UNIVERSITY OF WINCHESTER

Facilitating performance under pressure: Exploring the nature of coping strategies used across various performance domains to manage stress

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ABSTRACT

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In various performance domains, individuals are expected to perform at optimal standards under the influence of psychological pressure. When performing under psychological pressure, individuals are susceptible to experiencing psychological and physiological stress states that can either benefit or impair performance. To successfully perform the cognitive and / or motor skills required for optimal performance under pressure, individuals in different domains are required to have the self-regulatory capabilities to cope with stress. While there is a wealth of research regarding coping across performance domains, there is a scarcity of research that compares the nature of coping strategies used by individuals who operate in different high-pressure domains. Therefore, the purpose of this study was to explore the nature of coping strategies used by expert performers from several high-pressure domains to manage stress and facilitate performance under pressure. Seven expert performers (5 male and 2 female) were purposely selected from surgical, military, law enforcement, music, and sport performance domains. Participants were interviewed on an individual basis, to explore lived experiences of coping strategies used to manage stress when facilitating performance under pressure. Interpretative phenomenological analysis was used to theme the response data. Eight superordinate themes emerged from the data: perceived challenges, preparedness, personal responsibility, adaptability, support mechanisms, individual factors, perceived coping effect, and coping strategy development. Findings are discussed in relation to associated theoretical application, and the implications of inter-professional learning for psychologists working in different high-pressure performance domains.

Keywords: [Psychology, Performance, Pressure, Stress, Coping, Inter-professional, Psychologist]

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CHAPTER 1 - INTRODUCTION

The forthcoming chapter will, firstly, introduce the background context to the current research study. Secondly, a rational for the current research study will be provided, which details the proposed research territory. The final section will identify the aim of the current study and how the research will be conducted.

1.1 Background Context

Performance pressure is ubiquitous in various domains such as the military, law enforcement, emergency medicine, sport, and music; whereby individuals are expected to perform at optimal levels when experiencing pressure pertinent to job roles (Cocks, Moulton, Luu, & Cil, 2014; Vickers & Lewinski, 2012; Wagstaff & Leach, 2015). Considering the meaning of performance, Baumeister and Showers (1986) offer a broad and situational perspective by defining performance as any situation requiring an individual to successfully conduct a task at an optimal standard. Offering a narrower perspective of performance in a sporting context, Thomas, French and Humphries (1986) define performance as the combination of a performer's ability to produce the required skills (physical or cognitive) with their cognitive knowledge regarding the situation being experienced and that of past experiences.

Although Thomas et al's. (1986) definition of performance is provided in a sporting context, it could be argued that it is relatable to most high-pressure performance domains, due to the similarities in cognitive processes required for optimal performance. Indeed, research completed across performance domains accentuates that similar cognitive processes operate to aid the effective execution of skilled performance under perceived pressure (Burke, 2010; Cocks et al., 2014; Cotterill, 2015; Wagstaff & Leach, 2015), whether the goal is to produce an optimal mindset (e.g., Gould, Dieffenbach, & Moffet, 2002; Kao, Huang, & Hung, 2013) and / or faultless motor skills (Singer, 2002).

Of significance, performance is closely associated with psychological pressure. Specifically, performers' perceptions of personally important and challenging situations can evoke a desire to perform at optimal levels, which is otherwise known as performance pressure (Baumeister, 1984; Beilock & Carr, 2001; Hardy, Mullen, & Jones, 1996). Importantly, performance pressure can be appraised by an individual as being positive; for example, an individual can appraise performance pressure as an opportunity, which may subsequently increase motivation to achieve a set goal (Wallace, Baumesiter, & Vohs, 2005). In

contrast, performance pressure can also be appraised negatively by an individual, due to the various stressors associated with perceptions of performance pressure (Noblet & Gifford, 2002). Crucially, if individuals are incapable of regulating physiological and psychological stress states generated by pressure, they might under-perform (DeCaro, Thomas, Albert, & Beilock, 2011) or choke under pressure (Baumesiter, 1984). Therefore, to successfully perform under pressure, individuals require the self-regulatory capabilities to cope with stress (Nicholls, Polman, Morley, & Taylor, 2009), by adopting various coping strategies to manage stress-induced psychological and physiological states (Duhachek & Kelting, 2009).

1.2 Rationale

Although the importance of coping is acknowledged across various high-pressure domains, to date there is a paucity of research that explores comparisons of how expert performers from different performance domains, cope with pressure to produce optimal performance. Notably, Cotterill (2015) emphasised how a unique perspective of performance psychology can be developed from research that explores the experiences of performers across different domains. In relation to this unique perspective, there is a growing interest in research comparing the psychology of performance across various high-pressure performance domains. For example, comparing the military and sport (e.g., DeWiggins, Hite, & Alston, 2010; Fiore, Hoffman, & Salas, 2008; Fitzwater, Arthur, & Hardy, 2018; Goodwin, 2008; Hammermeister, Pickering, & Lennox, 2011; Wagstaff & Leach, 2015; Ward et al., 2008); comparing surgery and sport (e.g., Cocks et al., 2014); comparing emergency first-responder domains (e.g., Arble & Arnetz, 2017; Larsson, Berglund, & Ohlsson, 2016); comparing music, arts, medical and sport domains (e.g., Cotterill, 2015); and comparing high achievers in eleven professional domains (e.g., Sarkar & Fletcher, 2014a).

However, few studies have compared the coping strategies adopted by individuals to perform under pressure. For example, Cotterill (2015) explored how performers from various performance domains (e.g., performing arts, musical, sports, and medical domains) prepared for performance under pressure. Also, Arble and Arnetz (2017) surveyed coping methods used by first-responders in several domains (e.g., coast guard, customs control, military, police, fire services, and emergency medical services). Finally, Sarkar and Fletcher (2014a) explored the qualities that enable high achieving performers from eleven different domains to develop resilient qualities to thrive under pressure.

Of further significance to the current study, when considering coping strategies that facilitate performance under pressure, Cotterill (2017) indicates there is a scarcity of research that explores the *nature* of performance-specific coping strategies, how they work, and how to best develop their implementation.

1.3 Aim of the Research

To address the short supply of research regarding the nature of performance-specific coping strategies highlighted by Cotterill (2017), and the paucity of research that explores coping across different performance domains, the current study aims to: *explore the nature of coping strategies used to manage stress and facilitate performance under pressure across various high-pressure performance domains.*

Interpretative phenomenological analysis (IPA) is adopted as the preferred methodological approach to explore the lived experiences of expert performers who are required to perform under pressure, including: surgeons, military personnel, a professional music composer, a police officer, and an elite athlete. Of further significance to the aim of the research, learning from the experiences and perspectives of expert performers can garner a greater understanding of the following: first, the nature of coping strategies used across various performance domains to manage stress and facilitate performance under pressure. Second, the inter-professional transferability of coping strategies to enhance the performance of individuals and / or teams under pressure (i.e., opportunities for inter-professional learning between psychologists working in different high-pressure performance domains). Finally, ways to potentially reduce the amount of time for novices to become expert performers (Cotterill, 2015).

CHAPTER 2 - LITERATURE REVIEW

Coping is aligned with the extant stress literature, thus, the forthcoming literature review aims to: 1) Define and conceptualise stress; 2) Review stressors experienced across performance domains; 3) Explore the effects of stress on performance; 4) Define and conceptualise coping; 5) Compare coping with resilience and mental toughness; 6) Explore classifications of coping; 7) Review of coping literature in different performance domains; 8) Review psychological research across performance domains; 9) Explore research associated with how coping strategies are developed; and finally, a summary of the section will be offered, proceeded by the research questions for the current study.

2.1 Stress Defined and Conceptualised

Previously, Selye (1980, p.7) defined stress as the "nonspecific result of any demand upon the body", which was based on an endocrinological foundation, focusing on bodily changes such as adrenal gland enlargement and the degeneration of the thymus-lymphatic system. However, the definition is somewhat broad and to some extent meaningless, as stress research has shifted from medicine to the field of psychology (Salas, Driskell, & Hughes, 2013). Alternative definitions of stress have focused on the stimulus (e.g., Janis & Mann, 1977) or the response (e.g., Ivancevich & Matteson, 1980).

However, due to dissatisfactions of definitions founded on either the stimulus (i.e., the focus is on the environmental demands) or response (i.e., the focus is on the response of the individual)**,** emerging psychological definitions emphasised the relational process between the person and the environment (Salas et al., 2013). Indeed, the transactional framework of stress (Lazarus & Folkman, 1984), viewed as the predominant concept of stress, provides a "causal pathway between the individual and the environment, which is absent from more traditional definitions of stress" (Dewe, O'Driscoll, & Cooper, 2010, p.4).

When considering the transactional framework of stress, Lazarus and Folkman (1984) defined stress as an imbalance between an individual's constant appraisals of environmental demands and the specific resources available to cope with the demands. Furthermore, Lazarus and Folkman (1984) posited that two forms of appraisal (primary and secondary appraisal) harness the relational foundation between the person – environment and the stress process.

Primary appraisal is concerned with any occurrence discerned to be relevant to values, beliefs, contextual intentions, and importantly goal commitments (Nicholls & Polman, 2007). When a person has judged a situation to be of importance, subsequently they provide a specific meaning to the encounter, which could comprise of the following: threat (e.g., chance of future damage); harm/ loss (e.g., damage that has already happened); challenge (e.g., excitement about a forthcoming struggle); or benefit (e.g., it is recognised the stressful situation may lead to personal gain or benefit) (Nicholls & Polman, 2007).

Secondary appraisal comprises a cognitive-evaluative process where a person evaluates whether they have the available resources to respond to situational demands (Lazarus & Folkman, 1984). Once the secondary appraisal is complete, a third stage of the process involves the individual conducting the response, which is recognised as coping (Carver, Scheier, & Weintraub, 1989). Importantly, the transactional process should be viewed as a dynamic process, as opposed to a linear one, because an outcome from one stage of the process may change a preceding part of the process (Carver et al., 1989). Indeed, primary appraisal is not necessarily independent of secondary appraisal (Lazarus, 1999). For example, if at the secondary appraisal level an individual perceives that they have the coping resources to provide a sufficient response to a perceived threat, they may reappraise the situation as non-threatening (i.e., change the primary appraisal).

Adapting relational processes to stress (e.g., Lazarus & Folkman, 1984; Martens, 1977), Salas et al. (2013, p.6) defined stress in relation to performance as "a process by which certain environmental demands (i.e., performing in front of others, taking an examination, industrial noises) evoke an appraisal process in which perceived demands exceeds resources and results in undesirable physiological, psychological, behavioural, or social outcomes."

Additionally, Salas et al. (2013) produced a heuristic model of the stress process (figure 1) that considers stress in relation to performance and outcomes. First, the model consists of the introduction of environmental stimuli (e.g., task load). Second, the existence of a threat from the environment results in primary and secondary appraisal processes (e.g., Lazarus & Folkman, 1984). Consequently, the appraisal process ignites performance expectations (i.e., feelings of self-efficacy or mastery). Crucially, if environmental demands are deemed to exceed perceived resources, negative performance expectations are developed. In contrast, if the perceived resources available exceed the environmental demands and perceived threat, positive performance expectations are formed. Finally, the stress experienced results

in various outcomes including: physiological, emotional, social, cognitive, and performance outcomes (Salas et al., 2013).

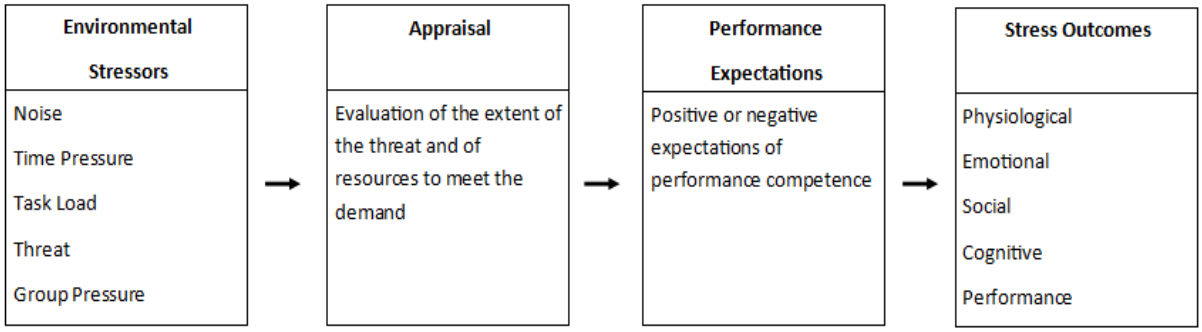

Figure 1. Heuristic model of the stress process (Salas et al., 2013)

Considering the model of the stress process presented by Salas et al. (2013) in figure 1, the next section in this chapter will explore the environmental stressors that could be experienced by performers in the performance domains selected for this study (section 2.2), followed by a section regarding the effects of stress on performance, in relation to the performance domains selected for the current study (section 2.3).

2.2 Stressors Experienced Across Performance Domains

Stressors experienced by performers contribute to perceptions of performance pressure (Cotterill, 2017). Importantly, a range of performance stressors (also referred to as challenges) have been reported in the psychology literature associated with the performance domains selected for the current study. For example, perceived challenges experienced by military personnel may include traumatic events, lack of job stimulation, ambiguity, responsibility, and overload (Day & Livingstone, 2001), the possibility of death, endangering fellow soldiers, being captured, element of surprise, and being isolated from comrades (Jensen & Wrisberg, 2014).

In addition, police officers face a variety of challenges in what is deemed a highly stressful occupation (Ortega, Brenner, & Leather, 2007). Thus, perceived challenges may include: facing unpredictable situations, encountering situations that could lead to injury, confronting someone armed with a weapon (Anshel, Robertson, & Caputi, 1997), physical contact with the public, responding to critical incidents

(Anderson, Litzenberger, & Plecas, 2002) and being under public scrutiny (Anderson, Papazoglu, Nyman, Koskelainen, & Gustafsberg, 2015).

Commonly reported perceived stressors experienced by surgeons have included: complex and rarely performed cases, operating on high-risk patients, distractions or interruptions to surgery, teamwork issues, unexpected surgical complications, equipment and resource issues, time pressures, and personal factors (e.g., tiredness) (Anton, Montero, Hawley, Brown, & Stefanidis, 2015; Arora et al., 2010; Wetzel et al., 2006; Wiegmann, ElBardissi, Dearani, Daly, & Sundt lll, 2007).

Associated with music performance anxiety (MPA), perceived challenges experienced by musicians have included: inadequate preparation for performance, public presentation and evaluation, difficult repertoire, health issues, bad performance experiences, self-induced pressure, negative thoughts, anxious personality, lack of self-confidence, and excessive physical arousal before-and-during performance (Kenny, 2011; Kenny, Driscoll, & Ackermann, 2014).

Finally, when performing in sport, athletes may experience numerous stressors, ranging from fear, a decline in confidence, sport specific demands, psychological demands (Dale, 2000; Holt & Hogg, 2002; Nicholls, Holt, Polman, 2005), worries relating to the outcomes of competition (Nicholls et al., 2016) expectations from other people, performing poorly in training, and coaches (Nicholls & Levy, 2016).

Importantly, numerous stressors that are common across performance domains have been identified in the sport and performance psychology literature (Cotterill, 2017), which makes it plausible to suggest there could be a core group of stressors that are experienced by performers in different domains (Noblet & Gifford, 2002). For example, common stressors identified from past research include: concerns of under-performing, problems with balancing commitments related to performance and non-performance, and pressure to perform at a high standard (McKay, Niven, Lavallee, & White, 2008).

Notwithstanding the potential that some stressors could commonly be experienced across all performance domains, there could also be distinct stressors experienced by individuals who perform in relatively similar performance contexts. Thus, there could be evidence of stressors that are exclusive to different performance environments (Cotterill, 2017). For example, performers who work in emergency first-response domains (e.g., police, emergency medicine and military) are prone to experiencing the similar stressor of facing life threatening situations (Arble & Arnetz, 2017).

Crucially, garnering a greater understanding of the perceived stressors and challenges experienced by performers in relation to performing under pressure, can also inform how training environments are

created to mimic pressured performance environments. Therefore, by practising in realistic pressured environments, individuals and / or teams could develop contextually relevant performance-specific coping strategies, that ultimately can be transferred to the actual performance environment (Cotterill, 2017).

Of further significance to stressors experienced by performers, previous researchers have acknowledged the importance of understanding the unique holistic viewpoint of an individual's perceptions of stress, when attempting to develop effective coping strategies (McKay et al., 2008; Noblet & Gifford, 2002).

2.3 Effects of Stress on Performance

To note, the effects of stress discussed in the forthcoming section typically align with acute stress, which is intense, occurs suddenly, and lasts for a short duration of time (Salas et al., 2013). However, chronic stress, associated with stress factors that exist in the background of our daily activities, should not be completely disregarded when considering the effects of stress on performance, because the cumulative effect of chronic stressors can also deteriorate performance over time (Salas et al., 2013).

Nevertheless, when experiencing acute stress, an individual may encounter various psychological and physiological responses. In terms of physiological responses, acute stress stimulates both the hypothalamic-pituitary-adrenal axis and the sympathetic nervous system, and subsequently levels of cortisol, alpha-amylase, breathing rate, body temperature and heart rate all increase (Giles, Mahoney, Brunyé, Taylor, & Kanarek, 2014). Due to these physiological changes stress has been associated with increased physiological arousal levels (Hope, 2016); which has also been reframed as "physiological and emotional energy" (Osborne, 2016. p.94).

Although there has long been a disagreement between researchers regarding the "causal directionality" of the stress process, to decipher which reaction comes first between the cognitive, emotional, or physiological reaction (Aldwin, 2007, p.27), some researchers identified that increased physiological and emotional energy may influence psychological processes such as decision-making, mood state (e.g., fear, anxiety, frustration and excitement), attention, memory (Salas et al., 2013), and psychomotor- and perceptual skill performance (Staal, 2004).

Crucially, the physiological and psychological responses identified can influence performance either positively or negatively. Positive effects of stress on performance occur when individuals thrive on

stress and pressure to enhance performance (Sarkar & Fletcher, 2014a). For example, perceived pressure can increase an individual's motivation when seeking to achieve a desired outcome (Wallace et al., 2005).

In contrast, detrimental effects of stress on performance occur due to increased cognitive loads, which deteriorate cognitive performance and perceptual-motor performance (Hope, 2016). For example, in domains such as law enforcement and the military, stress can deteriorate the ability to focus on task requirements, resulting in reduced cognitive control and impaired performance (Delahaij & Gaillard, 2008). In surgery, similar negative effects of stress have been reported. For example, surgeons have reported impaired decision-making ability and fine motor skill performance (Wetzel et al., 2006) leading to greater amounts of errors compromising patients' safety (Arora et al., 2010).

In music and sports performance settings, researchers have focused on how the arousal and anxiety induced from stress effects performance. In music performance, anxiety has reportedly affected performance positively and negatively for musicians of all abilities (Kenny, 2006). Small and manageable amounts of anxiety are deemed beneficial for music performance; however, high amounts of music performance anxiety can induce a stage fright state and impede fine motor skills required for performance, due to hyper-elevated muscle tension (Kirchner, Bloom, & Skutnick-Henley, 2008).

Similarly, in sport performance settings, fine motor skills can be negatively affected due to increased muscle tension caused by elevated arousal levels, leading to a performer choking under pressure (Balk, Adriaanse, De Ridder, & Evers, 2013). Conversely, some sports that require power for motor skill performance may benefit from increased anaerobic power outputs associated with increased arousal levels (Parfitt, Jones, & Hardy, 1990).

Of further significance to the effects of stress on performance, Burke, Priest, Salas, Sims and Mayer (2008) indicated that other researchers have argued how stress can impact *team* performance (e.g., Johnston, Driskell, & Salas, 1997; Karau & Kelly, 1992). The argument suggested that an individual operating under stress in a team performance environment, will narrow their attention to focus on performing their personal responsibilities at an optimal standard. Consequently, the individual does not pay attention to other team members, which therefore decreases team situational awareness, and impairs decision making and coordination.

Crucially, in performance settings influenced by the effects of stress, individuals and teams are required to cognitively, behaviourally, and emotionally self-regulate to mitigate the effects of stress, which

involves the key process of coping (Crocker, Tamminen, & Gaudreau, 2015; Lazarus, 1999). The subsequent section in this chapter will define what coping is and will explore coping at the conceptual level.

2.4 Coping Defined and Conceptualised

In a historical context, Schaufeli (2002) highlighted three approaches to coping that have been distinguished by previous researchers, including: the psychodynamic point-of-view; personality traits view; and the transactional approach.

Initially, the psychodynamic approach emerged, and suggested individuals use different techniques (defence mechanisms) to adjust the perception of a stressful event occurring, thus managing any distress caused by it (Dewe at al., 2010; Schaufeli, 2002). Through the development of research exploring various defence mechanisms, suggestions turned toward considering defence mechanisms as a hierarchy that differentiated adaptive / mature defences from maladaptive / immature defences (Parker & Endler, 1996). Research on defence mechanisms has indicated that when individuals encounter an event, they typically prefer to use particular strategies to manage the demands of the event, which suggests certain defence mechanisms may potentially be connected with specific outcomes (Parker & Endler, 1996).

Following the psychodynamic approach, the trait approach centered on links between personality traits and coping (Schaufeli, 2002), identifying a common base between the two (Connor-Smith & Flachsbart, 2007). More specifically, the trait approach is concerned with individuals who use set and preferred methods of coping, regardless of any change in circumstance (Carver et al., 1989). Notably, Suls, David and Harvey (1996) exclaim the trait approach of coping with stress is best understood from the stance that the two constructs of personality and coping overlap but are not tantamount. However, from the studies that have presented parallels between coping and personality (e.g., Houtman, 1990; McWilliams, Cox, & Enns, 2003), there remains limited knowledge regarding how personality facilitates coping (Connor-Smith & Flachsbart, 2007).

Currently, the predominant perspective of coping devised by Lazarus and colleagues, is the transactional approach (Giacobbi et al., 2004; Nicholls & Polman, 2007; Schaufeli, 2002). The transactional approach of coping is defined as “the constantly changing cognitive and behavioural efforts a person makes to

manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person" (Lazarus, 1999, p.110).

The transactional approach emphasised the importance of the relationship between both the environment and the person (Lazarus & Folkman, 1984), meaning coping strategy selection is influenced by the goals sought after by the performer in a specific context (Kristiansen & Roberts, 2010). Crucially, the transactional approach encourages the researcher to explore the cognitive processes connecting an individual to an environment (Dewe & Cooper, 2007) and not merely a reaction to stress (Lazarus & Folkman, 1984).

Although the transactional approach to coping is often deemed to be the predominant approach to coping, it is not without its critics (Dewe et al., 2010). The transactional definition to coping is argued to be limited by Snyder (2001) for the following two reasons: first, attempts to suggest that coping is a conscious process are restrictive, as coping can be an automatic and adaptive process below our level of consciousness. Second, there is ambiguity regarding what constitutes the 'effort' of an individual (Snyder, 2001). However, Snyder (2001) does agree that coping is purposeful in the sense an individual is responding to deal with a perceived stressor.

Another significant conceptual offering to coping, is the Cognitive-Motivational-Relational theory of emotion (CMR), which accentuates the importance of the fundamental relationship concerning stress, coping and emotion (Lazarus, 1999). The theory postulates an individual's cognitive appraisal (relationship between the person – environment) elicits emotions which are deemed motivational toward achieving desired goals (Lazarus, 1999). Interestingly, the CMR theory also suggests there is a 'bi-directional' relationship between emotion and coping, where emotion can influence what coping strategy is adopted in response to stress, and in-turn coping strategies can change the emotional state experienced.

Although both the transactional approach to coping and the CMR pertain to coping at the individual level, there is a growing interest regarding how coping manifests at the interpersonal or team level (Leprince, D'Arripe-Longueville, & Doron, 2018). Of relevance, Lyons, Mickelson, Sullivan and Coyne (1998) argued for the re-conceptualisation of coping to include social functions and processes. More specifically, Lyons et al. (1998) suggested a process of communal coping that occurs at the interpersonal level and involves the cooperative processes in groups to cope with individual and collective stressors, to solve problems (Lyons et al., 1998). Importantly, communal coping is recognised as being distinct to

other forms of individual and social coping processes (e.g., social support), by acknowledging that both the stress appraisal and coping response, are shared interpersonal processes within teams (Lyons et al., 1998).

2.5 Related Concepts to Coping: Resilience and Mental Toughness

To distinguish conceptual clarity, it is worthwhile to briefly discuss some concepts that are often associated with coping. Psychological resilience has been suggested to help individuals to both manage and respond positively to adversity (Bryan, O'Shea, & Macintyre, 2019). Several researchers have indicated the importance of coping when experiencing and dealing with adversity (e.g., Leipold & Greve, 2009; Tugade & Fredrickson, 2004). Indeed, Leipold and Greve (2009) suggested that an individual's resilience and ability to deal with adversity stems from specific coping processes. In contrast, Richardson (2002) elucidates that resilience involves coping processes, which subsequently enables individuals to deal with stressors or adversity.

Although such research highlights how closely aligned resilience and coping are, often with the concepts being used interchangeably, it is important to provide clarity on conceptual distinctions between these two constructs. Importantly, Fletcher and Sarkar (2013) contend that resilience influences *how* a situation is appraised, preceding any emotional and coping response. Conversely, coping refers to the strategies adopted to manage stressors, *proceeding* a stress appraisal (Fletcher & Sarkar, 2013). A further difference between the two constructs relates to how resilience elicits a positive response to a stressor, and in contrast coping may elicit either positive or negative strategies to manage a perceived stressor (Fletcher & Sarkar, 2013).

Of further relevance, the notion of team resilience has emerged from previous research that considered resilience at the interpersonal level. Team resilience is defined as "a dynamic, psychosocial process which protects a group of individuals from the potential negative effects of stressors they collectively encounter" (Morgan, Fletcher, & Sarkar, 2013, p.552). It is suggested that team resilience has theoretical similarities with communal coping, as the conceptualisations of both team resilience and communal coping refer to circumstances where perceived stressors are "acted upon in the context of close relationships" (Tamminen, Crocker, & McEwen, 2014, p. 146).

Another term often associated with coping and resilience is mental toughness. In this case individuals who are mentally tough, exude an ability to continue working toward and achieving goals in psychological circumstances, compared to performers who fail (Cotterill, 2017; Hardy, Ball, & Beattie, 2014). In relation to coping, mental toughness potentially predicts coping success when dealing with stressors in performance contexts (Nicholls, Levy, Polman, & Crust, 2011). Although mental toughness research across various performance domains has gained momentum over the past few decades, there are discrepancies in its conceptualisation, resulting in a lack of consensus in how it is characterised (Cotterill, 2017).

Now that the related concepts of resilience and mental toughness have been discussed and distinguished from coping, the next section in this chapter will explore classifications of coping categories.

2.6 Classification of Coping Categories

Coping is reported as being highly individualistic and it is widely acknowledged there are a plethora of coping strategies to help facilitate performance under pressure (Crocker, Kowalski, & Graham, 1998; Skinner, Edge, Altman, & Sherwood, 2003). Previously, researchers have attempted to divide coping into various classifications and categories, which consist of macro-analytical and micro-analytical levels (Crocker et al., 2015).

At the macro-analytical level, higher-order categories of coping have been established to differentiate between forms of coping based on functionality and purpose (Crocker et al., 1998). Emerging from the work of Lazarus and Folkman (1984), problem-focused and emotion-focused coping are the most widely acknowledged categories of coping strategies in the extant coping literature (Crocker et al., 2015; Nicholls & Polman, 2007; Violanti, 2001). Indeed, problem-and-emotion focused classifications of coping have provided an extensive practical framework to consider various types of coping (Folkman & Moskowitz, 2004), along with a 'starting point' to debate which type of coping strategy should be associated with each of the two classifications (Dewe et al., 2010, p.41).

Problem-focused coping entails direct cognitive and behavioural efforts to alter the situation where there is a stress appraisal (e.g., problem solving, increasing effort, planning). In contrast, emotion-focused coping tackles the emotional distress experienced during the situation to regulate emotional

arousal, for example, venting emotions, behavioural withdrawal, and wishful thinking (Cotterill, 2017; Lazarus & Folkman, 1984).

In addition to problem and emotion-focused coping categories, other macro-level coping classifications have emerged, including: approach and avoidance coping; and appraisal-focused coping. Approach coping involves confronting the source of stress with the person making a conscious effort to decrease it, for example, planning and taking direct action (Roth & Cohen, 1986). In contrast, avoidance coping is associated with attempts to cognitively or behaviourally disengage with the stressor, for example, psychologically distancing oneself from the stressful situation altogether (Krohne, 1993; Roth & Cohen, 1986). Appraisal-focused coping is associated with an individual's attempts to reappraise and redefine the meaning and importance of a situation (Moos & Billings, 1982).

In sports psychology research, similar classifications to approach and avoidance coping have been identified. More specifically, the following coping orientations have been highlighted: task-orientated coping which involves the process of directly targeting a stressful situation (e.g., cognitive reappraisal); disengagement-orientated coping consists of withdrawing from the stressful situation either physically or cognitively (e.g., denial); and distraction-orientated coping considers when an individual transfers focus of attention away from the perceived stressful situation (e.g., mental distraction) (Gaudreau, Nicholls, & Levy, 2010).

In contrast to macro-analytical coping classifications, micro-analytical coping strategies are concerned with distinguishing specific coping efforts such as arousal control, problem-solving, self-talk, imagery, planning, relaxation and seeking social support (Crocker et al., 2015). Furthermore, time management, fitness levels, nutrition, and sleep patterns are deemed examples of *internal coping resources* that reflect general behaviours or lifestyle management (Raedeke & Smith, 2004) to cope with stress (Cotterill, 2017; Raedeke & Smith, 2004). In contrast, perceptions of having access to strong social support is viewed as an *external resource* that can help an individual cope with environmental demands (Raedeke & Smith, 2004).

It is important to note, classifying categories of coping is an on-going issue for coping researchers, regardless of whether classifying the categories is their primary research aim (Dewe et al., 2010). Although macro-level categories of coping encapsulate the ways individuals respond to stressful events and describe the mechanisms being used on the ground level during coping episodes (Skinner et al., 2003), researchers have signified categorising coping as being problematic, because coping cannot be

"unequivocally observed" (Skinner et al., 2003, p. 217). To reinforce this point, Pearlin and Schooler (1978, p.7-8) stated "coping, in sum, is certainly not a unidimensional behavior (sic). It functions at a number of levels and is attained by a plethora of behaviours, cognitions, and perceptions". Essentially, coping should be viewed as a multifaceted response strategy, which incorporates a range of factors consisting of environmental, personal, social, habitual, and learned responses (Kovacs, 2007).

Furthermore, Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth (2001) asserted classifications of coping conceal the heterogeneity between different subtypes of coping responses. In relation to concealing the diversity of coping, Skinner et al. (2003) contend that single-function strategies (e.g., problem-and-emotion focused categories) are poor categories of coping, as they lack the ability to capture how coping strategies are specifically used, considering there are potentially more than one function for any coping strategy. For example, problem-focused and emotion-focused coping strategies are not deemed mutually exclusive as some coping strategies may fall into both categories, for example, effective planning can enhance problem solving (i.e., problem-focused coping) and relax the individual (i.e., emotion-focused coping) (Skinner et al., 2003). However, Lazarus (1999) stated that problem-and emotion-focused categories should not be defined as discrete types of coping, as common misconceptions occur when thinking of placing specific coping strategies into either of the categories, when they could be associated with both.

In summary, the researcher will make no attempt to align findings of the current study with the problematic categorical distinctions of coping offered by previous research. Congruent with IPA research, the researcher acknowledges the importance of conducting research that expresses the experiences of individuals in its own terms, and not predefined categorical assumptions (Smith, Flowers, & Larkin, 2009). To further explore coping, the forthcoming section of this chapter will review the coping literature across the performance domains selected for the current study.

2.7 Review of the Coping Literature in Different Performance Domains

As identified by Crocker et al. (2015), there are a vast amount of quantitative studies that focused on measuring coping with various inventories, for example, the Modified Ways of Coping Checklist (Crocker, 1992), the Coping Style Inventory (Kaissidis-Rodafinos & Anshel, 2000), and the Coping Function Questionnaire (Kowalski & Crocker, 2001). Although quantitative studies can potentially assess the validity of scores attained for specific populations (Crocker et al., 2015), they provide limited

accounts of participants' lived experiences of the phenomenon being explored. In accordance with the aim of the current study, the forthcoming review of literature will predominantly focus on qualitative research conducted within and between the performance domains selected for the current study (i.e., sport, law enforcement, surgical, military, and music performance domains). To note, additional quantitative studies (e.g., Kenny et al., 2014) were selected on their importance and relevance to the domains selected for the current study. Moreover, to further align with the aim of the present study, only studies that included elite, skilled, or expert performers were selected.

In the sports performance literature, a range of common coping strategies to manage an athlete's self-regulatory processes to foster positive adaptation have been identified including: seeking social support, planning, problem-solving, increasing effort, seeking social support, wishful thinking, task avoidance, adapting tactics, confrontation, and arousal control (Crocker et al., 2015). Early qualitative studies in the sport performance literature (e.g., Gould, Eklund, & Jackson, 1993a; Gould, Finch, & Jackson, 1993b) used interviews as the primary method of data collection to explore coping strategies used by athletes (Crocker et al., 2015).

In an early study, Gould et al. (1993a) indicated US Olympic wrestlers combined various coping strategies when experiencing stressors, including: cognitive control strategies (e.g., self-talk), task focus strategies (e.g., goal orientated focus), behavioural-based strategies (e.g., following a performance routine), and emotional control strategies (e.g., arousal control). Crucially, Gould et al. (1993a) highlighted that coping seemed to be a complex process, whereby the Olympic wrestlers combined different strategies to cope with stress. However, this study was limited on two accounts. First, the information gathered could not be generalised to all athletes, as only one sport was assessed; and second, the coping strategies explored were those used during a two-week Olympic event, when other strategies could have been used for different types / levels of performance (Gould et al., 1993b).

In another study, Gould et al. (1993b) explored the use of coping by a group of elite figure skaters. Like the Olympic wrestlers in the study conducted by Gould et al. (1993a), the figure skaters reported similar use of thought control strategies (e.g., rational thinking, self-talk, pre-performance mental routines, and anxiety control). However, in contrast to the Olympic wrestlers the figure skaters cited the use of additional strategies such as: time management, prioritisation, and social support (Gould et al., 1993b). Importantly, Gould et al. (1993b) also reported on the dynamic nature of coping, as the figure skaters continuously appraised and reappraised situational demands to apply the simultaneous use of different cognitive and behavioural strategies to cope.

Associated with the figure skaters continuous appraisal processes, further qualitative research (e.g., Anshel, 2001, using structured interviews with 28 male professional rugby league players; Dale, 2000 using phenomenological interviews with seven elite decathletes; Holt & Hogg, 2002, using semi-structured interviews with 10 female international soccer players) has supported the notion that an athlete's perception and appraisal of a stressor, will determine which coping strategy will be applied (Crocker et al., 2015).

A further qualitative study of significance in elite sport, is that of Nicholls et al. (2005) who adopted interpretative phenomenological analysis (IPA) to examine the experiences of effective and ineffective coping with international golfers. Coping strategies deemed to be effective included: rationalising, positive self-talk, reappraising, implementing a routine, physical relaxation, seeking social support, and breathing control techniques. In contrast, coping strategies such as routine changes, speeding up, trying too hard, and negative thoughts, were reported as being ineffective (Nicholls et al., 2005). The study implied that practitioners should encourage the use of the identified effective cognitive (e.g., reappraisal), emotional (e.g., breathing exercises), and behavioural (e.g., following routines) coping strategies. Although the study makes these suggestions, the findings from the study are limited due to only focusing on a single stressor, when it is important to consider that performance-related stressors in golf are multifaceted and complex (Nicholls et al., 2005).

Subsequently, Nicholls, Holt, Polman, & Bloomfield (2006) conducted a longitudinal study using diary entries (open-ended responses combined with Likert-type scale evaluations) aimed to develop understanding of elite athlete's coping processes. The descriptive data from studying eight male professional rugby union players highlighted increasing concentration on the task and increasing effort, were the most effective and frequently used coping strategies. Although examining coping over an extended period of time was a key strength of the study, the relatively small sample size made it difficult to generalise results to a wider population (Nicholls et al., 2006).

Another example of a qualitative study in elite sport was conducted by Nieuwenhuys, Vos, Pijpstra, & Bakker (2011), who explored the meta-experiences (i.e., knowledge, beliefs, and preferences) of ten elite athletes competing in various individual sports, and the perceived effectiveness of coping strategies used. Findings suggested that an athlete's meta-experiences influence the selection, implementation, and overall effectiveness of coping strategies adopted to manage performance-related stressors. This research provides some valuable information regarding why athletes use specific coping strategies

(Crocker et al., 2015), however, the findings from the study are based on retrospective views, and any recollections may be biased or become inaccurate over time (Nieuwenhuys et al., 2011).

In relation to coping processes at the team level Leprince et al., (2018) conducted a qualitative study that explored athletes from varying levels of performance, use of communal coping to deal with shared stressors. Outcomes from the study indicated that team sport athletes used various communal strategies to cope with shared stressors, categorised as: relationship-focused coping; problem-focused communal coping; communal goal withdrawal; and communal management of emotions. Although the study provides an interesting insight into how coping occurs as a social process, only examining the perceptions of individual members of teams, instead of the perceptions of whole teams, is a significant limitation (Leprince et al., 2018).

Turning now to other performance domains; researchers have identified that laboratory-based studies have been a common research approach to examine performance under pressure in law enforcement, emergency medicine, and the military (Hancock & Szalma, 2008). However, laboratory approaches may inhibit our knowledge and understanding of performing under pressure, due to the combined range of stressors an individual may experience away from the laboratory in real-world settings (Hancock & Szalma, 2008).

To address the issue identified by Hancock and Szalma (2008), a noteworthy qualitative study using a delayed retrospective report, was conducted by Harris, Eccles, Freeman, & Ward (2017). The researchers aimed to explore how skilled police officers from a Special Weapons and Tactics (SWAT) unit prepared for and coped with stressful events. Key findings from the study highlighted problem-focused strategies (e.g., planning and seeking information) were used to prepare for stressful events, to generate plausible task relevant information to ascertain required responses. In events, participants coped by: appraising stress as excitement; planning; and using emotion-focused strategies (e.g., breathing techniques). The retrospective nature of the insights gained from participants, and the way in which participants reported personal experiences, are identified as two limitations of the study (Harris et al., 2017). However, the contextual insights of expert performers gained from the study is a notable strength. Indeed, attempts to generate rich contextual insights of expert performers, may enhance our knowledge of plausible coping strategies that could be adopted under pressure (Kahneman & Klein, 2009). Subsequently, having knowledge of feasible coping strategies may inform how individuals are trained to operate in similar demanding environments (Harris et al., 2017).

Now considering surgeons, Anton et al. (2015) surveyed surgeons and identified intraoperative stress coping strategies used, and interestingly surgeons reported using both positive and negative coping strategies. For example: pausing surgery, implementing task refocusing strategies, team communication and problem solving, establishing action plans, and mental rehearsal were all reported to be positive coping strategies. Negative coping strategies included behaviours such as venting, yelling, or getting quiet. Although the survey gathered data from a large homogenous group, the findings may have been hindered by recall bias and a lack of self-insight from the participants (Anton et al., 2015).

A further qualitative study of significance in surgical performance was conducted by Wetzel et al. (2006). The researchers used in-depth semi-structured interviews to explore consultant and trainee surgeons' perceptions and experiences of intraoperative stressors and strategies to cope. In relation to coping, results highlighted that early recognition (e.g., internal signals of stress), pause and stand back, self-control (e.g., self-talk, distancing, and physical relaxation), and intraoperative planning and preparation, were all discussed as coping strategies used by surgeons. Adopting semi-structured interviews to gather rich data from surgeons is a notable strength of the study. However, the focus of the research was to explore coping strategies experienced in intraoperative environments, thus limiting the research, as other pre-and-post operative environments were not considered (Wetzel et al., 2006).

Literature focused on military personnel coping with stress, has mainly focused on simulation studies (Jensen & Wrisberg, 2014). Although previous simulation studies have indicated that both a greater amount of exposure to stress in practice, and using problem-focused coping strategies, can enhance performance under acute stress, the research only divulged minimal information regarding how individuals perceived and appraised both stressors and coping strategies used (Jensen & Wrisberg, 2014).

To address the gap in research associated with the military, Jensen & Wrisberg (2014) conducted a study that examined the lived experiences of military personnel who experienced situations involving acute stress (i.e., hand-to-hand combat) through phenomenological open-ended interviews. Findings indicated that to cope with the stress induced from hand-to-hand combat, participants had the ability to adapt to an aggressive mentality and perspective, which consequently resulted in an increased effort to fight. Furthermore, the study highlighted how the switch in mentality was underpinned by two key problem-focused strategies being: automaticity (e.g., training took over); and positively appraising emotions and adrenaline experienced at the time. Indeed, it was suggested participants used the

adrenaline to its advantage during combat, meaning it is viewed as a problem-focused strategy, as opposed to an emotion-focused strategy (Jensen & Wrisberg, 2014).

Although the study by Jensen and Wrisberg (2014) provides in-depth experiences of military personnel's experiences of coping, there are some noticeable limitations. First, experiences were only gathered for a specific situation that military personnel could experience. Second, the study only focused on coping strategies employed during challenging events, without a focus on how participants may have coped before and / or afterwards. To address such limitations, the researchers recommended that future researchers should focus on a more holistic perspective of coping under stress (Jensen & Wrisberg, 2014).

Research into the relevance of coping strategies has seldom been applied to musicians performing under pressure (Biasutti & Concina, 2014). Studies that have focused on coping strategies used by professional musicians have typically gathered data through survey responses. For example, Kenny et al. (2014) conducted a cross-sectional population survey of 377 professional musicians who experienced music performance anxiety (MPA). Results identified anxious professional musicians avoided under-performing by increasing preventative strategies, and by practising to prepare for performances. Specific coping strategies reported included: a greater amount of practice to ensure mastery, positive self-talk, mimicking performance in practice, accessing social support, relaxation techniques (e.g., breathing techniques) and using medication (e.g., beta blockers). Although the coping strategies reported in the study were rated as being effective by musicians, the researcher emphasised the need to further explore the perceived effectiveness of the implemented coping strategies (Kenny et al., 2014).

A qualitative study to note by Buma, Bakker, & Oudejans (2015) used concept mapping and verbal reports as two retrospective methods to ascertain what elite musicians think about and focus on, when performing under pressure. The findings from the study indicated three common areas of attention and thoughts: music-related focus (e.g., achieving mindset of enjoyment for the music, to share it); physical aspects (e.g., focus on breathing and posture); and focusing on thoughts that give confidence. Also, preparation was highlighted as an important factor that helped to cultivate sought after attentional states and thought processes. This study provides a fascinating insight into the thoughts and focus of elite musicians, and how such information can be used to train and educate non-elite musicians to perform under pressure (Buma et al., 2015). Indeed, such information may assist practitioners and performers alike, to determine the best coping strategies to achieve optimal performance attentional states.

2.8 Psychological Research Across Performance Domains

The following section of the literature review considers psychological research conducted across performance domains. Often, researchers have focused on the possible transferability of training programmes (e.g., mental skills training) between domains (e.g., Cocks et al., 2014; Hammermesiter et al., 2011). For example, Cocks et al. (2014) reviewed literature on mental practice within sport psychology and surgery. The review proposed that mental practices adopted by sports performers can also be used by trainees and expert surgeons, to produce optimal surgical performance (Cocks et al., 2014).

Further examples of reviewing literature between domains have presented overviews of practice and research between the military and sport (e.g., Fiore et al., 2008; Hammermeister et al., 2011; Wagstaff & Leach, 2015; Ward et al., 2008). Of interest, Wagstaff and Leach (2015) explore commonalities in positive psychology between elite performance in sport and the military, which may help to inform the potential collaboration of practitioners working within the different domains. Learned optimism, positive affect, resilience, mental toughness, self and emotion regulation, and posttraumatic growth were identified as six strength-based concepts to produce optimal performance in both domains (Wagstaff & Leach, 2015).

Although there is a growing body of research which provides an overview of literature across domains to inform potential collaboration and / or development of psychological skills training, there is a dearth of research exploring the similarities and differences of coping strategies used by individuals across performance domains. An example of a study that researched coping strategies used by individuals across performance domains, is that of Arble and Arnetz (2017). The study surveyed 6,240 Swedish emergency first responders and produced an empirical model of first-responder coping strategies, in relation to enhancing wellbeing. From the evidence gathered, the researchers posited a conceptual bifurcation of effective first responder coping between approach coping and avoidance coping. Additionally, approach coping strategies were also associated with improved well-being (Arble & Arnetz, 2017). However, the study was not without its limitations. For example, the study cannot present a causal relationship due to the cross-sectional data collected, and even though the measurements created for the study were internally consistent, they might not record aspects of the constructs as well as existing, well-validated measurements (Arble & Arnetz, 2017).

In addition, Cotterill (2015) conducted a study using IPA to explore strategies used by performers to prepare for performance under pressure. More specifically, the study employed semi-structured interviews to foster in-depth and rich lived experiences of performers from various domains, including: musical, arts, sport, and medical performance domains. Although findings highlighted differences between the physical strategies used across the different performance domain's due contextual specificities, the researcher highlighted key similarities of mental preparation strategies adopted across the performance domains. Thus, illuminating the possibility of different performance domains transferring examples of good practice for mental preparation strategies. A strength of this study was using an IPA approach to provide detailed insights into participants' lived experiences, however, the experiences gained were only regarding preparation for performance. Therefore, it would be beneficial to explore a more holistic perspective of coping under pressure, by considering strategies adopted before, during and after performance.

2.9 Developing Coping Strategies

Previous researchers have examined the implementation of psychological skills training (PST) in various performance domains. Indeed, researchers posited that PST has been effectively implemented in various high-pressure performance domains including surgery (e.g., Anton et al., 2018), the police (e.g., Le Scanff & Taugis, 2002), sport (e.g., Sheard & Golby, 2006; von Guenthner, Hammermeister, Burton, & Keller, 2010), and the military (e.g., Fitzwater et al., 2018; McCroy, Cobley, & Marchant, 2013). However, there is a paucity of research that explores how performers have developed personal coping strategies to facilitate performance under pressure.

To the researcher's knowledge, only Cotterill's (2015) study provides a unique insight into participants' experiences of how coping strategies were developed to prepare for performance under pressure. Findings from Cotterill's (2015) study, highlighted various ways performers developed behaviours and strategies to prepare for performance under pressure, including: ad-hoc processes (e.g., athletes); participating in structured training programmes (e.g., performing artists); organically developed (e.g., performing artists who had not experienced structured training programmes); and backward chaining processes based on performance necessity (e.g., surgeons). Importantly, garnering a greater understanding of how expert performers develop coping strategies, may inform psychologists working

across different performance domains of the processes that help performers develop personalised coping strategies.

2.10 Summary of Chapter and Research Questions

As previously discussed, the review of the literature reinforces the claim that there is a dearth of research, especially qualitative research, that explores the nature of performance-specific coping strategies across various performance domains (Cotterill, 2015, 2017). Additionally, Dewe et al. (2010) highlighted that if researchers can garner a greater understanding of coping, in turn, an increased understanding of stress and how it can be managed will be developed. To do so, Dewe et al. (2010) encouraged researchers to understand the roles, functions, and characteristics of coping.

Drawing from these suggestions, the current study will aim to explore the nature of coping strategies used to manage stress and facilitate performance under pressure across various high-pressure performance domains. More specifically the following research questions will be explored:

- What are the perceived challenges experienced by expert performers across performance domains?
- What coping strategies are used by expert performers across performance domains to facilitate performance under pressure?
- How do expert performers across performance domains perceive coping strategies effect performance under pressure?
- How do expert performers across performance domains suggest coping strategies have been developed?

CHAPTER 3 - METHOD

This chapter aims to outline the rationale for the research design, followed by the specific detail regarding the participants and their recruitment, procedure, data analysis, and ethics information related to the research conducted.

3.1 Research Design

Qualitative methods were deemed the most suitable approach for the current study. Indeed, several researchers (e.g., Crocker, et al., 2015; Nicholls et al., 2005; Somerfield & McCrae, 2000) have advocated the use of in-depth qualitative approaches to study coping. By exploring the lived experiences of individuals, the researcher aimed to provide rich contextual descriptions of experts' accounts of coping from real world, high-pressure performance domain environments (e.g., Harris et al., 2017; Kahneman & Klein, 2009).

To provide rich contextual descriptions, the current study adopted Interpretative Phenomenological Analysis (IPA) (Smith & Osborn, 2003) to explore the lived experiences of expert performers coping with stress to perform under pressure. Crucially, IPA can elucidate and clarify the phenomena being explored from the perspective of the participant, in a specific context to the research being investigated (Nicholls et al., 2005). Indeed, Larkin, Watts and Clifton (2006, p. 117) highlighted a strength of IPA as combining:

> "the rich description of a phenomenological 'core' (which aims to capture something of the claims and concerns of the person-in-context) with the more speculative development of an interpretative account (which considers the *meaning* of such claims and concerns)."

Of further significance to the current study, IPA aims to express the experiences of individuals in its own terms, and not predefined categorical assumptions (Smith et al., 2009), which aligns with the researcher's position to avoid aligning outcomes with the problematic categorical distinctions of coping offered by previous research.

More specifically, IPA is associated with the notion of individuals' active *sense making* of personal experiences (e.g., making sense of objects, people and events), via interpretative activity (Smith & Eatough, 2012). Furthermore, IPA is a flexible and dynamic approach which requires the researcher to navigate their way through various layers of interpretation (Smith, 2004), while being immersed in the

lived experiences and subjective reports provided by the participant (Brocki & Wearden, 2006; Larkin & Thompson, 2011; Smith, 2004). The layers of interpretation involve a double hermeneutic process (i.e., a two-part interpretation) as IPA research acknowledges it is not plausible to develop perceptions of another person's lived experiences, without the researchers own conceptions being involved (Smith & Eatough, 2012). In other words, the researcher is unable to remove oneself from the sense making process as the participants sense making is dependent on the interpretation of the researcher. As a result, the double hermeneutic process involves participants making sense of personal experiences (i.e., the first interpretation), and subsequently, the researcher attempts to interpret the participants' sense making activity (i.e., the second interpretation) (Smith & Eatough, 2012).

As an approach, IPA is committed to an "idiographic sensibility" where participants are positioned in particular contexts, to examine personal perspectives of the phenomenon being explored (Smith et al., 2009, p.37). As such, IPA aims to begin with a comprehensive analysis of each case (i.e., an analysis of each participants' lived experiences), followed by making more general claims (Smith et al., 2009) via emergent themes. To achieve idiography, IPA selects participants from small, purposeful, and carefully situated samples (Smith et al., 2009), that distinctly contrasts with other qualitative research approaches. For example, grounded theory was not selected as the qualitative method for the current study, due to its commitment to implement a specific theoretical sampling process (Brocki & Wearden, 2006), which produces a theoretical account of the phenomenon being examined (Smith et al., 2009). The theoretical sampling process involves the researcher starting with an initial sample, and subsequently sampling extra participants to explore the theory being generated, until theoretical saturation is obtained (Sarkar & Fletcher, 2014a). Therefore, the researcher deemed the grounded theory approach to be unrealistic for the current study, as sample sizes tend to be large.

In relation to the philosophical underpinnings of the study, the researcher acknowledges the foundation of IPA is formed by the dual epistemological combination of phenomenology and hermeneutic inquiry (i.e., the study is epistemologically interpretivist), which is broadly referred to as epistemological constructionism (Sandardos & Chambers, 2019). However, researchers have differing ontological beliefs in relation to IPA. Previous researchers posited a realistic ontology, to preserve a balanced viewpoint (e.g., Sarkar & Fletcher, 2014a). Furthermore, it is argued that research questions in IPA studies typically expose IPA's realist aspirations, which are directed at shared meanings of a specific phenomenon, encapsulating an ontological status of something that exists as a cognitive, emotional and / or experiential construct (Willig, 2016).

In contrast, Smith and McGannon (2018) refute the notion of combining epistemological constructionism and ontological realism, due to the two being incompatible and untenable. Congruent with Smith and McGannon's (2018) argument regarding the incompatibility of epistemological constructionism and ontological realism, the position of the researcher in the current study is ontological relativism combined with epistemological constructionism (via interpretative activity). Therefore, the researcher acknowledges there are multiple fluid realities (i.e., ontological relativism), and knowledge is constructed via interpretative activity (i.e., epistemological constructionism) (e.g., Coyle, Gorczynski, & Gibson, 2017).

3.2 Quality of the Qualitative Research and Reflexivity

The current study adopted a non-foundational approach to validity (Sparkes, 1998), which involved applying specific techniques appropriate to the study, with an aim to enhance both its rigor (Smith & McGannon, 2018) and trustworthiness (Lincoln & Guba, 1985). When considering the interpretivist underpinnings of IPA, the importance of reflexivity was appreciated by the researcher. IPA research acknowledges the significance of a researcher's presuppositions, and how they can either enhance or hinder the interpretation of a participants' lived experiences (Shaw, 2010). To mitigate the potential impact of the researcher's presuppositions, reflexivity affords the researcher the opportunity to rotate the 'researcher lens back onto oneself' (Berger, 2015, p.220) to develop an explicit evaluation of oneself when co-constructing reality (Shaw, 2010). Through self-appraisal, reflexivity provides the researcher with an opportunity to take the responsibility to acknowledge one's situatedness in the research and the impact it could have on the research endeavour (Berger, 2015).

Importantly, the process of reflexivity should permeate across the entirety of any research conducted (Dodgson, 2019; Shaw, 2010) and should not merely be viewed as an activity to raise awareness before and during data collection (Shaw, 2010). Consequently, the researcher in the current study addressed reflexivity at various stages throughout the research process. More specifically, reflexivity was approached via a process of bracketing (e.g., Cotterill, 2015; Cotterill & Cheetham, 2016; Nicholls et al., 2005) when collecting data (see section 3.4 Procedure) and engaging with a critical friend (e.g., Cowan & Taylor, 2016; Nicholls et al., 2005) when analysing the data (see section 3.6 Data analysis). Bracketing and critical friends are deemed appropriate techniques to encourage self-reflexivity in qualitative studies (Tracy, 2010).

Crucially, although bracketing and critical friends were techniques applied at specific stages of data collection and data analysis, the researcher also acknowledged the importance of remaining reflexive throughout the entire research process (e.g., Dodgson, 2019). The forthcoming sections will accentuate how this was achieved by the researcher in the current study.

3.3 Participants

Congruent with IPA guidelines and the idiographic commitment, participants were purposefully selected from a homogenous group (Smith & Osborn, 2003), and were deemed to be expert performers in various high-pressure performance domains. In relation to participant numbers, Smith and Eatough (2012) highlight the need to develop the correct mix between allowing enough time to analyse participant feedback for richness of individual cases and ensuring there are enough participants to compare cases. Accordingly, various researchers have recommended similar amounts of participants as being suitable for an IPA study, including: Turnpin et al. (1997), who suggest approximately eight participants; and Smith et al. (2009) who recommend collecting data from between three to six participants.

Consequently, the current study consisted of 7 expert performers (male n = 5 and female n = 2), aged between 32 to 56 years (M age = 42.14 years), with experience in their performance domains from 8 to 35 years (M = 19.57).

To guide selection, participants were recruited from what the researcher deemed to be high-pressure performance domains including: surgery, law enforcement, elite sport, professional music, and the military. The performance domains were deemed appropriate 'high-pressure' performance domains for the following reasons:

Surgery is considered a high-pressure performance domain due to the requirement of surgeons to perform in physically and psychologically demanding environments (Anton et al., 2015). Surgeons are expected to conduct complex surgical procedures with fine motor skills, while maintaining high focus for long periods of time (Arora et al., 2010). Furthermore, patient safety is dependent on a surgeon's performance levels, which in turn, can elicit high levels of stress in a surgeon (Anton et al., 2015).

Law enforcement and the military are deemed high-pressure performance domains, due to domain personnel being required to effectively respond to, and perform in, stressful situations that often entail

a confrontational threat, ambiguous challenges, and /or time constraints (Kumar, Parkash, & Mandal, 2013). Furthermore, failing to cope with pressure in law enforcement and the military, may potentially result in death for the domain personnel and / or others (Delahaij, Gaillard, & Soeters, 2006).

Professional musicians are required to demonstrate high-levels of physical and psychological skills for successful performance (Kenny et al., 2014), often with the additional fear of negative public appraisal (Biasutti & Concina, 2014). Like professional musicians, elite level athletes are also required to execute flawless physical skills (Singer, 2002) and cognitive skills (e.g., decision making) under challenging situations (Walsh, 2014).

To further guide participant selection, the following definition for the term 'expert' was considered by the researcher: an expert is "one who has special skills or knowledge derived from extensive experience with subdomains" (Hoffman, 1998, p.85). Although the researcher for the current study acknowledges there is an element of subjectivity regarding the definition and description of the term expert, participants were selected according to accumulated experience and / or performance status (e.g., Swann, Moran, & Piggott, 2015).

To note, the researcher recognises extensive experience does not necessarily mean the duration of time spent working in a performance domain; some individuals may generate extensive experiences from being exposed to a greater frequency of performance pressure over a shorter time period, according to the nature of the performance domain. In addition, for participants who had not accumulated a high amount of experience, experts were also considered on the standard of performance and perceived success at the highest level of performance (Swann et al., 2015). Below is a summary of the participants selected:

Two surgeons working at an NHS Hampshire hospital were selected and included: one Consultant Trauma and Orthopaedic Surgeon (TO surgeon) with 35 years of experience (15 years in the current role, and a previous 20 years in a similar role in the military); and one Associate Specialist Ear Nose and Throat (ENT surgeon) with an accumulated 32 years of experience in the current role. One professional music composer with 15 years of experience. One elite athlete who had competed at international level for 12 years in various sports including: mountain running, duathlon, triathlon, and cross-country running. To note, the athlete is also a former World Duathlon Champion. Two military personnel including: One Specialist Communicator in the Ministry of Defence with 17 years of military service; and One Royal Marine Corporal with 18 years of military service. Finally, one police constable with 8 years of

experience in the Surrey Police. Additionally, the police officer was acting as a mentor for new police recruits.

3.4 Procedure

After gaining ethical approval from the University Ethics Committee, the researcher collated a list of eligible participants who aligned with the selection criteria and sought contact details for each participant. Subsequently, the researcher emailed the participants and attached the participation information sheet (see appendix 1) which included information regarding the purpose of the study, requirements of participants, and a formal interview to participate in the study. Seven out of eight participants accepted the invitation to participate in the study. Following acceptance to participate in the study, participants were re-contacted to organise suitable dates, times, and locations of interviews.

When considering how to conduct interviews, face-to-face interviews are deemed the "gold standard" with regards to validity and rigour (McCoyd & Kerson, 2006, p.390). However, Sedgwick and Spiers (2009) highlighted conducting interviews in-person can be problematic when participants are geographically dispersed. As a result, for the present study, interviews were conducted either in-person with participants located within reasonable distance from the interviewer, or via Skype, for participants located a long distance from the interviewer. Using Skype for interviews, can increase participation in research, due to allowing greater flexibility as to when the interviews can take place (Deakin & Wakefield, 2014). Furthermore, Skype was the preferred method selected for long distance interviews, as opposed to telephone calls, which are not viewed as a viable and logical alternative to face-to-face interviews (Sturges & Hanrahan, 2004). Additionally, using Skype allows the researcher to maintain, to an extent, a "face-to-face" experience, while simultaneously preserving the "private space elements" offered by telephone interviews (Hanna, 2012, p.241).

Once a mutually convenient interview method, location, date and time had been agreed, participants were interviewed. More specifically, the current study incorporated the use of semi-structured interviews to explore the lived experiences of participants (Smith & Osborn, 2003). Semi-structured interviews are deemed an exemplary mode of data collection for IPA, whereby the researcher determines an initial set of questions as a guide (Nicholls et al., 2005), and crucially, allows the interview to be participant led, as participants are considered the 'experts' (Smith 1996; Smith & Eatough, 2012). Moreover, a further benefit of using semi-structured interviews is being able to facilitate the expression

of an account in an empathetic manner, forming a human-to-human relationship (Fontana & Frey, 2000).

To ensure guidelines of IPA were adhered to, the researcher developed an interview schedule (see appendix 2) which was specific to the study, as a method to guide rather than dictate the direction of the interviews (e.g., Cotterill, 2015; Cotterill & Cheetham, 2016). To develop the interview schedule, the researcher conformed to the four-step approach proposed by Smith and Osborn (2003), which includes the researcher: 1) considering and thinking about a wide range of issues; 2) placing the issues and topics in the most appropriate order; 3) developing suitable questions relating to the issues and topics identified; and 4) considering various probes and prompts to elicit extra information.

Examples of questions included in the interview schedule were: "What do you consider to be effective performance in your job?"; "What are the main stressors and challenges associated with your job?"; "Can you tell me about any successful coping strategies you have used to manage the challenges and stressors associated with your job, to help facilitate/improve your performance?"; "Can you tell me how you use/apply the strategy you have used to manage with the challenges and stressors associated with your job?"; "When/how did you learn to use the strategy?"; and "Why/how do you think the strategy has worked/been successful?"

As previously mentioned, seeking reliability in qualitative studies is deemed nonsensical, as the qualitative researcher is aiming to entice rich and meaningful personal information from the participants (Smith & McGannon, 2018). Importantly, the researcher attempted to adapt to each interview, to follow and understand the story of each participant (e.g., Nicholls et al., 2005), as opposed to just following a set list of questions (Smith & Osborn, 2003). Thus, the researcher avoided, when necessary, asking the same questions in the same order.

The interviews lasted between 45-120 minutes, and they were all audio-recorded and transcribed verbatim, which produces an accurate record of the dialogue between the participant and the researcher (e.g., Cotterill & Cheetham, 2016).

3.5 Reflexivity for the Procedure

Bracketing involved the process of the researcher developing and maintaining a reflexive diary prior to data collection (e.g., Tamminen, Holt, & Neely, 2013), to *bracket* personal lived experiences, enabling

the researcher to reconsider what one already knows about the phenomenon being explored (Hill & Hemmings, 2015). See appendices 3 and 4 for examples of extracts from reflexive journal entries. Importantly, the researcher acknowledged not leaving bracketed thoughts *at the door* when conducting participant interviews. To ensure a holistic reflexive process, the researcher aimed to be aware of bracketed thoughts that may have allowed one's own presuppositions to influence the direction of the interviews. In doing so, the narrative of each participant was followed as closely as possible, thus avoiding one's interpretations or theoretical concepts entering the participant's perceptions (Groenewold, 2004), and therefore, the narratives provided by participants.

When producing a reflexive journal for the current study, the researcher's understanding of each of the participants' performance domains may have been limited, due to not performing at a similar level in sport and, having no experience of working within military, musical, law enforcement and surgical performance domains. Notably, the researchers limited experiential knowledge may have aided the ability of the researcher to view the participants as the teachers and experts during interviews, thus helping to interrogate the information regarding their experiences (Flick, 2002).

Nevertheless, it was important for the researcher to acknowledge that personal knowledge could have been informed by prior research and personal experiences, which could hinder the aim of phenomenological research (Tamminen et al., 2013).

3.6 Data Analysis

Aligned with recommendations by Smith et al. (2009, pp. 82-101) the researcher adopted a six-step approach to data analysis:

Step 1: Read and re-read

Starting with the first case, the researcher actively engaged in the original data (i.e., transcribed verbatim) by reading and re-reading the transcribed verbatim. Additionally, the researcher listened to the audio-recording of transcripts the first time each participant transcribed verbatim was read.

Step 2: Initial noting

Continuing with the first case, the researcher maintained an open-mind to examine the semantic content and language used in the first participants' interview. Notes were made in the right-hand

column on anything the researcher considered to be relevant and of interest. Importantly, the researcher engaged with the narrative of the transcript. More specifically, the researcher made exploratory notes / comments considering three processes: 1) descriptive comments that describe the content, for example, key words, phrases, and explanations; 2) linguistic comments exploring the use of language (i.e., the meaning of the language used); and 3) conceptual comments focused on conceptual aspects of text, by being interpretative and interrogative.

Step 3: Developing emergent themes

Still working with the first case, the researcher predominately used the exploratory comments made in 'step 2' and identified emergent themes in the left-hand column, which were numbered in chronological order (see appendices 5 and 6 for examples). Essentially, step 3 was the first stage of the double hermeneutic process as the researcher is breaking down the whole of the original text into a set of parts (Smith et al., 2009).

Step 4: Searching for connections across emergent themes

Continuing to analyse the first case, the researcher wrote out the themes onto a separate piece of paper, which were still numbered, and colour coded for step 6 of the data analysis process (see appendix 7 for an example).

Abstraction was the researchers preferred method to search for patterns and themes. The process of abstraction involved the researcher clustering similar themes together (at the individual level) and providing an initial name for each cluster, which developed initial ideas of possible superordinate themes (Smith et al., 2009).

Step 5: Moving to the next case

The researcher now moved to the next case, and subsequently, all other cases were analysed on an individual level by repeating steps 1 – 4.

Step 6: Looking for patterns across cases

The researcher moved onto searching for patterns across the individual cases. To do so, the researcher cut out the colour coded and numbered themes from each individual case and grouped similar themes that emerged between all cases (see appendix 8 for an example). Using colour coded and numbered

themes, enabled the researcher to code direct quotations from the participants' transcribed verbatim, into NVivo software (see appendices 9 and 10 for examples).

Finally, the researcher completed the double hermeneutic process by producing a narrative account of the superordinate themes, allowing the analysis to become more expansive by incorporating relevant direct quotations from the transcribed verbatim (e.g., Cotterill & Cheetham, 2016).

3.7 Reflexivity for the Data Analysis

Having a reflexive mindset for steps 2 and 3 of the data analysis was pivotal in allowing the researcher to focus on, and interpret, the narrative provided by the participant (i.e., follow and interpret the participants' story and without allowing presuppositions to influence decisions on themes). To achieve reflexivity through steps 2 and 3, the researcher often revisited the transcribed verbatim at various stages to think through one's own reactions to the narrative provided (e.g., Shaw, 2010), without allowing one's own personal experiences and preconceived knowledge (e.g., coping theory and categorical distinctions) to dictate the analysis of the data, and subsequently, the outcome of the final superordinate themes.

Furthermore, the researcher engaged with a critical friend to hold a critical dialogue with another competent researcher. Using critical friends enhances the rigor of a qualitative study as its main role is to establish a 'theoretical sounding board' to reflect upon, and explore, various interpretations from the emerging data (Smith & McGannon, 2018, p.13). Essentially, the dialogue with critical friends encourages reflexivity where a platform is provided to challenge each other's perceptions and construction of knowledge (Cowan & Taylor, 2016).

In the present study, the researcher engaged with a critical friend following the initial completion of the data analysis. More specifically, the researcher critically discussed the emergent superordinate themes with another researcher and, reflected on comments from the critical friend when deciding on the final superordinate themes for the study. For example, one critical discussion focused on ensuring clarity with a proposed subordinate theme. The critical friend encouraged the researcher of the current study to check the relevant participants' narratives, to clarify if they related to either 'feelings' or 'thoughts' of control, when discussing the effects of coping strategies. Gaining clarity of such information, was

important to correctly interpret the meanings provided by the participants, and subsequently, to form appropriate subordinate and superordinate themes.

3.8 Ethics

Ethical approval for the study was gained from the Ethics Committee at University of Winchester inline the institute's ethics guidelines (see appendix 11). Prior to each interview, all participants were provided with another copy of the participant information sheet, which provided information regarding the purpose of the study, and the requirements of each participant (see appendix 1). Additionally, participants were asked to sign a consent form prior to their interview (see appendix 12). The consent form acted as a reminder to confirm the following: (1) Participants confirmed they had read and understood the participant information sheet; (2) Participants understood their participation was voluntary; (3) Participants agreed to take part in the study; (4) Participants agreed to having their voices digitally recorded; and (5) Participants understood their contribution will be reported anonymously. Indeed, all participants were reminded that all personal information would remain confidential and anonymous in accordance with the Data Protection Act (1998).

CHAPTER 4 - RESULTS AND DISCUSSION

Eight superordinate themes have emerged from the IPA data analysis. The superordinate themes are presented with the subordinate themes in table 1. The superordinate themes and subordinate themes will inform the forthcoming discussion.

Table 1. Superordinate and subordinate themes derived from the data analysis

Superordinate Themes	**Subordinate Themes**
Perceived Challenges	Situational Challenges Physical and Physiological Challenges Cognitive and Emotional Challenges Personal challenges Team challenges
Preparedness	Rehearsal Advanced Planning Pre-Performance Preparation
Personal Responsibility	Establishing Task Focus Role Acceptance Lifestyle Management Self-Awareness
Adaptability	Cognitive Adaptability Behavioural Adaptability
Support Mechanisms	Receiving Task Support Receiving Social Support Providing Support Faith
Individual Factors	Personality Job Enjoyment
Perceived Coping Effect	Individual Effect: Cognitive Individual Effect: Mood Teamwork Team Mood

Table 1. Continued

Coping Strategy Development	Specific Personnel Experiential Learning (Individual) Experiential Learning (Team) Independent Learning

4.1 Superordinate Theme 1: Perceived Challenges

All participants discussed perceived challenges associated with performance. The perceived challenges superordinate theme consists of five subordinate themes: situational challenges, physical and physiological challenges, cognitive and emotional challenges, personal challenges, and team challenges.

4.1.1 Situational Challenges

Participants discussed circumstances in which they experienced pressure. All participants reflected on experiences of *unfavourable* situations (i.e., situations where they perceived a reduced sense of control toward achieving an end goal) and numerous examples were provided. The following quotation from the athlete provides an insight into an unfavourable situation experienced in the swim event of a triathlon:

> …I got to the buoy and everybody…it was just a fight…people were just being dumped underneath, and I remember being pushed underneath, and I'd gone underneath the buoy, and it was being reported on…on the television that it was terrible how the course was laid out, because it just was creating havoc for swimmers, because it was such a sharp turn. Um…yeah, and I was one of them that was constantly being dumped, and I think I did come out of that and I was treading water, and was trying to get my breath back, and coping with the panic of it all, so…um…that was probably one of the worst experiences in a race.

Another example of an unfavourable situation was provided by the specialist communicator, who reflected on the challenge of being separated from team members:

> …if I was geographically separated from a squadron, as in we were…we were together, but the…the people that actually make the big choices were in another country…ah…if we couldn't get communications initially. So, if…if my satellite radio wasn't working then it's up to me to come up with the other solutions.

Further examples of unfavourable situations included: unpredicted complications during surgery (both surgeons); being distracted by others during surgery (TO surgeon); faulty instruments (composer); and the police officer described unfavourable scenarios that required quick decisions, as highlighted in the following quotation:

> Crikey, there's been so many. There's…one [ ] member of the public had called up to say that there was a…a lady that was on a railway bridge, hanging over it in a bit of a precarious way [ ] obviously we…we're now going to it, the updates are coming in, you know, that there's…there's now been a couple of calls from the members of the public concerned about this female. You know, she's not just looking over it, she's now kind of hanging over the bridge kind of thing. And it's quite a busy line.

Situations that involved *uncertainty* also emerged as perceived challenges experienced by the police officer, specialist communicator, royal marine, composer and the athlete. Like unfavourable situations, uncertainty may lead to a perceived lack of control due to not being able to predict future events, thus increasing the perceived stress experienced. The police officer discussed experiencing a range of uncertain situations, and the following extract from the police officer identifies personal feelings experienced when requested to attend jobs that had an element of uncertainty:

> Yeah, so your adrenaline's pumping cos you think "I don't know…I really don't know what I'm going to find". And you kind of, when you're at that door, it's that moment of fear…you think "oh no". You know, and then you kind of, and you…and it's always…I think anyone's like it, you still…you don't know what you're gonna come across.

Identifying similarities between most participants experiencing unfavourable situations and / or uncertain situations, is potentially, an important finding. The insight into similar perceived situational stressors may help inform practices designed to prepare individuals and teams for performance. Indeed, researchers (e.g., Cotterill, 2017; Driskell, Salas, Johnston and Wollert, 2008) emphasised the

need to garner a greater understanding of possible contextual performance stressors, to be able to prepare performers for specific stressful performance situations. Crucially, gaining a greater understanding of perceived situational challenges can inform how realistic training environments are designed, which subsequently, can foster an individual's ability to develop contextually relevant coping strategies that can be transferred to actual performance environments (Cotterill, 2017).

Of further significance, some participants also alluded to the *importance* of a situation. For example, both surgeons discussed the importance of performing surgery efficiently, to achieve targets and improve patients' quality of life. More specifically, the TO surgeon explained times when a patient goes into "extremis" (i.e., the patient is in a life-threatening condition), heightening the importance of performing well. Similarly, the police officer also identified responding to emergency calls and how they all resemble an element of importance. However, the police officer also identified times when there was a heightened sense of performing well, due to the severity of the job (e.g., attending a murder scene). The following quotation demonstrates how the police officer acknowledged there are more important jobs that require a structured performance process:

> …and that's not every job we go to. That's only the big jobs. So, that will be, um…you know, if we [ ] have to deal with a murder, for example, because obviously they're [ ] quite structured as to what happens, and who comes and [ ] who does what, especially if we're first on the scene. Um…because you don't want everybody in…in the scene.

In relation to the importance of a situation, a different perspective was provided by both the royal marine and specialist communicator, who both highlighted the continuous pressure experienced in work environments, which often entailed conducting "high risk operations" (e.g., specialist communicator) in both training and real-world performance settings.

A final perceived situational challenge identified from participant reflections, were circumstances associated with *traumatic experiences*. All participants recollected events which seemed to leave emotional scars following performances. For example, the athlete discussed crashing in the bike element of a triathlon and how that caused both physical and psychological harm. Additionally, the police officer and TO surgeon discussed dealing with deaths in working environments. For example, the police officer reflected on the numerous "sudden deaths" experienced:

> …my skipper (Sargent) and my inspector have…they've spoken to me and they're now holding me back from going to sudden deaths, as we call them, because I've…I've done too many [ ] a

> colleague on my team that we lift share with, and he's raised concerns, because it can't be good for you, and it's not good for you! I've lost count of the amount of people…the amount of dead people I've come across and dealt with. I've had in my, in my eight-year career I've had five hangings.

The specialist communicator also reflected on the regular occurrence of experiencing traumatic events and the associated emotional impact, as highlighted in the following quotation:

> …is putting you under a lot of…um…emotional wear and tear, really…I don't know [ ] what they…I don't know how it would be best explained, the…the emotional side of it all [ ] seeing people like you, that you are friendly with, getting shot and then obviously getting picked up by a helicopter and taken away. You don't really know how they're doing. Um [ ] and we knew then, that at that point we'd have the same again the next day, and the next day, and the next day.

In relation to perceptions of traumatic experiences, individuals that work in domains (e.g., emergency first responders) that encounter life threatening situations and / or scenarios that involve death, have a heightened chance of developing post-traumatic stress disorder (Arble & Arnetz, 2017). Importantly, psychologists who work with individuals in such high-pressure domains should be cognisant of coping strategies that focus on well-being, as well as those that focus on performance. It is suggested that coping strategies focused on well-being can foster posttraumatic growth, thus increasing an individual's motivation to establish or achieve life goals (Kashdan & Kane, 2011; Taku, Cann, Calhoun, & Tedeschi, 2008). Indeed, researchers have explored comparisons of coping strategies used by emergency first responders (e.g., Arble & Arnetz, 2017), which could foster collaboration between emergency first-response performance domains and the possible transferability of coping strategy use to enhance well-being.

4.1.2 Physical and Physiological Challenges

Physical challenges ranged from: the athlete sustaining an injury when training for a duathlon world championship event; the composer reporting how illness affected performance during a concert; and the specialist communicator alluded to the physical exhaustion experienced during gruelling selection processes, as illustrated in the following example:

> …we've been out on the ground for three weeks. We were carrying about a 140 pounds worth of kit each. Um…and we were moving across some…ah…some of the Scottish mountains, and [ ] guys were pretty…they were flagging pretty hard. Um…and actually just [ ] pulling everyone down and taking hits, and we had timelines to hit.

Four participants also reported physiological challenges they attempted to overcome to perform effectively under pressure. The athlete reflected on attempts to regulate breathing when experiencing a panic state, and the composer demonstrated an awareness of experiencing an increased heart rate prior to a concert and the need to manage it. Additionally, the police officer and specialist communicator discussed how they needed to manage adrenaline levels at the initial stage of engaging in performance. Here the police officer reflects on an example of controlling personal adrenaline levels:

> You're kind of like more aware, you'll go in there and yeah the adrenalines [ ] you know, and that's…and you've got to try and control that…that you don't go guns blazing.

Another example was provided by the specialist communicator, who recollected experiencing an increased heart rate and adrenaline rush during a fire fight when inexperienced:

> Two years after I joined the military, so…um…and I was very inexperienced and I'd never been to…I'd never been to a conflict zone before…and we kinda just ran off the back off a helicopter [ ] just a nice fast heart rate and…and a bit of adrenaline really. Not really knowing what to expect.

4.1.3 Cognitive and Emotional Challenges

Numerous perceived cognitive and emotional challenges associated with psychological components (e.g., anxiety, confidence, focus and anger) were reported by the participants. Perceived cognitive and emotional challenges are reported in the same subordinate theme, due to the possible bi-directional relationship between the cognitions and emotions identified in the participants' discussions.

Six participants recollected times they experienced thoughts and / or feelings of *anxiety* (i.e., cognitive and state anxiety). The royal marine, composer, TO surgeon, and athlete expressed how they still get worrying thoughts before performance, which for some, had derived from negative feelings. For

example, the royal marine reflected on feeling out of depth with a training exercise, which ultimately induced negative thoughts:

> I wasn't looking forward to it. I was being…I had negative thoughts on how I thought it was gonna go. Just because I already felt out of depth.

Similarly, the composer discussed how negative thoughts pertaining to escaping from a venue moments before performing a concert when inexperienced, derived from feelings of being scared:

> I remember being stood by some curtains…in America, before going out, and I was scanning to see where the exit was, because I thought if I could find one "I'm going…I'm gonna run!", because I was so anxious, at one of the first ones that I did [ ] I felt so scared…um…that I would've probably just disappeared, or I certainly felt like I wanted to, where my legs would have allowed me, my conscience probably wouldn't. But, either way I do remember thinking "where is it?" I couldn't find one, so the curtains went open, and I had to walk forward.

In contrast, the athlete discussed how negative thoughts, derived from evaluations of inadequate skill level for the swim event of a triathlon, induced feelings of a "panic state" during races.

Furthermore, the police officer, athlete and composer discussed the negative thoughts they had during performances without relating to feelings. For example, the athlete reported experiencing negative thoughts during an unfavourable situation in a race, and the police officer highlighted experiencing negative thoughts regarding decision-making during jobs, as illustrated by the following quotation:

> So, you could be going "oh no I'm making the wrong decision here, this isn't right, I don't know what I'm doing" or what…you know, you just think…your mindset is "I don't know what I'm doing". You just have that blank moment.

Of further relevance to experiences of anxiety, the royal marine, police officer, ENT surgeon, athlete and composer reflected on having negative thoughts following performances which may not have gone to plan. For example, the ENT surgeon indicated experiencing the following negative thoughts that were elicited from emotional reactions experienced post-surgery:

> …it affects…ah…me emotionally and ah...you sometimes….it may even knock your confidence levels, for a while. And then when you have to undertake that task, you may think "whether I'm up to that task" or "this went wrong when I did this".

Interestingly, the example from the ENT surgeon suggests the anxiety experienced also had a detrimental effect on personal *confidence levels*. Similarly, both the composer and athlete reported challenges of experiencing low confidence following difficult situations when performing under pressure. The composer explained how a difficult situation affected personal confidence levels during a concert, and the athlete stated how her confidence levels on the bike were affected from experiencing a crash during a competition. The following quotation highlights the athlete's thoughts regarding the bike crash, and the detrimental impact on personal confidence levels:

> …I didn't get back on the bike straight away because I couldn't, because I had quite a bad haematoma in my hip, and [ ] it knocked my confidence for quite a while on the bike, and it's quite common, most cyclists come off the bike, and they say you're not a real cyclist until you have crashed.

Offering perspectives of another cognitive challenge, the specialist communicator and royal marine reported experiencing poor *focus* during high-pressure performance environments. The specialist communicator referred to experiencing "tunnel vision" in an early experience of a firefight, and the royal marine also reported having tunnel vision when making an important decision in a pressured training environment, as illustrated in the following example:

> And I was just too narrow (focus)…I was just…had tunnel vision on…"we've got to achieve our aim, we've got to achieve what I've been told to do" and "we've got"…this was the last jump "we want to finish on a high". And it all got a bit too much for me.

Finally, *anger* was another challenging emotional response discussed by the composer, police officer, TO surgeon and specialist communicator. Both the TO surgeon and composer provided examples of experiencing anger with other colleagues for not adequately preparing for performances. The following quotation from the composer highlights the anger experienced, but also the awareness to control the emotion: "And just being so angry and then having to control all those extra emotions, for something that was nothing to do with me".

4.1.4 Personal Challenges

Additional perceived personal challenges were discussed by some participants. For example, perceived *social comparison* was a personal challenge experienced by both the athlete and the composer. For

example, the composer described a situation of observing videos of other composers, which elicited thoughts of self-doubt. Additionally, the athlete reflected on an experience of observing other team members, which induced negative thoughts relating to social comparison:

> No, and I regret it. I think, again, I…I was too focused on looking at what other athletes did, and I looked at the best athletes in (name of town). And that's what they did, they just did training. And I thought "well this is what you need to be, I've never been a full-time athlete, this is what full-time athletes are all about".

Another perceived personal challenge that emerged relates to being *judged by others*. For example, the athlete discussed experiences of feeling judged by other team members, and the royal marine discussed experiencing peer pressure, as demonstrated in the following quotation:

> Yeah, that's a lot of self-induced pressure with the…with the peers. I'll probably be honest, it's probably one of the biggest things is the peer press…the pressure among…amongst the peers, because it's quite a um…a high…we operate at a high level. The error for margin is small. Even if it's just something as…I don't know, ah…it could be something very…very menial, but it could be made big…it could be made big amongst people…amongst high level people, because they're always looking to try and get one up on you and overtake you potentially.

Additionally, the royal marine, composer and police officer referred to their perceptions of being judged by the public. For example, the composer indicated challenges derived from seeing bored faces in audiences during performances, and the royal marine discussed the importance of getting a demonstration correct in the front of public audiences. Furthermore, on numerous occasions the police officer discussed perceptions of being judged by the public when performing under pressure. The following quotation offers a reflection from the police officer and the perception of being judged by the public:

> …in the back of your mind you're sat there thinking "right, I've got members of the public watching"…and they…and if I stand and do nothing, they're gonna think "well, you're brilliant, aren't you!?" [ ] the general public's perception of police is that we're…you know, we have to do everything…they just sit…you know, they think "well, you're the police, why didn't you do that?"

In relation to another perceived personal challenge, the royal marine and athlete both alluded to concerns of *letting other people down*. For example, the royal marine did not want to let family and / or

teammates down when performing under pressure. Additionally, the athlete was conscious of how a mistake made during performance let the team down, and highlighted in the following quotation:

> Got on the bike and I got carried away, and it was raining, it was cobbled streets, I went to the front of the pack and gaps…put a massive gap in the rest of the field, which was like Olympic medallists and stuff in the pack, which I shouldn't have been doing…well, I'd never done that before…and then at the next corner I came off. And then I basically finished my leg in last place, passed over to my teammate who was then at the back. So…um…I could have actually come off that in first place and been ahead of the A team and that was really tough to deal with for quite a while, because I feel like I let a lot of people down, it was on TV…um…just through over-cooking a corner…um…on the bike.

Interestingly, having a fear of being judged by others and not wanting to let teammates down are recognised as stressors associated with performance, due to the evaluation and self-presentational concerns evoked from the potential of being judged by other people deemed to be important (James & Collins, 1997; McKay et al., 2008).

Of further interest, *unique personal challenges* were also discussed by some participants. In contrast to other participants, the composer was conscious of a challenge aligned to personality. More specifically, the composer discussed being an "emotional person", which may have elicited negative thoughts, emotions and behaviours before and during performances.

Another unique personal challenge was highlighted by the athlete who discussed the difficulty of not being able to replace the coach-athlete relationship experienced as a young athlete:

> So, everything kind of just went in line with moving across to this other sport. So, I lost that one person that knew me inside out, that I'd only have ever worked with and got this real connection. And then, I was thrown into a different coach that I'd never met…um…he was great, actually…but, I never found that one person.

Further unique personal challenges were reported by the police officer who discussed having a phobia of dogs, and by the athlete who identified motivational challenges experienced when feeling unhappy with a lifestyle and training set up:

> I'd say I was quite unhappy. I was probably quite miserable a lot of the time. Um…I wasn't accepted onto the programme either by the other team people, which didn't help.

Gaining an insight into the cognitive, emotional, and personal challenges experienced by participants, illuminates the need for psychologists to garner a holistic understanding of the perceived challenges experienced by performers (e.g., McKay et al., 2008) to help them develop appropriate coping strategies to mitigate the effects of stress to facilitate performance under pressure.

4.1.5 Team Challenges

A range of team challenges were highlighted by some participants. Challenges that affect *team cohesion* were discussed by the ENT surgeon, specialist communicator, police officer and composer. For example, the ENT surgeon, police officer and composer detailed how working with new colleagues presented challenges to cohesion, as they did not know how other colleagues worked. The ENT surgeon also offered a perspective on potential cultural barriers that could be experienced in a team, as illustrated in the following quotation:

> If you've got a…a team member who…um…who doesn't gel with you for any number of reasons, maybe cultural barriers, language barriers…um…and then you can't work together as a team, because surgery is very much a team work.

The specialist communicator and composer both reflected on *motivational team challenges*, when working with unmotivated colleagues. For example, the composer discussed musicians expressing a difference of opinion when a performance format was changed. The following quotation provides an insight into the composer's thoughts regarding the demotivated musicians and the impact it had on other musicians:

> You know, your behaviour is infectious. And if you are a moaning Minnie, then you will drag people down…you know, like emotional hoovers, they just suck the life out of other people. So, you need to kind of, avoid them. You know, it's different from being down or sad, or something horrible happening in your life. That I accept, and that's…I'll always look after people, but it's when they're just moaning…moaning for the sake of it…nothing constructive to say. So, that all has a huge impact on performance play.

Although the current study does not include the perspectives of other team members for the identified motivational team challenges, it could be suggested that the motivational team challenges are associated with communal coping. More specifically, communal coping considers shared team stressors

and Leprince et al. (2018) identified teammate relationship issues as a shared stressor experienced by sports teams. Relatedly, the composer's example of working with demotivated team members offers another example of a potential shared stressor relating to teammate relationship issues. Furthermore, the composer's example can also be associated with research conducted on emotional contagion, which is concerned with mood linkage in teams and how individual moods can influence the overall team mood (e.g., Totterdell, 2000). Of further interest, the examples of perceived team challenges pertaining to changes in team members (e.g., ENT surgeon) and interpersonal conflicts (e.g., composer) are recognised as potential challenges that can occur and impair team dynamics and performance, thus, requiring a team to be resilient to protect a team from the effects of stress (Alliger, Cerasoli, Tannenbaum, & Vessey, 2015).

In summary, the challenges superordinate theme provides an insight into *what* perceived stressors have been experienced by participants, and *when* they were experienced. Indeed, psychologists working with performers in high-pressure domains should seek to understand a performer's holistic perceptions and experiences of stress, to develop effective interventions and coping strategies (McKay et al., 2008; Noblet & Gifford, 2002) that are tailored to individual and team needs. More specifically, the perceived challenges discussed by participants in the current study imply psychologists working with expert performers should consider the following perceived challenges when attempting to help performers facilitate performance under pressure: situational challenges, physical and physiological challenges; cognitive, emotional, and personal challenges; and team challenges.

4.2 Superordinate Theme 2: Preparedness

All participants in this study discussed at least one aspect of preparedness for performance. Information presented in the forthcoming section supports the importance of preparing to perform across various performance domains (e.g., Broomhead, Skidmore, Eggett, & Mills, 2012; Burke, 2010; Cotterill, 2015; Hammermeister et al., 2010). Subordinate themes consist of: rehearsal, advanced planning, and pre-performance preparation.

4.2.1 Rehearsal

Participants reported engaging in different types of rehearsal, mainly physical and cognitive rehearsal, to prepare for performance. The royal marine, athlete, and composer explicitly described the varying types of *physical rehearsal* they have participated in to prepare for performance under pressure. For example, the athlete reflected on engaging in repetitive physical rehearsal, to develop an area for improvement:

> So, part of the bike element is to stay safe and tucked into the pack [ ] without utilising too much energy. So, that did cost me a lot in future races, and after that [ ] I did a lot more key sessions with one of the bike coaches to help get my confidence back on…just through repetition, repetition, repetition of corners.

Like the athlete, the royal marine also recognised the significance of repetitive physical rehearsal, through recollections of rehearsing in various conditions for parachute jumps, as illustrated in the following quotation:

> …when we're getting ready for parachuting [ ] we'll jump five or six times during the day, we'll jump at night, we…we'll jump every day for a couple of weeks, and at the end we'll start doing the, you know, the full [ ] tactical jumps. And these are the ones that, you know, you really need to make sure you get right.

The examples provided by the athlete and the royal marine can be associated with deliberate practice, which is recognised as a strategy to learn the skills required for performing under pressure (Cotterill, 2017). In contrast, other types of physical rehearsal identified by participants allude to *preparing to perform*. For example, the athlete described simulating performance when rehearsing:

> So, we'd simulate…simulate a lot of race specific things like that in training, so I'd always try and bring in images where it's gone well.

Additionally, there appears to be parallels regarding how the composer and royal marine prepared for performance, as both participants referred to physically rehearsing with *induced pressure*. For example, the composer discussed attempts to mimic performance when rehearsing:

> …when I'm playing, I do always imagine [ ] I'd rather have few people in the rehearsal, because I can picture…it's the real thing. So, I mimic the concert during the rehearsal, which helps experience how you're gonna feel.

Additionally, the royal marine reflected on feeling out of depth when participating in a pressure-induced training scenario, as illustrated in the following quotation:

> Just from listening to the briefs beforehand of what was expected of me, and the various different aircrafts that I had to talk to and plan, and make sure they didn't crash into each other and make sure we did…had this effect here, that effect there. And all these different working parts to the exercise, which were all playing into me controlling it all. And…um…when we flew in, we got picked up by helicopters, flew into the ahh…to the middle of the area that we were working in.

In relation to physically rehearsing in pressure induced environments, the specialist communicator reflected on circumstances in selection courses where stress induced states were imposed on performers, as signified in the following quotation:

> they put you under physical duress as well, whilst you're in a command position, so they can assess your command and leadership [ ] in different stress factors.

The examples provided by the composer, royal marine, and specialist communicator all relate to *pressure training* (PT). PT, which has been developed from the foundations of stress inoculation training, is a type of training where individuals experience an increase in perceived pressure when practising (i.e., rehearsing) (Low et al., 2020). To note, PT has also been referred to as self-conscious training (e.g., Beilock & Carr, 2001); anxiety training (e.g., Oudejans & Pijpers, 2009); and acclimatisation training (e.g., Beseler, Mesagno, Young, & Harvey, 2016) in previous studies. Crucially, PT has been reported to benefit performers in sport, medicine, and law enforcement (e.g., Hardy et al., 2017; Arora et al., 2009; Vickers & Lewinski, 2012). More specifically, PT offers a distinct form of training where an individual can train the "ability to cope with psychological pressure" while performing contextually relevant cognitive, physical or technical skills (Low, et al., 2020, p.4).

Although contemporary systematic reviews support the use and effectiveness of PT (e.g., Grőpel & Mesagno, 2019; Kent, Davenport, Lane, Nicholls, & Friesen, 2018), the police officer provided a contrasting viewpoint. For example, the police officer reflected on participating in role play training scenarios, concluding that it is implausible to mimic actual performance in the role play scenarios:

> They can't teach you how to deal with scenarios. They try and do role plays [ ] in the training school you go out and do all these different role plays with Mrs Miggins, and the shoplifter, and this, that, and the other. And it's…it's to try and get you to, you know, your confidence to speak to someone you don't know, arrest somebody that's…some stooge that's come in to help out…you've gotta go and nick 'em…who's gonna be awkward [ ] You know, and so they teach you that, to a degree, but they don't teach you…there's no way they can teach you all the scenarios you go to. We do officer safety training every year, which is your…your handcuffing, your baton strikes [ ] unarmed combat, so if someone's coming at you…how to…how to kind of control, and you know, block off punches and stuff, and be able to, you know, defend yourself. That's fine. But, it's not…it never happens how they'll teach you in the classroom.

Similar to the police officer's perspective, previous researchers have undeniably recognised that PT training may not be able to fully mimic all real-life scenarios; however, it is argued that the anxiety induced in such training scenarios can still benefit an individual in future performances (Low et al., 2020; Oudejans & Pijpers, 2010).

Parallels in participants' examples of physical rehearsal with induced pressure (e.g., the composer, royal marine, and, specialist communicator), implies that psychologists working in different performance domains may be able to share strategies when designing physical rehearsals to enable preparation for performance. For example, the design of the pressure-induced scenarios experienced by the composer, royal marine, and specialist communicator could be transferred to other performance domains that afford opportunities to physically rehearse in advance of performance (e.g., sport).

Separate to physical rehearsal, the composer, royal marine, and athlete discussed facilitating forms of *cognitive (mental) rehearsal* in preparation for performance under pressure. The composer highlighted how the lengthy duration of physical rehearsal, subsequently informed cognitive rehearsals when preparing for performance. Specifically, the composer discussed the process of visualising performances, as illustrated in the following quotation:

> I do it months and months before (visualisation). So, I wouldn't be doing it now. But, when I go off and start rehearsals, which I generally do with the musicians [ ] in a rehearsal room, I do that…five-weeks before the show. And then every week we meet up, and then I record it. So, on the train home, headphones on and I will re-listen to everything we've done [ ] I just keep playing it around in the car and then practise by playing at night time. If I'm in bed, I'll have the

> tunes round my head and I will again react to everything from starting the piece, which is one of the most important things, how you start it…all the way through every time, just continually, it just becomes night and day.

Interestingly, the athlete and royal marine discussed similar processes that underpin personal cognitive rehearsals, as both participants reflected on writing notes prior to conducting cognitive rehearsals. For example, the athlete reflected on writing notes before commencing a visualisation process, the night before a performance:

> …it was more the process of writing things down. So, you'd write everything down, and then I would sit down, and I'd read through my notes, and that's when I'd shut my eyes and I'd just picture myself going through these points that I've made…um…rather than actually having any kind of…anything else going on with it.

The royal marine offered a slightly different perspective that combined reading notes with mentally "going through" a task the night before a performance:

> Yeah, so I was going through the whole jump. I'd go through like, you know, we'll exit the aircraft, "right I've got to get…I've got to get steady, I've got to get level". Deploy my parachute "Right I'm happy with that. Right, now I've got to do this, I've got to make sure the guys are with me. Right now, I've got to get us back to here". "Right once I get here, I wanna make sure I see these", you know, all the various different things you have to do with parachuting. Um…and then at the back of my mind I was just thinking "as long as we can get everybody to where we need to go, then I'm happy". And I just kept going through all the weeks of training in my head, reading all over all my notes, making sure that everything I'd learnt, all these little mistakes that I had…we all made, weren't getting made on the last jump.

Interestingly, the examples of cognitive rehearsal provided by the royal marine, athlete, and composer all appear to have the function of enabling a focus on future performances. However, there are slight differences in how cognitive rehearsals are applied by the participants. For example, the royal marine appears to incorporate a self-talk process as a cognitive mechanism to focus on future performance requirements (e.g., Hardy, Oliver, & Tod, 2009). In contrast, the athlete and composer used visualisation processes to rehearse future performances. The parallels found between the athlete's and composer's use of visualisation, suggests psychologists working with performers in sport and music performance

domains may be able to transfer visualisation strategies that enable performers to cognitively rehearse in advance of performance.

4.2.2 Advanced Planning

The composer, royal marine, ENT surgeon, and TO surgeon all reflected on *planning processes* conducted in advance of performing under pressure. For example, the ENT surgeon, TO surgeon, and composer all detailed the lengthy and *meticulous planning processes* applied prior to performances. The following quotation illustrates the duration of the TO surgeon's planning and what it typically entailed:

> …I will have seen the patients in my pre-assessment clinic, I'll have seen them in the outpatient's clinic…if it's planned surgery…seen them in the outpatient's clinic. I've got a pretty good plan about what I'm going to do, and I document that. Then about…they'll have waited some weeks before their surgery, and about a week before their surgery they come to my pre-assessment clinic and I go through the operation with them then. The patient gets consented, and I go through exactly what I'm going to do with them, having thought it out, partly on your feet as you're going, partly I've thought about it beforehand. And I…it's documented clearly in their notes what we're planning to do, and if there's any funny steps. And then, when we come to the operating theatre, we do exactly the same thing.

Furthermore, both the ENT surgeon and TO surgeon reflected on the advanced planning conducted on the day of surgery, which included team meetings. The following quotation from the TO surgeon highlights an example of the planning that took place on the day of surgery:

> If it's something that is slightly unusual [ ] so, in the way our system works, we have the trauma meeting in the morning, I get told about the case in the morning, and I'll have a think about it then. It's what I'm gonna do that day, and it's slightly unusual. Then having done the trauma ward round on my way down to fracture clinic in the morning, I go via the operating theatre…find the team that's gonna be doing the operating that afternoon and say "right, we've got X on the list…ah…this is how I'm planning to do it, these are the bits of kit I'll need you to get ready" um…"have you got that bit of kit on the shelf?" If not, you know, we'll delay it for another day, or whatever…or, "can you get that bit of kit in by this afternoon?" Um…so, that

> we…hopefully, when you walk into the operating theatre, everything's good to go, and you're ready to go.

Offering a different perspective of advanced planning, the composer reflected on a *familiarisation process* adopted, in advance of a concert. The following quotation illuminates the meticulous familiarisation process adopted:

> …If I'm gone, I will find pictures of the stage and pictures of anybody else that's performed there, then I'll have a look and see that and watch it to see the kind of environment, before I go to it. To, as soon as I turn up at the venue, I'll always go and sit at the back, at the front, the balcony, all around, just to see how it feels being from that aspect of things. Take a lot of pictures and then if I'm rehearsing and I've had pictures taken, so I can see how I'm sitting, my posture. Um…performance, then the sound quality. And then we have to…which is part of the…um…sound check sessions, is to see how the…the sound radiates out to the audience, because that's a huge thing. And then how the sound radiates back to the musicians.

In relation to the composer's familiarisation process, it is suggested that if musicians can visit and rehearse in a venue prior to a concert, it enables them to assimilate performance setting cues into performance preparation, which subsequently, reduces the attentional demands and attentional resources required during performance (Kenny, 2011).

In addition to the meticulous familiarisation process, the composer also reflected on the advanced planning required to ensure the physical environment was set up prior to a concert (e.g., positioning and tuning the piano) and how various *practical solutions* were implemented to overcome potential barriers to performance. For example, the composer discussed contingency plans to ensure music scores were always available, in the following example:

> …I will always check if there's music shops nearby, if there are print shops nearby, so if something worst-case happens, I have all my scores on a pdf file, on a drop box, online. So, wherever I am around the world, and something drastic happened…the music got stolen…I can control that, because I can print out more copies and…and I travel with three lots of scores. So, one score I sent ahead with DHL (laughter), I travel with scores, and then another family member will have scores in their suitcase, just in case.

Providing another perspective, the royal marine discussed the significance of *scenario training* when planning in advance of performance under pressure:

> …we sort of plan scenarios and we work out how it could go, how we want it to go, and then we'll maybe throw in a few scenarios. Where we're like "OK, so this has happened now, this guy had to pull his reserve, what we gonna do?" [ ] I'd plan for that in my head and I'll make sure that if anything, you know, because I was in charge of this…if anything happens, any scenarios that are out of my control, I've got an option or I've got something in my head, which I can react to quickly [ ] So, I just plan things in my head, things that could wrong, how I would deal with it.

Planning is deemed a key problem-focused strategy as participants are directly aiming to manage the situation where there is a stress appraisal (Lazarus & Folkman, 1984) and has been recognised as a key coping strategy used by expert performers (Gould et al., 1993b; Harris et al., 2017). It could be argued that planning increases a perceived sense of control over future situations, and previous studies have suggested perceived control can benefit performance under pressure (e.g., Otten, 2009; Swann et al., 2017), as the perception of being in control potentially induces a challenge state (Jones, Meijen, McCarthy, & Sheffield, 2009) and reduces negative anxiety (Hanton, Neil, & Mellalieu, 2008). Additionally, scenario-based training (i.e., planning), as undertaken by the royal marine, affords performers the opportunity to rehearse in "simplified versions of the real-world" (van den Bosch & Riemersma, 2004, p.5). Crucially, scenario-based training can enable an individual to develop the key physical and cognitive competencies required to execute successful task performance in situations that may occur (Fowlkes, Dwyer, Oser, & Salas, 1998).

In terms of inter-professional learning, psychologists working in the military, music, and surgical performance domains could consider the transferability of planning processes to help performers mitigate the effects of stress experienced prior to performance. For example, the meticulous familiarisation process adopted by the composer could be transferred to other performance domains that afford performers the opportunity to visit a performance venue in advance of performance (e.g., sport). Additionally, the team planning processes discussed by participants in the military (e.g., scenario training) and surgical (e.g., team meetings) performance domains could also be transferred between the two domains.

4.2.3 Pre-Performance Preparation

Pre-performance preparation in the current study, refers to the preparatory cognitive and behavioural strategies participants applied in the moments prior to commencing performance under pressure.

Interestingly, the TO surgeon, specialist communicator, and police officer all offered perspectives of using pre-performance preparation strategies that functioned as final plans that incorporated *what if scenarios*. For example, the TO surgeon reflected on the use of surgical timeouts, which acted as the final stage of planning before starting a surgical procedure. The following quotation from the TO surgeon illustrates the three stages of planning implemented in surgical timeouts, and the importance of considering any associated what if scenarios:

> …I'll get them to draw out the fracture, and how they plan to put it back together, and where they plan to put the plates and the screws [ ] and exactly how they're gonna do it. And, then they write down next to that, how they're gonna set the patients up, how the patient's going to be anesthetised, the surgical approach they're gonna do, how they're gonna position the plates, what they're gonna do about the nerves [ ] So, that's screen one…screen two is kit. So, all the bits of kit they think they're gonna need during the operation, that they're gonna need to write down, so that they can then tell the theatre staff exactly the bits of kit that they're gonna get out [ ] And then, third screen, is almost the most important screen, you know, um…it's one I call the what if's? So, if I make a hole in the axillary artery…"how am I gonna get around that?" "What am I gonna do if that goes wrong?" "What if I can't reduce the fracture, and I can't get the fracture done? What am I gonna do then?"

In relation to embedding what if scenarios into pre-performance planning, the specialist communicator appeared to adopt a self-talk process that incorporated what if scenarios before descending on a parachute jump:

> So, then you've got to think about the…the what ifs. So, when I'm on the plane the initial bit is "right, what if I get in twists?"…um…"what if I've got a line over?"…so "what if there's a problem with my parachute?" Well I know where the…I know where my reserve is, so then I feel for my reserve [ ] it's that warm fuzzy feeling of…I'm moving my hands, you can't see…ah…it's that warm fuzzy feeling of…of "I know the drill to…to fix that immediate problem", because that's gonna be the next problem. It isn't going to be that I'm going the wrong way, because that's a bit later on down the line.

The suggestion of getting a "warm-fuzzy feeling' aligns with establishing a positive mood affect for the upcoming task. Additionally, the specialist communicator's pre-performance strategy seemed to have an attention function, as the specialist communicators pre-performance self-talk process may have

increased concentration (Chroni, Perkos, & Theodorakis, 2007) due to focusing on specific task requirements. Furthermore, it could be argued that the specialist communicator's pre-preparation strategy is a pre-performance routine, which involves a "sequence of task relevant thoughts and actions" systematically applied before performing (Moran, 1996, p.177). Indeed, a primary function of pre-performance routines is to enhance attentional focus (Cotterill, 2011, 2015; Czech, Ploszay, & Burke, 2004).

In relation to incorporating what if scenarios into a pre-performance preparation strategy, the police officer reflected on engaging in a *formalised decision-making process*, to consider what challenges could occur (i.e., what if scenarios) in impending jobs, and the solutions available to overcome the challenges:

> …we use a 'National Decision Model'…the NDM as they call it. And that's something that we all use, which is basically [ ] it's a five-step system. So, it's…it's basically: the information you get is part of it; then you've got the threats…so you know, the information is it's a person with a knife, the threat's [ ] someone's got a knife, that's gonna hurt us. And you then look at your powers and procedures, so "what powers have we got?" [ ] So, we're thinking of our powers and procedures on the way there. Um…and you then go round with, what have…you know, basically…um…"what other things can we do? Who else can we call? Do we call the Armed…Armed Response Unit? Do we call a traffic unit? A dog unit? Other units?

Of further significance, the police officer explained the communication process adopted when receiving notifications for new jobs to attend. The following extract highlights how the police officer, along with a colleague, would seek information to generate a greater contextual understanding of the ensuing job:

> …en route on the radio, obviously the control have got access to god knows what systems, you know, they've got everything. So, we're asking all the questions on the way there. So, if we're, you know, it could be that the crew…generally, if you're driving, your crew mate is going to do all the talking on the radio. So, they're asking for, you know, previous information "do we know anything about these people?" "Do we…have we been there before?" "Have we come across anything?" Has that person got any warning signs?" "So, is…are they violent?" Have they attacked the Police before?" [ ] So, they'll come back with everything.

By increasing the contextual understanding of a forthcoming job, the police officer potentially formed future situational states relevant to the job, to decide on relevant responses (e.g., Harris et al., 2017; Ward, Ericsson, & Williams, 2013; Ward, Suss, Eccles, Williams, & Harris, 2011). Furthermore, it is

plausible to suggest that from gaining a greater contextual understanding of a job, the police officer's self-efficacy increased due to attaining a greater perceived sense of control (Harris et al., 2017; Izana, Driskell, Salas, & Johnston, 1996; Thompson, 1981). Indeed, it could be suggested that the examples of what if scenarios provided (e.g., ENT surgeon, TO surgeon, and specialist communicator), all had the function to enrich the contextual understanding pertinent to a forthcoming task. Subsequently, participants' levels of self-efficacy may have increased, due to developing a greater perceived sense of control.

This finding has relevance to psychologists working in different performance domains, due to the potential transferability of incorporating what if scenarios into pre-performance preparation strategies. For example, the structured surgical timeout process reported by the TO surgeon, could be shared with other domains that are afforded the opportunity to conduct last-minute plans before performing in known contexts (e.g., in the military and police for pre-planned operations). Also, the decision-making strategy (e.g., NDM) used by the police officer, could be transferred to other domains that need to react to information received during unexpected situations (e.g., when unexpected situations occur in the military and surgery).

Analogous to previous research, the current study provides further evidence of similarities in cognitive strategies adopted by participants when preparing to perform under pressure (e.g., Cotterill, 2015). For example, both the specialist communicator and police officer seemed to incorporate self-talk processes when considering what if scenarios. This finding suggests that self-talk strategies could be shared between personnel who operate in the police and military.

Similar to the specialist communicator, both the athlete and the composer also reflected on using pre-performance routines. For example, the athlete discussed applying a visualisation strategy as part of a pre-performance routine before competing in triathlons. The following quotation illustrates the athlete's visualisation process:

> The starts about 300 metres to the first buoy, so it would be a matter of concentrating when I go out onto the pontoon, again you go out on the pontoon and you have all the music playing…um…it builds up all of the suspense. So, I then have to go into a…like a visualisation strategy where I'd start picturing myself swimming well [ ] setting off well. So, I basically visualised the whole of the race and how I wanted it to go.

Additionally, the athlete offered a further explanation of the visualisation used, as part of a pre-performance routine:

> …I was taking myself back to going into say, London Hyde Park, where I knew the swim was on. I'd be picturing a race prior to that, where I executed everything I wanted to, so where the swim had gone particularly well. So, I'd be picturing how that felt, what that looked like, how the start was, again, bringing in technical things, so I'd have my head down for eight strokes, I'd be kicking hard.

Interestingly, the athlete seemed to use visualisation for both cognitive and motivational purposes, as part of a pre-performance routine. This finding has similarities and differences with previous researchers' findings (e.g., Cotterill, 2015; Hays, 2002; Nordin & Cumming, 2005) who identified differences in the purposes of using pre-performance visualisation between creative performers (e.g., musicians) and more functional performers (e.g., athletes and surgeons). Specifically, it has been argued that more creative performers use pre-performance visualisation for motivational purposes, whereas more functional performers use pre-performance visualisation for attentional purposes (Cotterill, 2015). The athlete's example of visualisation provides partial support for this argument, as the athlete's visualisation process seemingly had an attentional purpose (e.g., focus on technical aspects). However, the athlete's example also offers a contrasting viewpoint, as there also appears to be a motivational function of the visualisation process reflected on (e.g., picturing a positive performance).

Of further significance, there appears to be parallels between the purposes of pre-performance routines adopted by the athlete and the specialist communicator. Although there are differences regarding the techniques used (e.g., self-talk and visualisation), the participants' pre-performance routines both had attentional and mood functions. This suggests performers in the military and sport may be able to transfer pre-performance techniques to achieve similar functions.

Finally, the composer discussed how a pre-performance routine increased confidence levels before going on stage. The following quotation illustrates the posture adopted and how it increased confidence:

> It's the whole shoulders, standing up and if you walk into a room [ ] it's the dynamic of standing there and you know, shoulders forward and being confident and standing up [ ] So, I've learnt that's a really good way of anything in life, not just a performance, but it does help. Going on stage straight and walking on as if you mean to do well.

In relation to the example provided by the composer, adopting an upright posture has been suggested to increase an individual's self-esteem and positive mood state (Nair, Sagar, Sollers lll, Consedine, & Broadbent, 2015), as perceived bodily schemas (i.e., perceived body image) of a posture adopted informs emotions experienced at the time (Schilder, 2013).

4.3 Superordinate Theme 3: Personal Responsibility

Personal responsibility emerged as a superordinate theme, as participants reflected on acknowledging and accepting personal responsibilities to cope with performing under pressure. The personal responsibility theme consists of four subordinate themes: establishing task focus, role acceptance, lifestyle management, and self-awareness.

4.3.1 Establishing Task Focus

Establishing task focus emerged as a key personal responsibility discussed by participants, and there were some similarities and differences between the types of task focus adopted by participants when performing under pressure. For all participants, except the composer, it was apparent that to achieve performance objectives participants avoided engaging with emotions. Relatedly, several participants reflected on the ability to focus on the *here and now* during performance under pressure. Indeed, two participants identified phrases associated with establishing task focus. For example, the police officer referred to an "investigative mode" and the specialist composer coined performance focus as having a "business lens".

When establishing focus during challenging situations, four participants (e.g., the royal marine, specialist communicator, police officer, and ENT surgeon) referred to adopting a *broad focus* (i.e., consider the bigger picture). Typically, after considering the bigger picture, subsequent plans were determined enabling participants to focus on the *process of how* to achieve task objectives.

In relation to establishing a broad focus, the specialist communicator reflected on a methodical approach to problem solve during a challenging situation (e.g., a communications problem):

> …I seem to be a bit more methodical in my thinking [ ] I tend to like, escape out of myself if that makes sense. So [ ] I look at the problem as…as a bigger picture [ ] rather than looking at what

> I've got in front of me. So, if I…if I'm using my laptop, rather than looking at a laptop, I think about how the bigger picture is. So, how does that laptop connect to that radio? How is that radio connected to that? How does that travel? Right [ ] I know the principles of it, because it's science and it's…it's not complicated. Um…I then understand that I am not the only…at that point, I knew I was not the only [ ] person speaking back to the squadron headquarters. So, I then just needed to engineer a way of doing that [ ] through one of the aviation assets.

Additionally, the specialist communicator also identified combining the use of visualisation during the same process, as highlighted in the following quotation: "Yeah, so it's visualising who's talking…who would be talking to who…um…and how that's done as well."

Of further interest, in the first excerpt the specialist communicator refers to escaping out of oneself, which could be interpreted as avoiding a narrow focus (tunnel vision) and / or the avoidance of allowing emotions to affect performance.

Offering another perspective of establishing a broad focus, the ENT surgeon described a hypothetical challenging situation during surgery, that would require a focus on considering alternative solutions:

> …otherwise you have to think that you can achieve almost the same level or outcome when you go for the alternative approach, and doing it maybe more tedious, or maybe more time consuming. Um…for example, if you're to stop bleeding, um…you can try to tie the bleeding blood vessel, to stop the bleeding, or you can have a machine that will buzz the blood vessels which is very quick and easy. So, if you don't have that machinery or it is broken, then you will think "OK I will go and tie it", which is a little bit more combustible, it will take more time, and…ah…but you have got ties that are suitable for that, so you go and tie the blood vessel.

An additional example of developing a broad attention was also provided by the police officer, as illustrated in the following quotation:

> …it's more of…you look at the bigger picture. You…you look at "what are we gonna do now, to stop this from happening" [ ] Now, I'm sitting there thinking…I look at…every angle…"what are you doing? Why are you doing this? What about that?"

From this example, the police officer appeared to use a self-talk process to evoke a broad focus. Similarly, the specialist communicator also seemed to include a self-talk process to consider what if scenarios (i.e., considering the bigger picture) during a parachute jump:

> …once descending, once the canopy's open and everything's happening, and I'm going roughly in the right direction, then it's "right, what if…what if I hit a thermal wind layer at…?" We…we get told roughly where they are if there is…um…or "if that knocks me this far of course, how am I gonna do that?" So, then I…I'm just kind of trying to always pre-empt something. When I get to the bits where it's land…when it's landing, then I'm racing into "right, when I land on, pack my chute away, get to the re-org…"what have I got to do then?" "I need to find my body armour, I need to put my radio on, I need to get my kit, I need to get my weapon, I need to…um…check everything, get comms, and then be ready to move on".

The examples provided by the participants associated with establishing a broad focus during performance under pressure, coincide with situations where participants were required to problem solve. More specifically, participants adopted *convergent thinking* to think about the bigger picture when attempting to find solutions to problems experienced. Indeed, convergent thinking is deemed to provide a foundation for problem solving (Akbari Chermahini, & Hommel, 2012), as this type of thinking requires an individual to focus on finding a possible solution to achieve a desired goal (Werner, 2016). This finding has implications for psychologists working in domains where performers are required to use convergent thinking for problem solving. For example, the methodical strategy used by the specialist communicator could be transferred to the police and surgical performance domains.

Of further interest, the police officer and specialist communicator both appeared to include a self-talk process when establishing a broad focus. Researchers have indicated that self-talk can be used as a cognitive mechanism to evoke desired concentration, attention style, and attentional control (Hardy et al., 2009). This finding is of relevance to psychologists working in different performance domains, due to the potential transferability of the self-talk strategies between policing, military, and other performance domains that require convergent thinking to solve problems (e.g., surgical performance domains).

In contrast to establishing a broad focus, the athlete and TO surgeon discussed establishing a *narrow focus* during performance under pressure. For example, the TO surgeon reflected on circumstances when a patient was in extremis (i.e., in a life-threatening condition), and would become "blinkered" to everything else. The narrow focus was established due to performing with a team of surgeons, and importantly, another consultant who would be making the important decisions.

Offering another example, the athlete reported adopting a self-talk strategy to establish a narrow focus on process goals during a challenging situation. Importantly, the athlete stressed the importance of focussing on *controlling the controllable*. The following quotation highlights how the athlete used instructional self-talk to focus on the technique required for the swim element of a triathlon:

> And then from the minute the gun would go, I'd then concentrate on a plan of…"right, head down for eight strokes". So, I basically go through, what I practised in training and then it was like that throughout the race. When I get to the first buoy: "right, it's head down"..."kick"…I…I've probably had some sort of…ah…skill that I would be thinking about, rather than thinking about what's happening in the race, I'd be thinking about something specific to help me swim well.

The process goals described by the athlete are related to executing specific technical aspects of skills required for performance at the time. Importantly, process goals can potentially benefit performance because they are deemed to be within the performers control (Cotterill, 2017). In the example discussed by the athlete, the importance of not focussing on other aspects of the race (i.e., factors out of personal control) was highlighted, which may ultimately reduce encountering negative emotions associated with performance. Importantly, psychologists may consider the transferability of the process goals adopted by the athlete to other performances where performers are required to establish a narrow focus (e.g., surgical performance domains).

To note, both the athlete (e.g., when adopting a narrow attentional focus) and the specialist communicator (e.g., when adopting a broad attentional focus) appeared to incorporate the use of instructional self-talk to focus on performance processes. Instructional self-talk assists performers via skill and strategy functions (Hardy, Comoutos, & Hatzigeorgiadis, 2018). Historically, instructional self-talk was deemed the superior form of self-talk for motor skills that require precision, as the approach potentially improves the performer's concentration.

In contrast, motivational self-talk was previously suggested to be more beneficial for strength and endurance-based skills, due to its mood effect (Theodorakis, Weinberg, Natsis, Douma, & Kazakas, 2000). However, contemporary advancements in the self-talk literature have argued against the use of instructional self-talk. This is especially the case for skilled performers, as it requires individuals to concentrate on skills that would otherwise be performed automatically, resulting in paralysis by analysis or deautomisation (Hardy, Begley, & Blanchfield, 2015; Wulf, 2007). However, the examples provided

by both the specialist communicator and the athlete offer empirical evidence for the use of instructional self-talk by expert performers during performance under pressure.

This finding has implications for psychologists working with expert performers in all performance domains, as the instructional self-talk strategies appear to be applicable to establishing both broad (e.g., specialist communicator) and narrow (e.g., athlete) focus. Thus, there may be opportunities to transfer the instructional self-talk strategies used by the specialist communicator and athlete to other performance domains (e.g., policing and surgical performance domains).

4.3.2 Role Acceptance

The police officer, royal marine, specialist communicator, and ENT surgeon all reflected on having a conscious *awareness of accepting job roles and responsibilities* to cope with and perform under pressure. For example, the police officer discussed understanding the role of the police to preserve and save lives (e.g., "that's what we've signed up for!") and being aware of taser carrier responsibilities when coping with challenging situations. Additionally, the ENT surgeon reflected on providing patients with a "better quality of life".

Offering another viewpoint, the royal marine described being confident and pleased to be given tasks that aligned with job roles and responsibilities, as illustrated in the following quotation:

> So, I've recently done a course, about a nine-month course in reconnaissance, and leading people over arduous terrain. And when…when I got given a task, "oh you're going to lead the guys up into mountains up there" I was just like "well, that's…that's what my job is anyway". I was more than confident to do it, I got given the task of planning the route, getting the guys up there into position and in the middle of the night. And again, it was just…for me it was just like, yeah this was a hundred percent my sort of field of expertise at the time. And I was pleased to get given the…the task. And then I went about planning it and using the experiences from before to make sure it went as smoothly as possible.

The quotation from the royal marine also highlights an aspect of obedience, due to not questioning the orders provided. Obedience was also identified by the police officer from suggesting "people don't argue, they just do it" when provided with commands from higher ranking colleagues.

Of further significance to role acceptance, the police officer also discussed 'being professional' on numerous occasions. For example, the police officer highlighted the importance of being professional to manage the public in challenging situations:

> …if you turn up and then straight away they think "oh…ohhhh you don't know what you're doing!" And then, if you come across as professional and…and you understand what's going on and [ ] you know, we don't go in there thinking "I'm…I'm gonna nick this person!" You know, because if you go in there, and that's your mind set, it's gonna go horribly wrong. If you go in there open-minded as to "right, there's always two stories to"…you know, two sides to every story.

The responsibility of being a leader was also reflected on by the police officer and specialist communicator. The police officer referred to experiences of arriving first to a scene and facilitating the role of a leader to provide orders to other colleagues. Also, the specialist communicator discussed experiences of leading by example, as illustrated in the forthcoming quotation:

> …anything that's physical I'm generally at the front, and that's the kind of…ah…the…the leader that I try and portray. You know, I might not be the fittest person there, so I might not be really at the front. But…um…I kinda…I always think [ ] that's the way to encourage. Leading by example is massive in the army.

From the examples highlighted, it appears that the participants adopted a *challenge state* when acknowledging and accepting job responsibilities to cope with challenging situations. A challenge state occurs when a performer appraises whether they have the necessary resources to cope with task demands (Seery, 2011). Indeed, by accepting job roles and responsibilities, it could be suggested that the participants realised they had the necessary resources to cope. Crucially, adopting a challenge state is suggested to evoke cognitions that are positive for performance, which mitigate the deleterious effects of negative emotions (e.g., cognitive anxiety) on performance (Jones et al., 2009; Moore, Vine, Wilson, & Freeman, 2012).

4.3.3 Lifestyle Management

The subordinate theme of lifestyle management is included in the personal responsibility theme, as it appears several participants established personal lifestyle choices in relation to performing under

pressure. Interestingly, there seemed to be contrasting viewpoints regarding why specific lifestyles were adopted. The athlete, police officer and specialist communicator discussed lifestyle management strategies that enabled them to *dissociate* from performance pressures. The following quotation from the specialist communicator illustrates how managing a personal lifestyle to keep fit, provided a form of dissociation from stressors associated with the job:

> …I think the only real other coping mechanism I have is…is trying to keep fit and trying to…for me, it's going on the bike, going in the gym, just pull yourself away from the stress of…um…of whatever it may be that you're doing. Um…and put yourself in a different…mines still a fairly competitive mindset, but it's not competitive [ ] in a work scenario.

Offering another viewpoint of developing a personal lifestyle, the following quotation provides an example from the athlete who reflected on changing from an intense lifestyle in training camps, to now having a busier, happier lifestyle to dissociate from thoughts about the job:

> …I had a lot of other things, so I was working part-time, well not even part-time, it was probably something like 15 hours in the local running shop, just something to take my mind off what I was doing. Um…like I said I had my husband there, friends, we bought a dog, I had other things that weren't just training. And (name of town), was literally eat, sleep, train, repeat – eat, sleep, train, repeat. And, some people thrived on that, but I didn't. I chose other…other stimuli.

The examples of lifestyle choices provided by the specialist communicator and athlete represent forms of psychological detachment from job-related stressors. Psychological detachment is viewed as an important off-job experience to aid wellbeing and recuperation (Soonentag & Fritz, 2007, 2015), which subsequently enables an individual to rejuvenate personal coping resources that may have been expended during past job performances under pressure (Grawitch, Barber, & Justice, 2010; Sarkar & Fletcher, 2014a). Considering this finding, psychologists may consider how to get performers to develop effective lifestyle management strategies to dissociate thoughts away from performance pressure, thus mitigating the effects of stress experienced away from the performance environment.

In contrast, the composer, royal marine and ENT Surgeon discussed managing lifestyles to prepare for performances. For example, the royal marine referred to maintaining fitness levels in preparation for performance. Additionally, the composer identified the need to maintain a *healthy lifestyle* to avoid illness, injury, and tiredness in the build up to a concert, as illustrated in the following quotation:

> …back to the sleep stuff and not be awoken by things troubling me at three in the night. Get a lot of sleep and eat well…I have, you know I drink glasses of wine, but I'm not a heavy drinker, but make sure coming up to that, I…I just don't go near it…I just make sure I'm…I'm eating…well just, anything that I can control in that environment. I do sport, but again I don't do too much the days building up, so that I don't injure myself or do something…um…silly. So, there is a planned mechanism in terms of being tired, or not tired and trying to keep things calm.

The ENT surgeon and TO surgeon both stressed the importance of *time management* to ensure they were prepared to meet targets for surgical lists. The following quotation from the ENT surgeon highlighted the importance of time management when preparing for performance:

> …my working schedule [ ] may start at eight-thirty, in fact to do surgery I have to come in at quarter-to-eight. So, I find the time, come there and then I have got time to sit with the four or five patients that I'm going to operate on that day, talk to them and…ah…make sure that the theatre starts at eight-thirty, otherwise you may be starting at nine. So, if I'm pushing those limits, then towards the end it becomes more and more stressful.

The lifestyle management examples provided by the royal marine (e.g., maintaining fitness levels), composer (e.g., healthy lifestyle) and ENT surgeon (e.g., time management), align with proactive coping which is synonymous with taking preventative steps to avoid resource depletion (Greenglass & Fiskenbaum, 2009). Indeed, it could be suggested that by developing proactive personal lifestyle choices, the royal marine, composer, and ENT surgeon all experienced an increased sense of perceived control over future performances. Crucially, developing a perceived sense of control is associated with reducing stress levels (Greenglass & Fiskenbaum, 2009).

4.3.4 Self-Awareness

Self-awareness pertains to participants who had an *awareness of personal emotions* and acknowledged the personal responsibility to *manage any unwanted emotions* that could hinder performance.

One example of self-awareness was provided by the ENT Surgeon who was aware of personal weaknesses and acknowledged the personal responsibility to prevent them from affecting performance. In addition, the police officer reflected on being aware of controlling adrenaline levels (i.e., arousal levels) when attending jobs. Other participants (e.g., composer, TO surgeon, specialist communicator,

and royal marine) all alluded to recognising situations where frustration may influence personal performances. For example, the specialist communicator recognised situations where frustration would lead to tunnel vision, and in such circumstances, would require specific strategies to cope:

> I know what my weaknesses are…um…and I know that if I get angry I'll (get)…tunnel vision. So, always being able…or try and step back and not get to that point where tunnel vision will step in.

The participants' examples demonstrate the ability to be aware of personal emotions and can be associated with emotional intelligence. Historically, emotional intelligence (EI) has been debated as either being a cardinal trait or a learned ability (Stough, Saklofske, & Parker, 2009). However, contemporary researches offer a practical alternative, in the form of a tripartite model (Laborde, Dosseville, & Allen, 2016). The tripartite model postulated that EI consists of three levels: 1) knowledge of the emotion (i.e., understand a certain situation may elicit an emotion, and the assess the need to manage the emotion; 2) having an ability to manage the emotion (i.e., adopting a specific strategy); and 3) trait aspect (i.e., what people would usually do) (e.g., Mikolajczak, 2009; Nelis, Quoidbach, Mikolajczak, & Hansenne, 2009). Although the current study does not establish whether the participants have trait EI, it could be suggested participants have developed the ability to be aware of personal emotions, the effect they might have on performance, and the need to manage them in challenging situations.

4.4 Superordinate Theme 4: Adaptability

The ability to adapt when coping was discussed by all participants in this study. However, the type of adaptations varied and included similarities found in two subordinate themes: cognitive adaptation and behavioural adaptation.

4.4.1 Cognitive Adaptation

The cognitive adaptability of participants appeared to be based on the foundation of *reappraising* any unwanted or unhelpful thoughts the participants experienced. There were various ways the participants reappraised thoughts to be able to perform under pressure. For example, developing a *sense of*

perspective emerged as a method to reappraise unwanted thoughts. This approach appeared to be important for the royal marine, composer, and police officer. For example, the royal marine specifically discussed adopting a sense of perspective that was realistic to the situation, as illustrated in the following quotation:

> …if it's an exercise, I put it into perspective the fact that "well I'm going to go home at the end of the week. I'm gonna see my family". If I'm away on operations, that's a little bit different, because there's a lot more ah…importance put on life and death, things like that. But…um…I tend to sort of leave like the "Oh well, I've still got my family" because that's not the case; I'm out there doing a job, where people's lives depend on it, and my family's at the other side of the world [ ] it's not really relevant. But...um [ ] I have my friends around me, which [ ] make it the point that you need to succeed.

This cognitive approach suggests that adopting a realistic sense of perspective almost made the thought process more believable to the royal marine, when reappraising negative thoughts. Interestingly, there appear to be some differences regarding when the three participants applied a sense of perspective, in relation to performing under pressure. The royal marine was conscious of only adopting a sense of perspective prior to and post-performance. During performance the royal marine was adamant that a sense of perspective was unsuitable, as it may affect task focus:

> …if I'm honest I'll try and do it before. So, if I'm stressed about before it, I try and put it into [ ] perspective before. If I've done it and I've cocked it up, and I'm getting a lot of flak from my boss or from the guys, then I'll put it into perspective afterwards. But, during…I'll be honest, during I'm 100% focussed, whether I'm doing well or doing badly. Um…I tend to try and…I don't tend to think about…ah…stuff like that. So, in the middle of what I'm doing, my family [ ] everything I put into perspective [ ] they don't get a second look in. I…I'm focused on what I'm doing at the time. If it goes well, great, and if it doesn't then I'll reflect later.

In contrast, the composer provided an example of adopting a sense of perspective during performance, after experiencing an unexpected and unfavourable situation prior to a concert:

> I had to then, just re-adjust how I felt about it, which was "wow, beautiful colours, what does this mean?" And then as I was performing, I'd look up at it (exhibition), I'd use that as an element of emotion which is: "what a tough thing, and what a lucky position we are all in!" And then seeing the, you know, the children's…tiny children's clothes. You know, things like this,

> that kind of strike a…a chord, so I turned it to good, it's back to focusing and making bad stuff or challenging stuff, into a positive.

The composer's perspective signifies how the emotions evoked from the situation were embraced and channelled during performance. Of significance, the perspective offered from the composer suggests the sense of perspective helped to elicit a positive mood state for performance, which contrasts to the royal marine who indicated avoiding inducing emotions during performance. Indeed, the royal marine aimed to focus on a task during performance under pressure, as developing a sense of perspective (e.g., thoughts about family) may elicit unwanted emotions that could impair task focus.

Like the royal marine, the police officer reflected on adopting a sense of perspective following performance, in this instance, to cope with traumatic experiences:

> …you're just sitting there and you're thinking about what you've just been to. You know [ ] you think about how lucky you are, you know your parents are still around. And then I think sometimes I kind of sit there and think "one day this is gonna happen to me", you know, my parents. And you kind of just sit and think "cor blimey".

Other forms of developing a sense of perspective discussed by participants included *acceptance of a situation* and *self-acceptance*. For example, the athlete, TO surgeon, and specialist communicator discussed accepting situations when cognitively reappraising challenges. Specifically, the TO surgeon reported fully accepting the targets set in the job role, which imposed a considerable amount of pressure on work performance; and the specialist communicator discussed an example of sitting and waiting for an unfavourable situation to finish. Furthermore, the athlete reported accepting a situation in which an injury affected the build up to an important event, which is illustrated in the following quotation:

> …I remember setting off feeling…no I remember being in the warm-up area actually, specifically just feeling no nerves, feeling no pressure, just thinking "I'm so grateful to be back racing". I'd a long period out before that particular injury (another injury).

In relation to self-acceptance, both the composer and royal marine reflected on adopting self-acceptance to cope with negative thoughts. For example, the royal marine described a process of adapting to thoughts of: "we'll I've already failed it [ ] so what if I fail it again!" when reflecting on a situation with heightened sense of self-induced pressure. Additionally, the composer discussed

addressing negative thoughts experienced prior to an important performance, through accepting personal capabilities, as demonstrated in the following example:

> …and I just let it all go in the end. I decided that I couldn't compete with what I'd seen, and I didn't know what the feedback was anyway for the other people that had done a similar thing. So, I decided to just be me, do it my way.

An alternative perspective of cognitive reappraisal was also provided by the composer and relates to *changing negative thoughts into positives*. Specifically, the composer reflected on habitually channelling negative thoughts experienced into positive thoughts, as illustrated in the following quotation:

> So, rather than going…just going into a situation going "I really hope I don't mess this concert up", go into it saying "I can't wait to do well!" Stop seeing the…the negative, and I'm not a negative person, but you can worry.

Developing a sense of perspective, accepting a situation, self-acceptance, and changing negative thoughts to positives can all be viewed as *cognitive reappraisal strategie*s that aim to regulate the impact of emotions experienced (i.e., emotional regulation strategies). More specifically, cognitive reappraisal strategies attempt to modify the impact of emotions, by reinterpreting any stimuli that may elicit an emotional response (Gross, 2002). For example, when an individual reappraises negative thoughts into positives, they regulate personal emotional responses by cultivating helpful emotions as opposed to negative emotions (Gross, 2002, 2013). Additionally, developing a realistic sense of perspective suggests an individual is attempting to establish order on the content of thoughts experienced (Gould et al., 1993a). Indeed, developing a realistic sense of perspective may enable the ability of a performer to examine challenges being experienced, which subsequently, may enable an individual to focus on the controllable factors associated with performing under pressure (Gould et al., 1993b).

Another cognitive adaptation strategy described by some participants aligned with *changing negative thoughts, to task-focussed thoughts*. For example, the following illustrates an experience provided by the athlete where first, the athlete reflected on an unfavourable situation that evoked negative thoughts:

> …probably thinking "what the hell am I doing here?" "What is going on?" (laughter). Probably, if I'm being honest, "why am I doing this?" "What am I doing this for?" Yeah, when things were going really bad, that's what I'd often think.

Subsequently, the athlete described how the negative thoughts were transferred to a focus on specific performance objectives, via a self-talk strategy:

> As soon as you get out the swim it's "right, OK that's behind you, there's the next discipline now". So, then you're starting to think about the next processes..."right, how do I ride my best?" "I've not come out of the swim where I need to be, so what do I need to do?" "Right, I need to be aggressive in this first five K (km) of the bike." "I need to be pushing my watts up higher than normal…um…to try and catch anybody possible".

Similarly, the royal marine and composer also offered insights of cognitively adapting to establish thoughts that focused on performance tasks during unfavourable situations. For example, the royal marine discussed the following:

> So, the way I dealt with things was, I just tried to prioritise what I needed to do…remember what…what my mission was, what my aim was, and then just try and focus on it, and try and achieve exactly what my boss has told me to do.

The perspectives offered by athlete, royal marine, and composer suggest the participants have developed the skill of selective perception, as they demonstrate the ability to adapt and block irrelevant stimuli (e.g., thoughts and emotions), to only focus on task-relevant information (Cotterill, 2017). The cognitive adaptation strategies applied by the athlete, royal marine, and composer are in accordance with guidance provided by researchers, that encourages performers to adopt concentration strategies that only allow attention on relevant stimuli (Kimiecik, & Jackson, 2002).

In terms of inter-professional learning, psychologists should be encouraged by the parallels in cognitive adaptation strategies adopted by participants in the current study. It could be argued there are opportunities for collaboration between psychologists working in the military, music, policing, and sport domains, when considering the transferability of cognitive reappraisal strategies (e.g., developing a sense of perspective, changing negative thoughts to positives, self-acceptance, and acceptance of the situation). However, psychologists should also be cognisant of *when* cognitive reappraisal strategies should be applied by performers. For example, the royal marine avoided applying a sense of perspective during performance due to the potential of unwanted emotions being evoked, which contrasted with the composer, who embraced the emotions elicited from developing a sense of perspective during performance.

Additionally, psychologists working in sport, military, police, and music domains may consider the transferability of cognitive adaptation strategies that change thoughts to a task focus. For example, the self-talk strategies used by the athlete to change negative thoughts to task specific thoughts, could be transferred to other performance domains.

4.4.2 Behavioural Adaptation

The TO surgeon, athlete, composer, and specialist communicator reported similarities in behavioural adaptation strategies used to cope with unfavourable situations. Specifically, all discussed having the ability to take a *pause* (physically) during performance to cope with challenging situations. For example, the TO surgeon provided some insights of adapting behaviour when getting distracted during surgery. The first insight highlights how the TO surgeon took a pause in performance, by physically stopping surgery:

> …if someone is…has answered the telephone saying…and says, you know "we need to discuss a patient with you urgently"…I have to physically just stop…um…when I can, and I'll say "right, get [ ] online, I can't talk right now, we'll ring back in thirty seconds!" or "give me" you know, "I'll ring in five minutes" or, right "OK, I can stop at this point"…you just stop, stand back, concentrate on the task in hand "thank you" phone goes down, back concentrating on what you're doing. Um…everyone is slightly different, but I…that's the way I do it.

The second insight from the TO surgeon offers a reflection on combining a relaxation strategy (e.g., breathing technique) with a physical pause in performance:

> …and, I just have to stand back for thirty-seconds, a deep breath, and I physically have to remove myself from what I'm doing, just for a few…few moments…deep breath…wait, calm down, and then carry on.

The athlete also offered a perspective of taking a pause in performance, by treading water following being dumped under water by other competitors in the swim element of a triathlon:

> …and I was one of them that was constantly being dumped, and I think I did come out of that and I was treading water, and was trying to get my breath back, and coping with the panic of it all.

A further example of taking a pause in performance is illustrated in the following quotation from the specialist communicator, who aimed to avoid tunnel vision during performance:

> So, always being able…or try and step back and not get to that point where tunnel vision will step in, and actually I'll lose perspective of what the…what the task is.

Previous researchers (e.g., Anton et al., 2015; Gould et al., 1993a) suggested that when a performer takes a pause in performance, it affords them the opportunity to minimise any uncertainty associated with the task, and consequently, enables the individual to refocus attention on performance. Furthermore, taking a physical pause during challenging situations can be deemed an emotional regulation strategy (Gould et al., 1993a). For example, in the case of the athlete, TO surgeon, and specialist communicator taking a pause in performance may have enabled the participants to regulate emotions being experienced and enhanced their ability to refocus and continue with respective tasks. Moreover, the additional use of a relaxation technique described by the TO surgeon, may have facilitated the ability of participants to adapt and manage physiological states induced by emotions being experienced, for example, decrease oxygen consumption, respiration, and heart rate (Dusek et al., 2008).

The parallels of taking a pause in performance reflected on by the participants, may inform psychologists working within sport, surgical, and military domains of the potential to share strategies. For example, the strategy adopted by the TO surgeon that combined taking a pause in performance with a relaxation strategy, could be transferred to performers in the sport and military performance domains.

Of further interest, another behavioural adaptation some participants reported was *venting emotions***.** For example, the composer waited for a suitable time after performance to express feelings to other musicians, who induced feelings of frustration in the composer. Another example was provided by the specialist communicator, who discussed venting annoyances with team members during performance, as highlighted in the following quotation:

> It happened once…the once where I kind of…the kettle exploded…told them what I thought. But, then I put my weapon up and I was like "come on, let's go!"

Previous researchers have suggested that the expression of emotions (e.g., venting) is linked to inferior adaptability strategies (e.g., Folkman & Moskowitz, 2004), which may be detrimental for performance. However, having the ability to express emotions (e.g., informing someone else of your feelings) and emotional modulation (e.g., when the composer managed emotions until an appropriate time to

express them) can be viewed as beneficial for performance, as they prevent the suppression of emotions, and potentially reduce symptoms of anxiety (Compas et al., 2014). This finding implies that psychologists working with performers in high-pressure domains may consider informing performers of strategies to vent emotions to avoid the suppression of negative emotions that could hinder performance. However, it is important to be cognisant of the impact any expression of emotions can have on other team members (i.e., the person on the receiving end). The challenge for psychologists would be to cultivate team performance environments in which performers are comfortable accepting and managing the expression of emotions from team members. Indeed, considering situations regarding when it is suitable to express emotions (i.e., emotional modulation) could foster the process of being able to express emotions in team performance environments.

4.5 Superordinate Theme 5: Support Mechanisms

Most participants discussed support mechanisms in relation to coping with performance under pressure. The following subordinate themes have been identified: receiving task support, receiving social support, providing support, and faith.

4.5.1 Receiving Task Support

In the current study, task support is associated with examples whereby participants discussed receiving support from *work peers*, to aid the execution of domain tasks when facilitating performance under pressure. Receiving support from work peers was reflected on by the specialist communicator, police officer, ENT Surgeon, and TO surgeon. For example, the specialist communicator and police officer both indicated the importance of having access to support from work peers with *expertise* when performing under pressure. Specifically, the specialist communicator recollected asking for advice from a medic when providing medical treatment to civilian casualties. Additionally, the police officer alluded to being able to access various forms of peer support available in the police force (e.g., armed response unit, dog unit, and traffic unit), other emergency services, and other external agencies (e.g., social services).

Associated with receiving task support from work peers with expertise, the police officer discussed accessing support from a superior, to aid decision-making when relatively inexperienced in the job role, as illustrated in the following quotation:

> …I would then…what we call 'point-to-point', which is where you can directly contact someone on the radio and ask them questions, but not over the airway, so everybody can hear you [ ] So, you point-to-point at skipper, and then you'll be saying to them "right, this is what I've got, this is what I'm thinking [ ] am I on the right page here, or am I missing something?"

Similarly, the specialist communicator also reflected on receiving task support from experienced peers when new to the job:

> So, all the things that I…training did kick in, but didn't kick in prop…um…and, it was again, it was the experienced guys around me that were telling me at that point. So, they were pulling me down into a ditch, or telling me to move.

In addition to support provided by colleagues with expertise, both surgeons reflected on requesting task support from *trusted* peers during challenging situations. An example of a reflection from the TO surgeon is provided in the following quotation:

> …there was a colleague of mine operating next door who I completely trust, who I know is a bloody good surgeon…and I just sent the staff next door, and said to them "whatever he's doing, tell him to stop! I need him now!" Um…and, he knew very well that if I ask for him now, you know…and we did it. We did exactly that, and we saved her life [ ] it was bloody stressful…um…really bloody stressful, but it worked [ ] and, you know if you've got a colleague you trust, and you've got systems in place that work…then it will…it will work.

Interestingly, the TO surgeon also discussed having *formalised* systems in place to access task support from work peers to make important decisions when planning for complex surgical procedures:

> …if I've got a difficult operation coming up, I've shared it with two or three of my colleagues, we've run ideas past each other, and if it really is going to be difficult, we do it together. Ah…you know, 'a problem shared, is a problem halved'. And…and it makes…and we've even got to the point now where we formalise [ ] we're doing those as two or three consultant cases; we don't operate as individuals with our trainees. We'll do it with at least one or two very experienced colleagues.

In relation to having formalised peer support, the TO surgeon also discussed the task support that is automatically available when a patient is in extremis (i.e., in a life-threatening state) during surgery:

> …they're at death's door, and you have one opportunity to get them right, or they're going to die [ ] in those occasions, it's actually really, really useful to have someone who is very experienced, standing back, and overseeing the whole thing [ ] So, you need someone, because the patient is dying in front of your eyes…um…everyone is concentrating on their bit, and you need someone to stand back and…who's very experienced and oversee the whole picture [ ] and is able to say "time" [ ] Or, you know, "you need to stop" or "you need to carry on because if we don't do that, he's going to die", "that can wait".

The examples of receiving task support from work peers identified by participants, can be associated with tangible and informational support, which are two types of social support identified by Schaefer, Coyne and Lazarus (1981). Tangible social support relates to providing direct help to another person, for example, when other surgeons physically supported the TO surgeon with challenging surgical procedures. In contrast, informational social support is aligned to the advice and guidance provided to another person (e.g., the police officer accessing advice from a superior during a point-to-point and the specialist communicator receiving advice from a medic).

Of significance, the examples of task support received from work peers (e.g., TO surgeon, police officer, and specialist communicator) lend to the notion of communal coping, which is a process where team members cooperate to solve problems (Crocker et al., 2015; Leprince et al., 2018; Lyons et al., 1998). Specifically, Leprince et al. (2018) identified that problem-focussed communal efforts is a key dimension of communal coping, which involves team members analysing tasks and action planning (e.g., TO surgeon and police officer) and sharing information to problem solve (e.g., TO surgeon, police officer, and specialist communicator). Of further relevance, Crocker et al. (2015) signify the importance of compensatory assistance in communal coping, where individuals draw upon other people's strengths to compensate for personal weaknesses. Evidence of compensatory assistance appears to be prevalent in the examples of receiving support from work peers with expertise (e.g., police officer, specialist communicator, and TO surgeon).

Psychologists working in different performance domains should consider the transferability of the task support processes offered by some participants. For example, the point-to-point strategy used by the police officer could be transferred to the military and surgical performance domains. Additionally, the

formalised planning with peer support conducted by the TO surgeon can be transferred to other domains that have the time to plan complex operations (e.g., the military).

4.5.2 Receiving Social Support

In the current study, social support relates to participants who received support from others to cope with emotions induced from performing under pressure. For example, the TO surgeon recognised the benefits working with friends when planning and conducting complex surgery, as it made the process "much more fun". In addition, when reflecting on being unhappy in previous training camps, the athlete indicated the benefit of surrounding oneself with family and friends in day-to-day life, when training for events: "…I was surrounding myself with friends and family and that, that's what helped me…ah…yeah…(get the) best results out of myself". Offering a similar viewpoint, the composer recalled the calming influence family members had when mitigating the effects of stress during an unfavourable situation on the day of a concert, as identified in the following quotation: "Just sit down, be around my family who were calming and positive."

Furthermore, the ENT surgeon, TO surgeon, and police officer all provided an alternative perspective of accessing social support from peers *following* challenging situations. For example, when feeling responsible for making mistakes during surgery, the ENT surgeon reflected on accessing support from other colleagues to cope with the negative emotions elicited:

> …it is the support you get from…maybe the other team members, your seniors, especially when you are a junior trainee [ ] And it's the support that you get that really props you up.

Additionally, both the police officer and TO surgeon reflected on socialising with peers following challenging circumstances, to alleviate the impact of stress from challenging experiences. For example, the following quotation from the police officer highlights how socialising with colleagues acted as a "release" from stress:

> If you kind of do anything socially outside of work, it's a great release. You know [ ] you can go out and you can sit there amongst your friends, you can have a drink and you kind of get to know each other even better.

Parallels can be drawn between the participants' examples of accessing social support, as they all relate to situations where individuals are attempting to overcome adversity and the social support accessed may have enabled them to mitigate the effects of any stress being experienced (e.g., Rees & Freeman, 2009, 2010). Crucially, the examples of accessing social support from friends, family, and colleagues can be specifically associated with *emotional support*, as they relate to gaining reassurance and being able to confide in others to regulate emotions being experienced (Schaefer et al., 1981). These findings are of relevance to psychologists working with performers in high-pressure domains, as they suggest psychologists may consider emotional support strategies that can be adopted by performers to regulate emotions induced from facilitating performance under pressure. Indeed, previous researchers have highlighted how social support strategies can enhance the well-being of an individual (e.g., Rosenfield & Richman, 1997).

Of further interest, when comparing the examples of task support and social support discussed by participants in the current study, it is apparent that the social support mechanisms were facilitated via informal processes, which contrasts to some examples of formalised task support processes provided by participants (e.g., TO surgeon planning for surgery with peers and the police officer using a point-to-point strategy). This finding suggests that social support processes may be neglected, as they were not recognised as formalised support mechanisms used to help performers cope during and after challenging situations. Indeed, psychologists working in different performance domains may consider ways to implement both formalised task support and social support mechanisms before, during and post-performance to help performers perform under pressure. This may especially be the case for performers who are more likely to experience traumatic experiences (e.g., police, surgeons, and military personnel).

Turning now to other forms of social support accessed by participants; using *humour* was discussed by the police officer and specialist communicator. The police officer referred to using humour with colleagues following a traumatic experience, as illustrated in the following quotation:

> …they call it 'black humour' [ ] with those kinds of jobs, you generally go double crewed. And then when you get in the car you just talk about it. You know [ ] and that's a good way if you talk about what you've just seen. And then, you know, there can be…sometimes there can be like…some of the conversations you know, would be seen as inappropriate. But [ ] it's a coping mechanism.

This example aligns with previous research that highlighted using humour can potentially buffer the effects of stress when police personnel encounter a death, due to creating distance (emotionally) from the stress and tragedy associated with it (e.g., Carpenter, Tait, Quadrelli, & Thompson, 2016; Scott, 2007; Vivona, 2014).

In relation to using humour to cope with challenging situations, the specialist communicator recalled a time when humour provided a coping mechanism for a team experiencing low morale out on deployment:

> …but yeah, humour was definitely the thing that got us through it [ ] and it's really relentless as well. So, there isn't…there aren't any bars that [ ] won't get taken down, or lines lost [ ] if you've just split up with your girlfriend or your wife or whatever it may be, they'll be sympathetic for probably about ten-minutes.

The example of using humour provided by the specialist communicator relates to banter and putdown humour. It has been argued that banter and putdown humour may elicit positive emotions within a team, which consequently buffers the negative effects of stressors being experienced at the time (Morgan, Sarkar, & Fletcher, 2015). In contrast, Trif and Fodor (2019) argued that banter and putdown humour may be perceived as detrimental and negative forms of humour, due to judgemental communications being imposed on other team members. Subsequently, the banter and putdown humour (e.g., sarcasm, ridicule or putting others down) may have harmful effects on team functioning, as they can hinder team social interactions (Romero & Cruthirds, 2006). However, the perspective offered by the specialist communicator supports the notion that banter, and putdown humour can help mitigate the deleterious effects of stress (e.g., Morgan et al., 2015).

4.5.3 Providing Support

Interestingly, some participants reflected on providing support to other team members. For example, the ENT surgeon and specialist communicator offered examples of providing tangible social support to other team members *during* challenging situations. The following quotation from the ENT surgeon illustrates an example of providing tangible support, after empathising with another colleague who was experiencing a challenging situation: "…so, you understand what the person is going through, so you just scrub in, and you…you…you come to help them". Similar to the ENT surgeon empathising with other

team members, the specialist communicator reflected on making a decision that benefited a team, as opposed to making a decision based on personal gain during a selection process:

> …slight exhaustion that was kicking in amongst the team [ ] and actually morale being…ah…probably the lowest I've ever seen [ ] So, what I did, I just…I stopped everybody where we were [ ] in a safe(ish)…ah…defensive position [ ] put the blokes down for the night. So, we gave them [ ] it was only for six hours, but it was six hours more rest then they'd probably had for three-weeks beforehand [ ] During the night, I wondered off with…with the optics and…um…just got an OP. So, I was…I got some of the information, then I got back and I got an hour's sleep. And then we woke up, and we…we moved on the next day.

The example of tangible support provided by the ENT surgeon can be associated with communal coping, as it relates to the effort expended by the ENT surgeon to mobilise physical and cognitive resources to help the team (e.g., Leprince et al., 2018). Of further interest, the selfless acts discussed by both the ENT surgeon and specialist communicator lend themselves to the notion of team resilience, as selfless acts are deemed to enhance the key characteristic of social capital within a resilient team (Morgan et al., 2013).

Of further significance, the specialist communicator, police officer, TO surgeon and ENT surgeon all offered perspectives of providing support to other colleagues *following* challenging situations. For example, the following quotation offers a reflection from the police officer who recognised the need to provide support to colleagues for either work-related challenges or personal challenges:

> …you know, someone at work might have a problem, and everyone will want to help out. Everyone will…everyone will go absolutely above and beyond to help that person out, because that's your work colleague.

Additionally, the TO surgeon and specialist communicator also discussed offering support to colleagues following challenging circumstances via debriefs, which enabled colleagues to unpick personal thoughts about the challenges experienced. Interestingly, there were similarities in the questions adopted by the specialist communicator and TO surgeon when debriefing colleagues. For example, the specialist communicator identified the following types of questions posed to a peer:

> …sit him down and say right "well what did you do here?" "I did this." "Why did you do that?" And try and draw it out of him, the thoughts out of him. And I won't really ask him how he felt, because I'm not a big feeler person, I don't want to open up a can of worms that I won't be able

> to put a lid back on [ ] I generally pull people through the thought process, and I question them, much like you're doing to me know. I'd question them of..."well, why did you do that?" "What made you do that?"

It could be argued the debriefings facilitated by the specialist communicator and TO surgeon may have increased the emotional bond between team members at the time, thus increasing social capital and enhancing team resilience (Morgan et al., 2013).

4.5.4 Faith

The final subordinate theme of having a faith, was reported as being an important support mechanism for the ENT surgeon. The ENT surgeon reflected on praying before, during, and after surgery. Before surgery the ENT surgeon highlighted praying to perform well and praying for the safety of patients:

> I'm not just praying that I should do a good job, I will pray that, yeah, for the patient to be safe, to be better after that, and…and…and then carry on. So, I think that, there is a divine influence that things will happen in a good way, that I pray.

Previous researchers in sport suggested that praying can help individuals cope with stress and anxiety, to achieve optimal performance standards (e.g., Park, 2000; Vernacchia, McGuire, Reardon, & Templin, 2000; Watson & Czech, 2005). Furthermore, contemporary research with nurses has also emphasised how praying can reduce, and buffer, stressors experienced at work (Achour, Azmi, Isahak, Nor, & Yusoff, 2019). This finding suggests psychologists who work with performers in high-pressure performance domains should consider how personal religious beliefs may enable participants the ability to develop strategies to cope with performance under pressure.

4.6 Superordinate Theme 6: Individual Factors

The next superordinate theme, individual factors, has emerged from individual personality and motivational factors, which influenced participants' ability to cope with performing under pressure. The individual factors superordinate theme consists of the following subordinate themes: personality traits and job enjoyment.

4.6.1 Personality

Some participants alluded to specific *personality characteristics* which helped to cope with facilitating performance under pressure. For example, the following quotation illustrates how the athlete reflected on the benefit of being a stubborn person, when experiencing unfavourable situations:

> …I'm quite a stubborn person, and I think that's what got me through it. I've got this stubborn approach to never give up, and I hate to fail. So, I don't know if that's something I've trained, or if it's something I'm born with, but that's what kept me going through it really.

From the athlete's example, it could be interpreted that competitiveness is also an aspect of the athlete's personality. Competitiveness is the drive to win against others (Gill & Deeter, 1988) and is viewed as a positive personality trait that could act as a protective factor for an individual (Sarkar & Fletcher, 2014b). Certainly, the example provided by the athlete in this study indicated how a stubborn personality acted as a protective factor during the challenging situation.

Interestingly, perfectionism emerged as a personality factor that encapsulated the *high expectations* five of the participants set themselves (e.g., composer, ENT surgeon, royal marine, TO Surgeon and specialist communicator). Typically, the personal high expectations reflected on by the participants were associated with the desire to perform at optimal standards. For example, the athlete, royal marine, specialist communicator, ENT surgeon, and TO surgeon all offered perspectives on the *need to achieve*, which manifested in several ways, including: the athlete stating a drive to always do the best; the royal marine wanting to do well amongst peers; the ENT surgeon aiming to achieve good results for patients; and the TO surgeon wanting to achieve surgical targets.

Furthermore, the royal marine was clear about the expectation to always be physically fit and mentally strong, and reflected on the expectation to always perform at optimal standards when executing tasks during performance, as illustrated in the following quotation:

> Yeah, if we're…you know, we could be marching long distances, we could be diving, we could be parachuting. Anything that involves physical assertion, is just part-and-parcel of it. What needs to go well is the execution of whatever we're gonna do.

The composer provided another example of expecting performance to be executed at optimal standards, by stating: "every single note I'm performing with has got to be…it's got to be right."

A further example of setting high expectations was provided by the specialist communicator who offered a perspective of analysing and reflecting on performances, to further improve performance:

> …I went over a lot of things in my head, I'd analyse…I'd analyse everything that I'd done [ ] in them moments. So, um…I'll definitely… definitely re-think about what…what had happened, how I reacted, and how I could've reacted, and how I would react in the future.

In relation to having high personal expectations, the composer reflected on a personal ambition to continually improve performances, which is illustrated in the following quotation:

> So, there's always that element of "what can I do differently? What can I change?" I might add [ ] visual screens, I might do something with a screen…now that's an extra change to what I normally do [ ] So, I'm considering playing live to picture. That's a whole different level of…um…preparation, so that will take a lot. So…um…but mainly, going forward because I don't sit still with anything…how to make it better? How to improve it?

Additionally, the royal marine also discussed ambitions in relation to job progression, as demonstrated in the following example: "I'm like one of the guys on the ground that will go and do the plan at the moment, as I wait to progress upwards".

Offering alternative viewpoints, the composer, specialist communicator, and TO surgeon all alluded to expecting high standards from colleagues. The following example illustrates the expectations the TO surgeon had of other junior surgeons:

> All the trainees that work with me know that if they want to do the operation, if they come to the operating theatre and just pick up the scalpel and haven't run through with me what they're going to do, they can take a hike! They…they're not even going to scrub, they won't even play. Ah…if they haven't thought through what they're going to do, the surgical approach, how they're going to do it, they can forget it…ah…because it will go badly.

The parallels in high expectations discussed by participants in the current study can be associated with adaptive perfectionism, perfectionist strivings (e.g., Stoeber, 2011) or self-orientated perfectionism (e.g., Hill, Hall, & Appleton, 2010). It is argued that these forms of perfectionism elicit positive emotions (Kaye, Conroy, & Fifer, 2008), thus increasing an individual's motivation, which could facilitate performance under pressure (Stoeber & Becker, 2008). Indeed, it is the influence of the goal-orientated

behaviour to achieve high standards which increases an individual's motivation (Kaye et al., 2008; Stoeber & Eismann, 2007).

Furthermore, Hill et al. (2010) highlighted a positive relationship between setting high personal performance standards (i.e., self-orientated perfectionism) and problem-focused coping, which is deemed to be more effective compared to emotion-focused coping when performing under pressure. Additionally, adaptive perfectionism is deemed a positive personality characteristic aligned with resilient qualities, as it acts as a protective factor to endure any stressors encountered (Sarkar & Fletcher, 2014b) when facilitating performance under pressure.

Crucially, this finding has implications for psychologists working in different performance domains, as it suggests individual personality factors (e.g., perfectionist strivings and setting high personal expectations) should be considered in relation to developing performers' ability to cope with stress and facilitate performance under pressure.

4.6.2 Job Enjoyment

All participants reflected on aspects of job enjoyment. For example, the composer, ENT surgeon, royal marine, athlete, TO Surgeon, and specialist communicator suggested current job roles at the time of interviews, were indeed previous childhood ambitions. The following quotation provides an insight into the ENT surgeons' childhood dream:

> …It was a childhood dream to be very honest with you. I don't know how that inspiration came along, I think it was…ah…maybe my contact with doctors when I used to get…ah…ill and going to the hospital – it never put me off, and I always [ ] looked up to the doctors who looked after me and treated me. And then in school [ ] I developed this interest…I can't remember having another ambition in my life, other than becoming a doctor.

In contrast, the police officer highlighted developing an interest in becoming a police officer through experiences in other similar job roles (e.g., working as a bouncer). Furthermore, the following example signifies the police officer's opinion of the job role:

> Yeah, yeah, love it. Yeah it's…every day is a different day [ ] you never know what you're going to come across, you never know what call's going to come from one to the next [ ] you don't

> know what you're going to come across, who's it going to be, what that person's going to be like, what the house is going to be like. It's yeah…it's…it's quite varied.

Similarly, the specialist communicator identified enjoying the challenges associated with the job and an inherent drive to solve problems, as demonstrated in the following quotation:

> …and then the other aspect of the job that I was doing, was…and every job I've done afterwards actually, has been problem solving. So, which is stuff I always enjoyed doing in college [ ] if they'd give me a problem, I wanted to figure it out.

In contrast to enjoying the challenges associated with the job, both the royal marine and the specialist communicator offered perspectives of enjoying the working environments, which is highlighted in the following quotation from the royal marine:

> …so, I enjoy the…um… working with the people I do. I enjoy [ ] the training that we do, we do some pretty cool training. I enjoy some of the places we get to go. And I enjoy going to countries and feeling that [ ] you know, once we come back, that we've made a difference. So, that's the main sort of areas.

In relation to facilitating performance under pressure, the reflections associated with job enjoyment could be related to Deci and Ryan's (2008) self-determination theory of motivation, as participants may be autonomously motivated. Importantly, autonomous motivation is linked with improved performance, increased persistence, and positive affect (Deci & Ryan, 2008). Indeed, autonomous motivation may act as an antecedent to coping with perceived challenges, as it could influence an individual's primary and secondary stress appraisal (Ntoumanis, Edmunds, & Duda, 2009).

4.7 Superordinate Theme 7: Perceived Coping Effect

Perceived coping effect emerged as a superordinate theme whereby participants reported on the perceived effects of coping strategies used. Four subordinate themes are included in the coping effect theme including: individual effect: cognitive, individual effect: mood, teamwork, and team mood.

4.7.1 Individual Effect: Cognitive

All participants, except for the ENT surgeon, explicitly discussed how coping strategies influenced *focus* required for performing under pressure. Some participants reported how coping strategy use enabled a broad focus for optimal performance (e.g., police officer, specialist communicator, and the royal marine), while other participants discussed how coping strategy use induced a narrow focus for optimal performance (e.g., TO surgeon and athlete). For example, the TO surgeon identified how task support in emergency surgery enabled a narrow focus to perform under pressure:

> …you become totally blinkered to anything that's going on outside your sphere. So, if I'm operating on the knee, I have no interest, and no concept of what's happening in the patient's chest that someone else may be dealing with.

In relation to adopting a broad focus to perform under pressure, the specialist communicator discussed the effect a methodical approach to convergent thinking had on concentration:

> …I'd say concentration's probably the big one [ ] it puts the business lens on what you've got to do [ ] I've got the holistic view of the…of what is going on, but I've also…I've also got a microscope on the bit that I'm looking at, at the same time. And I'm…I'm going through that.

Of further relevance to developing focus, coping strategy use seemed to positively affect how some participants managed potential *distractions* which could impede task focus. The royal marine, specialist communicator, and composer referred to avoiding unwanted *emotional distractions* to establish task focus during performance. For example, the following quotation provide an insight into the specialist communicators thoughts regarding avoiding thoughts from personal life, that may affect performance focus:

> …it's probably exactly that, to not let any…any emotions or any…any distractions in really…it's probably…probably distractions is probably a better…better way of thinking about it [ ] I don't want to take something in to work that…that should've been left at home, if that makes sense?

The composer offered another viewpoint regarding how coping strategy use mitigated unwanted emotional distractions. More specifically, by adapting to a positive mindset (i.e., cognitive adaptation) the composer was able to habitually park unwanted negative thoughts to refocus on task requirements, as illustrated in the following quotation:

> So, I try to channel a negative into a positive whatever I do, and focus for the good, focus on anything that's getting in your way as a good thing. So, my…my last concert with…with the other stuff going on [ ] I found a way of doing it for, you know, that time [ ] So, I decided that was my way of teaching these people that it doesn't matter, I'm still focussing on…on the appropriate stuff. And that really helps, because then it gives you a purpose. And it's that purpose that gets you through.

Additionally, the composer offered the following perspective regarding how producing a planning schedule enabled a task focus:

> And that's…that's the focus. And that schedule keeps you on track and it reminds you of what…what needs worrying about, what needs focussing on, and what needs the attention in your mind of how you perform.

A further example of avoiding unwanted emotional distractions before performance was provided by the athlete. Interestingly, the athlete averted from visualising a race the night before a competition, to reduce the possibility of becoming nervous. The following quotation identifies what the athlete would do to avoid unwanted thoughts the night before a competition:

> Probably not the night before. I would try to occupy myself with other thoughts other than the race to keep me, not too nervous. But yeah, the morning of it, you can't help but think about it.

The TO surgeon and composer also discussed how coping strategy use helped with avoiding *tangible distractions* (e.g., an interruption during performance) when performing under pressure. For example, the TO surgeon emphasised the need to avoid distractions during high pressure situations, to maintain a narrow focus when performing.

A further example of how coping strategy use helped a participant avoid tangible distractions during performance, was provided by the composer, who discussed how practical solutions to reduce potential distractions prior to a concert enabled focus for performance:

> But we need to be neat and tidy, because if I'm in the audience looking at the piece of music or can of coke, that's not very nice. So, I swoop that away and try and keep…keep it simple, and then my mind is simple and it's only focusing on the important things.

The reflections offered by the participants suggest that coping strategy use influenced the ability to focus when facilitating performance under pressure. More specifically, the examples provided imply

that concentration, selective perception, and vigilance appear to be the key dimensions of attentional focus that were influenced the most (e.g., Cotterill, 2017). Furthermore, participant examples associated with how coping strategy use helped to avoid distractions, supports the inclusion of concentration strategies in psychological skills training programmes, which can help performers to reduce or eliminate distractions that impede attentional space when performing (e.g., Kimiecik & Jackson, 2002).

Turning now to the next cognitive individual effect: coping strategy use appeared to affect *decision-making* processes for five participants (e.g., TO surgeon, ENT surgeon, specialist communicator, royal marine, and police officer). For example, the police officer referred to a formalised five-stage approach gathering data for impending jobs (e.g., NDM) which affected the ability to make decisions on what actions to take for an ensuing job. Additionally, the police officer, TO surgeon, and ENT surgeon also offered similar viewpoints regarding the influence of task support on decision-making. For example, the police officer emphasised how adopting a point-to-point strategy with a superior, enhanced the ability to make decisions when inexperienced, as illustrated in the following quotation:

> (name) [ ] "can I run this through with you?" And you'll be "I'm on this job, this has happened, that's happened [ ] this is what I'm thinking". He'll be like "don't be stupid, have you thought…" and you think "uh crik(ey)…yeah" [ ] and then straight away you go from being a little bit kind of scatty, to like (fingers click)…"I'm on it now!"

With a slightly different perspective, the specialist communicator attributed personal visualisation strategies to making informed decisions under pressure. More specifically, the specialist communicator implemented a backward chaining thought process to make decisions when attempting to solve technical problems, as illustrated by the following quotation:

> …if the computers aren't working on a network, it's meth…it's methodical to start at the end point. So, your user [ ] and then go through your physical layers before you start moving up through what is the…the data layer [ ] and through that (name) model, which is a little bit…that's like the geeky side of it. But, being able to look at the network topology, so a bird's eye picture of how that network is connected [ ] that is…if you get to a certain point, you know that it's working up until say the router; past the router it's not working. Right, so my problems at the router and that's how…that's how I generally try and problem solve.

The specialist communicator and police officer provided similar perspectives as to how broad focus adopted during performances, enabled reactive decisions to achieve desired goals. For example, the police officer considered the bigger picture to make a quick decision, when someone was threatening to jump off a bridge, as illustrated in the following quotation:

> …and it was one of [ ] it was one of them quick decisions you think "I've gotta do something about this!" And I'm sat there, and I'm working out what is she wearing? What can I grab? How am I gonna do this? And it was literally, it was…it was jacket off, on the floor and it was like "right, now" bam…and I just ran, grabbed her arm round her, grabbed at the back of the trousers.

Offering a slightly different viewpoint, the royal marine identified being able to make decisions by focusing on mission objectives, as suggested in the following quotation:

> …I'll just rethink about exactly what I'm trying to do, what my…what my mission was, what my aim was to do [ ] as the guy in command of someone else, and I…I'll make a decision that way.

Four participants (e.g., TO surgeon, ENT surgeon, royal marine, and composer) discussed how an awareness of personal responsibilities allowed them to make potentially cold, dispassionate or logical decisions either before or during challenging circumstances. For example, the TO surgeon suggested how focusing on facts, as opposed to feelings, facilitated logical decision making:

> …unfortunately, I've been there before, so you…you have to be…I find I have to be dispassionate…make clear, cold decisions, face the facts, and take your own personal feelings out of it…ah…because they will cloud your judgement.

Additionally, the royal marine reflected on how scenario planning would help speed up decision-making processes during performance:

> If it happens on the day, at least I've already thought about it, and [ ] the decision-making process is sped up. If it doesn't happen, then great.

Participant reflections relating to how coping strategy use enhanced decision making, support views that effective decision making is essential for successful performance (Cotterill, 2017). Indeed, when considering the nature of coping, findings from the current study suggests that psychologists working with performers in the police, military, and surgical performance domains should consider coping strategies that can enhance decision-making processes to facilitate performance under pressure.

Increased *confidence* was another individual cognitive factor affected by coping strategy use, as discussed by four participants. For example, the composer identified how a pre-performance behavioural strategy (e.g., having a specific posture when walking on stage), increased confidence levels for performance. In addition, the athlete, composer, and royal marine provided similar perspectives regarding the influence rehearsing had on confidence levels for performances. For example, the composer stressed the importance of feeling prepared before going out on stage, and how an increased volume in rehearsal increased confidence levels. The athlete indicated how repetitive bike rehearsal following a traumatic experience (e.g., bike crash) helped to retrieve required confidence levels. Additionally, the forthcoming quotation from the royal marine illustrates how repetitive physical rehearsal increased personal confidence levels, to facilitate performance under pressure:

> I just think that having…ah…having the repetition, knowing you can do it, knowing you've done it before, you know what's coming up…um [ ] it just takes the um…the edge of the unknown off. I know I'm not going to die, because I did it yesterday, I did it the day before, and I've done it at night, and I've done it, you know, in worse conditions.

Furthermore, the royal marine also reflected on the effect previous training and planning had on confidence levels when preparing for a high-pressure situation:

> …and just having confidence that we had done this sort of thing before, we knew what we were going to do. We'd weighed up the options and we made sure we had every advantage. We...we made sure we put ourselves in an advantageous position. Um…but yeah…that was one, it had gone well, we planned it…um…there was pressure there, because obviously you know, you're going to need to make sure that when you take action like that, that it's gotta be the correct one. Um…and that went well, and you know, it…it was all successful.

As previously discussed in the decision-making section, task support acted as a coping strategy to enable some participants to make confident decisions. It also appears task support enhanced the police officer's confidence knowing when specialist back-up is coming to support with a job. In addition, the royal marine discussed gaining extra confidence from working with confident team members. Specifically, the forthcoming quotation identifies the royal marines perceived importance of confidence and the emotional contagion experienced when working with confident colleagues:

> …if you're confident in our…in our job, and you're confident in what you do [ ] that can be a really, really deadly weapon, especially in what we do. Somebody's that confident in their

> ability, whether they're the best at it or not, if they're confident, you know, that…that can be half the battle, half the time. You know, um…confidence is a massive thing. I see confident guys. They might not be the best, but they're confident, and they come across…they don't have worries that I sometimes do, and I look…I see them, and I see strength in them, even though they're…they might not be that good at what they're doing, but they come across as good, and they come across as confident. And that just, you know, it just tends to run smoother I find.

The examples of increased confidence provided in the current study, can be associated with increased self-efficacy. Self-efficacy is the personal belief of having the required ability to achieve a desired goal (Bandura, 1977). Importantly, there appears to be a key similarity in how some participants developed self-efficacy beliefs, which was via past performance accomplishments (i.e., enactive mastery). Past performance accomplishments are deemed the most essential antecedent to increasing self-efficacy beliefs (Bandura, 1997), and in the current study were reported in the form of rehearsals (e.g., athlete, royal marine, and composer) and previous experiences (e.g., the royal marine). This finding implies that psychologists working with performers in music, policing, sport, and the military should consider coping strategies that can make performers feel more efficacious. Furthermore, psychologists in these domains may collaborate on examples of good practice that cultivate physical rehearsal environments where performers experience success (Feltz, Chow, & Hepler, 2008) to increase levels of self-efficacy associated with being able to cope and perform under pressure.

4.7.2 Individual Effect: Mood

Some participants reflected on how coping strategies elicited feelings of being *calm* or *relaxed* when facilitating performance under pressure. For example, the athlete recollected how a sense of perspective induced a relaxed state before a world championship win, as illustrated in the following quotation:

> …so, yeah it was the first one back and I was just in a completely relaxed state of "well I'm just here to race, and I'm really fortunate and glad".

Associated with establishing a relaxed state, the composer discussed the effect of a muscular relaxation strategy, as highlighted in the following quotation:

> …but it's just enough that if…you…you feel the nerves that you just tighten your tummy, and just relax and then just think about why you've done it and what it's done.

In relation to feeling calm, the TO surgeon, ENT surgeon, royal marine, and composer provided similar perspectives of how coping strategy use helped to evoke a state of feeling calm. For example, the composer identified how effective preparation subsequently induced a feeling of "internal calm" before performing in a concert:

> …but it's the sense of just [ ] internal calm is all I can do, and then I can get myself in the right state which is the performance, rather than looking round, to make sure that's done.

Furthermore, the following reflection from the ENT surgeon, indicates how praying would elicit a "sense of ease" when experiencing challenges:

> …and I pray if I have a difficult situation at work, I pray, and I get a sense of ease, how to deal with it, how…how to be calm, ah…how to be patient.

Finally, on discussing the effect of a visualisation strategy used as part of a pre-performance routine, the athlete suggested: "I think it helped to keep me calm, it helped control my nerves…definitely". This quotation from the athlete also indicates the positive effect the visualisation strategy had on controlling nerves (e.g., anxiety). In relation to feelings of nervousness, the composer also reflected on "feeling less anxious" due to applying a cognitive adaptation strategy which restructured negative thoughts experienced, to positive thoughts.

Turning now to how coping strategy use induced positive mood states; the athlete attributed changing personal lifestyle choice and adopting a supportive network to increased levels of daily *happiness* experienced:

> …if I'm happy in myself, whether I'm injured or not, it doesn't matter. As long as I'm happy in what I'm doing that's where my best results have come from. So, it's kind of the external stuff that I've looked at more, whereas when I think you're in it, you just look at that little bubble of the sport and racing. Whereas now, I'm able to reflect more on the wider things that contributed. And it's definitely this whole support network and having the right team behind you. And…um…yeah, that's what I think has been the most important thing.

The specialist communicator and police officer also discussed how coping strategy use induced a positive mood effect (i.e., motivation) which increased effort levels. For example, the specialist

communicator reflected on the personal responsibility to lead by example during a selection process, which subsequently, had a direct impact on personal effort levels and what the specialist communicator coined as "leader's legs". Also, the police officer discussed how task focus enabled a switch from a calm state, to an explosive state (i.e., motivated state), when attempting to stop a member of the public jumping off a railway bridge, as identified in the following quotation: "And it was like calm…"I've gotta…I've gotta just go" (finger click) "this has got to be explosive and quick".

Previous researchers have postulated that performance outcomes can be predicted by mood states (e.g., Beedie, Terry, & Lane, 2000). Evidence presented from participants in the current study suggests performers across various performance domains sought ways to feel calm and relaxed to facilitate performance under pressure. This finding suggests psychologists working with performers in music, sport, military, and surgical performance domains should consider coping strategies that enable performers to attain a calm and relaxed state to cope with performance under pressure. Furthermore, insights from participants from the current study imply that psychologists working with performers in the police, military, and sport should consider what coping strategies can evoke a positive mood state for performers. Indeed, it has been argued that eliciting positive states can cultivate psychological growth and optimise functioning (Frederickson, 2002; Menghel, Salonova, & Martinez, 2016). Finally, psychologists may consider ways to collaborate regarding the transferability of coping strategies that can induce feelings of calmness, relaxation, and positivity with performers who are required to facilitate performance under pressure.

4.7.3 Teamwork

Participants reflected on how coping strategy use had an influence on factors associated with teamwork. The TO surgeon, ENT surgeon, and police officer all discussed how coping strategy use established *role clarity* within teams. For example, both the TO surgeon and ENT surgeon offered a similar viewpoint on how team meetings prior to surgery, established role clarity. The following reflection from the ENT surgeon highlights how introductions are made in team meetings and how they help increase the awareness of other team members' roles:

> For example, if I've got…ah…a stranger there, ah…during our team brief, we go around, and he will say I'm so and so, and I'm an anaesthetist, so that I know he's an anaesthetist. If I don't say

> "I'm a surgeon" but I'm so and so…I'm a surgeon, he may not know who is the surgeon, and who is a nurse. So, it is very important people know who they are and…and what is their role.

The police officer provided a slightly different version of establishing role clarity, due to the implausibility of conducting detailed plans prior to jobs that require an emergency response. The police officer suggested role clarity would often be provided by the first member of the team on the scene, as highlighted in the following example:

> So, you know, usually when you're first on scene you kind of go in the house and you realise what you've got. And it'll be like "right, I'm…" and then you straight away…you…if…if you're first on, even though you're not a Sargent, you'll be "right, I need someone to go and do this…I need someone to go and do that", you know, "I need someone to find out this, can you do some checks on that?" [ ] So, everything kind of comes together, so then when you go there, you're kind of saying "right, I need someone to do this for me…I need someone to do that". And people don't argue, they just do it.

Closely associated with establishing role clarity, the TO surgeon also perceived that team briefings developed a clear understanding of task requirements. The following example from the TO surgeon encapsulates how developing a written plan helped inform team members of task requirements:

> So, they've got that all written out and it's all written out on the board, and then the theatre staff, their nurses, and the theatre staff in theatre, look at that and go "Ah, well that's what we're going to do today, and that's how we're going to do it".

Another effect coping strategy use had on teamwork pertains to how task support enabled shared decision making. The police officer, ENT surgeon, and TO surgeon all recollected times when team decisions were made with task support. For example, the TO surgeon discussed working with trustworthy colleagues to make decisions regarding complex cases. In addition, the ENT surgeon reflected on entrusting other team members to provide ideas during surgery, if an unfavourable situation occurred:

> So, if we don't have plan A, then…ah…always there is a plan B. So, either the surgeon may say "OK, why don't we do this?" but the nurse says "…oh, why don't we have this?" or "we have got this thing, this material". So, if a suture material…if I don't like a material and we need this

> suture material, and they will say "oh, but actually there is another type of suture material, do you want to try that?" And I might try that, and that might be quite good. So, a solution may come from either a surgeon or from a nurse. So, we…we take each other's advice.

The participants' insights pertaining to how coping strategies affected factors associated with teamwork to facilitate performance under pressure, provide support for the notion of communal coping. More specifically, establishing role clarity, understanding task requirements as a team, and shared decision-making can be associated with cooperative action (e.g., Lyons et al., 1998), analysis and action planning, and information sharing (e.g., Leprince et al., 2018). The effects of coping strategy use on teamwork also align with the conception of developing team resilience. For example, the effects on teamwork can be associated with developing the key team resilience characteristics of collective efficacy and team structure (e.g., role clarity) (e.g., Morgan et al., 2013). Importantly, the reflections presented by the police officer, ENT surgeon, and TO surgeon implies that psychologists working with police officers and surgeons should consider coping strategies that specifically enhance teamwork, so performers can facilitate performance under pressure.

4.7.4 Team Mood

For some participants, coping strategy use appeared to influence team mood states. For example, the police officer was cognisant of how task support (e.g., a colleague's updates) evoked a calm team mood:

> …it was probably one of the most professional jobs that I've been to, where our colleagues that got on the scene first [ ] the updates on the radio were calm, absolutely were…were perfect. And you know, "this is what we've got…this is what we need". So, there was no kind of panic on the radio.

Additionally, The ENT surgeon discussed attempts put team members *at ease* by breaking down hierarchical barriers, as illustrated in the forthcoming quotation:

> …but sometimes…ah…you…you will take an extra step, maybe you ask a few questions out of work, you say well…um… "where have you come from?" or…ah… "where is home?" "Did you

> have to drive far today to come here?" and "What level are you at with your training?" And …ah…"I saw you reading the book, why are you reading the book all that time, do you have an exam?" Or that "exams are really stressful and yeah you keep reading the book, when I need your help I will call you!" So, you try to put the person at ease.

The composer also reflected on the importance of getting to know other team members, to induce a positive mood state in other musicians. The following quotation demonstrates the composers attempts to understand other musicians' personalities, to evoke positive feelings:

> …being aware of them, and their personalities, and…and that's a really good factor to make them feel good, makes you work better with them, and then, you know, relish it themselves more.

The effects of coping strategy use on team mood can also be associated with communal coping and team resilience. For example, the communal management of emotions reflected on by the police officer (e.g., the team had a calm mood state) and the relationship-focussed strategies discussed by the ENT surgeon and composer can be aligned with communal coping (e.g., Leprince et al., 2018). Furthermore, the relationship-focussed strategies may have enhanced social capital, which is a key characteristic of developing team resilience (e.g., Morgan et al., 2013). Finally, the parallels found between the ENT surgeon and composer establishing relationship-focused coping, suggests psychologists working in music and surgical performance domains could transfer coping strategies used.

4.8 Superordinate Theme 8: Coping Strategy Development

Participants attributed a variety of reasons to developing the ability to cope with performing under pressure. Four subordinate themes emerged as part of the coping development theme: specific personnel, experiential learning (individual), experiential learning (team), and independent learning.

4.8.1 Specific Personnel

The specific personnel subordinate theme has emerged from participants who discussed developing the ability to cope from receiving support from other people. For example, the athlete and composer accentuated how they worked with *psychological coaches* to develop personal coping abilities. For example, the athlete worked with a sport psychologist and the composer worked with a performance coach (referred to as an American Coach). Importantly, both participants provided positive examples regarding the benefits of working with the psychological coaches, which is encapsulated in the following reflection from the athlete:

> Yeah, so the mental side of things is the biggest…the biggest factor. I actually worked with a sports psychologist for quite a while in the triathlon…um…specifically because I would come out of races very, very down. I think my first ever triathlon…yeah it was…my first ever triathlon race was a World Cup in Mexico, and I finished twelfth. And at the time I remember crossing the line and I cried, and I thought that I had done terrible. And I never competed in this event before, never mind at world level. Um…so, from there, I started working with…with a psychologist and we started putting together, you know, kind of key performance indicators that I…that I could come out of to say right "did you execute, you know, these three things in the swim?" "Yes – right, that was a success!" And then we started breaking my races down like that, so that helped.

In contrast, the royal marine and TO surgeon offered negative opinions of receiving support from psychologists. Both the royal marine and TO surgeon discussed how they have accessed training from psychologists, however, neither reported any benefits from such psychological training.

It could be suggested the athlete and composer benefitted from some form of psychological skills training (PST) from their specific psychological coaches. In contrast, the TO surgeon and royal marine dismissed any benefit from PST received. However, there are calls from researchers in specific performance domains, for example the military (e.g., Fitzwater et al., 2018) and surgery (e.g., Anton et al., 2018), to provide a greater focus on PST interventions for individuals operating within the domains. This is due to previous studies that highlighted the effective implementation of PST programmes in various performance domains (e.g., Anton et al., 2018; Le Scanff & Taugis, 2002; von Guethner et al., 2010). Indeed, Cotterill (2017) indicated how a range of psychological skills (e.g., imagery, cognitive

restructuring, goal setting, self-talk) can potentially mediate the effect of performance pressure individuals may be experiencing.

Aside from developing cognitive strategies with a performance coach (e.g., positive thinking), the composer also highlighted developing relaxation techniques from suggestions made by an experienced lawyer:

> …I was taught years ago…or I remember talking to a lawyer years ago that said whenever she's negotiating, she stands up and tenses her stomach. When she's talking on the phone and she paces…and she was a very high-profile lawyer. So, that's something that's stuck in my mind, which is if I do stand up, and you think about your breathing and just tense your stomach and then let it go, and then you start talking, it really helps. Something in that…that release…um…and it makes you stand tall and push your chest out, so that's something that I…I do think about, even if I'm sat playing the piano.

In addition to working with a sports psychologist the athlete discussed the training conducted with a specialist bike coach to develop a specific technique, following a traumatic experience. Furthermore, the athlete divulged information regarding the positive impact a sports coach had on developing personal coping abilities. The following quotation identifies how the specific coach-athlete relationship enabled the athlete to become mentally tough:

> He was a very straight, hard talker. He was a military background…um…quite an older man [ ] And it was that kind of relationship where he was always pushing me to the best I could be, and if I couldn't deal with things in training, then I couldn't deal with it in races. So, he was always trying to get the best out of me in training and that helped me cope…um…and made me a really mentally tough person, because of his training techniques. So, yeah, and I nev…definitely, never found that in anybody else.

Previous studies have emphasised the importance of the coach-athlete relationship in developing athletes to become successful performers (e.g., Jowett, 2017; Jowett & Cockerill, 2003). More specifically, researchers have suggested the coach-athlete relationship is more than the coach just merely coaching relevant sport skills and tactics (Bloom, Durant-Bush, & Salmela, 1997). Indeed, in the athlete's case, the coach-athlete relationship was deemed to develop the athlete's mental toughness, in addition to any technical and tactical support provided by the coach.

4.8.2 Experiential Learning (Individual)

Most participants referred to developing coping skills through personal experiences. The experiences ranged from rehearsals, on the job experiences, and life experiences.

With regards to rehearsals, the athlete, royal marine, and specialist communicator all reflected on positive experiences of learning from *physical rehearsals*, which were typically stress-induced. Crucially, the royal marine reflected on the benefit of experiencing and learning from adversity in a high-pressure training scenario, as highlighted in the following two quotations:

> …when we flew in, we got picked up by helicopters, flew into the ahh…to the middle of the area that we were working in. I got…I got given control of the exercise and…um…it pretty much went how I planned, and it went badly and…um…you know, there were things happening that weren't particularly good. And it was just, I just…I just didn't really cope with the pressure [ ]
>
> But, um…I actually learned more from that one day, and every time I've done it since, and I've done it much…much more complex, much more stressful, much more…ah…important in real life scenarios, and I've never felt...after having that ah…incident I've…I've always seemed to cope better since.

Offering slightly different perspectives, the police officer, royal marine, specialist communicator and TO surgeon all referred to how *on the job experiences* have helped to develop the ability to cope. For example, the specialist communicator reflected on learning from an early adverse experience, as illustrated in the following quotation:

> And I realised that I'd got tunnel vision, but everyone does in their first firefight, you get a bit of tunnel vision, and you kinda lose perspective of your surroundings. So…um…I knew…I knew what the fault was, so then I knew next time what I needed to do. And it was more having a bit of awareness…having more of an awareness of everything around me. I knew it because you do, you get taught it all the time, but getting shot at is a little bit different.

Similarly, the TO surgeon reflected on being frequently exposed to pressure when inexperienced and learning from mistakes. Interestingly, the TO surgeon seemed to have an inner conflict about whether this was (morally) correct, and compared it to modern-day training for junior surgeons:

> Um…and that is an issue that we have nowadays with our training…ah…particularly in surgery. Um…in the bad old days, when I was training…um…ah…I would've become a consultant having done, I don't know, five or ten thousand operations [ ] and I would've done at least sixty percent of those operations unsupervised, I would've learned by my mistakes, and that's bad. Nowadays, it is virtually unheard of for a trainee to do an operation unsupervised unless they've been really comp… really, rigorously tested all the way through. And it's only in the last year or so they may be allowed to fly solo. The issue with that is, that because their training is so much better, they don't get the same numbers as I used to get. And there are pros and cons both ways of that.

In relation to learning from experiences, the police officer provided a more generic overview for the benefits of gaining experience, as highlighted in the following quotation:

> …you learn from job-to-job-to-job as to what…what needs to be done. You know, you go to a burglary, and you think "right, what do I need for a burg(lar)?…this!" "What do I need to do [ ] for a domestic? I need to do this". So, everything kind of comes together.

In addition, the police officer offered an insight into developing a database to cope with the uncertainty of future situations:

> …you know, you start building up a database in your mind of all the things you can use, and all the services you can use, to make it better for that person.

Experiential learning encapsulates the ability of an individual to *reflect* on personal lived experiences, creating knowledge and understanding through the interpretational and transformational processes of those experiences (Kolb, 1984). Crucially, self-reflection is integral to the process of learning from experiences (e.g., Phelps, Strype, Le Bellu, Lahlou, & Aandal, 2016) and several participants identified reflective processes used to learn from experiences of performing under pressure in rehearsals, or on the job (e.g., athlete, composer, police officer, specialist communicator, and royal marine). Some examples of reflection discussed indicated the processes were formalised. For example, the athlete indicated having discussions regarding personal performances with a sports psychologist. Also, the police officer reflected on completing annual Performance Development Reviews. Additionally, the composer reported writing down performance reflections in a book (e.g., areas for improvement) and retrieving constructive feedback from other people following concerts.

In contrast, not all individualised reflective processes discussed by participants were formalised. For example, some participants (e.g., police officer, royal marine, and specialist communicator) all reported engaging in informal reflective thought processes following events, to learn from experiences. The following quotation from the specialist communicator indicates an example of an informal reflective thought process adopted:

> I kinda wanted to know what I'd done afterwards [ ] and afterwards I was like "Well (expletive) me that was stupid! Why did you…why was you stood up shooting…shooting, when you should've been in a firing position?" [ ] so, I kind of…what I didn't want to do was be that person again. So, I reflected on why? "Why was I doing that then?"

4.8.3 Experiential Learning (Team)

Similar to the reflective processes identified by participants for individual experiential learning, participants also reported on formalised and / or informal reflective processes adopted by teams to learn from experiences. The ENT surgeon discussed informal *team debriefing* processes that typically occurred after surgical procedures that encountered difficulties, as illustrated in the following quotation:

> …it happens in a very informal way. For example, when we are doing a procedure and if we had an equipment issue, we didn't have the right…um…material, or the right…um…instrument. Then, yeah we…somehow we manage OK using an alternative to…to cope with that situation. But at the end of it, then we would talk to the team and say "yeah, next time can you make sure that we have got enough of that stuff here, so that it doesn't happen".

In contrast, the police officer and royal marine both recollected formalised team debriefing processes when learning from experiences of performing under pressure. For example, the royal marine discussed having team meetings to rectify mistakes when rehearsing parachutes jumps for a forthcoming mission, and an experience of being "thoroughly debriefed" following an inadequate performance for a complex training exercise. In addition, the police officer reflected on a formal team debrief conducted by a specialist unit three-weeks after attending a serious crime. More specifically the team debrief incorporated video clips retrieved from body-worn videos (BWV) to help analyse the team's performance:

> …there was about eight of us that stayed in the room, and they sat …and what we done, we discussed what we did, who did what. Because it's still fresh in your mind, because it's quite a big thing that. And then all the body [ ] that we wear, all the camera's they…they use that and put it all onto one disc. And they played it, which was what we saw. So, some of the officers that weren't first on scene, then got to see what first on the scene officers saw, and what they did, to then discuss what could you do better. So, one of things was then the person…the person that went upstairs to go and see the wife [ ] any pulse, come downstairs and then dealt with him. So, straight away she's…she's touched her, touched him. So, really, she should've gone up and touched that person, gloves off, new pair gloves on, carried on. So, it's that…little things like that, no-one else would think of, and you think "oh actually, yeah".

Of further relevance to team learning processes, the police officer, specialist communicator, and TO Surgeon reported engaging in reflective processes with inexperienced peers. The police officer and TO surgeon offered examples which appeared to be formalised reflective processes, as demonstrated in the following quotation from the police officer when assuming the role of a mentor to another colleague:

> …and it's like "right, let's run through the job, what did you do?" and then…yeah…so, you kind of unpick it. So, it's like "right, well what was the job?" [ ] So, it's "right, well what…what was the job? What was you…what was the initial call?" "That" "OK, so what was going through your mind at this point?" "This" "OK, did you think about that?" [ ] And then you start picking all the little finer details. And sometimes, especially if they…if they're brand new [ ] we'll sit down, we'll literally write it out.

Although the examples of reflective processes discussed by participants for both the individual and team experiential learning sections are not all formalised, it could be argued the reflective processes discussed by participants are *purposeful* (i.e., intentional). It is suggested purposeful reflection has many benefits including: developing new knowledge; establishing self-awareness; increasing empowerment to make amendments (Ekebergh, 2007; Richards, Mascarenhas & Collins, 2009; Sarkar & Fletcher, 2014a); enhancing communication; developing critical thinking skills; and improving problem-solving skills (McCoy, 2006; Nikolou-Walker & Meaklim, 2007; Vodde, 2012). In relation to developing the ability to cope, by garnering an increased knowledge and self-awareness derived from purposeful reflective processes, individuals can consider how they may cope in similar contexts for future performances under pressure (e.g., Cropley et al., 2016). Importantly, psychologists working in different performance domains may consider how to transfer purposeful and formalised reflective processes at

both the individual and the team level. For example, at the individual level, the composer's strategy for recording reflections post-performance may be transferred to other domains such as sport.

Of significance to team reflective processes, previous researchers have explored how surgical teams can learn from the structured team reflectivity model used by the military, to reduce the incidences of preventable mistakes (Vashdi, Bamberger, Erez, & Weiss-Meilik, 2007). Furthermore, the current study illuminates how psychologists working in the surgical performance domain could adopt the *formalised* team debriefing strategies described by both the royal marine and the police officer. Ultimately, it could be suggested the formalised team debriefings can enhance the ability of surgeons to reflect on team performances and develop the ability to cope with future challenging situations.

Additionally, contemporary research in police education postulated the significant impact body-worn videos (BWV) can have on personal reflections of experiences from simulated training (Phelps et al., 2016). Medical domains have also reported the use of BWV as an aid to reflect on experiences gained through educational purposes, which suggests parallels could be made between policing and medical professions. Moreover, evidence from the police officer in the current study indicates how BWV enabled a detailed team reflection process of a real-world job experience. This has relevance to psychologists working in surgical and military performance domains, as they could consider transferring the use of BWV, with the aim to enhance purposeful team reflections following performance under pressure.

4.8.4 Independent Learning

There are various examples of how participants demonstrated the ability to learn independently, which may have inadvertently developed the ability to cope with challenging situations. For example, the ENT surgeon discussed reading to gain knowledge of unfamiliar surgical procedures, when training as a surgeon, and the composer independently developed a strategy to monitor other musicians, to see if they were acting as valuable team members. Additionally, the TO surgeon explicitly discussed training other surgeons to cope with distractions when performing surgery. Training other surgeons may have inadvertently enabled the TO surgeon to independently develop personal coping abilities, by keeping up-to-date with recent advances in the surgical field. The following quotation highlights how the TO

surgeon acknowledged the importance of staying current with contemporary advancements in the surgical field:

> …but part of the reason I…I do so much teaching, is that it forces me to stay current. So, it forces me to keep up…abreast with what's going on in the world. And by running courses, teaching on courses, I'm forever mixing with people who come up with bright new ideas, and I go "bloody hell, that's a great idea!"

Associated with independent learning, the athlete, specialist communicator, and TO surgeon all alluded to organically developing visualisation processes, to cope with performances under pressure. For example, the athlete established a visualisation process after writing down key points for a forthcoming competition, as illustrated in the following example:

> It's not something that…I mean I did work with a sport psychologist, but it's not something we ever sat down and practised techniques of, you know, it's not something that [ ] I think I've been on random courses where they get you laying in the room and you picture the sea and all that stuff. Um…I never did anything of that when I was actually in the sport at the elite level, it was more the…it was more the process of writing things down. So, you'd write everything down, and then I would sit down, and I'd read through my notes, and that's when I'd shut my eyes and I'd just picture myself going through these points that I've made…um…rather than actually having any kind of…anything else going on with it.

Offering a similar perspective, the Specialist Communicator reflected on organically developing a visualisation skill that has been transferred from other performance contexts, as described in the following quotation:

> No, I think it's something that I…I've always just done myself. Um…I used it in football when I was younger, or in cross-country. So, I'd visualise where I knew…I knew roughly how fit I was, so I would be able to visualise when and where I could…um…push to…to overtake somebody or sit in…understanding that.

The reflections provided from participants in the current study, align with findings from a previous study by Cotterill (2015) where some performers reported organically developing psychological skills to prepare for performance under pressure. Considering these findings and the findings regarding experiential learning from this study, psychologists working with performers in high-pressure performance domains should be encouraged to consider methods that enable performers to develop

personalised coping strategies via self-directed learning processes. Self-directed learning is closely associated with independent learning, as the emphasis is on the learner taking responsibility (i.e., performer-centered learning approach). Notably, Garrison (1997) posits a collaborative constructivist perspective of self-directed learning which combines the learner's construction of knowledge, combined with incorporating others (i.e., psychologists) to confirm useful and relevant knowledge.

4.9 Strengths and limitations of the research

One strength of the current study was the homogenous sample explored. All participants were deemed expert performers who have, and still were (at the time of interviewing), required to perform under high levels of perceived pressure. Gaining rich, contextual accounts of the participants' experiences enabled the researcher to align with commitments of IPA studies to establish and maintain an idiographic sensibility (e.g., Smith et al., 2009).

Another strength of the current study was the use of semi-structured interviews, as they empowered participants to provide their own narrative during the interviews, to divulge their expert knowledge (e.g., Smith 1996; Smith & Eatough, 2012). However, interviewing participants once was a possible limitation of the current study, as it only offers a narrow perspective of the nature of coping, thus restricting the exploration of the dynamic nature of coping over time. Future studies may benefit from adopting longitudinal explorations to garner information regarding the dynamic nature of coping and how it evolves over time across different performance domains.

Although the current study provides rich accounts of the participants' experiences to offer a unique perspective into the nature of coping across various performance domains, it is acknowledged that a sample of seven participants across five performance domains is relatively small. To broaden contemporary understanding of the nature of coping across performance domains, future studies could explore larger sample sizes across a wider range of high-pressure performance domains. Finally, the retrospective nature of the data collection might have limited the accuracy of participant recall when providing narrative accounts of their lived experiences. This can be addressed in future studies by collecting data from participants either during or immediately after performance.

CHAPTER 5 - CONCLUSION

The current study aimed to explore the nature of coping strategies used to manage stress and facilitate performance under pressure across various high-pressure performance domains. More specifically, the study had four research questions:

1. What are the perceived challenges experienced by expert performers across performance domains?
2. What coping strategies are used by expert performers across performance domains to facilitate performance under pressure?
3. How do expert performers across performance domains perceive coping strategies effect performance under pressure?
4. How do expert performers across performance domains suggest coping strategies have been developed?

To summarise the key findings, first, an overview is provided with relevance to both the research questions and any associated theoretical applications. Second, the implications of the key findings on inter-professional learning for psychologists working with performers in different high-pressure performance domains are considered. Third, future directions for research will be suggested. Finally, a closing summary statement will be included.

5.1 Overall summary of the key findings

The present study builds on previous research that offers a unique perspective of performance psychology across a variety of performance domains. In terms of theoretical application, participants in the current study reported using a range of cognitive, emotional, and behavioural coping strategies to manage stressors when facilitating performance under pressure. This finding supports the notion that coping is a highly individualistic, adaptive and dynamic process (e.g., Gould et al., 1993a, 1993b; Kovacs, 2007; Skinner et al., 2003). Additionally, findings from this study support the notion of re-conceptualising coping to consider coping processes at the team level, which include shared perceived team challenges (stressors) and shared team coping strategies (e.g., Leprince et al., 2018; Lyons et al., 1998).

Importantly, participant perspectives of coping in the current study indicate how the ability to cope permeates the ability to perform under pressure in different domains, with similar coping strategies being employed in advance of performance, pre-performance, during performance, and post-performance. In relation to *preparing* for performance under pressure, and congruent with Cotterill's (2015) findings, the current study provides further evidence of similar cognitive strategies used by performers across performance domains. Furthermore, the current study also presents similar types of physical rehearsal that prepare participants to cope with performance under pressure. Interestingly, the results allowed the identification of parallels in both cognitive and behavioural coping strategies adopted across performance domains, *during* performance under pressure.

In relation to having the ability to cope with performance under pressure, findings from the current study also illuminate the importance of considering coping strategies that focus on well-being (e.g., lifestyle management strategies and social support mechanisms). Indeed, coping strategies that focus on well-being away from the performance environment, may afford performers the opportunity to rejuvenate coping resources expended during previous performances under pressure (e.g., Grawitch et al., 2010; Sarkar & Fletcher, 2014a). Relatedly, findings from the current study suggest psychologists may consider the possible benefits of developing *formalised* social support processes, to enhance the emotional wellbeing of performers who are more likely to experience traumatic experiences (e.g., police officers, military personnel, and surgeons).

Notably, evidence from the current study also illuminates the presence of similar personality factors inherent in most participants. The most salient personality factor identified, perfectionist strivings, may suggest that some expert performers cope with performance pressure by setting high performance expectations to elicit positive emotions (e.g., Kaye et al., 2008) and increase motivation (e.g., Stoeber & Becker, 2008).

Of significance to understanding the nature of coping, perceptions of similar situational, cognitive, emotional, and personal challenges are provided by participants. Crucially, these findings imply that psychologists working with individuals in high-pressure domains should seek to establish a holistic view of the perceived challenges experienced by performers (e.g., McKay et al., 2008). Subsequently, psychologists will garner a greater understanding of *when* and *why* coping strategies may be required by individuals to manage the perceived challenges and facilitate performance under pressure.

Of further relevance, insights into the participants' perceived situational challenges, which mostly related to unfavourable situations, can inform how physical rehearsal environments are designed to replicate pressured performance environments. Consequently, in the realistic physical rehearsal environments, individuals can develop contextually relevant coping strategies that can be transferred to real-world pressured performance environments (e.g., Cotterill, 2017).

Pertinent to developing coping abilities, several participants in the current study developed the ability to cope through experiences of performing under pressure, either when rehearsing or performing on the job. Additionally, participants in the current study also reported organically developing personalised coping strategies. These outcomes suggest that a core part of coping strategy development is via a performer-centered learning process (e.g., self-directed learning), whereby performers can construct personal meanings from experiences of performing under pressure and develop personalised coping strategies. Importantly, to learn from experiences of performing under pressure, some participants in the current study alluded to having the ability to engage in *purposeful* critical reflection processes, either individually or with others (e.g., team members or psychologists).

Finally, the current study presents an awareness of the perceived effects of coping strategies on various psychological components at both the individual (e.g., improved focus, enhanced decision-making, increased self-efficacy, induced relaxed mood state) and team level (e.g., teamwork and team mood). Crucially, having a greater understanding of what psychological components expert performers are trying to influence to facilitate performance under pressure, can help psychologists identify and develop coping strategies that are best suited to achieve the desired effects.

5.2 Implications of the key findings for psychologists working in high-pressure performance domains

Of significance to psychologists working with performers in high-pressure domains, the findings afford the opportunity to access the perceived lived experiences of expert performers across various performance domains. Like other qualitative studies, the current study provides psychologists with access to expert performers' perceived cognitions, emotions and behaviours (e.g., Maher, Marchant, Morris, & Fazel, 2020), in relation to the nature of coping to manage stress and facilitate performance under pressure.

By providing access to participants' perceptions and being cognisant of the nature of coping across performance domains, the current study urges psychologists to engage in inter-professional learning and consider opportunities for coping strategy transferability. Additionally, garnering a greater understanding of the nature of coping across performance domains at the expert level, may inform psychologists working with novice performers how to potentially reduce the amount of time required to become an expert performer (e.g., Cotterill, 2015). The current study proposes the following as *ways psychologists can facilitate inter-professional learning*.

In relation to preparedness to perform, psychologists could collaborate on strategies that enable performers to learn and develop personalised coping strategies from realistic experiences of performing under pressure. For example, similar *physical rehearsal* strategies that replicate performance under pressure (e.g., pressure training), could be transferred between the military, sport, and music performance domains. Of further significance, similar *cognitive rehearsal* strategies used by participants in the current study to visualise future performances under pressure (e.g., royal marine, athlete, and composer), could be shared between the military, sport, and music performance domains.

Moreover, when helping performers prepare for performance under pressure, psychologists should consider the possibility of transferring *advanced planning strategies*. For example, team planning strategies could be shared between the military (e.g., scenario-based training) and surgical performance domains (e.g., team meetings). Also, the meticulous *familiarisation processes* reported by the composer in the current study (e.g., visiting and rehearsing in the physical venue, and taking images of the venue to enhance cognitive rehearsal) could be transferred to other domains which afford similar opportunities (e.g., sport).

Additionally, to help performers prepare for performance under pressure, psychologists may also consider including *what if scenarios* in pre-performance preparation processes. Specifically, the examples of incorporating what if scenarios into pre-performance processes offered by the police officer (e.g., National Decision-Making Model which incorporated a self-talk process), the TO surgeon (e.g., the three-stage surgical timeout process) and the specialist communicator (e.g., self-talk process), highlights the potential to transfer strategies, or elements of the strategies, between these performance domains (i.e., police, military, and surgical performance).

Of further relevance to pre-performance preparation, is the parallels identified regarding the functions of *pre-performance routines* adopted by the athlete and specialist communicator. Specifically, both

participant's pre-performance routines had a motivational and attentional function. This suggests that personnel who operate in military and sport domains could transfer pre-performance routine techniques (e.g., self-talk and visualisation processes), to achieve similar functions.

Turning now to strategies that enable performers to adapt when coping with stress. Psychologists should consider the transferability of similar *cognitive adaptation strategies* to help performers reappraise unwanted negative thoughts and / or emotions (e.g., developing a sense of perspective, changing negative thoughts to positives, self-acceptance, and acceptance of the situation). More specifically, the current study highlights parallels in cognitive reappraisal strategies used by participants from the military, music, sport, and police; which could inform psychologists of the potential transferability. To note, psychologists should also be cognisant of *when* adaptive cognitive strategies are used by performers. For example, the royal marine in the current study identified the importance of not embracing a sense of perspective during performance, as it may elicit unwanted emotions. In contrast, the music composer benefited from the emotions elicited via adopting a sense of perspective during performance.

Additionally, psychologists working in the military, sport, and music performance domains may consider the transferability of cognitive adaptation strategies that change thoughts to a task focus. For example, the self-talk strategy used by the athlete to change negative thoughts to task specific thoughts, may be transferable to other performance domains.

Furthermore, behavioural adaptation strategies could be shared between performance domains that afford performers the time to take a pause during performance to regulate emotions, and cope with unfavourable situations. Indeed, the TO surgeon's strategy of combining a physical pause during performance with a relaxation strategy (e.g., breath control), could be shared with performers in sport and the military.

Of significance, psychologists may also consider the possibility of sharing strategies that help performers *establish task focus* (i.e., focus on the here and now) *during* performance under pressure. For example, reflections provided by participants in the current study regarding methodical strategies to promote a broad focus (i.e., thinking about the bigger picture) could be shared between the military and police, to induce convergent thought processes that aid problem solving. Also, strategies that establish a narrow focus could be transferred between surgical and sport performance domains. For example, the

instructional self-talk used by the athlete in the current study to focus on *the process*, could be used by surgeons when operating.

Moving now to support mechanisms: psychologists working across different performance domains could transfer *formalised* task support processes in team performance environments. For example, similar task support strategies to cope with unfavourable situations could be transferred between the police (e.g., point-to-point with an experienced colleague), military (e.g., support from a specialist colleague), and surgical performance (e.g., support from a specialist or trusted peer).

Finally, psychologists working in team environments may consider the transferability of *formalised* and *purposeful* team reflection processes. Specifically, the formalised team debriefings discussed by participants from the police (e.g., use of BWV in team debriefs) and the military (e.g., formal debriefings), could be transferred to other performers who operate in team performance domains (e.g., surgeons).

5.3 Future directions of the research

The findings from the current study will hopefully encourage future researchers to further explore the unique perspective of exploring the nature of coping across performance domains. Indeed, further research may increase opportunities to foster dialogue between psychologists working in different high-pressure performance domains regarding the possible transferability of coping strategies. The following recommendations for future research are provided:

1. Explore the lived experiences of a greater number of participants across performance domains and / or a greater number of high-pressure performance domains.
2. Consider capturing a wider perspective of the dynamic nature of coping across various performance domains, by adopting longitudinal approaches to collecting data.
3. Reduce the retrospective nature of collecting data by gathering experiences of performers either during and / or immediately after performance.
4. Explore the nature of coping at both the individual and the team level.

5.4 Summary statement

The present study contributes to existing research that offers a unique perspective of performance psychology across various performance domains. More specifically, the study offers psychologists the opportunity to access the perceived cognitions, emotions, and behaviours from expert performers across different domains, in relation to the nature of coping to manage stress and facilitate performance under pressure. The findings from the current study present psychologists with associated theoretical applications and implications for interprofessional learning. Specifically, it is hoped the findings will foster discussions between psychologists working in different performance domains to collaborate on ideas pertaining to the transferability of coping strategies.

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APPENDICES

Appendix 1: Participant information sheet

Information sheet for participants

Project title: Facilitating performance under pressure: Exploring the nature of coping strategies used across various performance domains to manage stress.

Thank you for showing an interest in this project. Please read this information sheet carefully before deciding whether or not to participate. If you choose to participate, we thank you in advance for the time and effort you have decided to devote to our research. If you choose not to participate, there will be no disadvantage to you of any kind and we thank you for considering taking part in this project.

What is the aim of the project?

This project is being undertaken as part of the requirements for a research degree at the University of Winchester. The overall aim of this project is to explore the nature of coping strategies used across various performance domains, to facilitate performance under pressure.

It is widely acknowledged that various jobs require individuals to successfully perform under pressure. To successfully perform under pressure, it is important for individuals to have the ability to cope with the challenges they encounter. The specific aim of this project is to explore the nature of the coping strategies used by individuals in their job roles. The investigation will focus on the types of coping strategies used, how they are used, and why they work.

Information gathered from this study, will be used to inform training and performance for the selected job roles, of the coping strategies available to help performers manage challenges encountered when performing under pressure. Providing effective coping strategies to alleviate the negative effects of occupational stress can help facilitate performance under pressure, and perhaps more importantly, improve personal well-being and mental health.

What types of participants are needed?

We are looking to recruit either males and females over the age of 18 who are experts (individuals who have high levels of knowledge and/or skill) in the following performance domains: sport, police, musical performance and surgery. Participants should be willing to meet at an agreed venue for a one-to-one semi-structured interview which will last for approx. 60-90 minutes.

What will participants be asked to do?

In the interview, participants will be asked questions regarding their job. Questions will focus on:

What is deemed effective performance in the job?

What are the main stressors and challenges associated with the job?

What coping strategies are used to manage these challenges and stressors?

How and why do these coping strategies work?

All interviews will be recorded and transcripts of the interviews will be sent back to the participants so they can confirm authenticity of the dialogue in the interview.

Can participants change their mind and withdraw from the project?

If at any time you decide you no longer wish to participate in this project (for any reason) you may withdraw without disadvantage to yourself.

What data or information will be collected and what use will be made of it?

Information regarding the coping strategies used by each individual will be compared across all of the individuals and jobs selected for the project. Comparisons of information will be made to establish commonalities or differences between the nature of coping strategies employed.

Any information that is shared or communicated will not be linked to any specific individual who participates in this project. In all cases, participant anonymity will be preserved by applying participant codes used for all information representation, ensuring the identity of participants is protected at all times. Indeed, it is the broad implications rather than individual experiences that will form the core of the project.

Participants are most welcome to request a copy of the results of the project. Some individual results will be available immediately following the transcription of the interviews. Participants will also be able to request the results of the project as a whole, and we will be available to explain and interpret specific data and how it compares to the results of the group as a whole.

Any questions?

If you have any questions about our project, either now or in the future, please feel free to contact:

This project has been reviewed and approved by the Department of Sport, Exercise and Health Ethics Committee, University of Winchester.

Department of Sport, Exercise and Health

Faculty of Business, Law and Sport

Appendix 2: Interview Schedule

Key Research Questions:

During the interview, participants will be asked questions regarding their job. Questions will focus on:

- What is deemed effective performance in their domain?
- What are the main stressors and challenges associated with their performance?
- What coping strategies are used to manage these challenges and stressors?
- How and why are these perceived coping strategies thought to work?

Proposed Interview Schedule:

Section 1:

- Ensure participants receive information about the project by going through the informed consent form, highlighting the purpose of the study. Remind participants they can withdraw from the study at any time and their participation in the study will remain confidential and anonymous. Although names may be used in the interview, they will be removed from any subsequent publications to ensure confidentiality.

Section 2:

- Provide the participants with an opportunity to confirm their understanding of the project, and invite them to continue with the interview.

- Ask participants to complete a form to provide demographic information and sign the consent form.

Section 3:

- A selection of the following starting points will be used to build a rapport with the participant.

    - Tell me about your profession/performance domain.
    - Tell me about how long you have been working/performing in that performance domain.
    - Tell me why you chose your profession.

- Link to question for main part of interview
    - What do you consider to be effective performance in your domain?
    - Can you think of any examples?

Section 4:

- At this section, it is important to clarify the main stressors and challenges experienced by the participant in their performance domain. Once these are understood, we can further explore the strategies used to cope with them.

  - What are the main stressors and challenges associated with your job?
    - Can you explain and tell me about any recent examples?
    - Can you explain the impact the challenges and stressors have on your performance? Do you have any specific examples, to elaborate?
    - Are there any common situations which pose challenges to your performance? What are they and how often do they occur?

Section 5:

- This section will aim to identify any successful coping strategies used, in preparation to explore the nature of each one.

  - Can you tell me about any successful coping strategies you have used to manage the challenges and stressors associated with your job, to help facilitate/improve your performance?
    - Can you explain in more detail by discussing any specific situations/examples where you have used the strategies?
    - Do you use similar or different coping strategies to manage the challenges you experience?
    - How long have you been using the strategies for?
    - Do you use the strategies automatically?

Section 6:

- This section will be used to explore the nature of each coping strategy identified in section 5. To avoid confusion, if the participant has identified more than one strategy from section 5, the following sequence of questions will be used for the first strategy selected and then revisited for any further strategies identified.

  - Can you tell me how you use/apply the strategy you have used to manage the challenges and stressors associated with your job?
    - Can you elaborate when you use the coping strategy in relation to your performance (before, during, after) and why you use it at that time?
    - Can you specifically explain how you use the strategy? (consideration about automatic responses may be required here).

  - When/how did you learn to use the strategy?
    - Can you explain how long it took to acquire the strategy to use it effectively?
    - Did you learn to use the strategy independently or did you get specific training?

- Why/how do you think the strategy has worked/been successful? What is your understanding of it?
    - Can you explain by providing any specific examples?
    - Can you elaborate and consider whether the coping strategy has influenced any other psychological components (e.g. anxiety, focus, arousal, motivation) and how that may have improved your performance?

Note: Throughout the interview various prompts will be used to gain more information from the participant. Some examples are:

- Can you explain in more detail?
- Please can you elaborate?

Appendix 3: Reflexive journal extract

An extract from an entry produced in the reflexive journal prior to interviewing the first participant (TO surgeon).

The first interview conducted for the study. As I have been conducting lots of background reading re: coping under pressure to work toward literature review completion, it is important to remove thoughts of theoretical perspectives such as classifications of coping, as they may lead the interview direction. Also, it's important to be aware of any preconceived ideas I have developed regarding surgeons (e.g., watching T.V documentaries) and: what I think causes them stress; how I might think they cope with pressure. As this is the first interview, I need to feel confident in allowing the participant to lead the discourse of the information discussed, so the participant can provide an in-depth narrative of personal lived experiences.

Appendix 4: Reflexive journal extract

An extract from an entry produced in the reflexive journal prior to interviewing the athlete.

As I have experience of: competing in sport (not at elite level); teaching on sport and exercise science courses; sports coaching; and studying sport and exercise psychology, it is imperative I avoid preconceived ideas / knowledge developed from these personal experiences. The focus must be to explore the unique perspective of the participants experiences, allowing the participant to lead the direction of the interview. Additionally, it is important to be aware of the ideas gathered from the previous interviews conducted for this study, and how they could influence my personal interpretation of the next interview, and possibly what questions I pose.

Appendix 5: Data analysis example (police officer)

An extract showing step 2 (right hand column) and step 3 (left hand column) of data analysis for a page of the police officers transcribed verbatim.

72 Manage emotions. 73 Awareness of emotional contagion 74 Focus on task requirements 75 Help others (in distress). 76 Peer/social support (distressing events) 77 Accountability (personal responsibilities) 78 Personal coping strategy 79 Self-comforting 80 Show respect.	as day. If was to sit there and tell you now, what happened, and what I did, I could tell you everything. And it, it kind of gets...got, gets to the point where you go to them and you put the professional hat on and you deal with it, and you don't want the family to see it's affecting you. So, you just, you just get on with it. You what you're...you know what the procedure is, you know what the paperwork is you've got to do, you know what department you've got to call. If it's look suspect, whatever...if it's ever a hanging you have to...CID have to come out, because they need to make sure that it wasn't...they haven't been strung up by somebody look...you know, because obviously if people do it themselves, you've got to sit there and be "right, I need this department out, I need these people out, I need this phone call, I need that". Because you've got then...you've potentially got loved one's there that may have found them. So, you've got to be the professional one, and then can come to...they're gonna be in bits, but you've gotta be the one...you've gotta be the voice of reason and the person that's sat there. But as soon as you leave that property and the job's dealt with and you sit in the car, that's it! You, you know, you, you, deal with it how you best you can. You know, usually there's the, the Sargent's when you get back, because obviously there's paperwork you've got send off to the coroners etc. The Sargent's will sit down with you and make sure you're alright. But, I think a lot of the Police Officers will just say "yeah, I'm fine!". And so they...because, that's how it is. It's the job you do. You know, you can't...it's like being a fireman, you can't say "I can't go the fire, it's a bit hot", you know, with us we, we've signed up to protect people, look after people, we're going to be called to these kind of jobs, you know, murders and what-not, you're gonna see dead bodies and so, you need to deal with it. But, the amount you see, it can't be good. And people, and people used to been able to laugh at me, but they've always admired the way I deal with it. And I've always, even when I've trained people, because I mentor new officers going to come in, and special constables when they come through. But, when we go and deal with sudden deaths, one of the things that we have to do, is we have to check the deceased's body to make sure there's no knife stuck in them, there's nothing untoward. I'll say 90% of the time they're in bed, and I tuck them in. So, I'll check the body, and I'll cover them back up with the duvet and I'll say goodnight to them. And everyone always sits there and think it's weird. And I'll say "well, it's just respect! That person's lived, they've had a cracking innings generally", you know, and you just wanna, you know, you're all there, no-one wants the Police in the house, you know and it's like you know, someone's called up today "I've just found my mum/my dad dead on the sofa or in bed or whatever" we get called as part of the...we have to be called as part of the plan. The ambulance gets called, we get called to make sure there's nothing untoward. We don't want to be there, because it's not nice, because straight away	Manage emotions when dealing with distressing jobs ('professional hat'). Aware of emotional contagion and not wanting to affect others (family) dealing with. Copes with distressing jobs/emotions by focussing on task requirements. Helping those in distress. (manage own emotions to do so). Social/peer support provided (structured?). 'Best you can' - difficulties dealing with such events in the past? Aware of personal responsibilities (accountable for the job he is in). Has his own way of dealing with a specific distressing job - provide self-comfort as he feels he is showing respect? 9

Appendix 6: Data analysis example (composer)

An extract showing step 2 (right hand column) and step 3 (left hand column) of data analysis for a page of the composers transcribed verbatim.

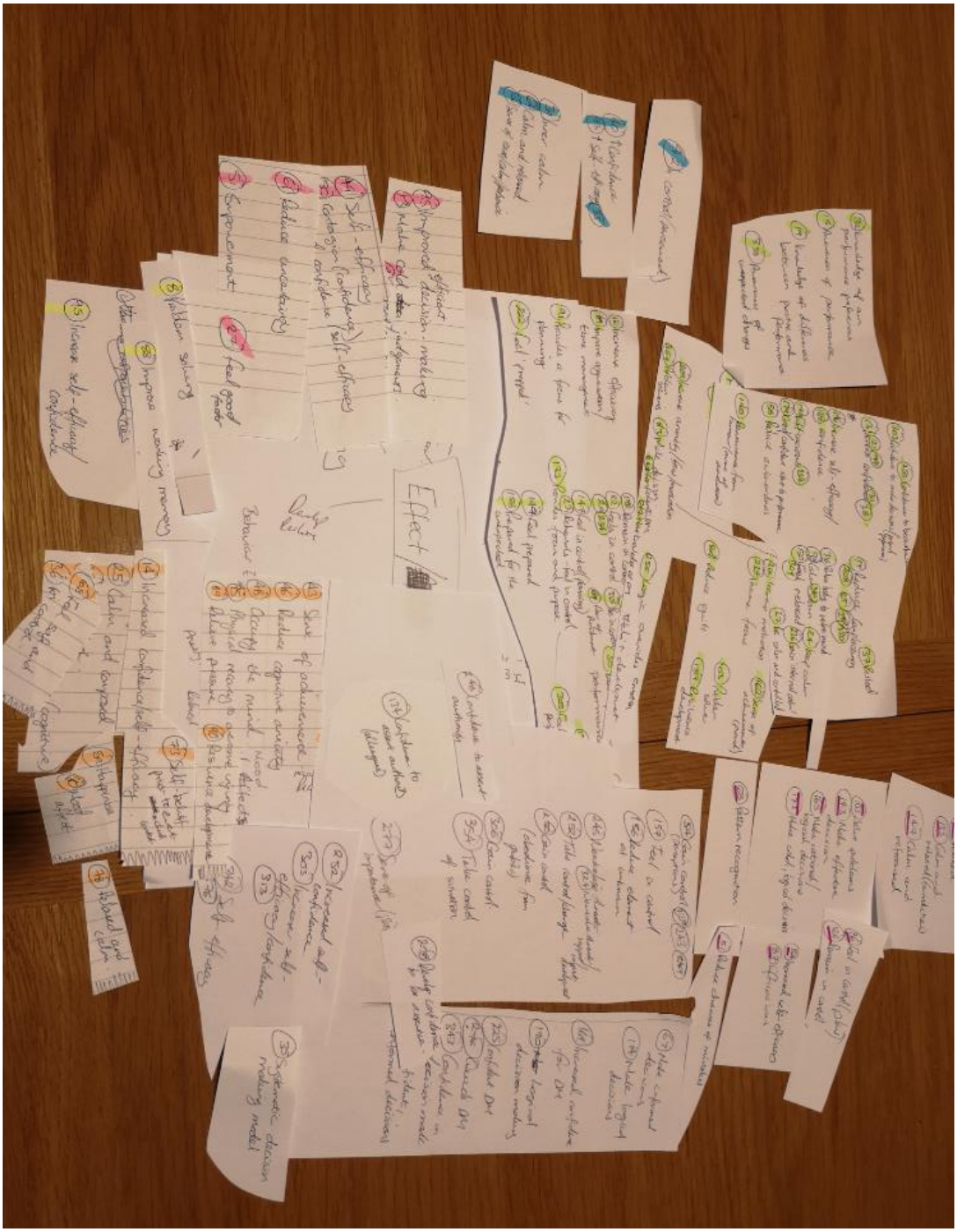
Appendix 7: Example of step 4 from the data analysis

An example of step 4 of data analysis showing the list of some emergent themes from the royal marines transcribed verbatim.

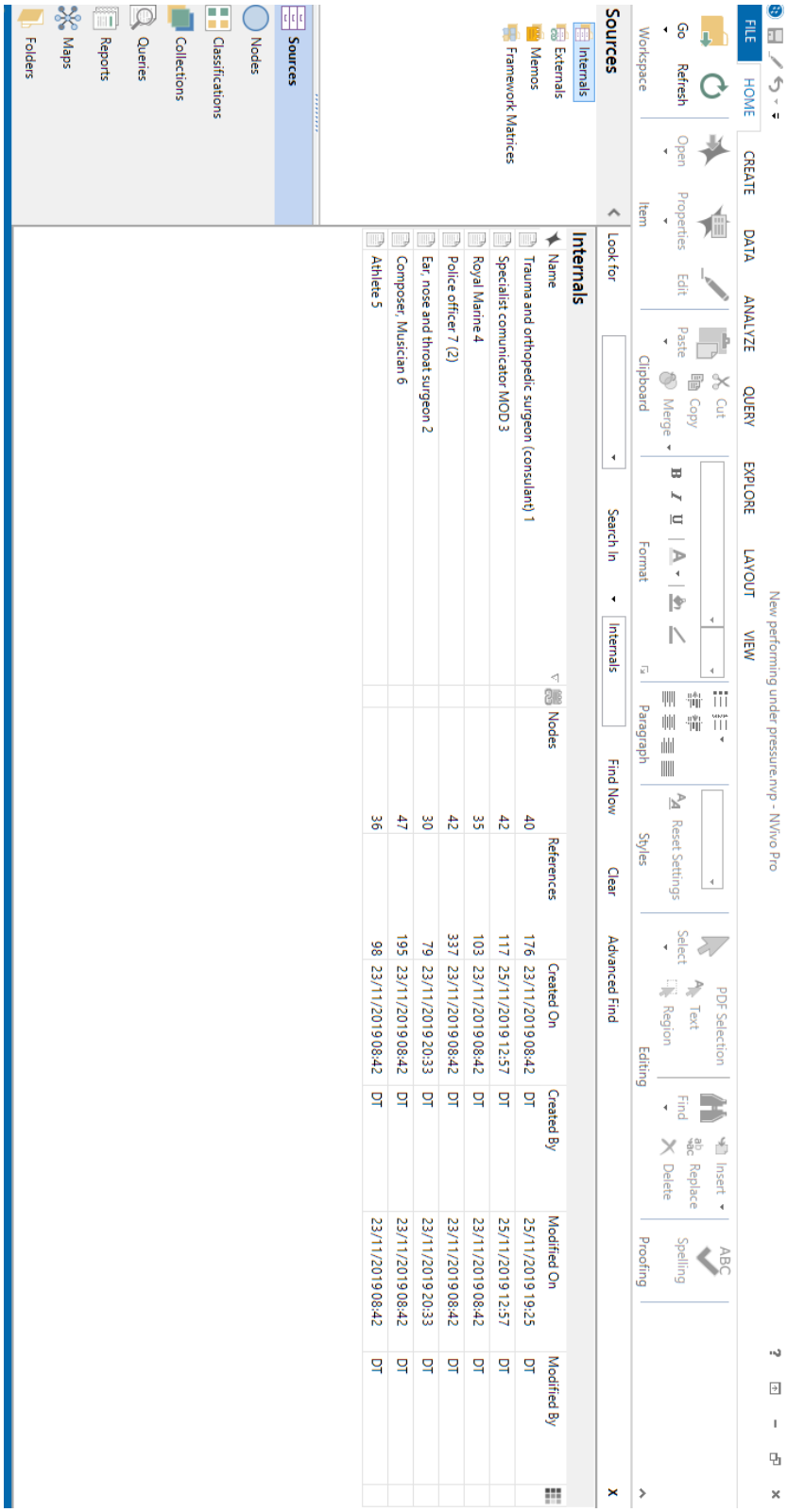
1. Extrinsic motivations
2. Margin for error
3. Continuous pressure
4. Looking good (Perceived self).
5. Fear pressure
6. Competitive environment
7. Paranoia - Self-induced
8. ~~Fear of failure~~ (mistakes magnified)
9. Composed/composure
10. Fine details.
11. Determination
12. Physical fitness
13. Make cold decisions.
14. Physical rehearsal.
15. Prepared.
16. Understand expectations (Physical).
17. Habit to train fitness (manage expectations)
18. High standards.
19. Social comparison (-).
20. Perceived lack of control.
21. Negative thoughts
22. Large-scale training exercise
23. Learning from negative training experience - Not prepared
24. Debriefing
25. Positive learning experience.
26. ~~Habit~~ Increased confidence/self-efficacy
27. Feel good factor
28. Self-acceptance.
29. Continuous training/practice
30. Lack of practice.
31. Self-image.
32. Practical planning/doing.
33. Career ambition/aspirations.
34. Letting team down.
35. Caring signs of weakness.
36. Expectations (mental).
37. Personal responsibility/accountability.
38. Positive/negative experiences impact perspective.
39. Course expectation. (Personal expectation
40. Personal reflection.
41. Resilience development.
42. Sense of perspective (situation comparison).
43. How perceived by others.
44. Prove self to others
45. Positive attitude (perspective)
46. Focus on performance task.
47. Adaptable perspectives for realism.
48. Severe consequence.
49. Self-efficacy.
50. Contagion (confidence).

Appendix 8: Example of step 6 of the data analysis

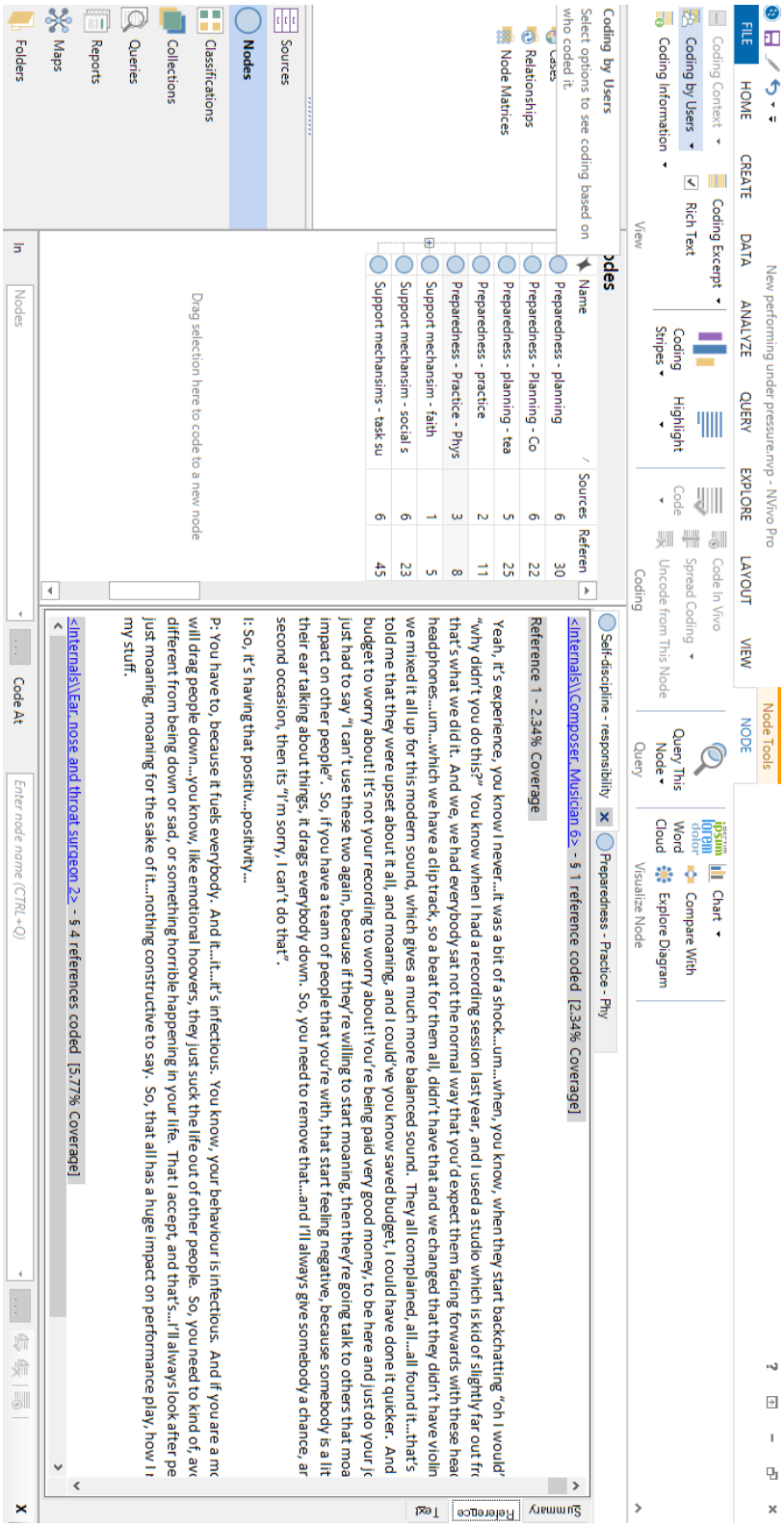
An example of step 6 of the data analysis where colour-coded participant themes were clustered together to formulate a potential superordinate theme.



Appendix 9: A screenshot of NVivo of the coded references for each participant



Appendix 10: A screenshot showing an example from the preparation node on NVivo



Appendix 11: Ethical Approval Document

UNIVERSITY OF WINCHESTER

Wednesday 10th January 2018

Darryl Taphouse

Department of Sport, Exercise & Health

Faculty of BLS

University of Winchester

Hants, SO22 4NR

Dear Darryl Taphouse,

Re: Faculty of Business, Law and Sport RKE Ethics Application [BLS/18/03]

Title: *Facilitating performance under pressure: Exploring the nature of coping strategies used across various performance domains to manage stress*

Thank you for your submission to the University of Winchester, Faculty of Business Law and Sport (BLS) ethics panel.

On behalf of the Faculty of BLS RKE Ethics Committee I am pleased to advise you that the ethics of your application have been approved. Approval is for five years and is for the documentation submitted for review on 04/12/17. If the project has not been completed within five years from the date of this letter, re-approval must be requested.

If the nature, content, location, procedures or personnel of your approved application change, please advise the Head of the Faculty BLS ethics committee.

Yours sincerely

Dr James Faulkner

Head of Ethics in Faculty BLS

University of Winchester

Appendix 12: Participant consent form

CONSENT FORM

Study title: Facilitating Performance Under Pressure: Exploring the nature of coping strategies used across various performance domains to manage stress.

Name of Researcher: Darryl Taphouse

Please sign next to each box to indicate that you have read and understood the statement

1.	I confirm that I have read and understand the information sheet for the above study and that I have had an opportunity to ask questions.	
2.	I understand that my participation is voluntary and that I am free to withdraw at any time without my legal rights being affected.	
3.	I agree to take part in the above study.	
4.	I agree to my voice being digitally recorded and understand this sound file will be deleted after transcription.	
5.	I understand that my contribution will be reported anonymously.	

Data Protection Act

I understand that data collected about me during my participation in this study will be stored on computer, and that any files containing information about me will be made anonymous.

I agree to the University of Winchester recording and processing this information about me. My consent is conditional upon the University complying with its duties and obligations under the Data Protection Act.

Name of Participant	Date	Signature