thesis represent the absolute elite, a term used to describe a small sample of truly exceptional people (Chi, 2006). The impact of a few individuals within a sport can be tremendous. With funding often explicitly determined by Olympic medal success, it is increasingly important to build an understanding of the individuals who occupy the upper end of the achievement

distribution (O'Boyle & Aguinis, 2012), such as coaches who have coached athletes to win Olympic gold medals.

The collection of coaches' self-report and swimmers' other-report data directly responds to previous researchers who have asserted that both athletes and coaches should be included in the design of coaching research (e.g. Cruickshank & Collins, 2017). Building on socioanalytic theory (Hogan, 1991), coaches' self-reports assess their inward perceptions of themselves, and swimmers' other-reports capture information regarding coaches' outward expressions and reputations. Therefore, both groups of participants were able to provide unique insights into the intrapersonal and interpersonal worlds of the coaches.

Importantly, as opposed to being driven by a preconceived bias regarding the dominance of any particular methodology, the methods were selected with respect to the research questions (Onwuegbuzie & Leech, 2005). Thus, by utilizing both quantitative and qualitative methods, this thesis maximized the strengths of each approach to develop a more complete understanding of world-leading and world-class swimming coaches (Stentz, Plano Clark, & Matkin, 2012; Teddlie & Tashakkori, 2009).

Lyle (2018) discussed performance coaches' preoccupation on sport-specific knowledge and the peculiarities which are unique to their context. Studies Two, Three, Four, and Five exclusively examined Olympic swimming coaching, and therefore the implications drawn from this work do not need to be generalized or decontextualized for this audience. Indeed, this study was developed in close collaboration with British Swimming. Previous researchers have been criticized for failing to research topics which sport scientists and National Governing Bodies perceive to be relevant to their current practice (Holt et al., 2018). Gould (2016) stated that coaches and other relevant stakeholders should be included in the research design process as this will ensure that the topic is of practical significance to those within the field. The engagement with British Swimming ensured the examination of a real-world question and the generation of relevant research findings. Indeed, the co-construction of the research design directly closes the gap between sport science researchers and the intended end users (Lyle, 2018).

Turning to limitations, the two groups of coaches were differentiated based on the achievements of their swimmers (i.e. winning an Olympic gold medal vs. not winning an Olympic gold medal). The difficulty inherent in this approach is that the contribution of the coach to the athlete's performance cannot be judged clearly (Rynne, Mallett, & Rabjohns, 2016).

Indeed, the overall performance of an athlete is affected by factors such as their individual natural ability. In order to eliminate these contaminating effects, athletes could be randomly assigned to coaches, with a well-designed randomized experiment producing clear causal data and eliminating many of the confounding variables. However, randomly assigning athletes to coaches, alongside being unrealistic within the Olympic context, would markedly reduce the ecological validity of the results. Therefore, it is not surprising that objective outcomes which are publicly recognizable, such as coaching an athlete to win an Olympic gold medal, represents the most common method of evaluating coaching success (Côté & Gilbert, 2009; Mallett & Coulter, 2016; Rynne et al., 2016).

There are limitations due to a number of possible biases within the studies. The swimmers were all nominated by the sampled coaches and some of these swimmers had retired. Due to time and resource constraints this represented the most effective method to recruit participants, although this approach carries the possibility of self-serving bias and a reliance on recollections of past events. There is potential simultaneity bias which can occur when the performance of the swimmer drives the coach's behavior. Given that the swimmers coached by the world-leading coaches performed extraordinarily well, the coach may have adapted their behavior to these performances, appearing more calm, composed, and confident. There is a possible performance-cue effect bias resulting from the knowledge of good outcomes that may have induced the world-leading swimmers to perceive that their coaches were higher on positively-valenced traits stereotypically related with good outcomes. Finally, there may have been a social desirability bias as the use of semi-structured interviews and psychometric questionnaires with world-leading and world-class coaches may have elicited atypical responses. Individuals who are aware that they are being examined precisely because of who they are may respond more unnaturally to these assessments in comparison with individuals who are part of an interchangeable mass, such as an undergraduate student attempting to earn course credit. Indeed, Schaller (1997) noted that prominent individuals are highly self-aware, which may mean that they engage in impression-management rather than genuine disclosure. It is important that caution is exercised when interpreting the results of this thesis because it is not possible to decisively say that they are free from these biases. Notwithstanding these limitations, the results represent a crucial first step towards establishing the factors which discriminate world-leading from world-class coaches.

8.2.3 Discussion of Future Research Directions

There are four primary future research directions which would flow from the results of this thesis. First, the focus on main effects and not interactive effects limits the ability to interpret the influence of specific characteristics. An integrated approach to understand how multiple traits jointly interact to produce coaching outcomes would enhance our understanding as it is likely that a complex interaction of multiple characteristics results in world-leading coaching outcomes (cf. Zaccaro, Green, Dubrow, & Kolze, 2018). This interactionist perspective would create an understanding of the combination of variables which enable coaches to attain success, recognizing that the research included in this thesis is cross-sectional and therefore cannot determine causation.

Secondly, future research could benefit from utilizing a longitudinal design to understand which factors can be casually linked with world-leading coaching, and which factors remain static and which ones fluctuate throughout a coach's career. For example, after coaching an athlete to win an Olympic gold medal, an individual's openness to experience may increase through an enhancement of their self-esteem, and this may have an impact on their coaching practice. However, this longitudinal design may be difficult to implement as it is hard to correctly select the coaches who will go on to coach Olympic champions.

Given that coaching is a co-created process (Jowett, 2017), additional research would help to address the extent to which an athlete's own characteristics influence coaching outcomes. This sentiment is aligned with the concept of followership, which typically examines the influence of a follower's characteristics in leadership processes and outcomes (Fairhurst & Uhl-Bien, 2012; Oc & Bashshur, 2013; Uhl-Bien, Riggio, Lowe, & Carsten, 2014). For example, within the context of this thesis, the agreeableness of the coach may reflect the agreeableness of the coach relative to the athlete. Variability in the level of the agreeableness of the athlete may alter the coach's agreeableness, with the optimum level of agreeableness dependent on the given situation. Therefore, reversing the lens and examining how the athlete's characteristics, emotions, and reactions feed back and influence the coach's emotions and behaviors constitutes an important next step.

Finally, it is important that future research utilizes systematic observation tools to enhance our knowledge of world-leading and world-class coaching. In a recent review of systematic observation tools, Cope et al. (2017) highlighted that the Arizona State University

Observation System (Lacy & Darst, 1984) was the most widely used instrument within coaching behavior research, although more contemporary research has predominantly used the Coach Analysis Intervention System (CAIS; Cushion, Harvey, Muir, & Nelson, 2012). The CAIS provides a systematic breakdown of multiple primary and secondary behaviors which results in a more complete and nuanced description of behavior. The use of this tool would build a substantial knowledge base regarding specific behaviors with respect to the context in which they were occurring, and this would enable the researcher and coach to collaboratively reflect on the findings and subsequently create bespoke and targeted interventions.

8.3 Conclusion

The purpose of this thesis was to research the psychosocial aspects of coaching in Olympic sport. Coaches are performers in their own right, and they influence athletes' performance, development, learning, and well-being. Given the significant financial investment that national governments make to achieve Olympic success, and the increasing research emphasis on understanding coaches, it is surprising that research has, until recently, paid comparatively little attention to Olympic coaches. The systematic review of psychosocial aspects of coaching in Olympic sport represents the first review of this kind. Alongside highlighting coach traits, states, and behaviors which were perceived to have either a facilitative, debilitating, or mixed, neutral, or unclear effect on athlete performance, it also noted that the previous research had not investigated the psychosocial characteristics which may discriminate world-leading from world-class coaches. Given the importance of context, and understanding both self- and other-perspectives, a series of four studies were conducted which comprehensively examined the psychosocial factors which discriminate world-leading from world-class swimming coaches. The individual studies utilized quantitative or qualitative methodologies to incorporate the strengths of each approach. The quantitative studies identified that the world-leading coaches were perceived to be significantly higher on the Big Five personality traits of agreeableness, conscientiousness, and openness to experience, as well as the emotional intelligence components of perception of emotion, management of own emotion, and management of other emotion in comparison with the world-class coaches, and were significantly less Machiavellian and narcissistic. The qualitative studies highlighted discriminating factors across the themes of motivation, personal qualities, underpinning personal bonds, improvement orientation, the creation of a stimulating environment, and Olympic event

management. Within these themes, the particularly significant discriminating factors were the world-leading coaches' provision of change-oriented feedback, experience of childhood adversity, excellence-seeking and failure-avoiding perfectionism, inspirational motivation, other-approach and other-avoidance goals, building mutual trust, innovation, and the expression of appropriate emotions during training and at the Olympic Games.

One can speculate that the factors which were perceived to discriminate between the world-leading and world-class coaches are advantageous towards coaching a swimmer to Olympic success. Although future research would help to establish the interaction of these characteristics and infer causality, the findings in this thesis can inform coach development programs to help coaches improve and enhance their performance, with the ultimate aim of delivering Olympic gold medals.

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Appendix A

Questionnaire (1 of 4)

Good to Great Project

How am I in general...

Here are a number of characteristics that may or may not apply to you. For example, do you agree that you are someone who *likes to spend time with others*?

Please rate the extent to which you disagree or agree with each of the statements below (*please circle*).

I am someone who...

	1 Disagree Strongly	2 Disagree a little	3 Neither agree nor disagree	4 Agree a little	5 Agree strongly
1. Is talkative	1	2	3	4	5
2. Tends to find fault in others	1	2	3	4	5
3. Does things carefully and completely	1	2	3	4	5
4. Is depressed, blue	1	2	3	4	5
5. Is original, comes up with new ideas	1	2	3	4	5
6. Is reserved; keeps thoughts and feelings to self	1	2	3	4	5
7. Is helpful and unselfish with others	1	2	3	4	5
8. Can be somewhat careless	1	2	3	4	5
9. Is relaxed, handles stress well	1	2	3	4	5
10. Is curious about many different things	1	2	3	4	5
11. Is full of energy	1	2	3	4	5
12. Starts quarrels with others	1	2	3	4	5
13. Is a reliable worker	1	2	3	4	5
14. Can be tense	1	2	3	4	5
15. Is clever, thinks a lot	1	2	3	4	5

	1 Disagree Strongly	2 Disagree a little	3 Neither agree nor disagree	4 Agree a little	5 Agree strongly
16. Generates a lot of enthusiasm	1	2	3	4	5
17. Has a forgiving nature	1	2	3	4	5
18. Tends to be disorganized	1	2	3	4	5
19. Worries a lot	1	2	3	4	5
20. Has an active imagination	1	2	3	4	5
21. Tends to be quiet	1	2	3	4	5
22. Is generally trusting	1	2	3	4	5
23. Tends to be lazy	1	2	3	4	5
24. Doesn't get easily upset, emotionally stable	1	2	3	4	5
25. Is creative and inventive	1	2	3	4	5
26. Takes charge, has an assertive personality	1	2	3	4	5
27. Can be cold and distant with others	1	2	3	4	5
28. Keeps working until things are done	1	2	3	4	5
29. Can be moody	1	2	3	4	5
30. Likes artistic and creative experiences	1	2	3	4	5
31. Is sometimes shy, inhibited	1	2	3	4	5
32. Is considerate and kind to almost everyone	1	2	3	4	5
33. Does things efficiently (quickly and correctly)	1	2	3	4	5
34. Remains calm in tense situations	1	2	3	4	5
35. Prefers work that is the same every time (routine)	1	2	3	4	5
36. Is outgoing, sociable	1	2	3	4	5
37. Is sometimes rude to others	1	2	3	4	5

Appendix B

Questionnaire (2 of 4)

Good to Great Project

Please rate the extent to which you agree or disagree with each of the statements below (*please circle*).

Some of these questions might be very difficult to answer, but please indicate what you think might be the case.

	1 Disagree Strongly	2 Disagree a little	3 Neither agree nor disagree	4 Agree a little	5 Agree strongly
1. I know when to speak about my personal problems to others.	1	2	3	4	5
2. When I am faced with obstacles, I remember times I faced similar obstacles and overcame them.	1	2	3	4	5
3. I expect that they will do well on most things they try.	1	2	3	4	5
4. Other people find it easy to confide in me.	1	2	3	4	5
5. I find it hard to understand non-verbal messages from other people.	1	2	3	4	5
6. Some of the major events of my life have led them to re-evaluate what is important and not important.	1	2	3	4	5
7. When my mood changes, I see new possibilities.	1	2	3	4	5
8. Emotions are one of the things that make my life worth living.	1	2	3	4	5
9. I am aware of their emotions as they experience them.	1	2	3	4	5
10. I expects good things to happen.	1	2	3	4	5
11. I like to share their emotions with others.	1	2	3	4	5

	1 Disagree Strongly	2 Disagree a little	3 Neither agree nor disagree	4 Agree a little	5 Agree strongly
12. When I experience a positive emotion, I know how to make it last.	1	2	3	4	5
13. I arrange events others enjoy.	1	2	3	4	5
14. I seek out events that make me happy.	1	2	3	4	5
15. I am aware of the non-verbal messages that I send to others.	1	2	3	4	5
16. I present myself in a way that makes a good impression on others.	1	2	3	4	5
17. When I am in a positive mood, solving problems is easy for me.	1	2	3	4	5
18. By looking at their facial expressions, I can recognize the emotions people are experiencing.	1	2	3	4	5
19. I know why my emotions change.	1	2	3	4	5
20. When I am in a positive mood, I am able to come up with new ideas.	1	2	3	4	5
21. I have control over my emotions.	1	2	3	4	5
22. I can easily recognize my emotions as I experience them.	1	2	3	4	5
23. I motivate myself by imagining a good outcome on the tasks I take on.	1	2	3	4	5
24. I compliment others when they have done something well.	1	2	3	4	5
25. I am aware of the non-verbal messages other people send.	1	2	3	4	5
26. When another person tells me about an important event in his or her life, I almost feel as though I have experienced this event myself.	1	2	3	4	5

Appendix C

Questionnaire (3 of 4)

Good to Great Project

Please rate the extent to which each statement below is either true or untrue for you (*please circle*).

	0 Not at all true	1 Slightly true	2 Quite true	3 Completely true
1. Most of my life is spent doing things that are meaningful.	0	1	2	3
2. By working hard you can nearly always achieve your goals.	0	1	2	3
3. I don't like to make changes in my regular activities.	0	1	2	3
4. I feel that my life is somewhat empty of meaning.	0	1	2	3
5. Changes in routine are interesting to me.	0	1	2	3
6. How things go in my life depends on my own actions.	0	1	2	3
7. I really look forward to my work activities.	0	1	2	3
8. I don't think there's much I can do to influence my own future.	0	1	2	3
9. I enjoy the challenge when I have to do more than one thing at a time.	0	1	2	3
10. Most days, life is really interesting and exciting for me.	0	1	2	3
11. It bothers me when my daily routine gets interrupted.	0	1	2	3
12. It is up to me to decide how the rest of my life will be.	0	1	2	3
13. Life in general is boring for me.	0	1	2	3
14. I like having a daily schedule that doesn't change very much.	0	1	2	3
15. My choices make a real difference in how things turn out in the end.	0	1	2	3

Appendix D

Questionnaire (4 of 4)

Good to Great Project

Please rate how much you disagree or agree with each of the statements below (*please circle*).

	1 Disagree Strongly	2 Disagree a little	3 Neither agree nor disagree	4 Agree a little	5 Agree strongly
1. I tend to manipulate others to get my way.	1	2	3	4	5
2. I have used deceit or lied to get my way.	1	2	3	4	5
3. I have used flattery to get my way.	1	2	3	4	5
4. I tend to exploit others towards my own end.	1	2	3	4	5
5. I tend to lack remorse.	1	2	3	4	5
6. I tend not be too concerned with morality or the morality of my actions.	1	2	3	4	5
7. I tend to be callous or insensitive.	1	2	3	4	5
8. I tend to be cynical.	1	2	3	4	5
9. I tend to want others to admire me.	1	2	3	4	5
10. I tend to want others to pay attention to me.	1	2	3	4	5
11. I tend to seek prestige or status.	1	2	3	4	5
12. I tend to expect special favors from others.	1	2	3	4	5

Appendix E

Biographical Questionnaire

Good to Great Project

Please answer the following questions:

Date of Birth: Gender (please tick): Male ☐ Female ☐

Relationship status (please tick):

Married ☐ Civil Partnership ☐ Divorced ☐ Widowed ☐

In a relationship ☐ Single ☐

Do you have any children (please tick): Yes ☐ No ☐

If yes, how many (please tick):

1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐

What is your highest academic qualification (please tick):

Standard Grades ☐ GCSE ☐ Highers ☐ A Level ☐

O Level ☐ IB ☐ NVQ ☐

Bachelors Degree ☐ Masters Degree ☐ Doctoral Degree ☐

Other (please state)

What was the highest level that you got to as an athlete (please tick):

Recreational ☐ Regional ☐ National ☐ International ☐ Olympic ☐

Please state the sport that you referred to above:

How many swimmers have you coached to....:

Olympic Games ☐ An Olympic medal ☐ An Olympic Gold medal ☐

Please name the swimmers (and the Olympic year) that you have coached to....:

Olympic Games

An Olympic medal

An Olympic gold medal

From the time you first started coaching swimming, how many years...:

Have you been coaching to date

Did it take you to get your first full-time coaching position

Have you been working with Olympic level swimmers

Did it take until a swimmer you were coaching won an Olympic medal

Did it take until a swimmer you were coaching won an Olympic Gold medal

Appendix F

Questionnaire (1 of 4)

Good to Great Project - Swimmer

How is your coach in general...

Here are a number of characteristics that may or may not apply to your coach. For example, do you agree that they are someone who *likes to spend time with others*?

Please rate the extent to which you disagree or agree with each of the statements below (*please circle*).

Your coach is someone who...	1 Disagree Strongly	2 Disagree a little	3 Neither agree nor disagree	4 Agree a little	5 Agree strongly
1. Is talkative	1	2	3	4	5
2. Tends to find fault in others	1	2	3	4	5
3. Does things carefully and completely	1	2	3	4	5
4. Is depressed, blue	1	2	3	4	5
5. Is original, comes up with new ideas	1	2	3	4	5
6. Is reserved; keeps thoughts and feelings to self	1	2	3	4	5
7. Is helpful and unselfish with others	1	2	3	4	5
8. Can be somewhat careless	1	2	3	4	5
9. Is relaxed, handles stress well	1	2	3	4	5
10. Is curious about many different things	1	2	3	4	5
11. Is full of energy	1	2	3	4	5
12. Starts quarrels with others	1	2	3	4	5
13. Is a reliable worker	1	2	3	4	5
14. Can be tense	1	2	3	4	5
15. Is clever, thinks a lot	1	2	3	4	5

44. Knows a lot about art, music, or books

Appendix G

Questionnaire (2 of 4)

Good to Great Project - Swimmer

Please rate the extent to which you agree or disagree with each of the statements below (*please circle*).

Some of these questions might be very difficult to answer, but please indicate what you think might be the case.

	1 Disagree Strongly	2 Disagree a little	3 Neither agree nor disagree	4 Agree a little	5 Agree strongly
1. Your coach knows when to speak about their personal problems to others.	1	2	3	4	5
2. When your coach is faced with obstacles, they remember times they faced similar obstacles and overcame them.	1	2	3	4	5
3. Your coach expects that they will do well on most things they try.	1	2	3	4	5
4. Other people find it easy to confide in your coach.	1	2	3	4	5
5. Your coach finds it hard to understand non-verbal messages from other people.	1	2	3	4	5
6. Some of the major events of your coach's life have led them to re-evaluate what is important and not important.	1	2	3	4	5
7. When your coach's mood changes, they see new possibilities.	1	2	3	4	5
8. Emotions are one of the things that make your coach's life worth living.	1	2	3	4	5
9. Your coach is aware of their emotions as they experience them.	1	2	3	4	5
10. Your coach expects good things to happen.	1	2	3	4	5
11. Your coach likes to share their emotions with others.	1	2	3	4	5

Appendix H

Questionnaire (3 of 4)

Good to Great Project - Swimmer

Please rate the extent to which each statement below is either untrue or true for your coach
(*please circle*).

Some of these questions might be very difficult to answer, but please indicate what you think might be the case.

	0 Not at all true	1 Slightly true	2 Quite true	3 Completely true
1. Most of their life is spent doing things that are meaningful.	0	1	2	3
2. By working hard your coach can nearly always achieve their goals.	0	1	2	3
3. They don't like to make changes in their regular activities.	0	1	2	3
4. Your coach feels that life is somewhat empty of meaning.	0	1	2	3
5. Changes in routine are interesting to your coach.	0	1	2	3
6. How things go in their life depends on their own actions.	0	1	2	3
7. They really look forward to their work activities.	0	1	2	3
8. Your coach doesn't think there's much they can do to influence their own future.	0	1	2	3
9. Your coach enjoys the challenge when they have to do more than one thing at a time.	0	1	2	3
10. Most days, life is really interesting and exciting for your coach.	0	1	2	3
11. It bothers your coach when their daily routine gets interrupted.	0	1	2	3

12. It is up to your coach to decide how the rest of their life will be.

13. Life in general is boring for your coach.

14. Your coach likes having a daily schedule that doesn't change very much.

15. Their choices make a real difference in how things turn out in the end.

0 Not at all true	1 Slightly true	2 Quite true	3 Completely true
0	1	2	3
0	1	2	3
0	1	2	3
0	1	2	3

Appendix I

Questionnaire (4 of 4)

Good to Great Project - Swimmer

Please rate how much you disagree or agree with each of the statements below (*please circle*).

	1 Disagree Strongly	2 Disagree a little	3 Neither agree nor disagree	4 Agree a little	5 Agree strongly
1. Your coach tends to manipulate others to get their way.	1	2	3	4	5
2. Your coach has used deceit or lied to get their way.	1	2	3	4	5
3. Your coach has used flattery to get their way.	1	2	3	4	5
4. Your coach tends to exploit others towards their own end.	1	2	3	4	5
5. Your coach tends to lack remorse.	1	2	3	4	5
6. Your coach tends not be too concerned with morality or the morality of their actions.	1	2	3	4	5
7. Your coach tends to be callous or insensitive.	1	2	3	4	5
8. Your coach tends to be cynical.	1	2	3	4	5
9. Your coach tends to want others to admire them.	1	2	3	4	5
10. Your coach tends to want others to pay attention to them.	1	2	3	4	5
11. Your coach tends to seek prestige or status.	1	2	3	4	5
12. Your coach tends to expect special favors from others.	1	2	3	4	5

Appendix J

Biographical Questionnaire

Good to Great Project - Swimmer

Please answer the following questions:

Date of Birth:

Gender (please tick): Male

☐

Female

☐

Please state which Olympic Games you have competed at:

Who was your coach when you competed at the Olympic Games:

How many seasons had you been working with them prior to the Olympic Games?

How many Olympic medals have you won, and please state the Olympic year and the event:

How many Olympic gold medals have you won, and please state the Olympic year and the event:

Appendix K



Good to Great Olympic Swimming Coach Study Interview Guide – Coach

Participant number:

Name:

Age:

Gender:

Email(s):

Interview date:

Time begun:

Time ended:

Duration of interview:

Correspondence concerning this interview guide should be addressed to Gillian Cook, School of Sport Exercise, and Health Sciences, Loughborough University, Epinal Way, Loughborough, Leicestershire LE11 3TU, United Kingdom. E-mail: G.M.Cook@lboro.ac.uk

Section One¹

Hello, I'm Gillian Cook, a doctoral researcher and performance psychologist from the School of Sport, Exercise, and Health Sciences at Loughborough University and I'd like to thank you for choosing to participate in this Good to Great Olympic coach swimming study.

The aim of this study is to fully understand who you are, what you do, and how you got to where you are today. This understanding will help us to design the very best coach support programme.

The information from this study will be used in a number of ways:

1. To help improve the quality of coaching support and education that coaches receive, and ensure it is at the highest international standard.
2. To contribute to an academic degree (i.e., PhD) of the researcher, part of which is to write a research paper to be published in an international peer-reviewed journal.

Evidence shows that independent studies of this type provide the most robust and effective platform to initiate positive changes. Hence, the overall aim of this study and its associated promotion is to help build a world-class coaching programme, which will help towards successful performances at the Olympic Games.

There are a couple of things you need to keep in mind throughout our discussions:

1. I will be asking you about what you do or have done in your capacity as a coach. Whilst the focus is on your current situation, answering the questions may well involve thinking back to events and incidents that have occurred throughout your career. You might not be able to immediately remember some things but take your time and pauses are fine. If you cannot remember after trying to think back, then just let me know, but please do not guess.
2. When you are answering the questions, keep in mind that we are interested what you do, both in and out of the competitive arena. So in your answers you can draw on any and all aspects of your life. This could include things such as issues in training, jobs, relationships or anything else that is relevant to what helped you become the coach you are today.

I would like to confirm the following with you:

1. All the information you provide me with will remain completely confidential. In the presentation of the results I may use selected quotes to illustrate important ideas. These will be strictly anonymous and participants' identities are protected.
2. I will be using an audio recording device to get accurate information to make a typed transcript for later reference.
3. Your participation is entirely voluntary and you are free to decline to answer any questions or stop the discussions at any point.
4. There are no right or wrong answers. I hope you will answer the questions honestly and openly. If there are any questions that you are not comfortable answering please simply state "no comment" and I will move onto the next question.
5. The interview itself will take about 90 minutes but the answers you give will help towards successful performances at the Olympic Games.
6. If you have any questions as we go along, please ask them at the time.

¹ Not recorded on tape.

Do you have any questions about what I have talked about so far? If you have any questions as we go along please ask them if at any time you do not understand what I am asking and need some clarification. Can you please sign this written informed consent and then we can begin.

Section Two- Written Informed Consent

I fully understand all of the above and willingly volunteer to participate in this study. I am aware that I can withdraw this consent at anytime.

Signature:

Print name:

Date:

Section Three²

	Interview questions	Participant probes
3.1	When and how did you first get involved in swimming?	
3.2	How did you come to be in your current role?	
3.3	Before proceeding to the next section, is there anything you can add concerning what has just been discussed in this section?	

Section Four

Now moving into the main part of the interview, I would like to explore in detail what you do, and how you got to where you are today.

	Interview questions	Participant probes
4.1	What does it take to coach [a swimmer to the Olympics and/or a swimmer to an Olympic bronze or silver medal, a swimmer to an Olympic gold medal]?	In your opinion, what are the keys to repeatedly coaching a swimmer to...[Olympic medals]? How do you maintain motivation, learning? What did/do you do? What did you think about that? What would be an example of that?
4.2	What personal traits have allowed you to develop into... [a swimmer to the Olympics and/or a swimmer to an Olympic bronze or silver medal, a swimmer to an Olympic gold medal]?	What would be an example of that?
4.3	What are the things that distinguish you from other coaches?	What do you see that makes you different? What's your brand?
4.4	How do you get your message across to your swimmers?	How do you change someone's behaviors? How do you give feedback?

² Recorded on Tape

		How do you demonstrate and explain skills? Encouragement?
4.5	What is your vision?	Your overall purpose/aim
4.6	What motivates you the most?	What do you mean by that?
4.7	What are your values?	Values are how you live your life – what things do you value in your life - examples – honest, trustworthy.
4.8	What behaviors do you think you display?	What do you do? What are your habits? Do you have any behaviors or characteristics that society would normally frown upon?
4.9	How do you create the conditions to help your swimmer? What conditions do you try to create?	What did/do you do?
4.10	What is the culture like at training? How do things feel around training? How do you try to make things feel around your swimmer?	What did/do you do?
4.11	Do you do things differently at different times, and do you think that makes a difference?	What would be an example of that? Example – Different things in training at different times.
4.12	How would you describe your coaching style?	What did/do you do? What would be an example of that?
4.13	What do you think your swimmers want from you in training, and what do you think they want from you in competition?	What do you mean by that? What would be an example of that?
4.14	What balance do you strike between nurturing the swimmers performance, and nurturing the whole person?	What do you see your role as?
4.15	How has your relationship/interactions with X evolved or changed over time?	What do you mean by that? What would be an example of that?
4.16	Can you tell me the different skills you use to help create and maintain those relationships?	What did/do you do? What would be an example of that?
4.17	What are 2 or 3 examples of the best things you have done as a coach?	What do you mean by that?
4.18	What is an example of the worst thing you have done as a coach?	What do you mean by that?

4.19	What qualities does your swimmer have that make you look better?	What do you mean by that? What would be an example of that?
4.20	How do you engage/influence swimmers?	What do you mean by that? What would be an example of that?
4.21	Do you think you got lucky with your swimmers?	Do you think you then attracted swimmers because you coached X?
4.22	Why do you think X swimmers chose to come and swim with you?	What do you mean by that?
4.23	Is there anything in your environment that you think has helped you become successful?	Facilities, resources, funding?
4.24	What has the role of your social network (friends and family) been in your success?	What do you mean by that? What would be an example of that?
4.25	How do you see your context differing from other?	What do you mean by that? What would be an example of that?
4.26	Can you describe how you cope with the pressure, and deal with the inevitable setbacks, that come with being an Olympic swimming coach?	What did you do?
4.27	Before proceeding to the next section, is there anything you can add concerning what has just been discussed in this section?	

Section Five

Okay, this just about completes the interview. However, before we finish, let me ask you some final questions.

	Interview questions
5.1	How do you think the interview went?
5.2	Did you feel you could give your opinions and views fully?
5.3	Did I lead you or influence your responses in any way?
5.4	Finally, is there anything that we haven't talked about that you believe contributed to you becoming a successful coach?

Thank you for helping out with this interview study.

Appendix L



Good to Great Olympic Swimming Coach Study Interview Guide – Swimmer

Participant number:

Name:

Age:

Gender:

Email(s):

Interview date:

Time begun:

Time ended:

Duration of interview:

Correspondence concerning this interview guide should be addressed to Gillian Cook, School of Sport Exercise, and Health Sciences, Loughborough University, Epinal Way, Loughborough, Leicestershire LE11 3TU, United Kingdom. E-mail: G.M.Cook@lboro.ac.uk

Section One¹

Hello, I'm Gillian Cook, a doctoral researcher and performance psychologist from the School of Sport, Exercise, and Health Sciences at Loughborough University and I'd like to thank you for choosing to participate in this Good to Great Olympic coach swimming study.

The aim of this study is to fully understand your coach. Your thoughts about who they are, what they do, and how they got to where you are today. This understanding will help us to design the very best coach support programme.

The information from this study will be used in a number of ways:

1. To help improve the quality of coaching support and education that coaches receive, and ensure it is at the highest international standard.
2. To contribute to an academic degree (i.e., PhD) of the researcher, part of which is to write a research paper to be published in an international peer-reviewed journal.

Evidence shows that independent studies of this type provide the most robust and effective platform to initiate positive changes. Hence, the overall aim of this study and its associated promotion is to help build a world-class coaching programme, which will help towards successful performances at the Olympic Games.

There are a couple of things you need to keep in mind throughout our discussions:

3. I will be asking you about what you do or have done in your capacity as a swimmer working with [coach's name]. Whilst the focus is on your current situation, answering the questions may well involve thinking back to events and incidents that have occurred throughout your career. You might not be able to immediately remember some things but take your time and pauses are fine. If you cannot remember after trying to think back, then just let me know, but please do not guess.
4. When you are answering the questions, keep in mind that we are interested what your coach does/did, both in and out of the competitive arena. So in your answers you can draw on any and all aspects of your life. This could include things such as issues in training, jobs, relationships or anything else that is relevant to your thoughts about [coach's name].

I would like to confirm the following with you:

7. All the information you provide me with will remain completely confidential. In the presentation of the results I may use selected quotes to illustrate important ideas. These will be strictly anonymous and participants' identities are protected.
8. I will be using an audio recording device to get accurate information to make a typed transcript for later reference.
9. Your participation is entirely voluntary and you are free to decline to answer any questions or stop the discussions at any point.
10. There are no right or wrong answers. I hope you will answer the questions honestly and openly. If there are any questions that you are not comfortable answering please simply state "no comment" and I will move onto the next question.
11. The interview itself will take about 90 minutes but the answers you give will help towards successful performances at the Olympic Games.
12. If you have any questions as we go along, please ask them at the time.

¹ Not recorded on tape.

Do you have any questions about what I have talked about so far? If you have any questions as we go along please ask them if at any time you do not understand what I am asking and need some clarification. Can you please sign this written informed consent and then we can begin.

Section Two- Written Informed Consent

I fully understand all of the above and willingly volunteer to participate in this study. I am aware that I can withdraw this consent at anytime.

Signature:

Print name:

Date:

Section Three²

	Interview questions	Participant probes
3.1	Can you briefly describe how you first get involved in swimming, and how you came to be where you are today?	
3.2	Before proceeding to the next section, is there anything you can add concerning what has just been discussed in this section?	

Section Four

Now moving into the main part of the interview, I would like to explore in detail what your coach does.

	Interview questions	Participant probes
4.1	What does it take from [coach's name] to get you to...[swim at the Olympics and/or an Olympic bronze or silver medal, an Olympic gold medal]?	In your opinion, what are the keys to repeatedly coaching a swimmer to...[Olympic medals]? How do they maintain motivation, learning? What did they/do they do? What would be an example of that?
4.2	What personal traits have allowed [coach's name] to develop into...[an Olympic coach and/or a coach that has coached a swimmer to an Olympic medal, a coach that has coached a swimmer to an Olympic gold medals]	What would be an example of that?
4.3	How has your coach's decision making changed over time?	
4.4	What are the things that distinguish [coach's name] from other coaches?	What do you see that makes them different? What's their brand?
4.5	How does [coach's name] get messages across to you?	How to they teach/instruct you? How did they change your behaviors? How do they

² Recorded on Tape

		give feedback? How do they demonstrate and explain skills?
4.6	What do you think [coach's name] vision is?	Their overall purpose/aim - e.g I'm going to coach the best swimmer.
4.7	What do you think motivates [coach's name] the most?	What do you mean by that?
4.8	What are [coach's name] values?	Values are how you live your life – what things do they value in their life - examples – success, hard work, honest, trustworthy.
4.9	What behaviors does [coach's name] display?	What do they do? What are their habits? Do they have any behaviors or characteristics that society would normally frown upon?
4.10	How does [coach's name] create the conditions to help you? What conditions do they try to create?	What did/do they do?
4.11	What is the culture like at training? How do things feel around training? How do they try to make things feel around you?	What did/do they do?
4.12	Do they do things differently at different times, and do you think that makes a difference?	What would be an example of that? Example – Different things in training at different times.
4.13	How would you describe [coach's name] coaching style?	What did/do they do? What would be an example of that?
4.14	What do/did you want from [coach's name] in training, and what do you want from your coach in competition?	What do you mean by that? What would be an example of that?
4.15	What balance does [coach's name] strike between nurturing your swimming performance, and nurturing you as a whole person?	What do you see their role as?
4.16	How has your relationship/interactions with [coach's name] evolved or changed over time?	What do you mean by that? What would be an example of that?
4.17	Can you tell me the different skills you think they used to help create and maintain those relationships?	What did/do they do? What would be an example of that?
4.18	What are 2 or 3 examples of the best things [coach's name] has done as a coach?	What do you mean by that?

4.19	What is an example of the worst thing [coach's name] has done as a coach?	What do you mean by that?
4.20	What qualities do you have that make your coach look better?	What do you mean by that? What would be an example of that?
4.21	How does [coach's name] engage/influence you?	What do you mean by that? What would be an example of that?
4.22	Do you think [coach's name] got lucky with their swimmers?	Do you think you then attracted swimmers because they coached you?
4.23	Why did you chose to come and swim with [coach's name]?	What do you mean by that?
4.24	Is there anything in [coach's name] environment that you think has helped them to become successful?	Facilities, resources, funding?
4.25	What has the role of your coach's social network (friends and family) been in your success?	What do you mean by that? What would be an example of that?
4.26	How do you see your coach's context differing from others?	What do you mean by that? What would be an example of that?
4.27	Can you describe how [coach's name] copes with the pressure, and deals with the inevitable setbacks that come with being a Olympic swimming coach?	What do they do? What is an example of that?
4.28	Before proceeding to the next section, is there anything you can add concerning what has just been discussed in this section?	

Section Five

Okay, this just about completes the interview. However, before we finish, let me ask you some final questions.

	Interview questions
5.1	How do you think the interview went?
5.2	Did you feel you could give your opinions and views fully?
5.3	Did I lead you or influence your responses in any way?
5.4	Finally, is there anything that we haven't talked about that you believe contributed to you becoming a successful coach?

Thank you for helping out with this interview study