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Conceptualising, Understanding and Alleviating Choking in Sport:

The Role of Significant Others.

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Abstract

Through a qualitative descriptive methodology, this study sought to understand the influence of significant others (i.e., parents, coaches and team-mates) on athletes' experience of choking in sport. Nine participants (6 males, 3 females) who were either elite (*n=1*) or intermediate / lower-end semi-athletes (*n=8*) completed semi-structured interviews which explored their choking experiences and the perceived impact that significant others had on their choking episodes. All participants were aged between 21 and 45 (*m* = 24.56; *SD* = 7.68), and were recruited from a number of sports including: football (*n=4*), cricket (*n=2*), golf (*n=1*), netball (*n=1*) and rifle shooting (*n=1*). Participants perceived their choking events were associated with a range of antecedents (i.e., perceived pressure, self-presentational motives and high expectations), mechanisms (i.e., debilitative anxiety, distraction and self-focus), moderators (i.e., social support, self-confidence, team cohesion, ego motivational climate and leadership), and consequences (i.e., acute drop in performance, short- and long-term negative affect, and a delayed-positive affect). Significant others were reported to increase or decrease the likelihood of choking, as a result of their influence on perceived pressure, self-presentational motives and expectations prior to the choking episode. Moreover, they also appeared to encourage / discourage choking through affecting the athletes' self-confidence, levels of team cohesion, the motivational climate and availability of social support. The findings of this study extend the choking literature and identify recommendations which practitioners can utilise to manage the impact that significant others have athletes who choke frequently.

Declarations and Statements

This work has not previously been accepted in substance for any degree and is not being concurrently submitted in candidature for any degree.

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This thesis is the result of my own investigations, except where otherwise stated. Other sources are acknowledged by footnotes giving explicit references. A bibliography is appended.

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Chapter 1

Introduction

While there remains some uncertainty regarding the definition and conceptualisation of choking in sport (see Jackson, 2013; Mesagno & Hill, 2013), athletes have tended to report that a choking event consists of a considerable drop in performance standards, as a result of heightened pressure (Hill, Cheesbrough, Gorczynski, & Matthews, 2018; Hill, Hanton Matthews, & Fleming, 2010a; Hill & Shaw; 2013). This experience is reflected in the most recent definition of choking, which identifies that choking in sport is "an acute and considerable drop in skill execution and performance when self-expected standards are normally achievable, which is the result of increased anxiety under perceived pressure" (Mesagno & Hill, 2013, p. 9). This differs from early definitions in which a choke was originally considered to be any "performance decrement in pressure situations" (Baumeister, 1984, p.610). However, as this failed to encompass the acute drop in performance and critical role of anxiety, the most recent conceptualisation of choking in sport by Mesagno and Hill (2013) has become the most plausible and operational definition to date. As a result, it is this definition that informs the current study.

Through the previous decade, researchers have provided an increasingly detailed account of the choking phenomenon (e.g., Gucciardi, Longbottom, Jackson, & Dimmock, 2010; Hill et al., 2010a; Hill Hanton, Matthews, & Fleming, 2010b; Hill et al., 2018; Hill & Shaw, 2013; Mesagno, Geukes, & Larkin, 2015). For example, it has been established that choking is caused by attentional disturbances, triggered by increased levels of anxiety (see Hill et al., 2010a). Moreover, through their adoption of qualitative methods to explore the choking experience, Gucciardi et al. (2010) identified that perceived pressure was the most important antecedent of choking in sport, which in turn was influenced by internal and external sources. Further, this study ascertained that a loss of attentional and / or emotional control, and a fear of failure preceded the choking experience. Many researchers have subsequently supported and extended these findings, including Hill and colleagues (e.g., Hill et al., 2010a; Hill et al., 2010b; Hill & Shaw 2013; Hill, Carvell, Matthews, Weston, & Thelwell; 2017) who added that event importance, high expectations, evaluation apprehension and unfamiliarity can also encourage a choking episode.

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The extant literature has also noted that trait anxiety, self-confidence, dispositional reinvestment, motivational climate, social support and self-presentational concerns are among the main moderating factors of choking (e.g., Baumeister, 1984; Baumeister, Hamilton & Tice, 1985; Beilock & Carr, 2001; Hill et al., 2010a; Hill & Shaw, 2013, Mesagno, Harvey & Janelle, 2012). Nonetheless, the main consequences of choking in sport are recognised as being a significant / acute decline in performance standards, which is followed by a negative affect in the short-term, and both negative and positive affect in the longer term (see Hill et al., 2018).

Clearly this available literature has provided considerable insights into choking. However, this body of work has failed to examine directly whether significant others (i.e., coaches, parents, team-mates and peers) may impact the choking experience. This is despite the inference from a small number of studies that significant others are likely to play an important role in the choke by affecting athletes' motivational climate (Baumeister, 1985; Hill & Shaw; 2013; Mesagno et al., 2012), levels of perceived pressure (e.g., Harwood & Knight, 2015; Smith, Smoll, & Cumming, 2007), self-presentational concerns (Mesagno et al., 2012; Hill et al., 2017), and self-confidence (Baumeister et al., 1985; Beilock & Carr, 2001; Vealey, Garner-Holman, Hayashi, & Giacobbi, 1998). However, such inferences have yet to be explored or tested directly.

Accordingly, the aim of this thesis is to address this gap in the literature, by examining, through qualitative methods, the role of significant others within the choking phenomenon and ascertaining strategies through which significant others can reduce the likelihood of an athlete choking under pressure.

Chapter 2

Literature Review

This chapter will explain critically what is meant by the term "choking" and follow with an explanation of the choking process. Thereafter, the antecedents, moderators, and consequences of a choke will be considered, alongside a review of evidence-based intervention devised to alleviate choking. Finally, the theoretical and potential role of significant others within the choking phenomenon will be presented.

Choking in Sport

Choking was initially defined as a "performance decrement under pressure situations" (Baumeister, 1984, p.610), and more specifically, "the occurrence of inferior performance despite striving and incentives for superior performance" (Baumeister & Showers, 1986, p.361). Such definitions directed early choking research, leading to the concept being examined through the exploration of *any* inferior performance under pressure (see Hill et al., 2009). This suggests that a choke is a specific negative response to perceived pressure rather than a random fluctuation (Beilock & Gray, 2007). However, through the past decade, a debate has emerged regarding whether such definitions accurately reflect the athlete's experience of choking, leading to the suggestion that an alternative conceptualisation and operational definition of choking in sport was needed (see Hill et al., 2009; Hill et al., 2010a; Mesagno & Hill, 2013). Hence, it has been asserted that a choking experience should be considered a significant deterioration of performance instead of any performance drop (Gucciardi & Dimmock, 2008), with contemporary literature deviating away from Baumeister's original definition (see Wilson, Chattington, Marple-Horvat, & Smith, 2007). Due to the lack of clarity surrounding the definition, and to gain theoretical clarity, Mesagno and Hill (2013) proposed that choking in sport should be defined as, "an

acute and considerable drop in skill execution and performance when self-expected standards are normally achievable, which is the result of increased anxiety under perceived pressure" (p.9). They emphasised that rather than '*any*' decrement in performance under pressure, choking is perceived by athletes as a dramatic and significant decline in their sporting standards, at a critical and pressurised moment of their performance, due to the debilitating impact of anxiety.

To support their definition, Mesagno and Hill (2013) identified that the media utilises the term "choking" only when referring to a significant drop in performance and refer to athletes as "chokers" when they have lost from seemingly unassailable positions in situations of pressure (see Hill et al., 2009). Although researchers should not base their conceptualisations or definitions on journalistic writings, there should be a recognition that the media are merely reporting how coaches and athletes use the term within the real-world sport setting. Moreover, and critically, the recent upsurge of studies that have examined the choking phenomenon through qualitative methods, have identified that athletes recall such events as a "*catastrophic, acute* or *significant drop*" in performance that differs in phenomenological experience and outcome from other performance failures (i.e., minor errors or under-performances; see Gucciardi & Dimmock, 2008; Hill et al., 2009; Hill et al., 2010b; Mesagno & Hill, 2013).

Accordingly, while noting the criticisms aimed at the Mesagno and Hill (2013) definition (i.e., the challenge of identifying objectively a "*catastrophic, acute* or *significant drop*" in performance; see Jackson, 2013), it is this definition which has been adopted within this thesis. Specifically, this definition has been chosen because it provides the most current and conceptually robust operational definition available and is being utilised by contemporary choking researchers (e.g., Eysenck & Wilson, 2016; Mesagno, & Beckmann, 2017; Moran & Toner, 2017).

Mechanisms of Choking in Sport

Choking in sport is caused by attentional disturbances, explained through two theories: self-focus (Baumeister, 1984) and distraction (Carver & Scheier, 1981). Both of these incorporate a number of individual sub-theories.

Self-focus theories. The self-focus theories, such as the Reinvestment Theory (RT; Masters 1992) and Explicit Monitoring Hypothesis (EMH; Beilock & Carr, 2001) broadly suggest that an athlete's performance anxiety can increase their level of self-consciousness. This can subsequently trigger an inward focus that encourages the athlete to monitor or control the explicit components of the skill (Hill et al., 2010a). In turn, this will cause the breakdown in skilled performance (i.e., a choke). Although the Reinvestment Theory and EMH are similar, there is one conceptual difference. That is, the Reinvestment Theory identifies that performance is negatively impacted by the athlete *controlling* the step-by-step execution of the skill (Masters and Maxwell, 2008), whereas the EMH suggests that the detriment in performance arises through the athlete *monitoring* the explicit components of the skill (Beilock & Carr, 2001).

As such, the self-focus theories connect choking in sport with stages of learning (Fitts & Posner, 1967), whereby elite athletes process procedural knowledge associated their well-learnt skill, *outside* the working memory, in a highly efficient way. Conversely, novice athletes execute their skill by processing explicit and rule-based knowledge through working memory, which is less effective and efficient. Therefore, when certain elite athletes experience performance anxiety and raised self-consciousness, they will (through monitoring / controlling the explicit components) revert to processing the skill through working memory in an inefficient (novice-like) manner (Masters, 1992; Wilson et al., 2007) thereby encouraging the choke (Hill et al., 2010a; Masters & Maxwell, 2008).

Distraction theories. The prominent distraction theories are the Processing Efficiency Theory (PET; Eysenck & Calvo, 1992) and Attentional Control Theory (ACT; Eysenck, Derakshan, Santos, & Calvo, 2007). In essence, the distraction theories propose that performance pressure creates a dual-task condition, in which pressure-induced anxiety is processed through working memory alongside task-relevant information. As such choking is suggested to occur as a result of task-relevant information being processed inefficiently (see Hill et al., 2010a; Mesagno et al., 2015).

Processing Efficiency Theory. The PET (Eysenck & Calvo, 1992) indicates that the inefficient processing of task-relevant information will cause a choke unless the athlete

responds with heightened effort. Therefore, the theory predicts that anxiety has two effects: *i)* it decreases the processing and storage ability of the working memory, thus reducing the opportunity to process task-relevant information; and *ii)* it has a motivational aspect, in which the athlete can increase their on-task effort which will partially or fully compensate for the reduced efficiency of task-relevant information processing (Eysenck & Calvo, 1992). Hence, the PET predicts that athletes with high trait anxiety will be more vulnerable to choking, especially if they are completing a task with a high cognitive load, for no amount of compensatory effort can overcome the reduced capacity of the working memory in such circumstances (see Murray & Janelle, 2003; Williams, Vickers, & Rodrigues 2002; Wilson, Smith, Chattingham, Ford, & Marple-Horvat, 2006).

Attentional Control Theory. Building on the PET, Eysenck et al. (2007) proposed the ACT, which indicates that anxiety disrupts the balance between athletes' attentional systems (i.e., stimulus-driven and goal-directed). Thus, when an athlete becomes anxious, they will experience an increased influence from the stimulus-driven attentional system (bottom-up control) and a decreased impact of the goal-directed attentional system (top-down control). This will encourage attention to be directed towards external, task-irrelevant and (in particular) threatening cues; which in turn, elicits choking.

Self-focus versus distraction theories. Self-focus theories have been presented as the dominant explanation for choking in sport (e.g., Beilock & Carr, 2001; Beilock & Gray, 2007; Gray, 2004; Gray & Cañal-Bruland, 2015; Gucciardi & Dimmock, 2008), with empirical support arising from two different experimental approaches. The first approach was provided by Masters (1992), who demonstrated that if an athlete learns a motor skill without explicit knowledge, their performance can become robust to pressure as they have no explicit rules to reinvest. Simply, athletes are less likely to choke via self-focus as they cannot break down the skill into its original explicit parts when performing under pressure (Hill et al., 2010a; Masters & Maxwell, 2008). This proposal has since been supported through the examination of analogy learning, where biomechanical metaphors are used to teach complex motor actions, thereby minimising explicit instructions (see Beilock, Carr, MacMahon, & Starkes 2002; Gray, 2004; Gray & Cañal-Bruland, 2015; Masters, 2000). As an example, Liao and Masters (2001) taught a forehand table tennis shot to one group of participants through explicit instructions, and used analogy learning for another (i.e.,

drawing a right-angled triangle with the bat). It was found that those who received explicit instructions went on to choke when exposed to pressure, while those who were taught through analogy, maintained their performance standards. However, it should also be noted that while such findings do reinforce the role of self-focus within the choking process, it is accepted that learning without explicit information is often a very slow process and does not offer a viable coaching approach for practitioners / athletes (see Masters, Maxwell, & Eves, 2000).

In terms of the second approach adopted to support the role of self-focus within choking, numerous experimental studies have directly explored the impact of self-focus and distracting conditions on pressurised performance. This body of work has demonstrated that athletes generally experience choking under pressure in response to a self-focus stimulus, though are able to maintain (or even improve) their performance when exposed to a distractor (e.g., Beilock et al., 2002; Gucciardi & Dimmock, 2008; Jackson, Ashford, & Norsworthy, 2006; Stoate & Wulf, 2011). For example, Jackson et al. (2006) found in their study of field hockey players, that the performance of a dribbling task deteriorated when participants (under pressure) were instructed to attend to the movement of their hands (self-focus condition). Whereas, when participants were required to generate random letters upon hearing a tone (distraction condition), they were able to maintain their performance standards.

Similarly, Beilock et al. (2002) demonstrated through their study of elite golfers that when exposed to a distracting dual-task (i.e., audible tones) during their putting performance, participants were able to maintain standards under pressure, while the same task within the self-focus condition (i.e., call stop at the end of their swing) led to a performance decrement. Indeed, a number of studies (e.g., Beilock & Carr, 2001; Reeves, Tenenbaum & Lidor, 2007), have found that when encouraged to inwardly focus on the explicit components of a skill, the athlete is more likely to experience choking. This exposure to a distracting task / stimulus under pressure can maintain / improve performance under pressure, as it may prevent the athlete from 'self-focus'.

However, as experimental studies create the self-focus and distraction conditions artificially and the pressure under which the athletes performed, it has been questioned whether an athlete would "naturally" self-focus when exposed to pressure, and thereby choke via this

process in the "real-world" setting (see Hill et al., 2010a for a review). Indeed, and in contrast to the experimental studies, recent qualitative studies which have examined the phenomenological experience of choking through athletes who have choked, have provided support for the distraction explanation of choking (see Hill et al., 2010b; Hill, Potter, & Quilliam, 2013; Gucciardi & Dimmock, 2008). For instance, Gucciardi et al. (2010) were the first to propose that when athletes are exposed to the high levels of perceived pressure associated with "real-life" competition, attentional focus is often directed to the outcome of the performance (distraction), rather than skill execution (self-focus). Thereafter, through their qualitative study of elite golfers, Hill et al. (2010b) also offered further support for the distraction theories of choking. Specifically, their participants suggested that they were distracted by various stressors during the choking episode, which included negative evaluation, fear of failure, negative thoughts and previous poor shots; all of which were considered to cause the choke. More recently, Hill et al. (2017) found in their study of elite athletes, that all participants reported distraction as the key process of their choke. In particular, the athletes suggested they focused on their anxiety, performance outcome, self-presentational motives and / or fear or re-injury, while choking.

Although such qualitative research does provide a compelling case for the distraction theories of choking, it must be acknowledged that relying on qualitative methods to recall attentional processes (especially relating to self-focus) can be problematic, as they are difficult to recognise (Beilock, Wierenga, & Carr, 2003) and influenced by objective and subjective performance outcomes (Ross & Conway, 1986). Hence, while the self-focus and distraction theories are often presented in the literature as opposing explanations for choking, there is an increasing awareness that both mechanisms could cause choking. Accordingly, DeCaro, Thomas, Albert, and Beilock (2011) proposed differing pathways to choking, which are dependent on individual (i.e., skill level, level of trait anxiety / reinvestment) and situational factors (e.g., skill type). For example, they suggest that an elite athlete with a dispositional tendency to reinvest, is likely to choke through self-focus, while a novice athlete with high-trait anxiety, who is completing a task with high cognitive demands, is far more likely to choke through distraction.

Antecedents of Choking in Sport
A number of antecedents (i.e., factors which precede the choke) have been identified within choking literature. Gucciardi et al. (2010) identified that, perhaps unsurprisingly,

perceived pressure was the most important antecedent, which was influenced by both internal (i.e., self-set performance targets) and external (e.g. not letting important people down) expectations and goals. In addition, among their sample of 22 experienced golfers, a loss of attentional / emotional control, fear of failure, and the debilitative interpretation of anxiety were also found to precede choking.

Several qualitative and quantitative studies have subsequently supported these findings (Hill et al., 2010b; Hill & Shaw, 2013; Mesagno & Beckman, 2017; Mesagno et al., 2012), with Hill et al. (2010b) adding that event importance, high expectations, evaluation apprehension, unfamiliarity to the situation, and overload of demands were also likely antecedents of a choking episode. Although these same antecedents have been found across athletes who compete within individual and team sport, it has been noted that individual responsibility, actions of opponents, and physiological fatigue, may specifically elicit choking within the team setting (see Hill & Shaw, 2013). In essence, there are a small number of consistent antecedents to choking in sport, which intensify the psychological demands placed on the performer.

Moderators of Choking in Sport

Through both qualitative and experimental research, several moderators of choking in sport have been noted. These moderators can increase or decrease the likelihood of an athlete experiencing a choke and / or determine the mechanism though which it occurs (i.e., self-focus or distraction). The key moderators include: skill level (Beilock & Carr, 2001); skill type (Beilock, Holt, Kulp & Carr, 2004); trait anxiety (Baumeister & Showers, 1986); dispositional reinvestment (Masters, Polman, & Hammond, 1993); self-consciousness (Baumeister, 1984); self-confidence (Baumeister et al., 1985); team cohesion (Hill & Shaw, 2013); motivational climate (Hill & Shaw, 2013); and self-presentation (Mesagno et al., 2012). Each is discussed briefly below.

Skill Level. Beilock and Carr (2001) were the first to identify that novice athletes are more susceptible to choke via distraction, as task-relevant information is processed through the working memory. Consequently, these athletes have a restricted ability to process cognitions related to anxiety alongside such information. In contrast, skilled athletes are more likely to choke via self-focus as the well-learnt skill is normally processed outside the

working memory (Beilock & Carr, 2001; Gray, 2004), and therefore vulnerable to the impact of anxiety-induced reinvestment.

Skill Type. It has been found that a complex task that requires high levels of cognitive control to perform is more likely to overwhelm working memory, and lead to choking through distraction. Conversely, athletes completing tasks that are processed outside the working memory, and which have procedural properties (e.g., manipulating golf putting tasks; see Beilock & Carr, 2001) are more vulnerable to choking via self-focus (Beilock, Holt, Kulp, & Carr, 2004; Hill et al., 2010a).

Trait Anxiety. Athletes with high trait anxiety are more susceptible to choking (Baumeister & Showers, 1986) and appear more vulnerable to choke via distraction (Masters et al., 1993). The high levels of debilitative anxiety that high trait anxiety athletes experience, are thought to overwhelm the working memory and encourage the choke through task-relevant processing inefficiency (Wilson, Smith, & Holmes, 2007).

Dispositional Reinvestment. Athletes with high dispositional reinvestment have a tendency to consciously control the explicit components of a well-learned skill when exposed to pressure. Therefore, it has been established that such athletes are more vulnerable to choking under pressure, and through the self-focus mechanism (e.g., Geukes, Harvey, Trezise, & Mesagno, 2017; Masters et al., 1993).

Self-Consciousness. Baumeister (1984) identified self-consciousness as an important moderator of choking because his work demonstrated that athletes with high dispositional self-consciousness are *less* likely to choke, due to being predisposed to (and therefore, 'used to') focusing inwardly when exposed to pressure. While a study by Beilock and Carr (2001) supported this notion, other research (e.g., Liao & Masters, 2002) has found that athletes high in self-consciousness were *more* likely to choke. Therefore, while self-consciousness is an accepted moderator of choking in sport, the equivocal findings to date make it difficult to identify its precise directional influence (Wang, Merchant, Morris, & Gibbs, 2004).

Self-Confidence. Self-confidence is considered a moderator of choking in sport, as an athlete with low self-confidence is: less motivated to adopt strategies that neutralise the processing inefficiency (Baumeister et al., 1985; Wilson et al., 2007); more vulnerable to distracting threatening cues and self-focus disturbances (Beilock & Carr, 2001); and more likely to appraise anxiety as debilitative (e.g., Hill et al., 2009, Hill et al., 2010a, Hill et al., 2013). All of these factors are key antecedents or processes within the choking phenomenon.

Team Cohesion and Motivational Climate. Hill and Shaw (2013) identified that in terms of choking within the team sport setting, low team cohesion (both task and social) and a high ego / low task motivational climate, can encourage certain athletes to choke. Alongside a lack of social support from coaches and team-mates, such moderators were suggested to foster avoidance-ego goals and avoidance coping strategies among choking-vulnerable athletes, which encourages choking episodes.

Self-Presentation. One of the most pervasive moderators of choking is self-presentation (Mesagno et al., 2012), which is an individual's attempt to monitor and regulate how they are perceived and evaluated by others (Schlenker, 1980). Mesagno et al. (2012) found that pressure, manipulated through evaluation apprehension (i.e., being watched), was more likely to induce choking than pressure induced through motivation (i.e., rewards). Indeed, as the moderating role of self-presentational concerns has received such extensive support (see Mesagno, Harvey, & Janelle, 2011), Mesagno et al. (2009; 2012) devised the Self-Presentation Model of Choking (SPM; Mesagno, 2009). It proposes that when being observed, choking-vulnerable athletes will become concerned about being judged negatively. This will increase their anxiety, and they will choke though distraction or self-focus. More recently, Hill et al. (2017) extended this work, by identifying that self-presentational motives that are concerned with avoiding negative evaluations (rather than achieving positive evaluation), were more likely to encourage choking.

Consequences of Choking in Sport

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Hill et al. (2010b) identified that the perceived short-term (e.g., immediately after the choke) negative consequences of a choke include a significant drop in performance, being highly self-critical, and lowered self-confidence. Furthermore, Hill and Shaw (2013) identified additional short- and long-term negative consequences including emotional distress, loss of enjoyment and even withdrawal from the sport. In contrast, Gucciardi et al. (2010) found positive consequences of the choking episode in the long-term, where the event was considered by the athletes to provide constructive learning experiences that improved their future performance under pressure.

More recently, Hill et al. (2018) used a phenomenological approach to examine the short- and long-term consequences of choking in sport with golfers. They confirmed previous suggestions that the short-term consequences of choking in sport were highly negative for both the performer (i.e., negative affect, a lack of emotional / attentional control) and performance (i.e., a significant decline in standards). However, the longer-term consequences of choking were mainly constructive, as the episode allows the athlete to experience adversity-related growth and develop mechanisms that can improve subsequent performances under pressure. However, the study also found that for a small number of athletes, the long-term consequences of a choking experience were highly destructive, which included increased vulnerability to choking, withdrawal from sport, and even, lowered well-being. In these latter cases, the athletes were serial chokers (i.e., choked frequently over >4 years) and as a result, had lost their self-confidence and sense of perceived control over their performances, which in turn had encouraged learned helplessness and a loss of identity.

Alleviation of Choking in Sport

Gröpel and Mesagno's (2017) recent systematic review of choking interventions identified a number of psychological strategies that alleviated / prevented choking in sport. It was identified that, within 47 studies, distraction-based interventions (e.g., pre-performance routine; Cotterill, 2010; process goal setting, Jackson et al., 2006) either maintained or improved performance under pressure, with self-focused-based interventions (e.g., Quiet-eye training; QE; Vickers, 2007; hemispheric priming, Beckmann, Gröpel, & Ehrlenspiel, 2013) reducing, for the most part, the athlete's tendency to choke. However,

acclimatisation interventions (e.g., self-consciousness training; see Beilock & Carr, 2001; simulated training, Oudejans & Pijpers, 2010) had varied impact on an athlete's performance under pressure, with practicing with distraction cues (see Reeves et al., 2007) and reappraisal training (see Balk, Adriaanse, De Ridder & Evers, 2013) having either a detrimental or no impact on choking vulnerability. Therefore, although limited, research has begun to identify interventions which may be used by practitioners and athletes to reduce the likelihood of a choking episode.

Summary of the choking in sport literature

It is evident that the choking experience is determined by a number of antecedents, mechanisms and moderators, and it can have a range of short and long-term consequences for the athlete. The likelihood of choking may also be alleviated through the use of specific psychological strategies. Through a critical review of the literature, it does appear (albeit indirectly) that significant others (coaches, parents and team-mates) may play a pivotal role in the choking process. Specifically, several antecedents and moderators of a choking episode (e.g., self-confidence, self-presentation, anxiety, motivational climate and pressure) are known to be affected by "others" (Hill et al., 2017; Hill & Shaw, 2013; Smith et al., 2007; Vealey et al., 1998), thereby indicating a potential link. Nevertheless, "significant others" have not been included specifically in choking research, and so their role in the choking experience has not been researched directly. Accordingly, there is a need to consider, examine and evidence whether / how significant others can influence an athlete's experience of, and vulnerability to, choking in sport.

Significant Others and Choking in Sport

Influence of significant others on sporting experiences

Significant others within sport are identified as coaches, team-mates, family, and peers (Donohue, Miller, Crammer, Cross, & Covassin, 2007; Weigand et al., 2001). Although little is known about the direct impact of significant others on the choking process, it has been established that they can influence athletes' sporting experiences (Côté, Baker & Abernethy, 2003; Fraser-Thomas, Côté, & Deakin, 2008) through their own participation in sport (Wold, & Anderssen, 1992) and, especially for parents, the provision of necessary resources (i.e., money, travel, opportunities; Côté et al., 2003). Of note, it appears that the relative influence of significant others on sport varies according to the context of the developmental stage of athletes (Weigand et al., 2001). For example, although parents are important throughout, others, such as peers, team-mates and coaches, become increasingly important through the developmental process (Wylleman & Lavallee, 2004).

Inferences can be made from the broader literature regarding the link between significant others and choking in sport - particularly given that significant others can contribute to perceptions of pressure, anxiety, and self-confidence, and influence the motivational climate, all of which influence the choking process.

Pressure and significant others

Significant others (particularly parents) who hold excessive expectations, overstep boundaries, and make negative remarks towards the athlete, can cause overwhelming levels of pressure (Amado, Sánchez-Oliva, González-Ponce, Pulido-González, & Sánchez-Miguel, 2015; Knight, Berrow, & Harwood, 2017). Such behaviours from significant others contribute to an athlete's perception of pressure and encourage detrimental outcomes (e.g., Bois, Lalanne, & Delforge; 2009; Harwood & Knight, 2015). For instance, it has been established that perceptions of parental pressure can result in high levels of debilitative competitive anxiety and parent-child conflict (Hellstedt, 1990), as well as impacting negatively on sporting experiences (Amado et al., 2015). In essence, parental interactions that increase the amount of pressure perceived by the athlete, is correlated to increased

stress, drop-out, and lowered enjoyment (Ross, Mallet & Parkes, 2015). A study by Knight, Boden and Holt (2010), with high performance Canadian tennis players, found that different types of parental involvement can influence, both negatively and positively, perceptions of pressure. Hence, it was identified that when significant others place pressure on the athletes, it was counterproductive to their performance and focus. Specifically, disrespectful / inconsistent behaviours and expecting success, were recognised to increase pressure on the athlete, and encourage negative outcomes.

Coaches can also increase athletes' perceptions of pressure, through holding unrealistic expectations which can lower the confidence of the athlete (Fraser-Thomas et al., 2008). High perceptions of pressure can then lead to athletes developing negative attitudes towards the coach, experiencing decreased motivation, lowered performance standards, and withdrawal from sport (Gould, Tuffey, Udry, & Loehr, 1996; Pelletier, Fortier, Vallerand, & Briere, 2001; Prince & Weiss, 2000). In contrast to research with parents and coaches, less research has examined the impact of peers on perceived pressure. However, Smith (2003) identified that peers play a critical role within youth sport, by affecting the athlete's sense of competence in sport, moral attitudes and performance outcomes. Accordingly, they are likely to influence the level of pressure experienced by athletes in some regard.

From the above, it is evident that significant others influence the levels of perceived pressure through their actions or inactions (see Donohue et al., 2007). Accordingly, and given the fact that pressure precedes choking – significant others are likely to affect the process of choking and encourage or discourage the choke from occurring. To support this claim, Hill and Shaw (2013) found that coaches, parents and / or team-mates were noted by "chokers" as a critical source of pressure, prior to their choking episodes.

Anxiety and significant others

There is extensive evidence to indicate that significant others can affect an athlete's levels of performance anxiety (see Smith et al., 2007). Specifically, coaches, parents and team-mates can increase the athlete's anxiety through encouraging social comparison, and offering criticism or negative feedback (Donohue et al., 2007; Mottaghi, Atarodi, & Rohani,

2013; Passer, 1983; Smith, Smoll, & Barnett, 1995; Smith et al., 2007), or lower it through offering positive feedback and creating a task-involving climate (Yoo, 2003). Furthermore, significant others can encourage evaluation apprehension, as athletes are motivated to present a favourable impression to them, and avoid their negative judgements (Leary & Kowalski, 1990). Such self-presentational motives and concerns are known to create social anxiety, which can have a debilitative impact on an athlete's performance (Leary, 1992). Thus, coaches and parents who foster positive relationships, and lower evaluation apprehension, can reduce athletes' level of anxiety, and improve their performance under pressure (Smith et al., 1995).

With social (see self-presentation model of choking; Mesagno et al., 2010) and performance anxiety responsible for choking episodes (Hill et al., 2010b; Hill et al., 2017; Hill and Shaw, 2013), it is apparent that significant others can contribute to the likelihood of athletes choking under pressure, through eliciting debilitative anxiety. Indeed, previous research by Hill et al. (2010b; 2013) indicated that parents' expectations, the presence of an audience, team-mates and coaches can be responsible for the debilitative anxiety that is perceived to cause a choking experience.

Self-Confidence and Significant Others

An athlete's level of self-confidence has a considerable impact on their performance (Vealey et al., 1998; Woodman & Hardy, 2003), and is known to be influenced by coaches, parents, and team-mates through their leadership and the provision of support (Bandura, 1977; Hays, Maynard, Thomas & Bawden, 2007; Vealey et al., 1998). Significant others have been identified as a source of athletes' self-confidence through several theoretical models, including the Conceptual Framework of Sports-Confidence (Vealey et al., 1998) and Vealey's Sport Confidence Model (Vealey & Chase, 2008). These models identify that significant others can increase an athlete's confidence through the provision of social support, the creation of the task motivational climate, lowering self-presentational concerns, and through effective leadership ability (especially the coach).

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Furthermore, Hays et al. (2007) identified that other key sources of confidence are influenced by significant others. This includes: the athlete's belief in the coaches' ability and training programme, and their handling of the athlete; the type and level of social support derived from family and friends; and the influence of significant others through their influence on preparation. In terms of the latter, it has been found that significant others can impact an athlete's mental (i.e., structured goal setting), physical (i.e., good training / conditioning programme and evidence of improvement), and holistic (i.e., video analysis, vision training and nutritional advice) preparation. However, poor coaching, poor social support, and poor preparation can be debilitative to an athlete's self-confidence (Hays, Thomas, Maynard, & Bawden, 2009), and in turn, performance.

Therefore, as parents, coaches, and team-mates are a key source of self-confidence, which in turn, is a moderator of choking, it is evident that they can increase or decrease the likelihood of a choking event. This relationship between significant others, self-confidence and choking has been supported tentatively by the work of Hill et al. (2009; 2010), where it was found through interviews with sport psychology practitioners and elite golfers, that significant others may damage athletes' self-confidence and thereby, encourage the choke.

Motivational climate and significant others

Significant others also have a critical role in the creation of the motivational climate (Ames, 1992) as they aid the development of the athlete's achievement motivational goals through expectations, values, beliefs and behaviour towards the athlete (Ames, 1992; Reinboth & Duda, 2006; Weigand et al., 2001). Research has established that athletes benefit from a task / mastery climate (i.e., focus on mastery of skills and effort) rather than an ego / performance climate (i.e., focus on winning; see Pensgarrd & Roberts, 2001) because it leads to a number of adaptive outcomes including motivational responses (i.e., increased effort and persistence), increased self- confidence and positive interpretations of anxiety levels (Vosloo, Ostrow, & Watson, 2009); all of which are related to optimal / clutch and choking sport performances (see Hill et al., 2010a; Swann et al, 2017).

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A qualitative examination of choking in sport within the team setting by Hill and Shaw (2013) found that when the coach and team-mates created a performance motivational climate, athletes' vulnerability to choking appeared to increase, because it caused levels of pressure and debilitative anxiety to rise. In contrast, when coaches fostered cohesion and a mastery climate, and stimulated social support between team-mates, the likelihood of choking within their team appeared to lower, as athletes reported there being less pressure, and they were better placed to cope with the performance demands. Although this study was limited by sample size (n=8) and focused on a small number of sports (n=4), it provided initial evidence that significant others can influence the likelihood of choking in sport, though their contribution to the athlete's motivational climate.

Rationale of the Study

The extant literature has established that significant others can impact performance under pressure, through affecting the athlete's level of perceived pressure, anxiety, self-confidence, and motivational climate. In turn, it can be inferred that significant others may influence the choking phenomenon. However, there is a need to investigate directly whether and how significant others impact choking in sport, in order to provide coaches, parents, team-mates and practitioners with information that can be used to support athletes who choke frequently.

Research Aims and Objectives

The aim of this study is to: *i)* explore the role of significant others within the choking phenomenon; *ii)* develop recommendations that help significant others support athletes who may experience choking.

Chapter 3

Method

Methodology

This study followed an interpretivist approach, in which the researcher attempted to view experiences through the participant's viewpoint, thus seeking the individual's perspective of the choking experience. As this approach accepts that reality is multiple, and socially constructed, it affords a detailed, holistic and individualised understanding of a choking episode, from those who have experienced it (Than & Than, 2015; Wills, 2007).

More specifically, a qualitative descriptive methodology (Sandelowski, 2000) was adopted to address the research aims of this study. This methodology is used to seek a comprehensive summary of events in everyday terms, which draws on existing knowledge and experiences (Neergaard, Olesen, Andersen, & Sondergaard, 2009). As it draws from naturalistic inquiry, it enables a commitment to studying events in their natural state (Bowen, 2008), and allows for descriptive validity, involving an accurate account of an event, from the perspective of those who have lived it (Maxwell, 1992). The methodology also obtains clear and undecorated answers that are relevant to the research aim (Sandelowski, 2000). Furthermore, it involves low-inference interpretation, compared to other interpretivist approaches (e.g., phenomenology or grounded theory), allowing

researchers to seek and establish pattern / themes across participants, ensuring the presentation of facts in its clearest form (Sandelowski, 2000).

Hence, the underpinning methodology of the study has engendered a detailed understanding of the role that significant others are perceived to have within the choking phenomenon, by pursuing direct descriptions of the choking experiences Neergaard et al., 2009; Sandelowski, 2000). Specifically, qualitative description allows for 'unadorned' explanations of how parents, coaches and team-mates impact the choking in sport, while drawing from existing themes within the choking literature to explain such impact (Sandelowski, 2000). Moreover, as the role of significant others within the choking experience has yet to be studied directly, the methodology provides researchers with an opportunity to seek, demonstrate and identify any connection between significant others and the choking phenomenon, in an inductive manner. Accordingly, this methodological approach has been chosen as it provided detailed, insightful and authentic accounts of the choking event, which enabled a thorough consideration of how significant others affect that process.

Participants

Nine participants (6 male and 3 female), between the age of 21 and 45 years (m = 24.56 years; SD = 7.68), took part in this study. They were recruited through personal and professional contacts, and had all played competitively (i.e., under pressure) for 2 years or more. The participants were involved in: football *(n=4),* cricket *(n=2)*, golf *(n=1)*, netball *(n=1)*, and rifle shooting *(n=1)* According to the classification system proposed by Swann, Moran, and Piggott (2015), the participants were either elite *(n=1)* or intermediate / lower-end semi-elite *(n=8),* with all having experienced success at club level or above (i.e., experience winning important matches). To encourage detailed and accurate recall, participants were purposely selected for the study if they had experienced one or more choking episode in the past twelve months. The participants self-identified that they had choked (i.e., an acute drop in performance under pressure), to ensure they were all discussing choking experiences (as defined by Mesagno and Hill, 2013), and were well-placed to discuss the role of significant others within their choking event(s).

Procedure

Once ethical approval was obtained from Swansea University, College of Engineering Ethics Board, the head coach of purposefully selected teams from the South West and Midlands (UK) were contacted via email (i.e., teams through which the supervisory team had personal / professional contacts), and the purpose of the study was explained to them. Those individuals then shared the project details across their athletes / sports team(s) and distributed an information sheet (see Appendix A). Athletes were encouraged to contact the research team through email (to arrange a face-to-face interview), if they perceived they matched the inclusion criteria of the study. That is: they were over the age of 16 years; performed at a competitive level or above; experienced at least one choke in the past twelve months; and were willing to discuss their experiences. Thereafter, interviews were arranged between the participant and researcher, and were completed either in person within an interview room on Swansea University campus, or via Skype.

This recruitment process safeguarded participant anonymity and ensured the participants self-identified as having choked. This latter point is important, as while it is not currently possible / appropriate to identify objectively athletes who have choked under pressure (see Mesagno & Hill, 2013), it is essential that the study explored the experience perceived by the athletes as "choking". Moreover, to enable comparison of findings across the sample, all participants were asked at the beginning of the interview, whether their choking event(s) reflected the most recent definition (i.e., an acute or significant drop in performance under perceived pressure; Mesagno & Hill, 2013). All participants agreed this was the case.

Data Collection

Data were collected through individual semi-structured interviews, as this method aligned with the aims of qualitative description methodology. Hence, interviews are directed towards understanding the "who, what and where of the events or experiences" (Sandelowski, 2000, p. 338), and are an effective method of gaining a detailed, and individualised description of the participant's choking experience, and their perceptions of the impact that significant others had on that experience.

At the start of each interview, the participant was reminded that their data, and their involvement within the study, would remain confidential. Once written informed consent was gained (see Appendix B), the interview explored in detail the participants' choking experience(s). For the participants who completed their interview via Skype, a consent form was sent through email to the participant, which was then signed and sent back, prior to the interview.

Although an interview guide was created, it varied somewhat for each interview, as data collection was an iterative process, where the guide was informed by data collected from the previous interview. Nevertheless, each interview was based broadly on previous choking literature, and explored specifically, athletes' thoughts, feelings and behaviours - before, during and after - each choking event (see Appendix C). In addition, and critically, at each stage of the choking process (before, during and after the choke), the interview focused on the specific role of significant others. Participants' answers were followed up with probes to ensure the data provided a comprehensive understanding of the choking experience, including the perceived impact of significant others. Interviews lasted approximately 45 minutes (M = 38.82, SD = 14.87 minutes), and were recorded digitally and transcribed verbatim.

Following the completion of the interview, data were analysed within a "few" days which enabled the researcher to follow an iterative process whereby the data were analysed, with the findings then informing future interviews (see Sparkes & Smith, 2014). Through using this process and asking follow-up questions, interviews continued until theoretical saturation was reached (i.e., theme / code saturation; see Hennink, Kaiser, & Marconi, 2017).

Overall, the semi-structured interviews enabled the researcher to explore experiences, that included unanticipated events (Newcomer, Hatry, & Wholey, 2015). This was particularly pertinent for the current study, as the role of significant others has not been explored directly before, and so there was a need to examine the unexpected and unprecedented,

by not limiting the direction of the interview. Thus, due to the broad nature of the data needed (i.e., the role of significant others such as parents, team-mates and coaches on the choking experience) every effort was made to ensure the conversation remained partially structured, though driven by the participant. Thereby encouraging the participants to tell their story of choking in its entirety (Smith & Sparkes, 2012).

It is important to note that semi-structured interviews are not devoid of limitations, as they rely on the ability of the interviewer and the articulation of the interviewee to obtain quality data (Newcomer et al., 2015). Furthermore, they are also known to be very time-consuming. To minimise such concerns, a pilot interview was completed, which provided experience for the researcher regarding how to elicit detailed responses, and how to approach the sensitive topic of choking. This interview was observed by a member of the supervisory team. Furthermore, an interview conducted by an experienced qualitative researcher (supervisor) was shadowed. In addition, adults were recruited to the study to ensure participants were well-placed to articulate their perceptions of the choking experience. Of note, the pilot interview led to a small number of changes being made to the interview schedule. This included specifically, offering more generic / introductory questions to build the relationship and trust between the participant and researcher.

Data Analysis

Data were analysed following a process advocated by Miles and Huberman (1984) for qualitative analysis. This process aligns with qualitative description (Huberman & Miles, 2012) and allows the researcher to stay close to the data obtained (Neergaard et al., 2009). The first step involved coding the transcripts of the interviews, highlighting any relevant information linked to the participants' choking experience and / or impact of significant others, while simultaneously recording insights, reflections and thoughts about the data. Next, data were sorted to identify similar phrases, patterns or themes while also noting any commonalities and differences between participant's data. Data were then sorted into global themes that reflected accurately a segment of the participants' experiences. These global themes were labelled by a theoretically informed code (e.g., perceived pressure, self-confidence, expectations and unfamiliarity). Quotations from each smaller group were documented to provide an account of choking with any differences / similarities across the

sample acknowledged. Finally, these global themes were placed into the pre-determined dimensions of choking in sport (i.e., antecedents, mechanisms, moderators or consequences of choking in sport). The process was therefore both inductive and deductive, as it sought to confirm and extend previous choking literature, while exploring a new dimension (significant others) of the choking experience. The themes / dimensions were described as a narrative, and an overview presented within a table (see Chapter 4) which together detail the role of significant others within the phenomenon of choking in sport.

Trustworthiness / Rigor of data

A relativist approach was adopted to ensure data were collected that developed a trustworthy account of choking from the participant's viewpoint. As such, the criteria used to determine trustworthiness / rigor of the finding, were relevant to the study (see Burke, 2016; Smith & McGannon, 2018). This rigor was facilitated due to the use of open-ended / semi-structured interviews, that explored the choking experience holistically, and ascertained the role of each significant other (i.e., parent, coach or team-mate) in detail. Therefore, the data were contextually situated (Sparkes & Smith, 2009), and provided an accurate and meaningful account from the perspective of the participant (Sandelowski, 1993). Moreover, this approach engendered authenticity of data by allowing the participants to speak their mind (Milne & Oberle, 2005). The use of an iterative process throughout the data collection and analysis contributed to the rigor of the data. Specifically, it allowed data to reach theoretical (code) saturation, therefore, data collection was no longer leading to new codes (Charmaz, 2006). Furthermore, a critical friend supported the analytical process by acting as a sounding board for analytical decisions during the data collection and analytical process, while also offering their own interpretation of the findings. This encouraged reflection and exploration of the multiple explanations which emerged during data collection and writing (Cowen & Taylor, 2016; Wolcott, 1994). Finally, interviews were conducted with information rich participants. This ensured athletes offered detailed and insightful explanations of the choking experiences as they had choked first-hand and 'regularly' (see Hill & Shaw, 2013).

Chapter 4

Results

The results are divided into four sections: i) perceived antecedents of the choke (before the choke); ii) perceived mechanisms of the choke (during the choke); iii) perceived moderators of the choke; and iv) perceived consequences of the choke (post-choke; see Table 1). Each

section also identifies how significant others were considered to influence each stage of the choking process.

In the table below (I can't modify directly): Team-mates should be Team-mates' and Significant other's should be Significant others'

Choking in sport			
Dimension	Global themes	Sub themes	Number of participants reporting global theme
Before the choke	Perceived pressure	Coach behaviour Seriousness of team Team-mates performance errors Financial investment Parental involvement	9
	Self-presentational concerns	Self-presentational motives Avoiding negative judgment Presence of audience	8
	High expectations	Significant other's expectations Self-expectation	7
During the choke	Debilitative anxiety		9
	Distraction		8
	Self-focus		3
Moderators of the choke	Social support		9
	Self-confidence		7
	Team-cohesion		6
	Ego motivational climate		5
	Leadership		2
Post-choke	Acute drop in performance		9
	Short- and long-term negative affect		9
	Positive affect		4

Table 1: The stages and moderators of choking in sport

Before the Choke

It was identified that perceived pressure, self-presentational concerns and high expectations (from self & others) preceded the choke.

Perceived Pressure. Unsurprisingly, all participants reported very high levels of *perceived pressure* before their choking event(s). Important games (e.g., avoiding relegation / gaining promotion), and clutch / critical moments (i.e., match deciding moments) that held personal value to the participants (e.g., local rivalry, penalty shootout and matches that decide promotion or relegation), were deemed to increase levels of perceived pressure, and encourage choking. Specifically, it was proposed that the "*need*" to perform well during those important games / clutch moments intensified the pressure. As explained by one participant, "*you are playing in an important game, you feel so much pressure to do well in the game… I normally end up playing worse because I have that pressure" (P5; Football).* Further, one participant found they were: *"desperate to do well... but all that did was add pressure and… I can't handle the pressure" (P2; Golf).* It was noted that all participants viewed success through the outcome of the match (i.e., held ego goals), and as such, felt a pressure to win.

Critically, all participants identified that significant others (i.e., their coaches, team-mates, parents, and more broadly, the audience) contributed to the raised levels of perceived pressure they experienced prior to their choking episode(s).

When the behaviour of the coach differed from normal during the build-up to the important game, a number of participants suggested it increased the *"need"* to perform well, and in turn, raised their levels of perceived pressure: "*The coaches knew [the game] was important, there was a lot more emphasis on it in training… there was more pressure than normal building up to it and it was quite obvious… they needed us to win" (P1; Cricket).* Similarly, one participant noted, she felt uncomfortable with her coaches' style of communication prior to an important game, which differed from normal, as it was more autocratic. This inconsistent and autocratic behaviour heightened perceptions of pressure that preceded several choking event(s): *"the speech given [by the coach] was more intense than normal… they [the opposition] had some really decent players so there was a lot of*

talk, like 'you need to cut them out of the game'… it was different to how we would normally build up to a game…and I didn't like it at all" (P3; Football).

Moreover, when the coach emphasised "winning" prior to an important game, it increased perceived pressure further, thereby encouraging the choke: "*The main emphasis was winning; it wasn't necessarily about playing well… [the coaches] were quite intense and had high expectations… it can be quite intimidating and make you perform worse" (P3; Football).*

It was also proposed that an increase in "*seriousness*" (e.g., a noticeable reduction in "*playing around*" amongst team members) prior to the game, reinforced its importance, and in turn, heightened athletes' perceptions of pressure. As one of the participants explained:

> *Before [the choke] everyone was very serious… …on a normal [gameday] you have a bit of messing about, a bit of jokiness, a bit of banter…[but] everyone was trying to get into a serious headspace which increased pressure…you see how much everyone else wants to win…you understand it is just as important to everyone else … you want to achieve for everyone else (P1; Cricket).*

In addition, six of the participants who competed in team sports identified that performance errors of their team-mates during the match, preceded their own choking experience - as those errors had intensified the pressure on themselves. One participant explained that: *"one of our players missed a penalty…because he missed, it meant that everything was riding on my penalty…the pressure doubles on me" (P5; Football).* Similarly, another participant who played cricket believed that others' performance errors impacted their own preparation which encouraged his choking episode:

> *[Team-mate's performance errors] influences it [the choke], as it means, like I'm bringing myself on to bowl and I'm probably not prepared enough…as I was not*

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prepared to bowl then… [it] adds pressure as you're trying to make up for what he failed in… I was trying to recover his failure [prior to the choke] (P1; Cricket).

Perceived pressure was increased for many participants (prior to choking), as a result of parental influence. That is, as sport held an important position within their family unit, and their parents have previously / continued to invest both time and money into their sport, even if they were not in attendance at a game, athletes perceived that they needed to perform well to "*repay to their parents*":

[My parents] want me to succeed… but it is also important to do well as [my parents have] put the amount of time, money and effort into [my participation]… so I want to be able to repay them with my performance… [my parents have] always been supportive of me playing cricket and doing well in cricket and if I fail I am letting them down… it adds pressure (P1; Cricket).

If participants were being watched by their parents, this often led to further increases in pressure. For example, the golfer reported that when her father watched her play, she experienced several choking events:

My dad was incredibly supportive. He used to drive me all over the place… But he [my dad] was so nervous, he wanted to do well, so badly. He would hide behind trees when he was watching me, and so he made me a little bit nervous… it didn't help. I desperately wanted to do well and prove him right and reward him for his sacrifice. So, the pressure from that, added to the anxiety he was showing…all of that definitely got to me (P2; Golf).

Self-Presentational Concerns. It was evident that most participants (*n*=8) displayed *self-presentational motives* prior to the choking event. There was a desire among participants to impress significant others and / or to avoid negative judgement from them

when performing under pressure. The cricketer detailed that his desire to impress everyone led to his choking episode:

> I want to impress the people watching, I want to impress my team-mates, have my team-mates respect me because I have… taking it upon myself to win the game… you are a hero… I choked because this put more pressure on myself (P1; Cricket).

Similarly, another participant reported that they were worried about being judged negatively prior to their choking experience, which was not typical behaviour in a 'normal' game: "… this game, I didn't do what I would normally do… I was like come on girls they are watching us… oh my god they are judging us" (P6; Netball). Similarly, another participant explained how she wanted to avoid embarrassment and evade negative judgment before her choking event started:

> I've never been brilliant in front of people…I was just afraid I would embarrass myself in front of them…they would judge me negatively, and they would think that I was shit… I'm just worrying about what they [audience] are thinking, and I rush the shot to get away from that situation. Needless to say, the shot is horrific, I choke, and ironically, I do end up embarrassing myself! (P2; Golf).

Furthermore, the *presence of an audience* preceded the choking experience as it intensified the self-presentational fear of being judged negatively. It was identified that the larger audiences increased participants' desire to impress the significant others present, which then often encouraged the choke:

> You are automatically under more pressure because more people are watching you… you [are] obviously trying to impress all these other people and all these people are going to be judging you and being judged is not the nicest… [when] there's more pressure on you to perform as you are trying to show how good you are to other people… you've got like my family or other players family around who

want you to succeed there that added pressure because they're now looking at you
to try take it on your back and try and win the game (P1; Cricket).

Similarly, as explained by another participant, such evaluation from the audience, created pressure and most likely, causes the choke: *"when you know people are watching you…there is a pressure to perform…[it] induces anxiety. I suppose it's like…you know you're being watched, and you know you need to perform, and you panic, and it causes anxiety"* (P3; Football).

Therefore, self-presentation, and the desire to impress / avoid negative judgement from coaches, parents and team-mates (i.e., significant others) is a prominent aspect of the choking process, as it can add to the level of perceived pressure and elicit anxiety.

High Expectations. Most participants (*n*=7) identified that high *expectations* (from self and others) preceded their choking experience(s). For the most part, the high expectations from the parents, coach and / or team-mates intensified their own expectation to win and be successful. For example, one footballer stated that:

There was an expectation [from players and coach], that we would win as everyone
knew we were better than them… Before the corner [that led to the choke] it was
obvious that everyone was more anxious, including me, as we knew we should
already have won the game. It affected [my performance] and would be one of the
reasons I choked (P9; Football).

Therefore, high expectations from significant others (particularly parents and coaches) increased perception of pressure and the likelihood of choking events. One participant explained in more detail, that it was the fear and (subsequent) anxiety associated with not meeting those expectations, that specifically led to the choke:

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My parents always expected me to do well, as they had invested so much time and money into ferrying me across the country to play sport …They would always mention what a waste of time it was if I didn't play well. Even if we were playing a better team, they would still expect us to win… [my parents] expected too much…It was all too much for me. One of my coaches had the same high expectations, and as a result, I played worse under him than any other of my coaches (P9; Football).

During the choke

It was reported that the mechanism of choking was associated with intense debilitative anxiety, self-focus and / or distraction.

Debilitative Anxiety. All participants associated their choking event with *intense and debilitative anxiety* which had been induced through the increased levels of perceived pressure, self-presentational concerns, and raised expectations, all of which were affected by significant others (see antecedents of choking). Regardless of the source, participants associated anxiety with all their choking episodes:

When I feel anxious, I find it difficult to do the things that I know I can do. It hinders my performance; it hinders my ability to perform and execute [the skill]. There is a thing in the back of your head telling you that you are not good enough… that is when you [choke] (P3; Football).

Similarly, another suggested:

The anxiety takes over, and rather than making me fight… it just tensed me up… It was obvious that I was anxious… I sped myself up…trying to get through the over as fast as possible. And so [I was] lobbing the ball down the leg side and going for five wides… (P1; Cricket).

The presence of significant others influenced levels of debilitative anxiety through increasing perceived pressure. For example, the cricketer explained that during the choke: *"You've got…family or other players family around who want you to succeed…there's more pressure on you to perform [during the game]…you are getting more anxious" (P1; Cricket).*

Interestingly, it was also noted by a number of participants, that at times, their debilitative anxiety could be experienced through emotional contagion. That is, the anxiety of significant others (coaches, team-mates and parents) was "caught" by the participants: *"I would definitely pick up on [my dad's] anxiety and I would feel more anxious"(P2; Golf).* Another explained:

> *My mum would rarely come watch me play football, she would only come once or twice a season to the big games, as she was too nervous when she watched me. So, when she was there, I was more anxious, because she was…which could be why I choked" (P9; Football).*

Distraction. Most participants (*n=8*) identified that they choked as a result of *distraction*. For the most part, they focused on factors relating to significant others, that included: the consequences / impact of their personal failure(s) on the team / their team-mates, and the need to avoid negative / gain positive judgement from parents and audiences. Therefore, the actions of significant others hindered the participants' focus, causing the choke to occur. The golfer summarised the role of distraction during the choke, and how significant others were often the distracting stimulus:

> *I'd be standing over the ball, aware of people watching. And I'd be thinking to myself, 'don't mess it up, don't look like an idiot' in front of them… I'd be so so anxious…I just have these thoughts that go through my mind. Like...don't shank it, don't cock it up, don't duff it, don't [over]think it, don't look stupid in front of them, I'd think of anything, except what I should actually be doing, thinking and focusing on! So, obviously I am going to choke when I'm thinking like that. I'm not giving myself a chance (P2; Golf).*

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The participants also became distracted by factors unrelated to significant others, including the consequences of a poor performance during the choke. For example, one participant explained: *"if I have a bad shot [during the performance] I often start to think about what that would mean to my overall score…you start shooting poorly then"* (P8; Rifle shooter). Furthermore, a number of participants reported that they became distracted through *"overload"*:

> *[During the choke] there was like one hundred things going through my brain all at once and…trying to process it all…thinking about everything going wrong when really you should be thinking about one or two things that you can control… my brain went to pieces (P6; Netball).*

Self-Focus. A smaller number of participants (*n*=3) indicated that they choked through *self-focus*. One participant summarised how he focused inwardly on technique during his choking episodes: *"I think a lot more about what I am trying to do… the intricate detail of my [technique] becomes more and more important as I am choking"* (P1; Cricket). Another participant explained:

> *I focus on my arms taking the club away from the ball. I concentrate on my hands, and the wrist cocking on my back swing. Because the shot is so important, and I'm so nervous, I try and make sure that my technique is right. But of course, the swing is then so rigid and unnatural – that I hit the ball horribly (P2; golf)*

Moderators of the Choke

It was found that social support, self-confidence, team-cohesion, motivational climate and leadership all moderated the choking experiences.

Social Support. All participants recognised that social support (from significant others) could moderate their choking experience. It was proposed that if they had received emotional support prior to important performances (i.e., encouragement) a choking event was less likely, as they felt more comfortable and confident going into the pressurised performance:

> *If I received… support, I would have been more able to control how anxious I felt. [I would have] felt more in control…more comfortable… emotionally and psychologically [I would have been] in a much stronger place. So, wouldn't have choked (P3; Football).*

A lack of social support appeared to have a detrimental impact on the participants' self-confidence, leading to a choking episode. This is explained further by one participant when recalling her most recent choke:

> *Mum was like you shouldn't be playing netball you should be doing your studies…my mum and dad didn't actually care about my participation… or support me. [Which meant] the confidence… just went down (P6; Netball).*

Another participant summarised how a lack of social support impacted negatively on him, thereby leading to choking episodes:

> *My mum was…really critical of me. And so, when I failed, she would be really dismissive…That lack of support… especially after a bad game, just destroyed my confidence. I felt worse and worse going into pressurised games and that's when I started [to choke]" (P9; Football).*

Self-Confidence. Most participants (*n*=7) stated that *self-confidence* moderated their choking experience(s), as a lack of self-confidence encouraged a choke, while high

confidence alleviated its likelihood. As summarised by one participant, who was explaining a choking event: "*When I went to that game, I wasn't confident, I didn't like the situation, I didn't feel comfortable…you haven't got confidence in [your team]… that doesn't help your own confidence*" (P6; Netball). Another recognised that they, "*went into the tournament really undercooked, playing badly, low [in] confidence so…. I was shambolic. And so, when the pressure came on, I just knew I would cock it up. And I did*" (P2; Golf).

It was identified that the lack of self-confidence also affected participants' ability to recover from errors, which then often triggered the collapse in performance standards (i.e., a choke):

> *If you are more confident it is more likely that the mistake won't affect you and you will carry on [and make better decisions]. Whereas, if you are lacking in confidence and start to doubt yourself things will go awry and you…. [choke]*" (P8; Rifle Shooting).

In contrast, it was reported that, "*if you're going into the game…confident…your anxiety is low. That will be reflected in your performance and…[you] play better*" (P3; Football). Finally, another participant summarised: "*When I am confident in my ability… I am far more relaxed, and I usually perform… If I am struggling…I will be thinking about how I can improve my technique… I'll think about my weaknesses in my technique…and then I will likely choke*" (P1; Cricket).

Accordingly, self-confidence was deemed as an important moderator of choking, which at times, could be lowered by significant others, through a lack of social support and negative feedback: "*When my coach reassured me that I was good enough, it would give me confidence going into the game…I would play better and not over think what I was doing…Then, there was less chance I would fuck up*" (P9; Football).

Team Cohesion. Many participants (*n*=6) reported that *Team Cohesion* was a key moderator of their choking experience. High levels of team cohesion were suggested to increase trust within the team, which reduced the athletes own vulnerability to choking by increasing self-confidence: *"if you have good chemistry with your team-mates you feel more confident…and know that I can trust them if I do something [wrong], I can trust them to cover me… to help me… [it] definitely improves my performance" (P5; Football).* On the other hand, a lack of team cohesion created a lack of trust and increased conflict within the team, which was suggested to impact negatively on the participants' pressurised performance. For example:

> We would argue a lot about decisions individuals had made and how we should play. I think that because a few people wanted to play differently. This affected the closeness of the team and would definitely be detrimental to performance as we were all trying to play differently… no one was on the same page (P9; Football).

As a result, it was considered that team-mates and coaches (i.e., significant others), could influence the likelihood of participants choking, through their impact on team cohesion. For instance, the same goalkeeper explained how significant others, particularly the coach, impacted on team cohesion, which encouraged the choke:

> The coach tried to implement different tactics which caused confusion and bickering within the team… no one was on the same page… It effected my decision making….I didn't know if to rush out and try clear the ball. Some of the team thought I should, and others thought I shouldn't. I was caught in no man's land and so the striker went around me and scored (P9; Football).

Motivational Climate. Out of the six participants who played team sport, five identified that the *motivational climate* could moderate their choking susceptibility. This finding was summarised by one of the participants (footballer) who identified that an ego / performance climate - which was created by the coach - increased the perceived pressure and anxiety he felt, and which impacted detrimentally on his performance. In contrast, a

mastery climate would reduce the likelihood of a choke, as there was a focus on performance over results:

> *When the focus is on winning instead of on my performance, it makes me feel more anxious, I was concentrating on the result rather than my performance, which would've led to me to choking. Whereas, when I'm focusing on my performance I tend to play better, which would mean I was less likely to choke… a task climate makes [me] more comfortable… you're less likely to choke because you're competing against yourself… [you set] your own… expectations (P3; Football).*

Leadership. The *leadership* behaviours of the coach and team captain were also considered to encourage / discourage choking. Specifically, the lack of trust between the coach, team and each individual athlete, was suggested to encourage a choking episode. For example, one participant detailed how poor leadership from their captain impacted the team's motivation, confidence and performance, leading to her choke:

> *We had a captain that none of us had any confidence in at all… she doesn't motivate any of the girls… we have a vice captain who is awful as well…you have your captain saying something and then one of the girls rolling her eyes… that does not fill you with any confidence because you are like clearly she doesn't know what she is talking about and there is no hope for the rest of us [to perform]…I was just thinking everything [the captain] is completely wrong…it threw the girls off and I felt uncomfortable (P6; Netball).*

Similarly, poor leadership from the coach was also found to encourage the choking experience. As explained by the footballer:

> *I did not agree with the way the coach managed the team… he wanted me to play in a way I was not comfortable with… [and] it would lead to me making huge mistakes, and then a choke… I played worse under him (P9; Football).*

After the Choke

Following the choking episode, athletes reported an acute drop in performance, short- and long-term negative affect and long-term positive affect.

All participants recognised that, after the choke, they experienced an *acute drop in performance.* The performance was described as *"shambolic", "messed up massively"* and a *"breakdown in process".* One participant even *"felt responsible for [the team] not winning".* As summarised by the cricketer, a choke is *"catastrophic"* in which he went for *"thirty runs"* and bowled *"5 wides"* in one over. One participant suggested she had experienced the "*ultimate choke*" when she refused to turn up to the event after faking an injury: "*I pretended that I had an injury… I choked and didn't want to go" (P6; Netball).*

All nine participants reported that their choking episode(s) led to *negative affect in the short-term,* including: embarrassment, lowered enjoyment and lowered self-confidence. For example, one participant detailed her embarrassment and frustration following the choke: *"I felt like a bit of a dick in front of some people I knew… I felt a bit of a dick in front of my opponents as well as I was playing so badly" (P2; Golf).*

The most dominant negative consequence described was the feeling of letting significant others down, who included specifically, parents and team-mates:

> It is important for me to do well as they [parents] put the amount of time, money and effort into it, so I want to be able to repay them with my performance. They have always been supportive of me playing cricket… and if I choke, I feel I am letting them down (P1; Cricket).

Another participant explained: *"I felt awful [after the choke]. It was the feeling of letting your team-mates down …let myself down by doing something stupid" (P4; Cricket).*

In the longer-term, a number of participants (*n*=4) recognised the choke impacted negatively on their future performance through increased fear of failure and pressure. For example, one participant (football goalkeeper) detailed how he feared making the same mistake in future performances, and so he avoided that specific skill (i.e., catching the football). In this case, the goalkeeper punched the ball instead: "*I would be worried about making the same mistake again and so I would avoid trying to catch the ball and just punch it instead - even though it was clearly a ball that should be caught*" (P9; Football).

However, four participants recognised that the choke had a positive impact on them in the long-term. For example, they felt the choke had provided an opportunity to learn how to manage pressure and the important moments: "*when I am in that situation now, I have learnt from that experience of feeling the pressure and I know I will do better…next time (P5; Football).*

Of importance, it was acknowledged that the consequences of a choke were influenced at times, by significant others. For example, social support provided by parents and team-mates enabled the participants to respond positively in the short- and long-term, to their choking experience. Specifically, the emotional support offered helped them overcome the choking experience:

> *[The team] all came over to me and were like don't worry about it, it's fine, it happens…Because they came over to me and spoke to me about it, I felt happier about it…than if I just sat there on the coach for 2 hours on the way home thinking about how I missed the penalty over and over again. It would have made it worse and me more upset… But, because everyone was laughing and joking with me, it took the pressure completely off me and I got back to playing normally. I could relax with my team-mates again (P5; Football).*

Of interest, another participant felt that a lack of appropriate social support post-choke from significant others (including the coach) impacted their sporting experiences in the longer term considerably:

In terms of like emotional support and helping me when I [choked], he [the coach] couldn't provide that support as he wasn't capable of doing that…I felt like the support wasn't there…It did affect me [negatively]… I felt alone… it was down to me to deal with [the choke] which made me even more anxious because I didn't… know how to deal with it (P3; Football).

However, it was also recognised that there are times, when individuals from outside the team and family, should be the ones to offer support post-choke. The golfer in particular noted that, *"I didn't need an arm around me. I needed someone…a sport psychologist, who can tell me how to stop choking. I need to know how to play better under pressure. That's it!" (P2; Golf).*

Chapter 5

Discussion

This study is the first to examine, directly, the role that significant others may have within the choking experience (before, during and after the choke). With regard to the research aims of the study, it was identified that significant others play a prominent role within the choking phenomenon. Specifically, significant others can increase and / or decrease the likelihood of a choke through many avenues. Based on the results, a number of recommendations for practitioners and significant others are suggested that can be used to support athletes who may choke.

Before a Choke in Sport

All reported antecedents of the choking experience found within this study (i.e., perceived pressure, high expectations and self-presentational motives) have also been noted elsewhere in the literature (e.g., Gucciardi et al., 2010; Hill et al., 2010b; Hill et al., 2017; Hill & Shaw, 2013). Therefore, this study reinforces the importance of athletes managing pressure, expectations and self-presentational concerns, effectively, in order to prevent the occurrence of choking (see Gröpel & Mesagno, 2017). Critically, the study has also established that significant others can influence each of these antecedents, and thereby indirectly encourage / discourage choking episodes through increasing pressure via their actions and / or presence, high expectations and by the desire to impress and / or avoid negative judgement.

It is accepted that perceived pressure is the key antecedent of choking in sport (Hill et al., 2010a), and as found within the current study, it is created when athletes compete in events they deem as important and / or during clutch moments. Of importance, it was noted by all participants that perceived pressure was created through the actions and / or presence of significant others, that included, specifically, unfamiliar coach behaviour, changes to the team "atmosphere" (i.e., seriousness among the team), team-mates' performance errors, and parental expectations / involvement.

With regard to coaches, their unfamiliar and inconsistent behaviour heightened the athlete's perception of pressure which impacted detrimentally their performance under pressure and encouraged choking. In terms of unfamiliar behaviour from coaches, it has been found previously to precede the choking episode (see Hill et al., 2010b; Hill et al., 2017). Specifically, unfamiliarity can elicit substantial debilitative anxiety due to the lack of perceived control and lowered self-confidence associated with uncertain / unfamiliar situations (Hill, Matthews, & Senior, 2016). This reinforces the proposal that consistent coach behaviour, underpinned by effective communication, is essential for optimal performance under pressure (see Olusoga, Maynard, Hays, & Butt, 2012).

As well as being unfamiliar, the communication style prior to choking was considered to be autocratic and ego-orientated, which also increased the athletes' perception of pressure. It has been found previously that autocratic communication styles negatively affect the

athlete's performance (Fraser-Thomas & Côté, 2009), as they encourage pressure and anxiety (Ommundsen, Roberts, Lemyre, & Miller, 2006), and potentially choking. In particular, when the communication style emphasises ego-orientated outcomes, this induces more anxiety than task-orientated communication (Hogue, Fry, Fry, & Pressman, 2013). Therefore, when approaching any important game, coaches should ensure their behaviour and communication style remains consistent with that exhibited in the recent past, and emphasises task-orientated principles, to reduce the likelihood of their athletes choking.

It has been established elsewhere, that team-mates can increase pressure (see Donohue et al., 2007; Flett & Hewitt, 2014), and the current study extends this work by identifying that their actions, specifically, changes in team-atmosphere (i.e., increase in seriousness among the team) and their performance errors, can increase perceived pressure and encourage choking under pressure. While this change in atmosphere added to the important choking-antecedent of unfamiliarity (see Hill et al., 2010b; Hill et al., 2016), it also encouraged a negative psychological climate (Rousseau, 1988), whereby the athlete attempts to make sense of the team direction, policies and practices (Schneider & Rentsch, 1988). In turn, the psychological climate can impact performance, satisfaction and motivation (Baltes, 2001; Schulte, Ostroff, & Kinicki, 2006). Practitioners should therefore develop a positive psychological climate through fostering warmth and friendliness amongst the team, and adopting consistent / repetitive communications (Cotterill, 2012; Klein, Conn, Smith, & Sorra, 2001) in order to reduce the likelihood of their athletes choking.

Although previous studies have shown that choking is triggered by athletes' own performance errors (see Hill et al., 2010b), the current study has identified that a choke can also occur following others' errors, because they heighten the need and perceived pressure to perform well. In this case, the team-mate's performance error appeared to encourage choking as the athlete was then striving to achieve success (to make up for the team-mate's error), while being highly anxious (Baumeister & Showers,1986). Also, without optimal psychological preparation, within a somewhat unfamiliar context (Hill et al., 2009), and with lowered levels of self-confidence (Hill et al., 2010b) choking-susceptibility increased. As such, practitioners / coaches should therefore encourage scenario training, where athletes are required to prepare for unfamiliar / unexpected situations, that include performance

errors from others. This increases the athlete's perceived control, therefore, possibly reducing the likelihood of choking (Wood, Jordet, & Wilson).

The current study has demonstrated that parents' expectations of their child, and the substantive financial investment in their sporting lives, may increase perceptions of pressure (Amado et al., 2015; Bois et al., 2009; Knight & Harwood, 2015; Dunn, Dorsch, King, & Rothlisberger, 2016), and thereby increase the likelihood of choking. Specifically, the majority of athletes within the present study had highly supportive parents, which is necessary for sporting progression (Knight, Boden, & Holt, 2010). However, because the support from parents was internalised, the athletes within the study appear to have created their own perceptions of parental pressure and had choked through the processes of striving to 'repay' their parents' investment (Lauer, Gould, Roman, & Pierce, 2010). Furthermore, parental pressure has been linked to a number of maladaptive outcomes for athletes, particularly heightened levels of performance anxiety (O'Rourke, Smith, Smoll, & Cumming, 2011). Equally, those parents who set high expectations can expose their child to negative sporting experiences (Knight, Neely, & Holt, 2011), and this may encourage choking if the athlete does not feel they can meet those expectations (Baumeister et al., 1985; Jordet, 2009).

Those athletes within the current study who did not feel confident of meeting the high expectations of their parents reported that they often choked as a result. However, as indicated, perceptions of pressure are not necessarily derived directly from those expectations. For instance, previous research indicated that athletes internalise pressure from negative parental behaviours (Knight & Mellalieu, 2016), therefore, increasing choking-susceptibility. As such, practitioners should offer workshops for parents that consider optimal parental involvement, their management of goals, and how to create a supportive emotional climate, that is consistent with their child's needs (see Knight & Holt, 2014). With regard to the athlete, practitioners should encourage the adoption of holistic process goals over ego goals, as athletes are more likely to excel under pressure when expectations are lowered to a level they are confident of attaining, through utilising appropriate goals (Burton & Naylor, 2002). This increases emotional and perceived control while also encouraging an optimal psychological state, decreasing the likelihood of choking (Hill et al., 2010b).

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As found elsewhere (Gucciardi et al., 2010; Hill et al., 2010b; Hill & Shaw, 2013), self-expectations were an antecedent to choking among the participants. High self-expectations can lead to an increased likelihood of choking through self-focus (Gucciardi et al., 2010) and distraction (Hill et al., 2010b), and as such, adopting appropriate holistic process goals to direct attention towards the task can reduce the likelihood of choking (Hill et al, 2010b).

Of note, when adopting process goals as an intervention, the evidence demonstrates that abstract and holistic process goals (e.g., a swing feel / the use of an analogy etc.) can reduce the likelihood of choking through increasing emotional and attentional control (Gröpel & Mesagno, 2017; Hill et al., 2010b; Hill et al., 2011). This is of importance, as part process goals (i.e., focus on technique) can encourage choking through self-focus (Gröpel & Mesagno, 2017; Mullen, Faull, Jones, & Kingston, 2015). Therefore, the current study recommends implementing holistic process goals (rather than part process goals) when adopting goal setting as an intervention to reduce the likelihood of choking.

The study provides further support for the self-presentation model of choking in sport (Mesagno, 2009; Mesagno et al., 2011), as all participants reported the desire to impress others / avoid negative judgement from others, prior to their choking episodes. However, critically, athletes reported that they were uncertain of their ability to achieve their self-presentation goals. Thus, it is specifically this uncertainty, and the lack of self-presentation efficacy, that appeared to increased levels of anxiety and encourage choking (Hill et al., 201; Mesagno et al., 2011). However, unlike Hill et al. (2017), who identified that avoidance self-presentational motives (i.e., aiming to avoid negative judgement) preceded choking, the current study identified that avoidance and approach (i.e., aiming to create a positive image to others) self-presentation motives may occur prior to the choke. Therefore, it remains critical that all athletes are encouraged to adopt cognitively-focused coping strategies (e.g., restructuring and goal-management / setting) which can enable the athlete to have belief in their ability to reach their self-presentation goal, and / or manage effectively their self-presentation anxiety (see Hill et al., 2017). That is, realistic, holistic process goals, which are within the control of the athlete (and therefore attainable) will alleviate self-presentational concerns, and thereby minimise the likelihood of anxiety-

induced distraction and / or self-focus (Hill et al., 2017). In essence, this will lower the athlete's vulnerability to choke.

During Choking in Sport

The findings of this study reinforce the belief that high levels of debilitative anxiety are the primary mechanism for choking in sport (Hill et al., 2010b, Hill & Shaw, 2013; Mesagno et al., 2015), as they encourage self-focus or (particularly in this study) distraction. Critically, the actions of significant others are able to influence the levels of debilitative anxiety through increasing levels of perceived pressure, creating self-presentational concerns, and through emotional contagion (i.e., 'catching' other people's emotions; Hatfield, Cacioppo, & Rapson, 1994). In terms of the latter, a recent study has shown that the emotional contagion of anxiety among teammates can create a team choke (Wergin, Zimanyi, Mesagno, & Beckmann, 2018). However, the current study has also identified that it may also play a role in the individual choking experience, through significant others feeling anxious. Particularly, athletes "pick up" on the anxiety of parents, coaches and / or team-mates which increases their anxiety, and thereby encourages a choke.

Distraction was reported by the participants to be the most prominent mechanism for their choking episodes, supporting the growing evidence-base for distraction, rather than self-focus, to be the likely cause of choking within the real life, highly pressurised, competitive setting (Gucciardi et al., 2010; Hill et al., 2017; Hill & Shaw, 2013). While this finding may be attributed to the athlete's ability to recall attentional disturbances during a choking episode (Beilock et al., 2003), the athletes within the study did report both distraction and self-focus. As such, it remains the case that there are two different pathways to choking (DeCaro et al., 2011).

Moderators of Choking in Sport

All moderators of the choke that were identified within this study (i.e., social support, self-confidence, team-cohesion, ego-motivational climate, leadership) reflect previous choking literature (Baumeister et al., 1985; Hill & Shaw, 2013). Of importance, all moderators were influenced by significant others.

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In terms of social support, it was noted that the likelihood of a choke was reduced if the athlete received social support (particularly from parents, coaches or team-mates), as it can increase self-confidence, and reduce the negative effect of stress and anxiety (Rees & Freeman, 2007). More specifically, informational-based social support (e.g., advice or guidance concerning possible solutions; Cutrona & Russell, 1990) may help increase self-confidence (Rees & Hardy, 2000), while emotion-based social support can lower anxiety and increase self-confidence (Rees & Freeman, 2007), thereby alleviating the likelihood of choking. However, tangible support (i.e., the provision of finance) was also identified as a source of pressure, increasing choking susceptibility. Nonetheless, as social support can act as a buffer to the harmful impact of stress, and allow the athlete to manage pressure more effectively (Tamminen & Holt 2012), coaches should provide informational-based social support (and / or expose athletes to a sport psychologist), and parents / team mates should be encouraged to offer emotional support.

In line with previous literature (Baumeister et al., 1985; Hill et al., 2010b), this study has found that low self-confidence encourages a choking experience. In this case, lowered self-confidence was attributed mainly to poor form and negative feedback from others, which contributed to raised performance- and self-presentation anxiety, and an inability to recover after a performance error. All of which are known to encourage a collapse of performance when exposed to pressure (Hill et al., 2010a; Hill et al., 2017; Hill et al., 2018; Hill & Shaw, 2013). In contrast, when the participants were more confident, the choke was less likely to occur, likely due to their lowered anxiety and enhanced attentional control (Wilson et al., 2007).

Therefore, the current study emphasises the impact that significant others can have on self-confidence (see Vealey et al., 1998; Vealey & Chase, 2008), and in turn, the likelihood of choking. Specifically, significant others are a source of self-confidence (Vealey et al., 1998), they can influence motivational climate and goal setting (Ames, 1992; Reinboth & Duda, 2006; Vealey et al., 1998), impact the athletes' cognitions and behaviours (Vealey et al., 1998) and thereby, damage performance (Vealey & Chase, 2008). Accordingly, it is essential that practitioners work with parents, coaches and team-mates to ensure their influence on

the athletes' self-confidence is positive, and thereby the likelihood of a choking episode is reduced (see Baumeister, 1985; Hill et al., 2009; Hill & Shaw, 2013). This can be achieved through positive / constructive feedback, vicarious experiences and environmental comfort (see Hays et al., 2007).

It was identified that team cohesion moderated athletes' vulnerability to choke under pressure. That is, when the team did not trust one another, and / or there was interpersonal conflict between team-mates, pressurised performance was impacted detrimentally, increasing the likelihood of a choke. This extends the previous tentative suggestion by Hill and Shaw (2013) that team cohesion plays an important moderating role in the choking experience. It is likely therefore, that as greater cohesiveness within the team lowers perception of anxiety (Prapavessis & Carron, 1996) improves collective efficacy (Jacob & Carron, 1998), increases effort (Gammage, Carron, & Estabrooks, 2001) and attentional control (Prapavessis, Carron & Spink, 1996), while also reducing the desire of athletes to satisfy others' expectations (Prapavessis & Carron, 1996), athletes are less likely to choke. Hence, it is imperative that practitioners should adapt direct team-building exercises to improve cohesion (see Carron & Hausenblas, 1998). Specifically, practitioners should implement regular team meetings that encourage open and honest discussions, which has previously been found to improve cohesion, confidence and trust amongst team members (Pain & Harwood, 2009).

It has been found previously, that significant others who create an ego / performance motivational climate, are likely to encourage athletes to experience a collapse in their performance standards (e.g., Hill & Shaw, 2013). This finding has been supported through the current study, as participants reported that a focus and emphasis on winning (by the coach, parents and teammates) elicited their choke(s). Although challenging goals can improve performance (Kingston & Wilson, 2008), goals based on winning and losing, and on the comparison to others (i.e., ego-orientation) are more likely to increase anxiety (Ntoumanis & Biddle, 1998), lower self-confidence (Vosloo et al., 2009), and therefore increase the likelihood of choking. As such, significant others should establish and manage task-orientated goals to reduce the likelihood of athletes choking (Hill et al., 2010b; Roberts, Treasure & Balague, 1998), and reinforce a task-orientated judgement of success though their communication (Olympiou, Jowett, & Duda, 2008).

Finally, the present study identifies that leadership can impact the choking experience, particularly when poor leadership leads to a breakdown in the leader-athlete relationship (i.e., conflict, and lack of trust) and the leader demonstrates inconsistent and autocratic behaviour. Previous literature has found that leaders (i.e., coaches or captains of teams) can impact performance (Cotterill, 2013), with transformational leaders (see Bass & Riggio, 2006) able to enhance self-confidence, cohesion, psychological climate and performance through their behaviours and values (i.e., intellectual stimulation, individualised consideration, inspirational motivation and idealised influence; Bass & Steidlmeier, 1999; Hoption, Phelan & Barling 2007). As such transformational leaders provide social support, positive feedback and democratic behaviour (Riemer & Toon, 2001), it would be advisable for coaches and captains to adopt similar behaviours in order to encourage optimal performance of their athletes and alleviate the likelihood of choking occurring.

Consequences of Choking in Sport

The consequences of choking identified in this study reflect previous choking literature (see Gucciardi et al., 2010; Hill et al., 2009; Hill et al., 2010a; Hill et al., 2018; Hill & Shaw, 2013). That is, choking consists of an acute or catastrophic / acute drop in performance, which, as indicated within previous studies (Hill et al., 2010a; Hill et al., 2010b), is distinct from an underperformance. Of interest, an athlete within the current study claimed to have experienced the "ultimate choke" by refusing to take part in a pressurised event. While it was initially proposed by Hill et al. (2009) that non-attendance could be classified as choking, researchers will need to re-visit the conceptualisation of choking in sport, if such an avoidance-coping behaviour is to be classed as a choke. After all, while the athlete in question experienced heightened anxiety, they did not experience distraction or self-focus (i.e., the mechanism of choking), and did not suffer a "breakdown" in performance.

The findings of the study also reinforced the suggestion that a choking episode has a negative impact on the athlete (Gucciardi et al., 2010; Hill et al., 2018; Hill & Shaw, 2013). In the short-term, all participants specified that they experienced lowered enjoyment, reduced self-confidence and increased embarrassment post-choke. Seemingly, a key source of such negative affect, was that the athletes felt they had let significant others down.

However, in regard to the long-term consequences of choking, both negative and positive impact from the choking experience were found in this study, reflecting more recent choking literature (Hill et al., 2018). Some participants acknowledged that the choking episodes had led to increased perceived pressure and a fear of failure regarding future events, thereby increasing further the likelihood of a choking episode, and potential withdrawal from their sport. Conversely, most participants identified that the choking event offered them an opportunity to learn and manage pressure during future performances more effectively.

As such, most participants demonstrated adversity-related growth (Sarker, Fletcher, & Brown, 2015), whereby they amended their pre-adversity assumptions by appraising the adverse event (the choke) constructively. Thereafter, they were likely to have constructed an understanding of how to enhance perceived control over future events (i.e., pressurised performance), and develop effective management of emotions (Galli & Reed, 2012; Sarker et al., 2015). This process was unlikely to have occurred for those who experienced a long-term negative impact of the choking experience. It is evident therefore, that significant others (especially the coach and parents) can play a crucial role within adversity related growth post-choke, by supporting athletes to reflect constructively on their choking experience and using the episode(s) to develop effective coping responses for future pressurised performance (see Hill et al., 2018).

Chapter 6

Conclusion

Overall, this novel study illustrates the prominent role that significant others have on the choking experience, confirming the inference offered in previous research regarding the link between coaches, parents and teammates, and choking in sport. The present study is the first to examine directly the impact of significant others on the choking phenomenon; and therefore, it is the first programme of work to identify that significant others hold the potential to impact the choking process through multiple routes. Specifically, they impact on each antecedent of the choke by increasing levels of perceived pressure, initiating self-presentation concerns and raising expectations. Therefore, the significant others can elicit intense, debilitative anxiety, thereby encouraging self-focus, and in particular, distraction.

Furthermore, it has been found that coaches, parents, and team-mates can all influence the moderators of the choke. Particularly, significant others are able to increase and / or decrease choking-susceptibility through their influence on self-confidence, team-cohesion, motivational climate and the perceived effectiveness of their leadership and social support. With regard to the consequences of the choking experience, significant others were able to impact the likelihood of the athlete learning from the choke, when parents, coaches or team-mates offered effective social support.

Of note, significant others were not the sole cause and explanation for the choking episodes reported by participants. In this case, significant others did not influence an athlete's own expectations and the increase in perceived pressure from the event (i.e., from the unfamiliarity and / or importance of the event) which raised debilitative anxiety levels, causing the choking episode. Nonetheless, significant others evidently can play a pertinent role in every stage of the choking process, and that role can be both negative and positive. Accordingly, the findings of this study can be used to support athletes who are prone to choking, by encouraging significant others to positively influence athletes' performance under pressure.

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Limitations

The time constraints on this study may have limited its findings, as at a certain point in the academic year, recruitment had to discontinue. However, all participants recruited were information rich as they had all choked frequently and recently. Moreover, theme / code saturation was deemed to have been reached. The time-constraints encompassing the study also did not allow multiple interviews with the same athlete. As such, the athlete may have not felt comfortable in providing all insights to their choking experience, due to lack of a relationship formed with the interviewer. Nonetheless, the time constraints meant a small sample (*n*=9) was recruited and only one participant was classified as elite (see Swann et al., 2015). This may have affected the findings, as an elite athlete is more likely to choke through self-focus, and it is unclear from this study, whether that mechanism of choking was affected by significant others, as much as distraction evidently was. Therefore, further research is needed to consider the impact of significant others on the choking experience across a broader spectrum of athletes, sports and levels. Furthermore, the researcher was relatively inexperienced with conducting interviews, and although a pilot interview was conducted, it remained the case that data collection was likely to have been affected detrimentally, particularly at the beginning of the research process.

Strengths of the Study

Nonetheless, the present study is novel, as it is the first to explore directly the influencing role of significant others within the choking phenomenon, through information-rich "chokers". Also, as participants within the study were personal and / or professional contacts, insightful data were gained, due to the existing relationship with the interviewee. Furthermore, the study is also the first to provide applied recommendations for practitioners, coaches, parents and team-mates that can be adopted to prevent and / or alleviate a choking episode among those who are susceptible.

Applied Implications

Throughout the Discussion, recommendations have been identified which can be adopted by significant others to support athletes who experience choking. The key strategies are summarised within Table 2 below:

Strategy / Recommendation	Practitioner / Significant Other providing strategy	Impact on athlete
Consistent coach behaviour / communication	Coach	Reduces unfamiliarity of the event which increases confidence and perceived control. As such, an athlete's perception of pressure is reduced.
Create a positive psychological climate	Practitioner	Improves performance, satisfaction and motivation through repetitive communications and fostering warmth and friendliness within the team.
Scenario training	Practitioner	Reduces unfamiliarity by preparing for unexpected situations, increases perceived control.
Adopt holistic process goals	Practitioner / Coach	Reduces expectation on athlete by increasing emotional and perceived control.
Cognitively-focused coping strategies (e.g., restructuring)	Practitioners	Increases belief and self-confidence to reach goals, helps manage self-presentation anxiety.
Informational-based social support	Coaches	Buffer the harmful effects of stress and helps manage pressure.
Emotional support	Parents / Team-mates	Helps manage anxiety and perceived pressure.
Regular team-meetings	Practitioners	Improves team-cohesion, trust and confidence amongst team-members.
Transformational leadership	Coaches	Encourages optimal performance of athlete through effective social support, positive feedback and democratic behaviour.
Constructive reflection	Coaches / Parents	Encourages adversity-related growth post-choke through offering effective coping responses during future pressurised performances.

Table 2: Summary of applied implications

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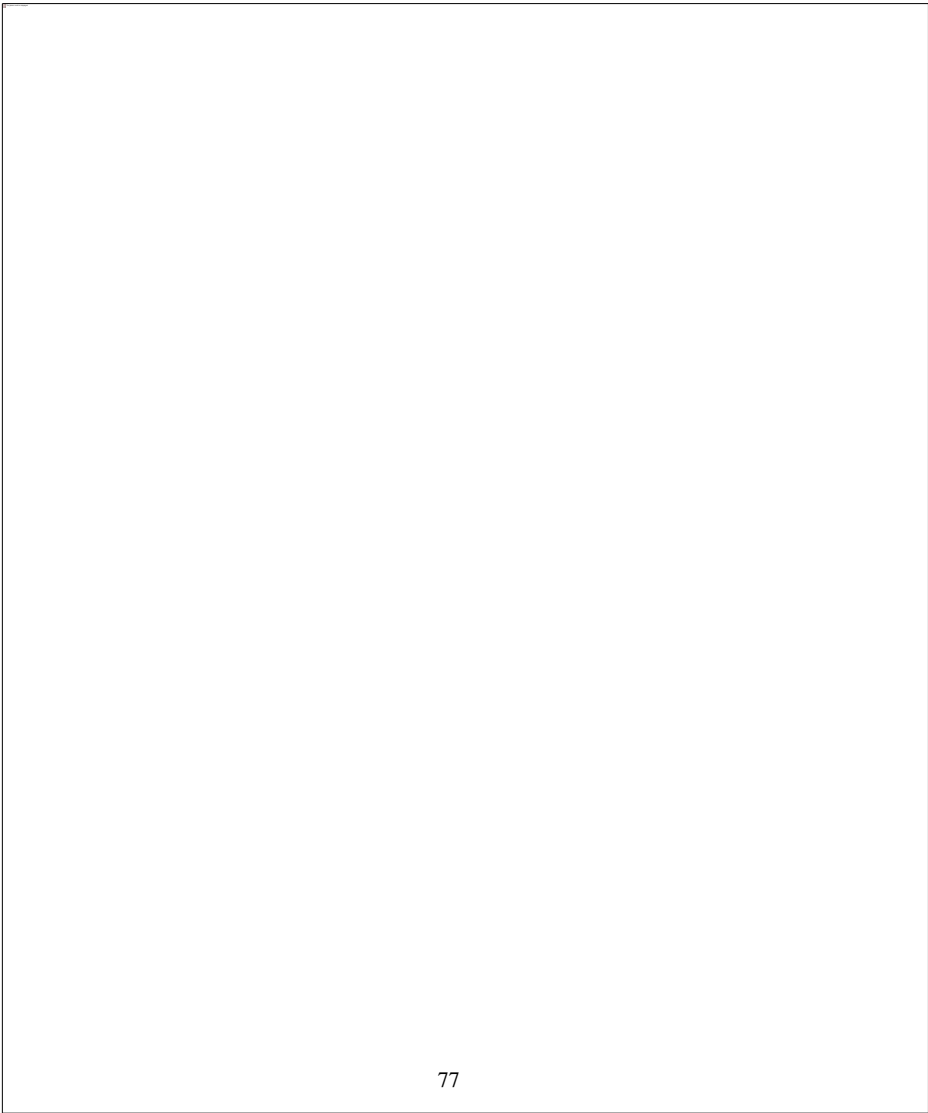
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Appendix A

Participant Information Sheet

4.What will happen to me if I take part?

If you volunteer to take part in the study, you will be asked to complete an interview that will explore your perceptions of athlete performance under pressure, and the role that significant others can play in supporting optimal athletic pressurized performance. The interviews will take part at a mutually convenient time, and in a private /safe location (i.e., interview rooms at Swansea university) or via SKYPE. The interviews will take approximately 60 minutes

5. What are the possible disadvantages of taking part?

There are no foreseen disadvantages to taking part in the study. However, there is a small risk of emotional distress as you are asked to recall poor performance (of yourself, or others). If distress does occur, then the interview will be stopped, and will not resume until you are happy to do so. Please note, that you also have the right to withdraw from the study, without the need to provide a reason. If required, you can also access support / guidance from the supervisor team.

6. What are the possible benefits of taking part?

The project aims to generate recommendations that can be used by the athlete and significant others to improve sporting performance under pressure. Furthermore, by reflecting on their own performances, it has been found that athletes can learn to perform more effectively under pressure.

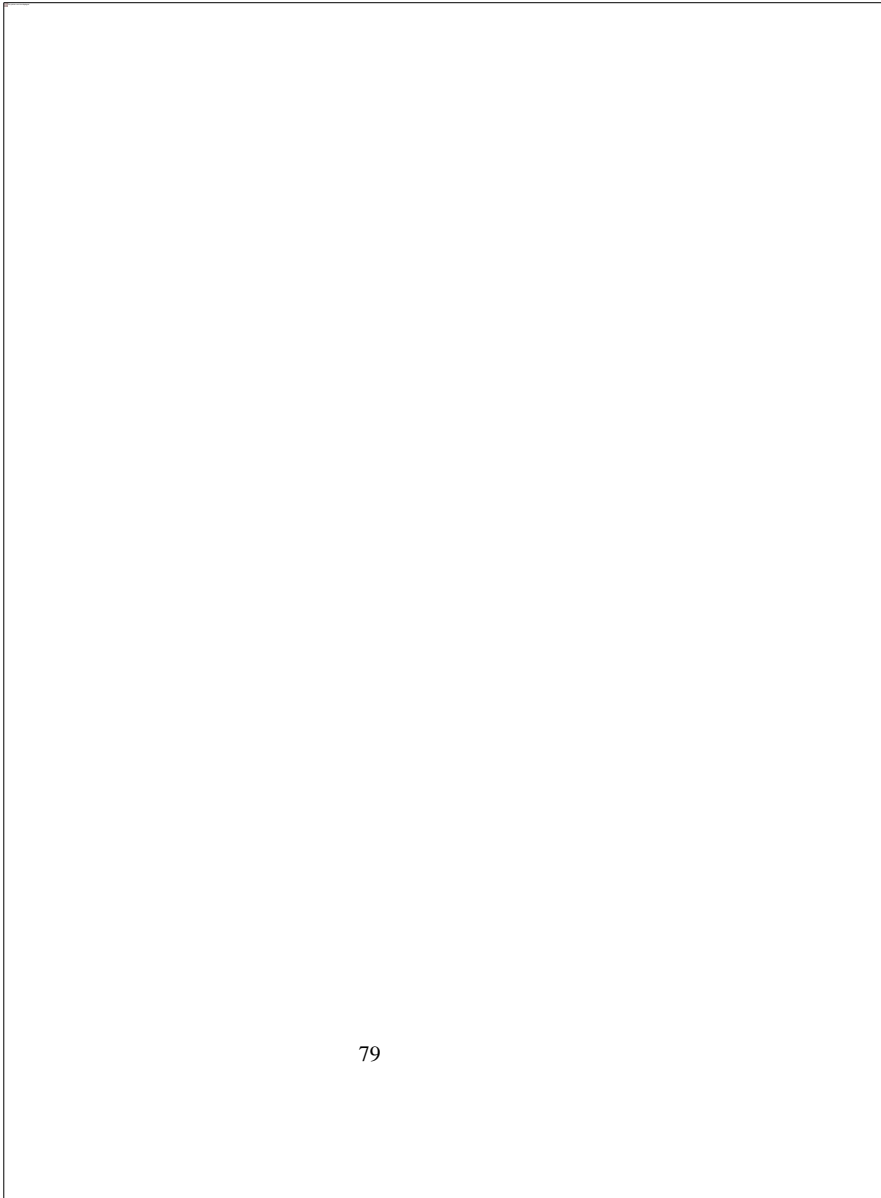**7. Will my taking part in the study be kept confidential?**

Your involvement in the study and the data you provide will remain confidential. The process of recruitment and the interview arrangements have been devised so that only the research team know of your involvement in the study. Moreover, your data will be stored on a password protected laptop, and your identity will not be revealed in the dissemination of the project.

8. What if I have any questions?

Further information can be obtained from the contact details at the top of this sheet. The project outlined has been approved by the College of Engineering Research Ethics Committee at Swansea University. If you have any questions/concerns about the ethics of this research, please contact Dr. Andrew Bloodworth at. A.J.Bloodworth@swansea.ac.uk

Appendix B

Participant Consent Form

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Appendix C

Interview Schedule