Sustainable Performance: A Comparison between the Sports, Corporate and Arts Industries©

Doctor of Philosophy (Psychology)

D A Biton

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Statement of Authentication

The work presented in this thesis is, to the best of my knowledge and belief, original except as acknowledged in the text. I hereby declare that I have not submitted this material, either in whole or in part, for a degree at this or any other institution.

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Acknowledgements

My heartfelt thanks are given to my father and mother, who brought me up to believe that I could do anything in life, and who have supported me throughout. My father was the first to encourage me to do this research, and without hesitation this doctorate is a gift to him.

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Abstract

This study sought to recognise individual sustainability as a tangible and identifiable concept, by beginning to determine some of the contributing factors of individual sustainability of performance, or individual sustainability of competitive advantage. As no comprehensive research presently exists in relation to individual sustainability, the approach taken was to build on and extend current research, as well as addressing issues on individual sustainability of performance. An accepted theoretical framework (the resource based theory) was used to guide data collection, and both elite sustainable and elite non-sustainable performers participated. The primary focus of the research was to identify the processes, (individual and historical variables), that were characteristics of sustained performers at an elite level. So that this could be accomplished, a number of aims were proposed, including: To determine the relationship between sustained performance, levels of sustained performance and specific individual and historical variables; to identify whether differences exist as a function of gender; and to identify whether differences exist due to type of performance discipline. A multi-method approach was used, with 50 individuals completing a questionnaire, and 18 individuals participating further in an interview. Results indicated significant differences between sustainable and non-sustainable performers on a variety of variables. For example, sustainable performers demonstrated a significantly higher level of innate confidence as compared to non-sustainable performers. The concept of failure was also highlighted as being of singular importance. Criticality of gender, both generally, and in relation to sustainability was established, with differences also being revealed between industries. Specific variables such as gender, confidence and failure were found to be predictors of sustainability. The findings clearly indicated areas for future consideration in the research and development of the concept of individual sustainability.

Human performance is an "area of psychology devoted to the subjective, temporal and environmental factors that affect performance in the short term. It is the study of factors that contribute to the day to day variations in individual performance and provides information that enables us to specify ways of achieving optimal performance." (Beh, 1999, p.2).

Chapter 1

Introduction and Problem Formulation

As society continues to evolve, and technology constantly advances, the impact upon an individual's ability to develop and perform is likely to be unremitting, (Van-Dusen-Wishard, 2000). Given that progression and change are likely to persist, (Van-Dusen-Wishard, 2000), human performance, as an important area of study, is probable to remain in focus (Beh, 1999; Gould, Dieffenbach, & Moffat, 2002).

Whilst investigations into human performance have increased substantially over the last few decades, the preoccupation with human performance and productivity has been prevalent in our society for centuries. This fascination is highlighted regularly by sporting events such as the Olympics, arts events such as the Oscars, and in society itself by being recognised as a master in a chosen field (Nobel prize), or being recognised for outstanding contribution (Knighthood).

Events such as these are associated with achieving the highest pinnacle of a career. They typically identify, or involve, a number of individuals who are perceived to be outstanding, and to have reached the highest level within their chosen field. However, whilst the events themselves are associated with numerous individuals who demonstrate a

competitive advantage, outstanding or peak performance, the main foci within these events tends to be not on those who take part, but on those who win.

These 'winners' are often portrayed in the media as being 'the greatest', the best in their field and to have 'what it takes'. While Bandura and Walters (1963) reported that such concepts might have a (possible) significant influence upon the wider population, with others attempting to emulate such 'winners', they have undoubtedly been the main focus of human performance research (Beh, 1999).

The identification of what affects an individual's performance; how to minimise or enhance those factors; and, how to pinpoint the conditions under which people will perform their best and attain competitive advantage, have typically been at the centre of numerous researchers reports (Gould, Finch, & Jackson, 1993; Gould, Guinan, Greenleaf, Medbery, & Peterson, 1999; Jackson & Csikszentmihalyi, 1999; Kreiner-Phillips, 1990; Orlick & Partington, 1998; Williams & Krane, 1998). Many differences exist between the aforementioned researchers, and other researchers, such as Maslow (1968, 1971) Privette (1983), and Garfield (1986) in relation to the examination of such areas. Differences that pertain to but are not limited to conjecture, method and approach.

However, in looking at how and why individuals do what they do from differing perspectives (for example, behavioural, humanistic and psychotherapy), and from differing domains (sport, corporate and arts), all agree that performance can be improved; and that achieving a level of competitive advantage, or outstanding or elite performance can occur in individuals from many walks of life and at any time. For example:

> Another one of our respondents, a worker named Rico Medellin, gets this feeling quite often on his job. He works on the assembly line. The task he has to perform on each unit that passes in front of his station should take forty-three seconds to perform the same exact operation almost six hundred times in a working day. Most people would grow tired of such work very soon. But Rico has been at this job for over five years and he still enjoys it. The reason is that he approaches the task in the same way that an Olympic athlete approaches his event: How can I beat my record? Like the runner who trains for years to shave a few seconds off his best performance on the track, Rico has trained himself to better his time on the assembly line. After five years his best average for a day has been twenty-eight seconds per unit. In part he tries to improve his performance to earn a bonus and the respect of his supervisors. But most often he does not even let on to others that he is ahead and lets his success pass unnoticed. It is enough to know that he can do it, because when he is working at top performance, the experience is so enthralling that it is almost painful for him to slow down. "It's better than anything else", Rico says. (Csikszentmihalyi, 1990, p.39).

While acknowledging that the main theme of research has been optimal or peak performance, it is also evident that getting to the top, being an elite performer, and having a competitive advantage is only part of the journey. Sustaining this advantage and having a consistency to performance would seem to be the rest of the journey. This view has

been supported by Kreiner-Phillips (1990) who suggests, "that preparing athletes for the after-effects of winning at the elite level is an area that has been overlooked in the past. Getting to the top is only half the battle. It would appear that staying consistently at the top requires a different strategy" (Kreiner-Phillips, 1990, p.26).

This concept of sustaining performance or sustaining a competitive advantage is often portrayed in the media. Typically, it is reported that the mark of a true champion or an outstanding performer is not just their ability to be the best, but their propensity for sustaining this level, and either winning again, or performing consistently over an extended period of time. The implications from this are that sustainability adds a new, higher, dimension to performance.

Consequently, sustainability has captured 'imaginations and aspirations' (Fricker, 1998). It has also spawned an overwhelming amount of interest in understanding, at a much deeper level, the contributing factors that will enable individuals and organisations, from a myriad of disciplines, to continue to attain such standards. However, while generating substantial interest and opinion, it must be acknowledged that it has not produced the same amount of empirical research or consensus as the concepts of getting to the top, peak performance or competitive advantage. In relation to these concepts there is a certain level of consensus and commonality between researchers.

Whilst it is possible, therefore, from the plethora of empirical research, to define and identify the attributes of peak or optimal performance or competitive advantage, as yet, sustainability of performance, or sustainability of competitive advantage, as a tangible and identifiable concept does not enjoy the same advantages, or the same level

of acceptance. If, as has been suggested, this area has been overlooked in the past, further research would thus appear to be necessary.

Orlick and Partington (1988), Jackson (1996), Kreiner-Phillips (1990) and Orlick (1998), are among the notable few who have gone beyond peak performance research and have begun to examine the concept of sustainability. However, a thorough review of the literature highlighted a number of issues. Studies specifically related to the concept of sustainability in relation to individual sustainable performance, or individual sustainable competitive advantage, were found to be extremely rare. More specifically, while the aforementioned investigators mention sustainability, the main focus of research appears to be on elite performers and what they have, rather than on the concept of sustainability, which appeared to be merely an afterthought or by-product. As a consequence, applicability, and the lack of specific empirical investigations are identified as an issue.

Further issues concerned replication, narrowness, methodology and subject matter. While current research has focussed upon the mental strategies of elite athletes or the effects of success on elite athletes, they have not gone far enough to allow fellow researchers or readers to begin to understand the roots of sustainability, and to understand what sustainability is.

With respect to narrowness, on examination of the current research, studies primarily tended to focus on the sporting arena, and in particular on Olympic champions. Whilst winning medals consecutively in the Olympic games is a tangible measurement of sustainability and consistency, sustaining a high level of performance can and does occur on the production line and in other walks of life (Csikszentmihalyi, 1990; Garfield,

1986). The number of studies that look across disciplines in relation to sustainability seems to be non-existent.

An additional and equally important focus of concern rests within the conjecture, methods and rationale of the studies. While current research has provided some insights into what may be occurring, the studies differed in their approach, with no two studies using a common theoretical framework to look at the area of sustainability.

The majority of studies have also tended to focus on qualitative measures only. Since qualitative studies rely on participants' consciousness, this focus on tangible rather than intangible factors may be a severely limiting factor. This supposition is supported from findings in the area of organisational competitive advantage, where intangible rather than tangible factors were seen to have more of an impact upon competitive advantage. According to McInman and Grove (1991), this may be the primary reason as to why it may be an unpopular research topic.

The final issue rests on the subject matter. The only studies carried out to date in the area of individual sustainable performance, or individual sustainable competitive advantage, have focussed on motivational aspects of sustainability, or on experiential aspects of sustainability rather than on both aspects. Since "motivational behaviour and experience are interrelated and not disconnected in human beings" (Rosini, 1977, p. 162), and combining motivational and experiential constructs is considered to be an important new direction in psychology (Pintrich, Cross, Kozma, & McKeachie, 1986), the integration of the two concepts would appear to be a fundamental requirement of any study concerned within the field of sustainability.

It might be argued that the existence of such issues may be because in the few empirical and observational studies to date, the number of athletes, artists and business people who are able to sustain a high level of performance is quite small. As a result, it would seem logical that few studies would or could be conducted. Consequently, a question that could be asked by researchers is whether sustainability of performance or sustainability of competitive advantage as a concept, is worth looking at in-depth? What is the point of looking into such an area since there are so few people achieving this? Is this really a realistic state to strive towards?

A counter view to this, and one that is wholly supported for this research is that, even if few people are achieving this state, the fact remains that some people are achieving it, and that sustainability is still not understood as a concept. Does this mean the people who are achieving it are an anomaly? Are they doing, or do they have, something that is different from other elite athletes or people? Or, as Garfield (1986) mentions, do " sustainable peak performers have less taken away and are consequently able to fulfil their potential" (Garfield, 1986, p. 60).

It is recognised that consistently performing at your potential is considered to be the ultimate challenge, and the true indicator of a champion (Loehr, 1982; Orlick & Partington, 1988); and that getting to the top is really half the battle (Kreiner-Phillips, 1990). It is also acknowledged that staying at the top requires different strategies to getting there (Orlick, 1998); and that motivation and experiential factors are interlinked, (Rosini, 1977). Consequently, even though sustainability is rare, given the above it potentially adds a new, higher, dimension to performance. There is a need, therefore, to begin building on current thinking by conducting empirical research using a common

framework, thereby beginning to provide a foundation on which sustainability can be defined and accepted.

McInman and Grove (1991), and Privette (1983) have supported the concept of building on current research and focussing attention upon the significance and consequences of sustainability or peak episodes. Certainly by doing so there is the possibility that by beginning to provide such empirical evidence, the impact on organisations and individuals could be far-reaching.

Organisations invest thousands of dollars in individuals with regard to their development. In being able to answer the question of what constitutes sustainable performance or a sustainable competitive advantage, it is likely to have a tremendous impact on an organisation's productivity and profitability. For individuals, the impact is likely to be even more significant with a potential impact on stress, slumping and burnout. As well as maximising the investment, both financial and emotional that individuals put in to reaching the top, and being the best that they can be.

This study is therefore concerned with building on and extending the research, as well as addressing current issues on sustainability of performance. This will be achieved by using an accepted theoretical framework to begin to examine and provide additional insight into the concept of sustainability. Sustainable and non-sustainable performers will also be looked at, to gain an understanding into how individuals who have a competitive advantage sustain that advantage. In addition, this research will examine whether the discipline in which the individual is operating, makes a difference as to how this sustainability is attained; and, whether experience has an impact on sustainability of performance, or sustainability of competitive advantage.

More specifically, the primary focus of this research is to identify the processes (individual and historical variables) that are characteristics of sustained performers at an elite level. So that this may be accomplished the following aims and hypotheses are proposed:

1. To determine the relationship between levels of sustained performance and specific individual and historical variables. The hypotheses associated with this aim are as follows:

i). Sustainable performers will have higher levels of task orientation and confidence;

ii). Sustainable performers will have less negative cognitions;

iii). Sustainable performers will have greater incidences of peak experience experiences, peak performance experiences and flow experiences, and fewer incidences of failure; and

iv). Sustainable performers will have experienced a greater number of life events more often. The level of significance attached to the life events will be the same as that attached by non-sustainable performers.

2. To identify whether differences exist as a function of gender.

3. To identify whether differences exist due to type of performance discipline. The specific hypothesis attached with this aim is as follows: Characteristics of sustainable performance will differ according to the practising environment.

4. To identify variables that are predictive of sustainable performance. And

5. To determine if any of the variables found to be significant predictors of sustainable performance can be classified as rare, valuable, inimitable and non-

substitutable, consistent with the resource based theory research in organisational sustained competitive advantage.

Structure of thesis

The next chapter is concerned with identifying the theoretical framework against which the aims of this research will be examined.

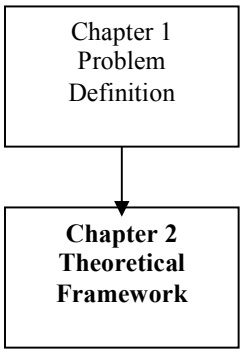

Figure 1. Structure of thesis.

"In an increasingly competitive world companies will strive to find new approaches to every conceivable point of leverage in the productivity equation. One such point - in the minds of many the greatest point of leverage – is the full utilisation of people, the human resource" (Garfield, 1986, p. 17).

CHAPTER 2

A Resource Based Perspective

Theoretical framework

The pursuit of competitive advantage and how to sustain it is an idea that is at the heart of many disciplines. Whilst there is evidence that some people consistently outperform others (Jackson & Csikszentmihalyi, 1999; Kreiner-Phillips & Orlick, 1993; Orlick, 1990; Meyer, Sampo, Paunonen, Gellatly, & Jackson, 1989), there is limited understanding and little consensus regarding the concept of individual sustainable performance (hereafter known as ISP), or individual sustainable competitive advantage (hereafter known as ISCA).

A number of theories have sought to explain how to maintain a mental edge that consistently produces elite performance, including Garfield (1986); Kovess (2000); Loehr and Schwartz (2001); and Orlick (1990). However, these theories, on close examination, were based on observation and experience. Consequently, no two theories were found to have used the same methods, conjecture or approach.

Various empirical explanations (self-serving bias, Kerr & Beh, 1995; sport commitment model, Scanlan, Carpenter, Simons, Schmidt, & Keeler, 1993; and behavioural complexity, Lombardo & Eichinger, 1989, cited in Greathouse, 2001) have

also been offered to account for the differences between elite performers, and the potential impact on the sustainability of performance. Within these explanations, however, the main focus was on elite performers and what they have, rather than specifically on the concept of sustainability.

Factorially, human sustainability has been seen to be about psychological well-being, belief, confidence and commitment (Jackson & Csikszentmihalyi, 1999; Kreiner-Phillips & Orlick, 1993; Meyer, et al., 1989; Orlick, 1990; Read, 2000). However, these same factors have been found to be present in, and essential for, the attainment of peak performance or competitive advantage. Accepting that it takes additional, or different, factors to sustain performance (Kreiner-Phillips, 1990), it would indicate that further investigation is necessary.

This is especially true in the light of research that suggests, that even with continuous performance of the components that helped them to achieve the top, peak performers were not necessarily going to remain at their peak. It was suggested that alterations were made, or, something other than those specific factors were present to ensure that performance was maintained (Orlick, 1998). Meyers, Sterling, Bourgeois, Treadwell, and LeUnes (1994), Encarnacion, Meyers, Ryan, and Pease (2000) and Kerr and Beh (1995), provide support that other factors may be present. "At an elite level such factors as ability and motivation frequently fail to relate to differences in performance where both ability in a particular field of sporting endeavour and motivation to succeed are close to optimal" (Kerr & Beh, 1995, p. 102).

Given the above, it might be concluded that the current situation is one where many researchers have begun to examine the concept of sustainability, albeit from their

own individual perspectives. Taking into account that "in psychological theory and empirical research, one basic prerequisite for overcoming fragmentation is a common theoretical frame of reference for planning, implementing and interpreting empirical research" (Magnusson, 1988, p.20), it would seem necessary to identify a common theoretical framework against which the research can be examined. As a result it would then be possible to begin to identify the components of sustainability.

However, although this is a fundamental prerequisite, the field of psychology and related fields provide the researcher with a plethora of theoretical perspectives, with overall, no one framework being superior to another. Consequently, the choice of theoretical framework will ultimately be influenced, not only by the nature of the area to be studied, but also by the preferences of the researcher involved.

With the potential complexity of ISP or ISCA, and the lack of research into the area, it can be argued that to look just within the field of performance psychology or psychology in general, may not provide a theoretical perspective sufficient to elucidate the issues involved. A more beneficial approach may be to 'cast the net wider' and look for a common framework outside the area, yet one that is clearly related and can be applied to the area of psychology or performance psychology.

Reed and DeFillippi (1990) suggest that it is to firms with performance that is consistently above industry average that researchers must look for organisation sustained competitive advantage. Accordingly, within the performance psychology area, studies looking at elite performers who have sustained their level were considered (Jackson & Csikszentmihalyi, 1999; Kreiner-Phillips & Orlick, 1993; Meyer, et al., 1989; Orlick, 1990). Additionally, peak performance studies were examined. The varieties of

conjecture, methods and the lack of empirically tested models within these areas, makes comparison across studies, and the application of a model to new research difficult. No study, to the researcher's investigation and knowledge, posited a common theoretical framework that had been extensively empirically tested.

Other related areas examined, that could provide insight into sustaining a peak level of performance, and sustaining a competitive advantage, were sustainability of marriage, (Fowers, 2000, Mackey & O'Brien, 1995); pilot performance (Alkov & Borowsky, 1980; Alkov, Borowsky, & Gaynor, 1982; Deitz & Thoms, 1991; Sanders & Hoffman, 1975); and surgeons' performance (Gilligan, Treasure, & Watts, 1996; Sexton, Thomas, & Helmreich, 2000). Again on close examination of the research and theories, no common framework was provided that was applicable to ISP or ISCA.

Within organisations, various frameworks have been put forward to account for sustainability in performance (Collins, 2001; Gilson, Pratt, Roberts, & Weymes, 2000; Goldsmith & Clutterbuck, 1997; Jackson, 1996; Owen, Mundy, Guild, & Guild, 2001). However, each of the previous frameworks lacked sufficient transferability to individual sustainability. In addition, the frameworks lacked sufficient empirical testing. There did, however, seem to be some applicability, as well as a general framework, when looking at organisational sustained competitive advantage.

Within strategic management and organisations (Porter, 1985), the resource based theory (hereafter known as RBT), was viewed as a possible framework for understanding the sources and sustainability of competitive advantage (Smith, Vasudevan, & Tanniru, 1996). Wernerfelt (1984) first determined and popularised the term RBT, however, the idea of looking at firms as a set of resources goes back to the work of Penrose (1959).

Within Penrose's work, the firm was conceptualised as an "administrative organisation and a collection of productive resources" (Penrose, 1959, p.31). She distinguished between physical and human resources, with the latter including the knowledge and experience of the management team.

The RBT (Barney, 1991; Dierickx & Cool, 1989; Prahalad & Hamel, 1990; Russo & Fouts, 1997; Wernerfelt, 1984) has since been looked at by many researchers (Amit & Schoemaker, 1993; Barney, 1991; Collis & Montgomery, 1995; Grant, 1991), in numerous disciplines (arts, human resources, information technology, and a range of industrial classifications), and was considered to be an established and robust theory (Peteraf, 1993; Teece, 1982).

Resource Based Theory (RBT)

Central to the understanding of the resource-based view of the firm are the definitions of resources, competitive advantage and sustained competitive advantage.

Resources.

According to Wernerfelt (1984) a resource is "anything which could be thought of as a strength or weakness of a given firm" (Wernerfelt, 1984, p.172). A firm's resources at a given time was defined as "those (tangible and intangible) assets which are tied semi-permanently to the firm with examples including brand names, in-house knowledge of technology, employment of skilled personnel etc" (Wernerfelt, 1984, p.172). The primary concern for firms was seen to be "wanting to create a situation where its own resource position directly or indirectly makes it more difficult for others to catch up" (Wernerfelt, 1984, p.173).

While Barney (1991), Grant (1991), Amit and Schoemaker (1993) and Collis and Montgomery (1995) all built on Wernerfelts' initial concept, Barney's definition appears to be the most widely used in the resource based literature with "Barney's (1991) specification of the characteristics necessary for a sustainable competitive advantage seeming to be a seminal article in popularising the theory within the strategy and other literatures" (Wright, Dunford, & Snell, 2001, p.4). Accordingly, for this research Barney's definition is the one that will be used.

Barney (1991) defined organisational resources to include, "all assets, capabilities, organisational processes, firm attributes, information, knowledge, etc controlled by a firm and that enable it to conceive of and implement strategies that are efficient and effective" (Barney, 1991, p.101). Resources were also defined more broadly as any assets, tangible or intangible, that help firms implement strategies to improve their efficiency and effectiveness.

According to Barney, resources may be classified into three categories, physical, human and organisational (Figure 2). Physical resources include the firm's plant and equipment, technology and geographic location. Human resources include experience, judgement, and intelligence of the individual managers and workers in the firm. Organisational resources consist of the firm's structure, planning, controlling and co-ordinating systems. Additionally, organisational resources could include the informal relations within and between firms (Wright, McMahan, & McWilliams, 1994).

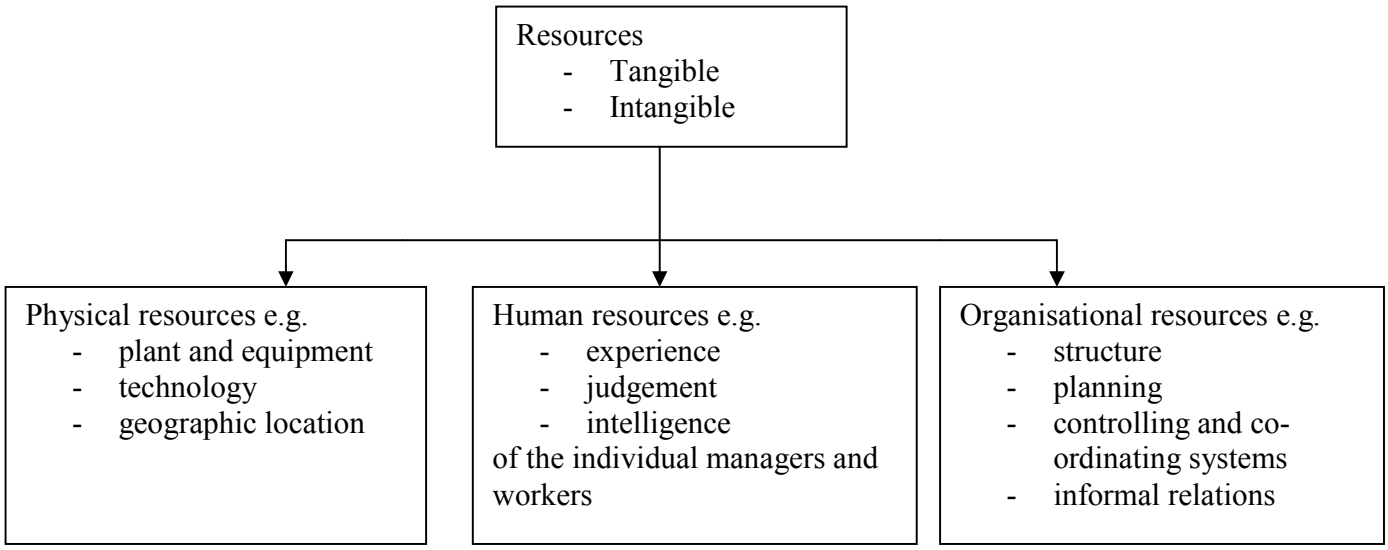

Figure 2. Resource Based Theory - Resources

Competitive advantage.

Although there are numerous writings and discussions on competitive advantage (Fahy, 2000), there is an absence of clear definitions. In the resource-based view of the firm, the resources themselves are the sources of competitive advantage. Barney (1991) describes a competitive advantage as occurring "when a firm is implementing a value creating strategy not simultaneously being implemented by any current or potential competitors" (Barney, 1991, p.102). According to this theory, (Figure 3), competitive advantage can only occur where firms have resource heterogeneity (where resources vary across firms) *and* resource immobility (the inability of other firms to obtain the resources from other firms or resource markets).

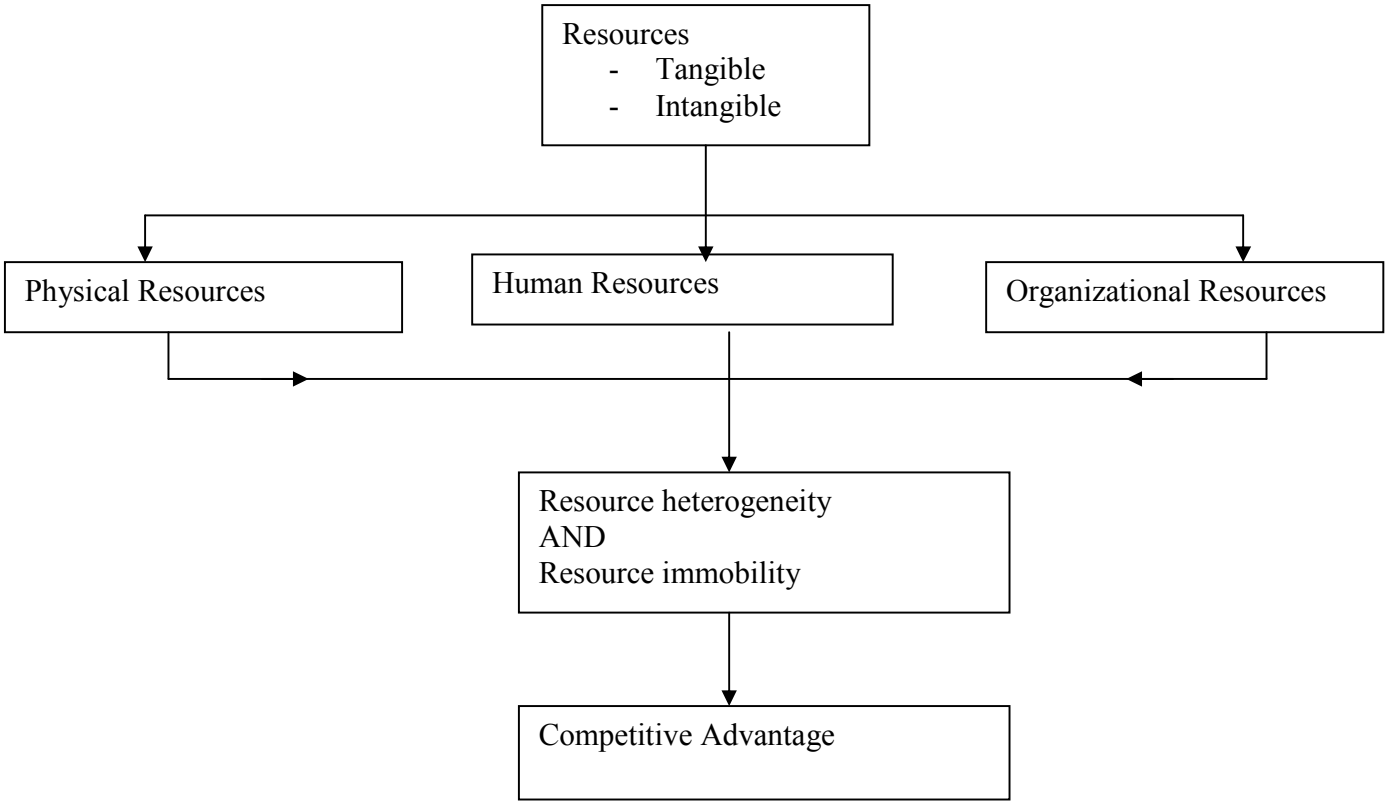

Figure 3. Resource Based Theory - Competitive Advantage.

Sustained competitive advantage.

This can only occur when other firms cannot copy (in totality), the benefits of a competitive advantage (Lippman & Rumelt, 1982). Consequently, not all physical, human and organisational resources will create a sustained competitive advantage, (Figure 4). To be a resource that creates a sustained competitive advantage, an asset must have the four following attributes: It must be valuable. The resource must contribute significantly to the organisation's effectiveness and efficiency. Second, it must be rare. There must not be a lot of it. Third, there must be no substitute for the resource. Competitors cannot acquire the resource to achieve the same strategic outcomes. Lastly, the resource must be inimitable. Firms that do not possess the resource cannot obtain it.

This last attribute is said to be achievable in three ways. A firm may have acquired the resource through "unique historical conditions" (Barney, 1991, p.107). Writers such as Amit and Schoemaker (1993); Barney (1991); Dierickx & Cool (1989); and Teece (1985) have emphasised the way key resources are developed over time through opportunities that may not repeat themselves. Concurring with this stance, Barney (1991) maintained that the performance of a firm "does not depend simply on the industry structure within which a firm finds itself at a particular point in time, but also on the path followed through history to arrive where it is" (Barney, 1991, p.108). Additionally, as organisation specific cultures develop over time (Sathe, 1985), competitors may find imitating such conditions too costly (Wright, McMahan, & McWilliams, 1994). Consequently, it may be summarised that the components of the RBT are sensitive to history (Boxall, 1996).

The second way a resource may be inimitable is by causal ambiguity. This occurs when the associations between the resources and the firm's competitive advantage are not understood. However, given that the link is not understood, the organisation itself will also have an ambiguous understanding. The inability of a competitor to imitate the associations leads to causal ambiguity (Moingeon & Edmondson, 1996).

The last approach involves social complexity. Sustained competitive advantage may be based on a variety of factors, including the smooth teamwork of an organisation's managers, or its organisational culture. Competitors may realise the value of these socially complex relationships but may not be able to replicate them.

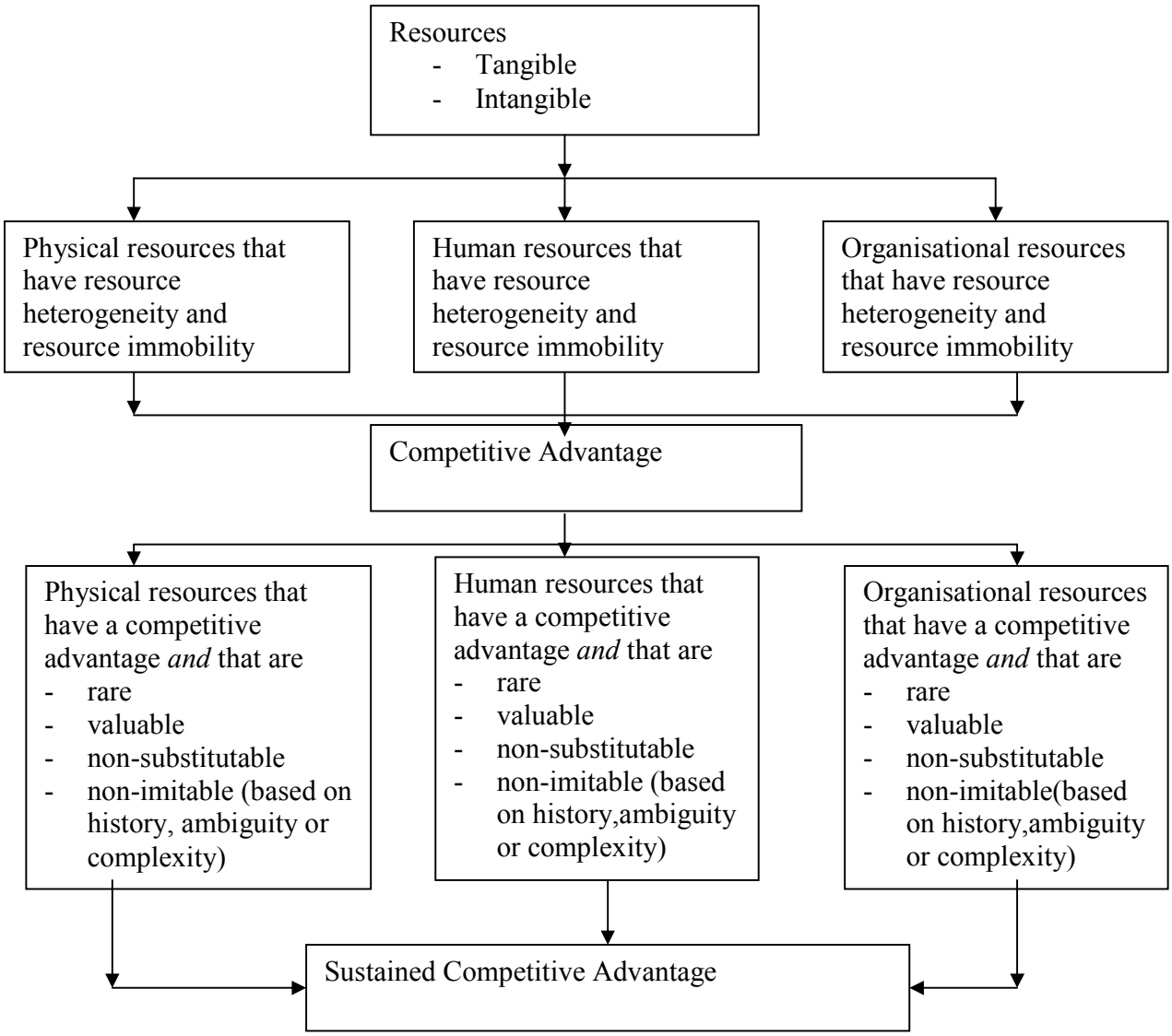

Figure 4. Resource Based Theory - Sustained Competitive Advantage.

Resource based theory – How it works

The highest theme within the theory is target resources. This is a resource on which competitive advantage is measured at a specific point in time (for example, profit or market share). Since economic conditions can vary (for example, stock market boom or crash), there may be an impact upon target resources. This may subsequently result in

target resources changing. The next level of resource is a strategic or key resource. This is any resource that is capable of providing a firm with a competitive advantage. A strategic or key resource is also considered to be rare, valuable, non-substitutable and inimitable.

Competitive advantage was additionally not just seen to be reliant on one strategic resource, but could also be achieved by the existence of resource bundles (Barney, 1991). These were considered to be a collection of various resources that together provide a competitive advantage. Within a resource bundle the number and type may vary, as may their individual value. The value is measured in terms of the contribution of each individual resource to the target resource. Beyond their individual contributions to competitive advantage, individual resources can interact and impact on the target resources. This results in new and often intangible resources being created. These new resources were termed 'quasi resources' whose contribution to competitive advantage could be separately measured. Overall, resource bundles were thought to provide a greater contribution than the sum of the contribution from each individual resource in the bundle (Barney, 1991).

In addition to resource bundles, it is also possible to increase the value of a strategic resource by the influence of a second resource or a catalyst. It has also been suggested that resource effects may be affected by time. More specifically, a strategic resource at a given point in time will have a value. However, this value may increase and continue to increase, as a result of experience or learning taking place, (Lieberman, 1987). In sum, the attainment, creation or maintenance of a superior resource

configuration, was thought to be critical for sustainability of competitive advantage to occur.

Application of the RBT

In accordance with the RBT, the majority of studies on sustained competitive advantage have focussed upon the physical, organisational and human resources of organisations. They have concluded that sustainability occurs as a result of the company having unique resources and resource-based strategies.

Studies typically identified a firm's resources and capabilities, measured such resources and capabilities, and then compared these measures with a firm's resulting performance. Such approaches were thought to be taken based on the understanding that "the resource based view can be applied in several ways, and that the way it should be applied depends mostly on the empirical context of the application" (Barney, 2001, p.7). Examples of scholars utilising these methods include Robins and Wiserma (1995), Henderson and Cockburn (1994), Mazadok (1999), Wernerfelt (1984), Barney (1991), Conner (1991), Bush and Artz (1999), Yeoh and Roth (1999), Powell and Dent-Micallef (1997), Miller and Shamsie (1996), Maijoor and Van Witteloostuijn (1996), Quinn, Anderson, and Finklestein (1996) and Pringle and Kroll (1997). Overall, the studies support the RBT and shows that firms who build their strategies on factors such as causal ambiguity, social complexity, and intangible assets outperform firms that do not build their strategies on the above, and only on tangible assets.

Applying RBT to individuals

The aforementioned studies are also seen as resource based due to common assumptions. These include that resources and capabilities can be heterogeneously

distributed across competing firms, and that they can help explain why some firms consistently outperform other firms (Barney, 2001).

In accepting the use of Barney's (1991) definition of resources for this research, the following was concluded in determining applicability to individuals. Since Barney defines physical and organisational resources as states containing aspects such as the plant, structures, equipment and location, there would seem to be limited relevance or direct applicability to individuals. The third component of the RBT was the human resource element. This comprised two aspects, human resource processes and strategies; and the experience, judgement, and intelligence of the individual managers and workers in the firm. These latter aspects are directly applicable and transferable to ISP and ISCA.

Although aspects of all three areas (physical, organisational and human) have been seen to contribute to an organisation's sustained competitive advantage, according to Quinn, Anderson, and Finklestein (1996), it was the human resource and human resource systems that made the biggest contribution to organisation sustainability. They proposed that for an organisation to attain sustained competitive advantage its success "lies more in its intellectual and systems capabilities than in its physical assets" (Quinn, Anderson, & Finklestein, 1996, p.71).

Luthans and Stajkovic (1999), and Smith and Rupp (2002), also support the criticality of human resources for sustained competitive advantage. More specifically, Luthans and Stajkovic (1999) suggest that "this is not to say that people are the answer to everything, nor that areas such as information technology are not important. ….However, information technology may not be sufficient in sustaining competitive advantage. Technology is easily obtained and copied and only serves to level the playing field in

terms of your competitors" (Luthans & Stajkovic, 1999, p.49). Smith and Rupp conjecture that "an organisation's human assets cannot be copied as easily or perhaps not at all" (Smith & Rupp, 2002, p.253).

Given the nature of organisational sustained competitive advantage, when applying the RBT it is unsurprising that the three components of physical, organisational and human resources were identified and examined, since organisations have such dimensions. However, as the characteristics of each area can be classed as distinct, it is reasonable to conjecture that the entity under investigation would determine which categories and characteristics would or should be investigated. Accordingly, it can be surmised that the RBT can be applied to each area separately. This summation is supported by Barney's (2001) contention that empirical context should determine the application, and the research of Quinn, Anderson, and Finklestein (1996), Luthans & Stajkovic (1999), and Smith and Rupp (2002), and their conclusion that human resources was the more critical aspect of sustainability of organisations.

The focus of this research is individual sustainable performance or individual sustained competitive advantage. Individuals are the human resources inherent within the human resource category. Consequently, it is proposed that the human resources aspect of sustained competitive advantage will remain the primary focus of the chapter. Such an approach is based upon accepting the premise that the RBT can, and has, been applied to this one component, with the resulting findings that human resources are heterogeneously distributed across competing firms; they provide differences that are long lasting; and, explain why some firms consistently outperform others.

Human resources.

Empirically the RBT has been applied in a number of ways including investigating high performance work systems, supplies of talent, and the fit between employee skills and strategy (Boxall & Steeneveld, 1999; Huselid, 1995; Koch & McGrath, 1996; Lepak & Snell, 1999; Lepak, Takeuchi, & Snell, 2001 cited in Wright, Dunford, & Snell, 2001; Richard, 2001; Wright, McMahan, & Smart, 1995; Youndt & Snell, 2001, cited in Wright, Dunford, & Snell, 2001). While the studies have had a different focus, all concur that human resource activities are thought to lead to the development of a skilled workforce, and further to a competitive advantage.

Wright, McMahan, and McWilliams (1994) took the study of human resources further and suggested that human resources may be segregated into two categories, human resources ("the pool of human capital under the firm's control in a direct employment relationship" Wright, McMahan, & McWilliams, 1994, p.304), and human resources practices ("organisational activities directed at managing the pool of human capital and ensuring that the capital is employed towards the fulfilment of organisational goals" Wright, McMahan, & McWilliams, 1994, p.304).

While Wright, McMahan, & McWilliams (1994) suggested that human resource practices may be important, they also maintained that human resource practices are easily imitated and/or substituted, and consequently cannot be by themselves a source of sustained competitive advantage. For these writers the source of sustained competitive advantage lies in the human resource themselves. However, this view was countered by Boxall (1996), Schuler and MacMillan (1984), Ulrich (1991), and Lado and Wilson (1994) who suggest that human resource practices are a source of competitive advantage

and that "while knowledge of human resource policies and practices are indeed widespread, the knowledge of how to combine, implement and refine them within a particular context may not be" (Boxall, 1996, p.64).

Regardless of which was seen to be more important, human resources met the criteria of providing a sustained competitive advantage due to being valuable, rare, inimitable and non-substitutable (Wright, McMahan, & McWilliams, 1984). This view has been supported by other scholars (Khatari, 2000; Lado & Wilson, 1994; Pfieffer, 1994), who all agree that while competitors can easily copy competitive advantage obtained via technology, it is hard to copy competitive advantage gained through people.

In summary, research has tended to focus upon human resources collectively or human resource processes. Even though Barney emphasised that human capital resources refers to the characteristics of individual managers and workers in the firm, a substantial part of the writing on human resources as a source of sustained competitive advantage has focused on top management or top manager teams (Barney, 1991; Castanias & Helfat, 1991). Barney specifically noted that it was the managerial team that might constitute a source of sustained competitive advantage.

The concept that individuals may themselves be sources of organisational competitive advantage by being valuable, rare, non-substitutable and inimitable while not directly examined, has also been alluded to and supported by many researchers within the field of RBT. Specifically, individuals are seen to be valuable as a result of the work in utility analysis (Boudreau, 1983; Boudreau & Berger, 1985; Cascio & Ramos, 1986; Cronshaw & Alexander, 1986; Schmidt, Hunter, & Pearlman, 1979).

Particular aspects of individuals are also seen to be rare. Jobs require skills. Since these skills should be normally distributed in the population, individuals who possess specific high quality skills are rare. One such skill that has been repeatedly measured is cognitive ability, which has been seen to be a relatively stable attribute that is normally distributed in the population (Jenson, 1980). Cognitive ability has received consistent empirical support, as one of the best predictors of performance in work organisations (Hunter & Hunter, 1984). Additionally, a strong positive relationship has been consistently demonstrated between cognitive ability and individual performance (Hunter & Hunter, 1984).

Due to their unique history, individuals are also seen to be inimitable and non-substitutable. The primary factor contributing to an individual's unique history is knowledge. According to Lubit (2001) "to provide sustained competitive advantage, one needs knowledge that is difficult for outsiders to copy as well as the ability to rapidly develop new knowledge" (Lubit, 2001, p.164).

There are two paths by which companies have been seen, and individuals can use knowledge to create sustained competitive advantage. These are tacit knowledge and explicit knowledge. Tacit knowledge contains information that is intangible (difficult to express, formalise or share). Key indicators of tacit knowledge include being unconsciously acquired, having considerable experience in an activity, and being learned through personal experience (Lubit, 2001; Nelson & Winter, 1982). Alternatively, tangible or explicit knowledge is conscious and can be put into words. The difficulty of copying tacit knowledge enables it to be the basis of an inimitable competitive advantage.

Emphasising the importance of unique knowledge, Prahalad and Hamel (1990), and Rumelt (1991) maintain that it forms the basis of an organisation's competitive advantage. Additionally the strategic management literature highlights that, "a knowledge based view is the essence of the resource based perspective" (Conner & Prahalad, 1996, p.477), and that " each individual possesses experience, insights and skills that are to some extent different from that of another" (Conner & Prahalad, 1996, p.482). Prahalad and Hamel (1990) and Teece (1985) also emphasise the importance of experience and history, maintaining that the acquisition of past resources can determine and impact on future opportunities.

Finally, the inextricable linking of individuals or human resources and social complexity is unavoidable. Since human interactions produces social complexity, competitors must be able to copy these exactly. Due to the many scenarios that may potentially exist, this is highly unlikely.

Applying the RBT to Individual Sustainable Performance or Individual Sustained Competitive Advantage (ISP or ISCA).

In summary, the research accepts that human resources collectively may be valuable, rare, non-substitutable and inimitable (Alvareza & Busenitz, 2001; Boudreau, 1983; Boxall, 1996; Busenitz & Barney, 1997; Conner & Prahalad, 1996; Hunter & Hunter, 1984; Lubit, 2001; Lumpkin & Dess, 1996; Moingeon & Edmondson, 1996; Prahalad & Hamel, 1990; Rumelt, 1991; Sathe, 1985). Writers also suggest that the individuals themselves are sources of competitive advantage and contribute to a firm's sustained competitive advantage.

Whilst this link between human resources or individuals and the subsequent impact on sustained organisational competitive advantage has been established, an area that appears to have been overlooked is the direct link between individuals, the resource based theory and an individual's own sustained performance, or sustained competitive advantage. Do the same factors that contribute to sustained competitive advantage in firms also contribute to individual sustained performance? Based on the following rationale, the likelihood is that this link may exist.

The RBT attests that resources may or may not provide a competitive advantage depending on whether they have resource heterogeneity (where resources vary across firms), and immobility (the inability of firms to obtain the resources from other firms or resource markets). Sustainability of competitive advantage is said to occur if the resources are key resources, possessing certain criteria (valuable, rare, non-substitutable and inimitable).

From individual sustainable performance research, writers (for example, Kerr & Beh, 1995) are suggesting that where certain variables are close to optimal within elite performers (for example motivation), maintaining or continuing these factors may not result in sustainability. They also state that while the same factors are present in sustainable peak performance and peak performance, other factors must be present to result in sustainability being achieved (Kerr & Beh, 1995; Orlick, 1998).

Using the RBT to interpret these findings, variables that are close to optimal and present within all elite performers, such as motivation, would not possess resource heterogeneity or immobility. Consequently, a competitive advantage would not exist, and sustainability could not be achieved.

Where the same factors were found to be present within sustainability and peak performance, they may have a competitive advantage. However, if they were not key resources meeting the criteria of being valuable, rare, non-substitutable and inimitable, maintaining them would still result in having a competitive advantage but it may not, according to the RBT, achieve sustainability.

Consequently, just as organisational sustained competitive advantage is based on the same unit of analysis, the resource, it is reasonable to conjecture that individuals who are sustaining performance or a competitive advantage may also have the same unit of analysis, the resource. Some of the resources may be seen to lead to a competitive advantage and further to sustained competitive advantage. Given that the RBT has primarily been utilised for understanding organisations, using the RBT as a theoretical framework for understanding ISP or ISCA requires some modifications and specifications. However, while minor alterations are necessary, the fundamental characteristics, requisites and integrity of the RBT are maintained. More specifically:

Resources.

Organisational resources are said to include "all assets, capabilities, organisational processes, firm attributes, information, knowledge, controlled by a firm and that enable it to conceive of and implement strategies that are efficient and effective" (Barney, 1991, p.101). For individual resources this can be changed to all assets, capabilities, individual processes, individual attributes, information, knowledge, controlled by the individual and that enable him or her to conceive of and implement strategies that are efficient and effective.

Competitive advantage.

Barney (1991) describes a competitive advantage as occurring "when a firm is implementing a value creating strategy not simultaneously being implemented by any current or potential competitors" (Barney, 1991, p.102). For individual competitive advantage this could be changed to when an individual is implementing a value creating strategy not simultaneously being implemented by any current or potential competitors.

In addition, since competitive advantage can only occur where firms have resource heterogeneity (where resources vary across firms) *and* resource immobility (the inability of other firms to obtain the resources from other firms or resource markets), the same conditions would be necessary for individuals to achieve individual competitive advantage. Resources would need to vary across individuals with the inability of other individuals to obtain resources from other individuals or markets. Connor and Prahalad (1996) have supported the existence of individual resource heterogeneity and immobility by suggesting "each individual possesses experience, insights and skills that are to some extent different from that of another" (Conner & Prahalad, 1996, p.482).

Sustained competitive advantage.

Sustained competitive advantage can only occur when other firms are unable to copy the benefits of a competitive advantage (Lippman & Rumelt, 1982). Resources also need to be key resources, possessing the criteria of being valuable, rare, non-substitutable and inimitable based on unique historical conditions, causal ambiguity or social complexity. For individual sustained competitive advantage, it is proposed that the same conditions apply.

What will be looked at?

It is necessary to identify specifically what can be looked at within the confines of this research. Clearly to look at all assets, capabilities, individual processes, individual attributes, information, knowledge which are controlled by the individual, and that enable a person to conceive of and implement strategies that are efficient and effective, is unquestionably unrealistic.

Additionally, deciding which psychological factors might predict individual sustainable performance is a difficult task at this point, for there is little empirical data to direct such an endeavour. Consequently, the constructs selected for inclusion in this study were chosen due to theoretical relevance to the area of sustainable performance, as well as being based on empirical data to date, that suggests possible relationships with sustainable performance.

It is not claimed that the factors selected in this study are the only ones related to sustainable performance. However, it is believed that this approach provides a viable starting point that should lead to a better understanding of sustainable performance.

Human resource research in organisation sustained competitive advantage suggests that experience and tacit knowledge, cognitive factors and history appear to make more of a marked difference in the sustainability of competitive advantage. However, the aforementioned areas are still very broad. Accordingly, while the areas of experience and tacit knowledge; cognitive factors; and history will be acknowledged to be the overriding factors being looked at within this study, specific variables within these areas still need to be identified and applied to individuals.

Experience and tacit knowledge.

The RBT views firms as learning organisations, improving their existing capabilities through experience. Lubit (2001), Prahalad and Hamel (1990), and Rumelt (1991) all concurred that tacit knowledge was critical for organisational success and sustained competitive advantage. When looking specifically at individuals, Lubit (2001) suggests that they require an ability to develop new knowledge, as well as acquire knowledge that cannot be copied. In addition, Nelson and Winter (1982) maintain that tacit knowledge can only be learned through personal experience.

Experience and tacit knowledge can thus be said to meet the criteria of being either tangible or intangible, and also to possess resource heterogeneity and immobility. Depending on which specific aspects of experience and tacit knowledge may be looked at, they may also be potential key resources providing a sustained competitive advantage.

When examining the concept of experience in-depth, and the literature on individuals who are considered to be peak performers or those who have a competitive advantage, it is apparent that a common set of experiences appears to be mentioned. These experiences seem to have had a significant impact on an individual's performance or on their lives, and may be linked to levels of performance (Csikszentmihaly 1975a, 1975b; Jackson 1996; Maslow 1964; Privette 1985; Privette & Bundrick 1991). Such episodes have been labelled peak performance experiences, peak experience experiences and flow experiences.

All three concepts appear to have been used interchangeably and have led to the subsequent question and research of whether they are independent constructs or not. The research has demonstrated that all three concepts have common characteristics as well as

some differentiators. However, whilst research by Privette and Bundrick (1991) have suggested that these concepts are independent of one another, Jackson (1996) in her research on flow, has suggested that they are interlinked, with flow being a process that results in peak experience and peak performance. Regardless of whether they are independent or not, peak performance experiences, and/or peak experience experiences and/or flow experiences have been shown to be an undisputable part of the peak performers repertoire. When integrated, such experiences can result in what has been termed in sports psychology as peak flow performance (Ravizza, 1977).

While not mentioned as a matter of course, a fourth experience has been identified as being common, regardless of the environment (sport, art, corporate or social), or level of performance attained. Perceptions of failure have been reported as being an independent concept rather than being an opposing end of the success axis (Conroy, Poczwardowski, & Henschen, 2001). Similar to peak experience, peak performance and flow experiences, failure experiences (including an individual's approach to failure), seem to have a significant impact, are linked to levels of performance, affect individuals' behaviour towards current and future achievement situations, are context specific, and have been implied to be a part of maintaining successful performance (Anderson & Jennings, 1980; Lazarus, 1991; Podlog, 2002; Weiner, 1986).

It was also clear from the research on experience and tacit knowledge, that how an organisation arrives at a particular juncture was critical (Barney, 1991). The importance of history was supported by Teece (1985) who conjectured that past resource acquisitions determine and constrain future opportunities. Since past experiences or events may determine an organisation's performance, it is reasonable to surmise that an

individual's experience and tacit knowledge may also result from their own individual (life) events.

Like the overriding concepts of experience and tacit knowledge, the specific variables of peak performance experiences, peak experience experiences, flow experiences, failure experiences and life events would meet the criteria of being tangible and/or intangible, and possess resource heterogeneity and immobility. Accordingly, these factors should allow competitive advantage to occur.

They would also meet the criteria of being valuable, contributing significantly to the individual's effectiveness; rare; non-substitutable with competitors not being able to substitute the knowledge gained; and inimitable. Individuals who do not possess the exact same knowledge or experience cannot obtain it. Consequently, there is the possibility that these experiences may be linked to sustainability of performance.

Cognitive factors.

The links between cognitive ability and individual performance have been well established (Hunter & Hunter, 1984). Individuals who are considered to be peak performers or those who have a competitive advantage, when describing or examining the impact of peak performances, peak experiences, flow experiences, or failure experiences describe a number of cognitive characteristics.

Common to all four experiences were the characteristics of confidence; focus or cognitive interference (manifesting itself in concentration); and motivation (manifesting itself in a desire to be the best that they can be, or to just be the best, a concept that has been labelled goal orientation). The possible link between RBT and goal orientation is further established by Dweck (1989) and Kanfer and Ackerman's (1989) proposition that,

depending on the goal orientation of individuals, their cognitive activities may use up resources that could be applied to the task, therefore hindering task performance.

Like the overriding concept of cognitive ability, the specific variables of confidence, focus or cognitive interference and goal orientation would meet the criteria of being tangible or intangible and possess resource heterogeneity and immobility. These factors should allow competitive advantage to occur.

They would also meet the criteria of being valuable, contributing significantly to the individual's effectiveness; rare, being normally distributed in the population; non-substitutable; and inimitable. Individuals who do not possess the same cognitive abilities cannot obtain them. Consequently, these variables may also be linked to sustainability of performance.

Summary

Since it has been acknowledged that motivation and experience are interrelated in individuals, by taking the approach of integrating prior knowledge with motivational conceptions or cognitive strategies it enables this study to take current research further. Researchers such as Pintrich, Cross, Kozma, and McKeachie, (1986) consider such an investigation and direction essential.

Structure of thesis

The forthcoming chapters relate to a further discussion of peak performance experiences, peak experience experiences, flow experiences, life events or experience, failure experiences, goal orientation, cognitive interference, and confidence (Figure 5).

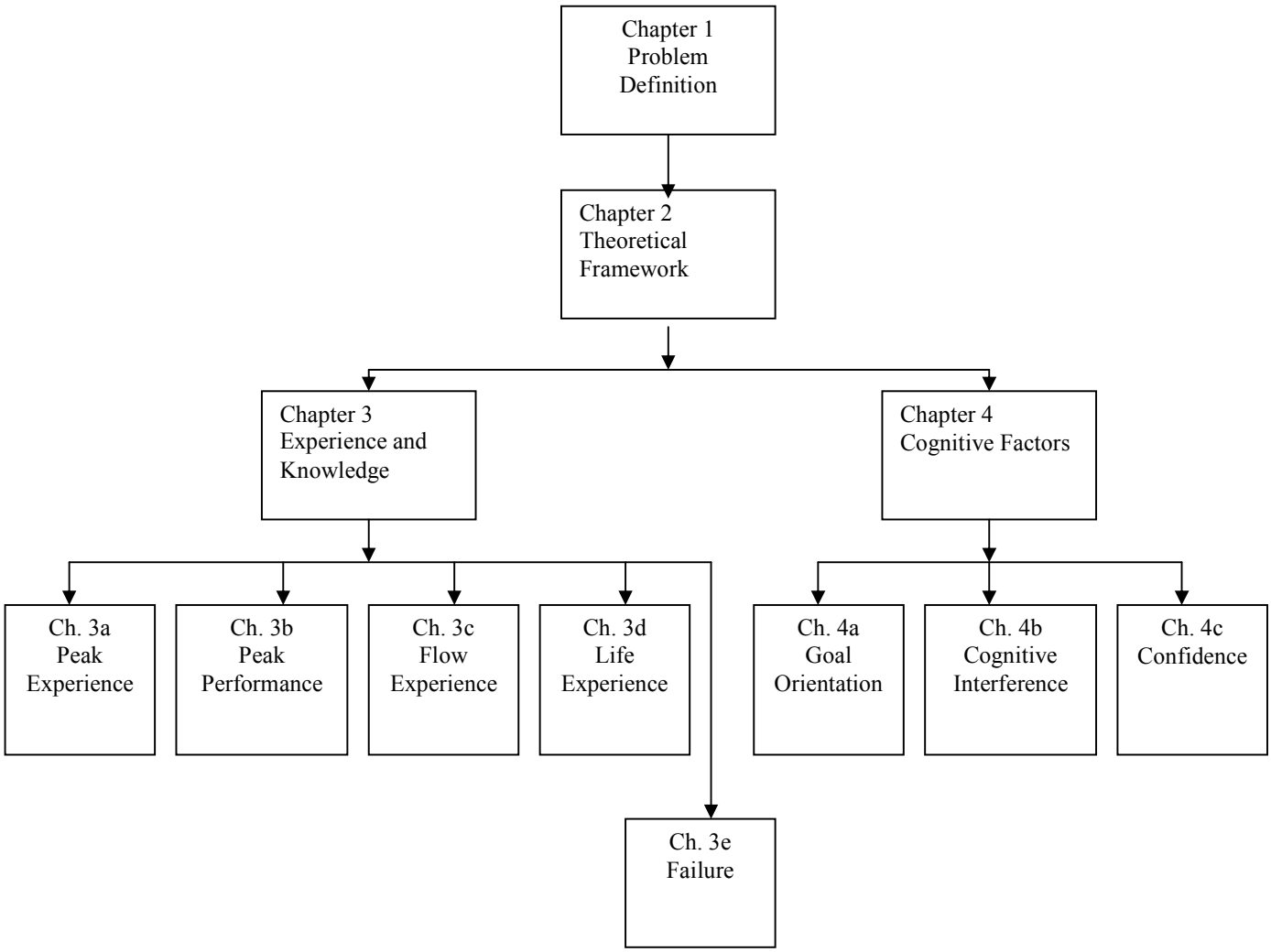

Figure 5. Structure of thesis

"The most significant experiences that transform human lives often cannot be explained in human terms" (Benson & Proctor, 2003 p.233)

Chapter 3

Experience and Knowledge

Human resource research in organisation sustained competitive advantage suggests that experience, tacit knowledge and history, are primary factors impacting upon the sustainability of competitive advantage within organisations. Since the aforementioned areas are very broad, it was necessary to identify specific variables upon which the current research could begin to examine individual sustainability.

The following five chapters contain a review of peak experience, peak performance, flow, life events and failure experiences. These constructs have been selected for their applicability to the nominated theoretical framework, their theoretical relevance to the area of sustainable performance, as well as being based on empirical data that suggests possible relationships with sustainable performance.

However, while these areas will be investigated, it is not claimed that they are the only ones applicable. Rather, it is believed that this approach is a viable beginning point to a better understanding of individual sustainable performance or individual competitive advantage.

"The most significant experiences that transform human lives often cannot be explained in human terms" (Benson & Proctor, 2003 p.233)

Chapter 3a

Experience

Within Eastern and Western religions, the occurrence of out of the ordinary experiences has been documented for centuries (Lowis, 1998). While some individuals have attributed such experiences to luck, others suggest that they are the result of an innate ability that when understood can enhance productivity and well-being, (Servaas, 2003).

James (1958) and Maslow (1959a, 1959b, 1962a, 1962b, 1968, 1970, 1971) have been acknowledged to be the initial researchers who "opened the window on optimal functioning" (Rathunde, 2001 p.136). Many researchers, however, acknowledge Maslow, who invented the phrase 'peak experience', as being the 'father' of peak experience (Atkins, 1990; Lanier, Privette, Vodanovich, & Bundrick, 1996; Laski, 1962; Leach, 1962).

Like James, Maslow believed that all the facets of experience, tacit and explicit, were worthwhile exploring. As a result of the subsequent popularity of Maslow's work, and ensuing empirical investigations (Laski 1962; Leach, 1962; Privette & Bundrick, 1987; Wuthnow, 1978), the validity of the peak experience as an experiential phenomenon and important life experience has been established (Hallaq, 1977; McClain & Andrews, 1969; Panzarella, 1980; Thorne, 1963; Warmoth, 1965; Wuthnow, 1978).

As with so many areas, the concept of peak experience has been approached in differing ways, resulting in definitional and inter-changeability issues (McInman & Grove, 1991). More specifically, Maslow (1959b) determined peak experiences to be, amongst other things, "….the parental experience, the mystic or oceanic, or nature experience, the aesthetic perception, the creative moment, the therapeutic or intellectual insight, the orgasmic experience, and certain forms of athletic fulfilment" (Maslow, 1959b, p.44-45). Leach (1962), defines it "as that highly valued experience which is characterised by such intensity of perception, depth of feeling, or sense of profound significance as to cause it to stand out in more or less permanent contrast to the major part of an individual's experience" (Leach, 1962, p.20). Other researchers such as Privette and Bundrick, (1987) and Lanier et al. (1996) have also offered accounts of what constitutes a peak experience.

Problems have also arisen due to the inter-changeability of terms (McInman & Grove, 1991). For instance, Laski's definition, that she based on her term ecstasy, referred to exactly the same dimension of experience as Maslow, and so "the two terms will be used interchangeably" (Leach, 1962, p.21).

Despite such differences, all agree that peak experiences are moments of highest happiness, and all are based primarily on Maslow's definition. Consequently, in lieu of an encompassing definition, and in acknowledgement of Maslow as the founder of the area of peak experience, Maslow's characterisations of a peak experience will be used as the basis for this aspect of the current research.

Maslow's conception of peak experiences maintains that they are experiences in which the individual exceeds ordinary reality and reaches their ultimate potential and

reality. The attainment of such potential and reality has also been described as self-actualisation. Leach (1962), reports some examples of this state as including: having a sense of being 'of-a-piece' rather than the usual feeling of fragmentation; that an individual may momentarily transcend their own ability; and that things may come more effortlessly. Peak experiences were also typically determined to be of short duration and accompanied by positive affect.

Maslow (1970) suggested that the more emotionally healthy we are, the greater the likelihood of a peak experience, and also the more frequently such episodes occur day to day. Maslow (1970) also proposed that peak experiences decrease as we age while plateau experiences increase. Maslow suggested that the more we appreciated tranquillity, the less we experienced the 'white-hot' intensity of peak moments. This in turn resulted in a state more gentle and sustained in nature. Unlike peak experiences, (which Maslow felt were unpredictable events, a proposition supporting Laski (1962) and given support by Rowan (1983)), plateau experiences were thought able to be invoked through conscious thought (Hoffman, 1998). "All I wish to do here with this brief mention is to correct the tendency of some to identify experiences of transcendence as only dramatic, orgasmic, transient, 'peaky', like a moment on top of Mt. Everest. There is also the high plateau where one can stay 'turned-on', (Maslow, 1971, p.349).

Although Maslow felt that having peak experiences is an aspect of self-actualisation, he admitted that many non-self-actualisers, perhaps even most individuals, have peak experiences. Maslow (1962b) conjectured that although virtually everyone has the potential to have a peak experience, many might be repressing, misinterpreting or

rejecting them. It was thought that this might have been as a result of cultural or personal reasons.

Leach (1962), Laski (1962) and Benson and Proctor (2003) supported the view that peak experiences were not limited to a chosen few. “These almost mystical mind sets which typically involve a sense of invulnerability, of perfection, effortless activity or extreme clarity certainly aren’t limited to superior sports achievement. Public speakers, writers and other professionals who have entered into similar high performance states have described their experiences in similar terms” (Benson & Proctor, 2003, p.5-6).

Empirically, Davis, Lockwood, and Wright (1991) and Wuthnow (1978), added to the view that peak experiences are common and widely distributed in the population, but not reported. Davis, Lockwood, and Wright (1991) reported 79% of their subjects had a peak experience, and yet, more than half of the respondents had told two or fewer people about it. Common reasons for not talking about the experience were that it was a special, intense experience that they wanted to keep for themselves, and/or that they did not want it devalued.

Wuthnow (1978) showed evidence that such reluctance could also have been due to the definition used, which made it less acceptable or less embarrassing. The view that definition plays a crucial role has been supported. Thomas and Cooper (1978, 1980) and Wuthnow (1978), have shown that, depending on the definition, between 35% and 100% of the general population report having had a peak or mystical experience. Additionally, Schachtel (1959) suggests that a lack of reporting may be due to a ‘gap’ in language and communication skills, stating that unless this ‘gap’ is narrowed, “the significant quality of the experience is condemned to oblivion” (Schachtel, 1959, p.296).

While empirical studies of peak experiences have provided data on their attributes, frequencies, triggers and psychological correlates, it has been suggested that the research appears to be generally classifiable into three approaches (Mathes, Zevon, Roter, & Joergers, 1982). One approach is concerned with creating a classification of peak experiences, another the causes of peak experience, and the third a relationship between having peak experiences and psychological well-being, (Mathes, Zevon, Roter, & Joergers, 1982).

Within these approaches, many researchers have examined the concept of peak experience and have provided conceptual models (Armor, 1969; Benson & Proctor, 2003; Hallaq, 1977; Landsman, 1969; Panzarella 1980; Privette & Bundrick, 1987). However, while attempting to identify a conceptual model and measure against which the current research can be planned, implemented and the results interpreted, it became clear that relatively few have provided a conceptual model and/or measure that is empirically replicable. Exceptions to this included Landsman's positive experiences; Panzarella's peak experiences; Thorne's (1963) peak experiences; Privette and Bundrick's experience model of feeling and performance; and Mathes', et al. (1982) peak experience objective scale.

Approach 1 - Classification studies

Thorne (1963) provided one of the few conceptual models that relate to peak experiences in his classification work. Thorne asked subjects to report the three most exciting, highest and best experiences of their lives. Researching peak and lowest point (nadir), experiences, Thorne (1963) developed a six-category classification system of peak experiences noting that the "variety of peak and nadir experiences reported by

normal subjects is so great that it is difficult to arrange a classification system to encompass them" (Thorne, 1963, p.249).

The six categories consisted of sensual peak experiences; emotional peak experiences; cognitive peak experiences; conative peak experiences; self-actualisation and climax experiences. There were no separate subsections for lowest point experiences as they were considered to usually reflect the opposite pole from peak experiences. Within lowest point experiences, the self was said to feel disillusioned or blocked in some way. Pilot studies indicated wide differences in the type of peak and lowest point experiences reported, depending on age, sex, intelligence, economic and social aspects. Several researchers have found Thorne's model reliable (Allen, Haupt, & Jones, 1964; Ebersole, 1972). However, studies by Lanier et al. (1996) and Yeagle, Privette, and Dunham (1989) have found no differences in peak experiences as a result of demographics.

Hallaq (1977) suggested that following Thorne's data gathering technique might be cumbersome and time-consuming. In an effort to overcome the difficulty of having to classify peak experiences Hallaq determined that "parallel studies that implement quantitative analysis are needed if more progress in this direction is desired" (Hallaq, 1977, p.77). Consequently, Hallaq devised the procedure of giving subjects Thorne's categories, and having them rate the intensity of the peak experiences they had in each category, using a ten point scale. Finding a slightly different classification system to Thorne, Hallaq acknowledged that he had accepted experiences that Thorne would likely not have, and that "Thorne's classification seems to be more sensible" (Hallaq, 1977, p.82).

Landsman (1969), dealing only with positive experience, suggested a three-category typology (with self, external world and interpersonal), which separates the experiences according to content. Individual positive experiences, the first category, are subjective moments of intensified self-awareness. Experiences in the second category, external-world, included all high intensity sensuous relationships to things. Interpersonal positive experience, concerned the heightened dialogic connections between the self and others.

The most intense and frequent experiences were reported in the interpersonal category (Landsman, 1969; Magen, 1983). For Landsman, maximising positive human experience may be the key to self-actualisation. He points out that a significant gap in a theory of human experience is the conditions that help an individual to develop this phenomenon.

Concurring that conditions to help development are necessary, Peake, Van Noord, and Albott (1979) have begun to address this gap. They advise that helping people to "develop an expectation from the start" provides the groundwork to "begin exploration and create a positive self-fulfilling prophecy" (Peake, Van Noord, & Albott, 1979, p.103). Rowan (1983) explains that if such groundwork is done through the process of self-development, then the peak experience becomes viewed as a well-earned, positive, pinnacle.

To counter the operational definitional issues inherent within peak experience research, Mathes et al. (1982) created an objective measure of the tendency to report having peak experiences. This not only focused upon affective symptoms of such experiences, but also on their core, the perception of being. The peak scale questionnaire

was developed based upon Maslow's descriptions of peak experiences, and where possible, Mathes et al. retained Maslow's original language.

The findings revealed an empirical picture of the individual consistent with Maslow's work. Individuals who reported having peak experiences were also likely to have experiences involving intense happiness, and were even more prone to report having cognitive experiences of a transcendent and mystical nature. In addition, self-actualising individuals were more likely to report having peak experiences, than less self-actualising individuals, although this relationship was not a strong one.

One of the most systematic studies of peak experiences was by Laski (1962). Laski not only examined peak experiences but also mystical and ecstatic experiences. All such experiences were given the name ecstasy. The very specific requirements she had for classification were derived from the analyses of her original participants. To be classed as ecstasy, the experience must have arisen from common trigger conditions, (nature, sexual love, childbirth, exercise, movement, religion, art, beauty, knowledge, creative work, recollection and miscellaneous). They could not, consistent with Maslow's thinking, arise from worldly motives as making money or acquiring success (Laski, 1962). The experience must also have been infrequent, of short duration and ordinarily have included mention of at least two feelings of gain and one of loss, or one of 'quasi-physical' classification.

She based this classification on her observation, that when people related how they felt in ecstasy three things were evident: they had gained a sense of something (e.g. joy); they had lost a sense of something (e.g. of time); and they had had feelings which seemed to refer to physical as opposed to mental sensations. Because this latter sensation

may be either literal or figurative, she called them quasi-physical. Examples include release and calm. Like Maslow, Laski acknowledged that individuals have experiences of less intensity. Accordingly, she set up a category called 'response experiences'. Laski, also like Maslow, felt that it was obvious that most people experience ecstasy as momentary and that they had an afterglow due to their intensity. She also concurred that such experiences transformed the individual's perception of the world; that their feelings may have continued for some time; and, that most people can have them.

In summarising the empirical data, studies attempting to create the classification of peak experience have little consensus. Of the accepted conceptual models presented, Thorne's (1963) classification has clear categories, and includes emotional, cognitive and physical aspects. However, it does not fully address negative experiences, and due to its design, is unable to examine the concepts of performance or feelings of flow (McInman & Grove, 1991). While Laski (1962) detailed a comprehensive study, similar to Thorne and Landsman it does not lend itself to address performance experiences.

Approach 2 - Causes of peak experiences

Maslow's conjecture that a variety of triggers pre-empt a peak experience has been supported (Polyson, 1985; Thomas & Cooper, 1980; Wuthnow, 1978). A study, both classification and causal in nature, was carried out by Whittaker (1975). Whittaker sought to classify peak experiences in terms of the events that triggered them and suggested the following nine categories: academic, artistic, athletic, nature, altruistic, sexual, drug and political. These categories significantly overlap with Maslow's list of music, love/sex, bursts of creativeness and discovery, childbirth, fusion with nature and

athletic episodes. Maslow later added drugs (under certain circumstances) and mathematics (particularly the act of getting mathematical proof, (Maslow, 1971)).

While it has been posited that one of the triggers for the occurrence of peak experiences was athletics, few researchers explored this until Ravizza (1977). In his work on an athlete's greatest sports performances, Ravizza examined the hypothesis that athletic events cause peak experiences. Ravizza asked 20 athletes to describe their greatest moment in sports, and then compared these descriptions with Maslow's description of the peak experience. While Ravizza found many similarities to Maslow there was also an important difference. This difference was in relation to a "narrowing of focus of attention to the immediate activity, and reporting being unaware of the crowd" (Ravizza, 1977, p.36). Greatest moments in sport were, therefore, seen to be less cognitive and reflective in nature, not resulting in important life changes.

This demonstration of a more narrow focus and being less cognitive and reflective can be seen in one of the passages quoted by Ravizza: Another skier revealed "everything was so perfect, everything so right that it couldn't be any other way. The closest thing I can say about it was that there seemed to be tracks in the snow that my ski's were made to fit in…..it was no longer me and the hill, but both of us, it was just right, for I belonged there" (Ravizza, 1977, p.38.)

Music as a trigger for peak experience has also been supported, with Lowis (1998) finding that music was "ranked overall first as a trigger for peak experience" (Lowis 1998, p.4). However, building on these findings Lowis (2002) has since suggested that music was more of a trigger for those currently involved in music.

Panzarella (1980) content and factor analysed the music and visual art peak experiences of 103 individuals, located in art galleries and concert locations. He suggested such peak experiences could be placed into one of four phenomenological categories, renewal ecstasy, motor sensory ecstasy, fusion emotional ecstasy or withdrawal ecstasy. The four phenomenological variables were found to be statistically independent. Renewal ecstasy results from visual art, and involves a form of enlightenment, and usually a vision of the world as better and more beautiful. Motor sensory ecstasy resulted from music and involves quasi-physical responses such as feelings of floating and being high. It is also composed of actual physical responses such as increased heart rate and shivering. The third category, fusion emotional ecstasy, comprises experiences of merging with an aesthetic object and its' associated emotional responses. A loss of contact from the physical and social world, along with a narrowing of attention onto only aesthetic stimuli, characterises the fourth category, withdrawal ecstasy.

Panzarella conjectured, that individuals experiencing such peak moments always have features of at least two categories. A three-stage process of peak experience was also noted. It begins with a cognitive response and loss of self (a stage identified as pre-glow), culminates with motor responses (the stage of glow), and then subsides with an emotional and stimulus specific response that often involves self-transformation (a stage termed after-glow).

Panzarella (1980) also noted that in "Maslow's omnibus phenomenology, perceptual and cognitive responses were given the most prominent places; physical and emotional responses were given relatively little attention" (Panzarella, 1980, p.70).

However, he did acknowledge that in Maslow's last description, physical and emotional aspects were recognised as excitement, high tension, relaxation and stillness of young 'peakers'.

Consistent with the premise that peak experiences can occur in a variety of places, within an educational setting, Bloom (1981) found that certain factors evoke peak learning experiences that are remembered long after the event. Bloom (1981) described two types of peak learning experiences. One was unique to an individual who just happens to be in a situation that triggers off a powerful response within him or herself. The second type is one in which a group of individuals simultaneously have much the same reactions and involvement. However, while type one may be more easily comparable to those experiences described by Maslow and others, it has been suggested that further research is required to qualify the question of whether type two learning experiences are really equitable.

In summary, while some of the studies examining the causes of peak experience have numerous crossovers to Maslow's original list, no common methodology has been utilised. In addition, the specificity of the studies, and the categories subsequently identified (for example Panzarella's art and music factors), do not lend themselves for investigation outside these areas.

Approach 3 - Relationship between peak experience and well-being

Margoshes and Litt (1966) carried out one of the earliest studies looking at the relationship between having peak experiences and psychological well-being. These researchers had normal and psychotic individuals list the life experiences they remembered 'most vividly'. These were then classified as peak, lowest point or doubtful

experiences. They found that normal people reported fewer lowest point experiences than psychotics, suggesting that peak experience is an aspect of psychological health and possibly actualisation.

One of the first large systematic studies on peak experience and well-being, was conducted by Wuthnow (1978). This study reported that most of the claims about peak experiences have been derived from "volunteered accounts or from clinical studies", a situation that was "curiously lopsided" (Wuthnow, 1978, p.59). Wuthnow further declared that little effort was being made to test claims on "broader, predefined samples of the general population" (Wuthnow, 1978, p.59).

In addressing this issue, and to obtain a general sense of how common or uncommon peak experiences were, respondents were asked questions about three kinds of peak experiences. Wuthnow reported a difference between the lasting effects of the experiences, with nearly half claiming that it had no lasting effects. However, while never asked, according to Wuthnow, the implication was that as a result of the relative recency when the experiences had occurred, these experiences occur frequently rather than being one off. Wuthnow also found that certain types of peak experiences were common to a wide cross section of people. Even though experiences differed, similarities of feelings were present. It was suggested that some people were more 'into' peaking than others, which subsequently led to the question of "what are the people like who are most heavily involved with peak experiences?" (Wuthnow, 1978, p.63).

Findings have suggested that 'peakers' appear to find their lives more meaningful, to feel more assured of themselves, and to think about questions of meaning and purpose more. They appear to exhibit several characteristics of a reflective, introspective,

actualising style of life. Peak experiences were thought to be not just isolated phenomena, but part of a broader style of life. The experiences seem to be part of a reflective, inner-directed, self-aware and self-confident style of life. Maslow's (1962a, 1962b) view that 'peakers' are self-actualising people seems to be most consistent with this outlook. "The person is more apt to feel that life in general is more worthwhile, even if it is usually drab, pedestrian, painful or un-gratifying, since beauty, excitement, honesty, play, goodness, truth and meaningfulness have been demonstrated to him to exist", (Maslow, 1962a, p.95).

Savage, Fadiman, Mogar, and Allen (1966) and Mogar (1965), both support the findings that peak experiences produce self-confidence, and a deeper sense of meaning and purpose. "Peak experiences are important because they uniquely combine cognitive and affective components of learning" (Bloom, 1981, p.198).

McClain and Andrews (1969) looked more explicitly at the question of the relationship between peaking and self-actualisation. They had participants complete a variety of instruments, classified them into 'peakers' and 'non-peakers' and then compared them on the scales. They found that 'peakers' had more anti-authoritarian attitudes, were less dogmatic and more open-minded, abstract thinkers, intelligent, assertive, expedient, tenderminded, imaginative, forthright, placid, experimenting, self-sufficient and relaxed than 'non-peakers'. It was concluded that 'peakers' were more self-actualising than 'non-peakers'. A view that was again consistent with Maslow.

Maslow (1968) suggested that for peak experiences to occur groundwork must be done. This involved learning to gratify needs and wishes by becoming responsible rather than dependent, and by replacing fear with courage. Maslow asserted that peakers had

less interest in material possessions, a finding supported by Mogar (1965) and Wuthnow (1978). Responding to the question of which came first, the peak experience or being disinterested in material possessions, Wuthnow (1978) suggested the relationship worked in both ways.

Frequency of the peak experience

While ambiguity surrounds the frequency with which peak moments are experienced, Leach proposed that "the richest and most intense experience is not only self-validating but tends to lead to its own recurrence" (Leach, 1962, p.8). Hardy (1979), Hay (1990), Greeley (1974), Lipscombe, (1999) and Lowis (1998) are among the few who have examined the question of frequency, concluding that peak experiences can and do occur quite frequently. Maslow suggests that self-actualising people seem to experience peak experiences more frequently than average people (Maslow, 1959a). Others, however, have suggested that they are a once in a lifetime experience (Panzarella, 1980). What is unclear from research into the frequency of such episodes is whether the peak experiences looked at can be comparable, due to definitional issues.

Lasting effects of the peak experience

Laski (1962) conjectures that "ecstatic experiences are…..processes facilitating improved mental organisation" (Laski, 1962, p.280) with more of her participants reporting that they had gained from the experience. Panzarella (1980) found 90% of his participants reported permanent effects from their aesthetic peak experiences: "the effects are now part of me and shall always be so. They are what create the person within me" (Panzarella, 1980, p.82). Lanier et al. (1996) reported a moderately higher

percentage having had lasting effects, with 93% stating the peak experience as significant or turning points.

In activities where arousal level is significantly and characteristically high (such as skydiving); that are very stimulating and challenging; and where the loss from a wrong decision could be the individual's life, the feeling was also found to have a lasting effect (Lipscombe, 1999). In addition, there was a high expectation of a repeat experience (Lipscombe 1999).

According to Rogers (1961) experiences "become a clear and definite referent" (Rogers, 1961, p.149) to which the person may return again for further increasing their understanding. This desire to repeat such experiences was also proposed by Maslow (1959a, 1962a), who suggests that peak experiences can change a person's view of themselves in a healthy direction by giving them a glimpse of their potential. It was felt that in turn such episodes can and do transform lives. Peak experiences can "release a person for greater creativity, spontaneity, expressiveness and idiosyncracy", (Maslow, 1959a, p.65).

Leach (1962) and Frick (1982), examining the effects of such episodes, suggest that courage, confidence and meaning resulting from such experiences, allow an individual to explore their character and individuality more fully. Frick (1982) in his work on transpersonal psychology supports the existence of meaning, stating that it is the "experience of an altered reality that moves us from ego centeredness into….contact with the essential relatedness and harmony of the universe" (Frick, 1982, p.49).

In sum, Maslow and others (Lanier et al. 1996; Smith, 1973; Usher, 1989; Warmoth, 1965; Wuthnow, 1978) found that peak experiences have significant meaning

for the individual. This parallels Maslow's and Panzarella's theoretical and empirical data. However, contrary to this, Ebersole (1972) found over half of his participants did not record lasting effects from peak experiences. Wuthnow (1978) also found a difference between the lasting effects of the experiences, with nearly half claiming that it had no lasting effects.

Disagreement with Maslow

There have been several critiques of Maslow's ideas (Geller, 1982; Shaw & Colimore, 1988; Smith, 1973). Major contentions appear to surround the lasting effects of peak experiences, the role of nadir or lowest point experiences, and the definition of self-actualisation itself.

Ravizza (1977) and Ebersole (1972) found that often peak experiences have no lasting effects. Wilson and Spencer (1990) suggest that while rare, change may occur; "only in rare instances is therapeutic change or self-actualisation initiated by peak experiences" (Wilson & Spencer, 1990, p.565). They also found intense negative experiences to be as meaningful, and potentially self-actualising, as intense positive experiences. The importance of lowest point or nadir experiences was also emphasised by Ebersole, who found that nadir or lowest point experiences had more positive and lasting effects than peak experiences.

While these findings do not negate Maslow's contention that peak experiences lead to positive personality change, they do suggest that nadir experiences may be equally, or more effective, in bringing about such consequences. Leach (1962), quoting one of her students, suggests that this may be the case, reporting "the most wonderful things that happened to me weren't especially happy at the time" (Leach, 1962, p.45), and

"however desirable, or rewarding growth may be, it is not comfortable" (Leach, 1962, p.46).

Blanchard (1969) also disagreed with some of Maslow's fundamental aspects of peak experiences, indicating that Maslow may have been narrow in his thinking. Blanchard believed that "the peak experience like life itself is filled with possibilities for both joy and tragedy. It can lead to self-fulfilment or self-destruction" (Blanchard, 1969, p.111). He disagreed that a peak experience is always pleasant, good, beautiful; that it occurs more frequently and more intensely in mature, self-actualised people; and that it rests upon prior satisfaction of the more primitive deficiency needs (hunger, safety, sex and so on). However, according to Wilson and Spencer (1990), while Maslow did acknowledge that nadir or lowest point experiences may be as psychologically important, no information was provided about the subjective effects of such experiences.

Self-actualisation has also been subject for discussion. Writings have referred to self-actualisation being inherent in the relationship between peak experiences and well-being. Maslow also maintained the distinctive characteristic of his participants was their level of self-actualisation and their ability to fulfil all their human potentials. Mittleman (1991), however, suggests that a more reasonable assertion is to suggest that the distinctive characteristic is one of openness. According to Mittleman, Maslow's participants when confronted with information are more than most people, both receptive and responsive. Mittleman maintains that these individuals do not shy away from unpleasant things, but rather see things realistically and clearly while constantly learning. His main point of difference with Maslow revolved around the individual's use of information, which Mittleman saw as active over Maslow's more passive approach.

While openness as a concept has been accepted as part of optimal functioning, (Leach, 1962; Rogers, 1961), Leach (1962) suggests that the "quality of openness to experiences as a valued and characteristic mode of responding has had little systematic investigation" (Leach, 1962, p.7). The interconnectedness of openness and self-actualisation was assumed by Leach in her research, "a significant connection between the capacity (or perhaps the disposition) for peak experiences, and general openness to experiences" (Leach, 1962, p.9). Mittleman's (1991) hypothesis about openness rather than actualisation, while adding to the research, also does not provide a systematic investigation. While his implication was that Maslow had overlooked the importance of the concept of openness, Maslow himself stated that his participants displayed both "a more efficient perception of reality" (Maslow, 1970, p.153-154), and displayed a "continued freshness of appreciation" (Maslow, 1970, p.163).

Maslow (1971) acknowledged that he had misgivings concerning some of his earlier writings, and in his later publications began to address imbalances that he perceived he may have created concerning peak experiences. One such imbalance concerned the one-sided use of the concept. He warned against "polarisation and dichotomising, or either-or-thinking, all in or all out, or exclusiveness and seperativeness", stressing instead the need for "holistic, integrative, inclusive thought" (Maslow, 1971, p.343).

Summary

In summarising the empirical data, studies attempting to create the classification of peak experience have little consensus and/or are not comprehensive enough. With respect to the causes of peak experience, while athletics, visual art and music have been

well established, the methodology, and/or the specificity, and/or the models presented do not allow empirical replication on a wider population. The same concerns are inherent for the data on psychological well-being and peak experiences.

Consequently, while various problems seem to exist in most of the conceptual models presented, one of the fundamental issues applying to them all relates to their narrowness. According to James (1958) and Maslow (1962a, 1962b, 1968, 1970), all facets of experience should be looked at, however, generally this has not been the case. Within peak experience research, the emphasis appears to have been upon positive experiences. Conversely, nadir or lowest point experiences have not received the same attention. It is also accepted that different types of experience are prevalent in optimal performing people, namely peak experiences, peak performance experiences, flow experiences and nadir experiences (Jackson, 1992; Privette & Bundrick, 1987, 1991).

Privette and Bundrick's (1987) model of feeling and performance, which is an extension in thinking of Privette's (1983) original topology, transcends the areas of classification, causes and relationship, and to some extent well-being. Both empirical and replicable in nature, it encompasses the areas of peak experience, peak performance, flow and nadir experiences. Both Privette's (1983) topology and Privette and Bundrick's (1987) model have been extensively utilised with a wide range of populations (business, actors, sports people, arts people), and accepted by numerous researchers, (Atkins, 1990; Lanier et al., 1996).

Primarily based on reviews of the work of Csikszentmihalyi (1975a, 1975b), Maslow (1962a), herself and others, Privette (1983) developed a topology to discuss the interrelationship between peak experience experiences (intense joy), peak performance

experiences (superior functioning) and flow experiences (intrinsically rewarding experience). Doing an item analysis of peak performance, peak experience and flow, Privette found areas of uniqueness, factors common to two out of three concepts, and characteristics common to all constructs. According to Privette (1983) "peak experience seems to have a mystic or transpersonal quality that is not as clearly defined in peak performance or flow" (Privette, 1983, p.1364). And while "flow is fun, peak performance involves a holistic experience of clear focus on self and valued object" (Privette, 1983, p.1364). Additionally, both peak experience and peak performance include a high level of joy and/or performance. Alternatively, flow was not defined by the intensity of either joy or performance, (Privette, 1982).

Privette (1983) described components common to all three constructs as: absorption; attention or clear focussed involvement; awareness of power; joy; valuing; spontaneous, effortless, letting be of the process; graceful, integrated, taoistic nature of the person; personal identity through a sense of meaning; responsibility; loss of time, space; and temporality.

Expanding such thoughts, Privette and Bundrick (1987) developed the experience model of feeling and performance. Privette and Bundrick (1987) focussed upon two main categories in their model. One was feeling and the other performance. They maintained that each dimension must be identified and defined (see Figure 6). The far end poles of the feeling dimension are misery and ecstasy or highest happiness. In between, moving from the top ecstasy, to the bottom, misery, there is joy, enjoyment, neutrality, boredom and worry or depression.

The second dimension, that of performance, has total failure (on the left) and personal best (on the right) at its extreme poles. Between these two poles are inadequacy, inefficiency, mediocrity, effectiveness, and high performance. Privette and Bundrick (1987) conceptualised the scales meeting at 90 degrees by the characteristics of neutrality and mediocrity.

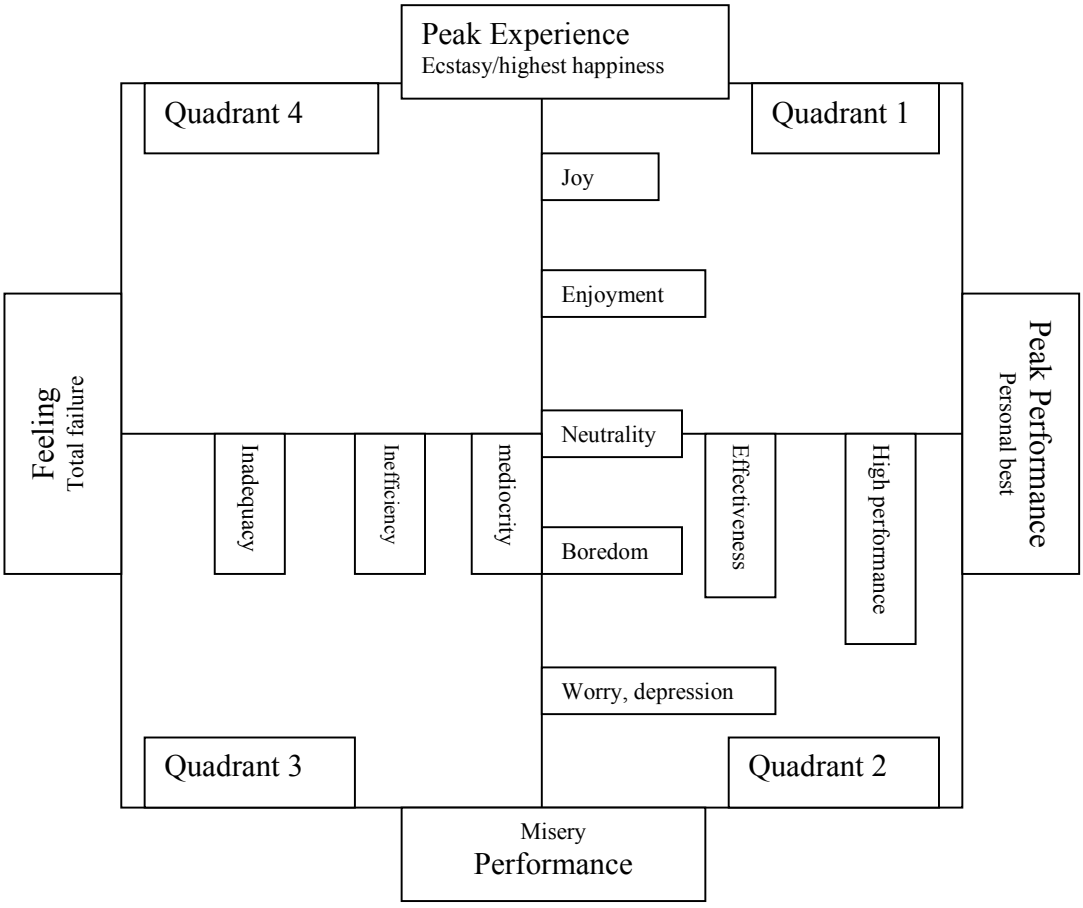

Figure 6. Privette and Bundrick's (1987) model of feeling and performance. (Adapted and reproduced with permission).

Once this had been detailed, they proposed that the interactions between these categories should be investigated. Such analysis resulted in four quadrants, each indicating a particular relation between the two dimensions.

Quadrant 1, the upper right area, involved a relationship between high performance and high feeling. An athlete winning Olympic gold or a dancer attaining their best performance would fall into this category. The concept of flow was also thought to occur within this quadrant, with the intensity varying from both being very slight to peak flow. The culmination of this quadrant, according to Privette (1985), represents Maslow's self-actualised person (highest level of performance, highest level of feeling and consequently the attainment of full potential).

The lower right corner, quadrant 2, would characterise those who achieved the very best that they could, but at the same time felt dreadful about it. An example of this may be an athlete getting their best time but still getting beaten, or a dancer performing at their very best and yet still not getting chosen to perform a role. The lower left corner, quadrant 3, (miserable and total failure) would characterise the experience of a corporate person repeatedly getting passed over for promotion. Finally, quadrant 4, (ecstatic but total failure), is characteristic of an individual who has done their best, being happy to take part but has not performed well. An individual's typical or usual experience was said to occur in the centre, between the areas of neutrality or mediocrity.

Privettte and Bundrick (1987) saw the concepts of peak experience, peak performance, flow, and failure as independent constructs with similarities and differences. Consistent with Maslow, their conceptualisation of the factors involved within each of the experiences contained many aspects of his original thought. Such

aspects include but are not limited to the following: a feeling of being all together, having a strong sense of self, meaning, personal value and significance. More specifically, Privette and Bundrick (1987, 1991) reported, that peak experience has a mystical or transpersonal quality associated with fusion and loss of self. It includes a high level of joy and/or performance, absorption, clear focus, highest happiness, intense meaning and spontaneity.

Current research

The current research is concerned with investigating the area of peak experience in relation to individual sustained competitive advantage. However, commensurate with the hypothesese under investigation, it is also concerned with examining the impact of peak performance, flow and failure upon individual sustained advantage.

Privette (1984) using her original (1983) topology developed a self-report measure. Like the original topology and Privette and Bundrick's (1987) later model, this measure has been extensively utilised (business, actors, sports people, arts people), and accepted (Atkins, 1990; Lanier et al., 1996), and is clearly aligned to an empirical model. The self-report questionnaire targeted experiential data of all the areas of peak experience, peak performance, flow and lowest point (nadir) experiences. Additionally, acknowledging comments from previous research that more quantifiable data was required, Privette's 'Experience Questionnaire' contained both a self-report section and a series of quantifiable questions.

Privette's Experience Questionnaire is one that transcends all aspects of experience, is empirically and methodologically accepted, is linked to an empirical model, and is based on Maslow's original concept. Consequently, it is proposed that

Privette's (1984) Experience Questionnaire is utilised as the measure for the peak experience, peak performance, flow and failure aspects of the research. Accordingly, while the following chapters will explore the concepts of peak performance, flow and failure, they will not detail an empirical model or measure as this has been outlined above.

"Extraordinary achievers are ordinary people who have found ways to make a major impact" (Garfield, 1986, p.15).

Chapter 3b

Peak Performance

Outstanding individuals, whose performance is greatly superior to the general population, have long been acknowledged (Ericsson, Krampe, & Tesch-Romer, 1993). Whilst assorted definitions of this superior or peak performance have been offered, (Beh, 1999; Privette, 1981a; 1981b; 1982; Williams & Krane, 1998), all accept that peak performance includes various factors that impact on an individual's ability to achieve an optimal level. Also recognised, is the view that peak performance is a demonstration of behaviour exceeding an individual's normal level of functioning, with individuals being said to use their potential more fully.

Emphasising the concept of untapped potential, now commonly accepted by researchers, James (1958) noted, "most people live, whether physically, intellectually or morally in a very restricted circle of their potential being. They make use of a very small portion of their possible consciousness, of their soul's, resources in general, much like a man who out of his whole bodily organism, should get into the habit of using and moving only his little finger. Great emergencies and crises show us how much greater our vital resources are than we had supposed" (James, 1958, p.253).

Inherent within this behavioural outlook of peak performance, are the concepts of individuality and level attained. More specifically, the implication is that for an

individual, the behaviour exhibited is the best or a superior performance for that individual. However, generally, the behaviour may not be, and usually is not, (but could be), the best performance that anyone has ever achieved for that particular situation (McInman & Grove, 1991; Privette, 1983). Further, peak performance has been thought to be more productive, more creative or in some way a superior level of behaviour that is focussed on the level attained, since peak performance can occur in a variety of activities (Privette & Bundrick, 1997).

Investigations into the concept of peak performance appear to be broadly classifiable into the areas of behavioural (psychological skills), personality attributes, and experiential. However, to date, while significant research has taken place on the behavioural (psychological skills) and personality attributes required for peak performance to occur, much less emphasis has been placed on experiential aspects such as feelings, thoughts, interpretations, beliefs and meanings.

This situation may be considered a disservice to peak performance as reflected by Privette and Bundrick (1991) who state "experience is less global than personality and more comprehensive than behaviour" (Privette & Bundrick, 1991, p.170). The implication being, by observing the individual's behaviour, while the individual's personality may be more observable and therefore accessible, accessing the individual's experience may provide much richer information. Howe, Davidson, and Sloboda (1998) also concur that differences in early experiences (amongst other things) are the real determinants of excellence. Given this, experience may be said to be equally important for the attainment of peak performance as the concepts of behaviour (psychological skills) and personality.

Additionally, the contention that experience and the resultant demonstration of personality characteristics may be linked (International Centre for Aquatic Research, 1990), lends further weight to the view that experience as a concept cannot be ignored. For example, within the sports arena, "elite swimmers could be characterised as having high confidence levels, well developed concentration skills, motivation and mental preparation levels. How these skills become developed is unclear, but it seems likely that years of experience must help enhance these skills" (International Centre for Aquatic Research, 1990, p.123).

The rationale as to why experience as a concept has not received the same attention as behaviour (psychological skills) or personality may lie in experience being thought to be too hard a concept to examine (Privette & Bundrick, 1991). Such difficulty may be the result of having to determine experience, and consequently an individual's thoughts and feelings. However, regardless of this perceived difficulty, since experience is deemed to be an integral part of optimal performance, Privette (1986) proposed that for "experience to be a salient data category, critical experiential phenomena must be identified and defined operationally, and their characteristics, interrelations, and ramifications for behaviour and personality examined" (Privette, 1986, p.264).

While this chapter is primarily concerned with peak performance experiences, which will be discussed subsequently, it is readily acknowledged that previous research has suggested relationships between experience, behaviour (psychological skills) and personality. Additionally, the current research is also concerned with the potential links between experience and cognitive factors. Accordingly, it is thought reasonable and necessary to report the most salient findings from behavioural (psychological skills), and

personality research in relation to peak or optimal performance as well as research on experience.

The remaining chapter is thus organised as follows: peak performance, behaviour (psychological skills) and personality; peak performance, experience, behaviour (psychological skills) and personality; and peak performance and experiences.

Peak performance, behaviour (psychological skills) and personality

In the search for information on aspects associated with elite high-level athletic success and performance, researchers have paid considerable attention to psychological factors (Jackson, Dover, & Mayocchi, 1998; Jackson, Mayocchi, & Dover, 1998). The importance of psychological skills is such that they have been seen as being equal to physiological and biomechanical factors, (International Centre for Aquatic Research, 1990).

Specifically, factors that have been shown to be attributable to peak performance across disciplines include: internal factors such as: *self-efficacy*, (Bandura, 1977; Theodorakis, 1996); *confidence* (Gat & McWhirter, 1998); *enthusiasm*, (Goleman, 1998); *commitment*, (Theodorakis, 1996); *awareness,* (Williams & Krane, 1998); *focus* (Koner, 1993); *mental toughness* (Loehr, 1982) and *determination* (Gould, Finch, & Jackson, 1993; Williams & Krane 1998).

External factors include the following: *goal setting,* (Locke, Shaw, Saari, & Latham, 1981; Taylor & Taylor, 1995); *balance,* (Davis, 1999; Millman, 1999); *coaches, managers or dance instructors* (Gould, Guinan, Greenleaf, Medbery, & Peterson, 1999; Livingston, 1988; Taylor & Taylor, 1995, respectively); *detailed competition plans and plans for dealing with distractions* (Gould et al., 1999); *tactical strategies* (Gould et al.,

1993; Williams & Krane 1998); *impact on other people and constant reviewing of the environment* (Dervitsiotis, 1999). Finally, factors that can be both internal and external include: *control* (Brownell, 1982); *motivation,* (Chantal, Guay, Dobreva-Martinova, & Vallerand, 1996; McClelland & Boyatzis, 1982); *coping skills for dealing with distractions and unexpected events* (Dervitsiotis, 1999); and *adapting to change* (Goleman, 1998).

Additional explorations of peak performance in the sporting, corporate and arts worlds have also focused on combinations of factors, mental preparation strategies, and other psychological skills utilised by successful peak performers. Orlick and Partington (1988) undertook one such study within a sporting environment. They investigated factors related to optimal mental readiness and psychological elements of success. It was found that total commitment to pursuing excellence was common to all of the elite athletes. Other distinctive characteristics included: ability to focus attention, high quality training including goal setting, competition simulation, imagery, detailed competition plans and plans for dealing with distractions. These plans were also found to continue through post competition, indicating a mental approach of constant fine-tuning.

More recently, again within sporting environments, Gould, Finch, and Jackson, (1993), Williams and Krane (1998), the International Centre for Aquatic Research, (1990), and Gould, et al. (1999), revealed findings similar to Orlick and Partington (1988). Factors associated with peak and Olympic performance included: heightened effort and commitment, use of systematic mental preparation including preparation routines, tactical strategies, focus and motivational strategies, positive expectancies, optimal arousal states, high levels of commitment and motivation, high levels of self

confidence, determination, self regulation of arousal, goal setting, imagery, well developed competitive routines and plans, concentration and having coping skills for dealing with distractions and unexpected events. Additionally, other skills important for individual development included concentration, confidence, focus, motivation and mental preparation (International Centre for Aquatic Research, 1990).

Within the corporate domain, Goleman (1998) reported findings that IQ takes second position to emotional intelligence in determining outstanding job performance. He suggests that emotional intelligence skills are synergistic with cognitive ones and that top performers have both. Garfield (1986) observed seven major value structures in peak performers: achievement as the primary motivation; contribution to results; self-development over time; creativity and risk-taking; synergy with others and objectives; quality and course correction; opportunity and the challenge of change (Garfield, 1986).

Optimal performance within the dance world, and more specifically ballet, was seen to be dependent on three areas, personal, physical and technical factors (Taylor & Taylor, 1995). Personal factors included confidence, motivation, intensity, focus, imagery, self-insight, commitment and support. This was also supported by Koner, (1993) who suggested focus (inner, body, dramatic) and dynamics (time, intensity and space range) were essential for superior performance; Physical factors included strength, stamina, coordination, timing, flexibility, ability, and diet. Finally technical factors were found to be specific to the execution of ballet for example 'turn-out'. Hamilton (1997) expanding on this area, also reported positive thinking and self-talk to be associated with successful peak performance, allowing dancers to work with negative feedback, tolerate ambiguity and manage the typical ups and downs.

In summary, and whilst not definitive, there is reasonable evidence to suggest from the previous writings that there is remarkable similarity between the factors identified for optimal performance within the sporting and dance worlds. This fact may not be unsurprising in the light of proposals that dancers have been equated with top performing athletes (Hays, 2002; Poczwardowski & Conroy, 2002). In addition, when examined collectively, across disciplines, studies investigating psychological characteristics and strategies associated with superior performance reveal that more successful performers are better able to concentrate, focus attention on the task at hand, exhibit higher levels of confidence and are more committed and motivated.

Negative impact on performance.

To corroborate the features inherent in peak performance, it is necessary to identify the factors missing when examining negative impacts on performance, such as burnout, slumping, pain coping strategies and underachievement. 'Burnout' in corporate and dance arenas, (Maslach, 1997; Ryan & Stephens, 1988 respectively), was found to have factors such as a lack of control, lack of support, mental malais, and a lack of confidence present, whilst within the sporting world the area of slumping includes fatigue and lack of confidence (Taylor, 1991).

The resistance resources (Antonovsky, 1974) of hardiness (Butler, 1997; Funk & Houston, 1987; Kobasa, 1979), and social supports (Hendrix, Acevedo, & Hebert, 2000), have shown that commitment, control, challenge and support impact on performance either directly or indirectly. Kobasa found that hardiness functions as a resistance resource in buffering the effects of stressful events. While Funk and Houston (1987) critiqued Kobasa's work, and proposed that (currently) there is little evidence that

hardiness has significant stress buffering effects, they did concede that hardiness may have a main effect on health. Butler (1997) supported the links between emotion, health and performance reporting that, "in certain specific elite sport environments, when certain conditions are met, pre-performance mood profiles predict a greater proportion of performance variation" (Butler, 1997, p. 18). Consequently, hardiness may not impact on physical health, but it may impact on mood and subsequently performance.

In relation to social supports, whilst there are many definitions of what constitutes social support, numerous studies have documented the beneficial effects of social support in reducing the likelihood of illness in times of stress. Hendrix, Acevedo, and Hebert, (2000) examining the interrelationship between hardiness, support and burnout supported previous research findings that significant relationships exist between personal/situational variables and stress appraisal, and between stress appraisal and dimensions of burnout (Hendrix, Acevedo, & Hebert, 2000).

Pain coping strategies in dancers also suggests that negative events, psychosocial aspects and low levels of social support impact on performance (Encarnacion, Meyers, Ryan, & Pease, 2000; Patterson, Smith, Everett, & Ptacek, 1998; Petrie, 1992; Smith, Smoll & Ptacek, 1990).

Within education, the concept of underachievement has received varying levels of attention. Whilst many studies had different definitions of underachievement, (Mandel, Marcus, & Phillips, 1996) common personality factors demonstrated by underachievers (those performing below their ability) included having low-aspiration, being depressed, distrustful and rebellious. Achievers (those being successful) displayed a positive self-image, self-confidence, discipline, a need for achievement, independence, responsibility,

a more accurate self-awareness and were future-oriented. Overachievers (those performing at their highest level of ability or peak performance), in addition to demonstrating those factors identified for achievers, also demonstrated being socially and family aware, very hardworking, self-starting and consistent.

Examining negative impacts in totality, the research may be lending additional credence to the factors identified as being a requirement for successful peak performance.

Peak performance, experience, psychological skills and personality

"It is generally assumed that outstanding human achievements reflect some varying balance between training and experience (nurture) on one hand and innate differences in capacities and talents (nature) on the other" (Ericsson & Lehman, 1996, p.275). This link between peak performance, experience, behaviour (psychological skills) and personality, and the assertion that all are required for peak performance, may be evident in the work on expertise. Within this area, it has been suggested that innate talent or ability, only becomes expertise when nourished by extensive training and practice, (Richman, Gobet, Staszewski, & Simon, 1994; Starkes, Deakin, Allard, Hodges, & Hayes, 1996).

Such a proposition has been corroborated by studies of more than a dozen expert domains including chess playing, musical performance, swimming, tennis, musical composition, experimental science, and mathematical research, (Bloom, 1985; Ericsson & Charness, 1994). Browne and Mahoney's research, (1984); findings by the International Centre for Aquatic Research (1990); Allen (1988); and Jones, Hanton, and Connaughton's (2002) investigation into mental toughness also lend support for the

possible links between peak performance, experience, behaviour (psychological skills) and personality.

Specifically, Browne and Mahoney (1984) report, "once a person can perform the basic sports skills automatically, peak performances are reachable and repeatable" (Browne & Mahoney, 1984, p.612), suggesting peak performances may only be attained when individual's do not have to consciously think about the mechanics of performing the task. The International Centre for Aquatic Research (1990) concluded the undisputable presence of psychological skills in elite performance reporting, "elite swimmers could be characterised as having high confidence levels, well developed concentration skills, motivation and mental preparation levels" (p.123). However, they also hypothesise that although it was unclear how these skills became developed, it was likely that years of experience must have helped to enhance these skills. Allen (1988) also reported similar views, acknowledging that peak performance shares a core of cognitive abilities, and that the development of these characteristics occurs best when grounded in personal significant experience.

Jones, Hanton, and Connaughton (2002) reported in their research on mental toughness, "while mental toughness provides the performer a psychological advantage over opponents, that advantage, either innate or developed over years of experience, enabled the performer to have superior self-regulatory skills. Specifically, mentally tough performers consistently remained more determined, focused, and confident" (Jones, Hanton, & Connaughton, 2002, p.209-210). Jones, Hanton, and Connaughton therefore conceded that mental toughness could be developed as well as having certain innate traits.

Patel, Kaufman, and Magder (1996) contend that research investigating the nature of expertise has made significant progress towards understanding the nature of outstanding human performance. That expertise encapsulates the possible links between experience and subsequent performance has been underlined by the work of Chase and Simon (1973). Whilst De Groot (1946, 1978) is considered to be the originator of the work on expertise, the more recent interest in the area is attributed to Chase and Simon (1973). They proposed a general theory for the "structure of expertise that offered empirical predictions for the structure of expert performance in a wide range of domains of expert performance, such as any skilled task, for example, music or football" (Chase & Simon, 1973, p.279).

Chase and Simon proposed that most forms of expertise resulted from the vast amounts of knowledge, and pattern based retrieval mechanisms, that were gathered over many years of experience within a particular domain. For example, Chase and Simon propose that individuals need to spend around 10 years of intensive preparation in the domain, before they can reach an international level of performance. While the supposition of 10 years has been supported by other researchers in a variety of disciplines, (Bloom, 1985; Chi, Glaser, & Rees, 1982; Ericsson & Smith, 1991), an important general finding is that the number of years of experience in the domain is only weakly related to the level of attained performance (Ericsson, Krampe, & Tesch-Romer, 1993). Consequently, measures such as number of competitions played in chess (Charness, Krampe, & Mayr, 1996), or the number of baseball games played in the major leagues (Schulz, Musa, Staszewski, & Siegler, 1994), do not accurately predict performance in samples of skilled performers.

The implication from such a finding suggests that number of years alone cannot explain the level of performance attained. Expanding this research, two explanations for the level of attained performance have been offered, namely deliberate practice and information recoding. Firstly, deliberate practice has been seen to be a differentiator in expertise, with studies showing that deliberate practice is not only essential for the attainment of expert performance but also for its maintenance (Ericsson, 1996). Whether in sport (Starkes et al. 1996), chess, (Charness et al. 1996), or music (Ericsson, Krampe, & Tesch-Romer, 1993), highest achieving individuals were found to consistently do more deliberate practice than moderate achievers, over longer periods of childhood, adolescence and early adulthood.

In addition, Starkes et al. (1996) found that concentration was the most important factor in deliberate practice. Further, Ericsson, Krampe, and Tesch-Romer (1993) contend, that individuals undertake deliberate practice as a means of attaining the highest levels, not due to it being naturally enjoyable. However, Helsen, Hodges, Van-Winckel, and Starkes (2000) report conflicting findings, suggesting that those aspects most relevant to the game, and those found most physically and mentally demanding, were enjoyable for athletes.

Durand-Bush and Salmela (2002) reported elite athletes engaged in deliberate practice in both the investment and maintenance years. It has also been highlighted that the amount of deliberate practice required in maintaining skills that have already been acquired, is less than the amount required to initially achieve them (Krampe & Ericsson, 1996). Such findings could have important implications when looking at over-training, a phenomenon that appears to be prevalent at elite levels in sport (Durand-Bush & Salmela,

2002), and one that can have a deleterious impact on performance (Hollander, Meyers, & LeUnes, 1995).

The perception of expertise as depicted by Chase and Simon (1973), Chi, Glaser, and Rees, (1982), and the contention that deliberate practice may be the key, is consistent with skill acquisition theory (Anderson, 1983). This is based on the assumption that an individual first acquires knowledge and then organises it into procedures for responding to situations. According to these theories, deliberate practice allows appropriate actions to be accessed automatically through pattern-based retrieval.

While there may be strong support for the hypothesis that deliberate practice is the primary mediating factor in the acquisition of expert performance regardless of discipline, there is evidence to suggest that it is not all that it takes. Starkes et al. (1996) conclude that desire may be one additional aspect. Bouchard (1994) also suggested that genetic differences in personality characteristics might predispose individuals to engage in practice related activities. Taking a different approach, Helsen, et al. (2000) suggest that it is not just deliberate practice that is important, but the type of practice engaged in.

Accepting that deliberate practice may not be the key alone, research has gone further. As part of their usual cognitive processing, expert performers have been found to generate complex representations of the situation. Information about the context is integrated with knowledge. This allows the expert to select appropriate actions, as well as evaluate, check and reason about alternative approaches. From chess masters playing blindfold chess (Ericsson and Oliver, 1989), to medicine (Patel, Arocha, & Kaufman, 1994) and elite sports (Abernathy, 1991; Allard & Starkes, 1991; Helsen & Pauwels, 1993), it has been reported that experts recode information at a higher level allowing

them more meaning. Consequently, this recoding of information has formulated the second explanation of level of attained performance.

While much less research has taken place on the interrelationships between peak performance, experience and specific cognitive resources, Jackson and Roberts's (1992) investigation on the relationships between peak performance, flow, goal orientation and perceived ability begins to highlight the potential links.

Duda (1989a, 1989b) contended that mastery oriented individuals experience greater intrinsic interest in the tasks, persist longer and are more likely to be performing the task for its own sake. She also reported that competitive oriented individuals are more likely to focus on outcomes, give up in the face of failure and manifest learned helplessness when perception of ability is low. Consequently, Jackson and Roberts (1992) hypothesised that it is possible that mastery oriented individuals are more likely to experience the components of flow and consequently, peak performance.

Jackson and Roberts revealed findings to support such a contention, in addition to reporting that athletes who were high in mastery orientation experienced flow more frequently than athletes low in mastery. Thus it was thought "critical to recognise the concept of ability employed by the athlete when investigating peak performance" (Jackson & Roberts, 1992, p.158). While the results from this study are suggestive, Jackson and Roberts acknowledge that further evidence is needed to confirm and clarify the relationships that were found.

While not specifically targeting goal orientation, general research on peak performance in sport may lend some support for Jackson and Robert's suggestion that this state may be related to the adoption of a mastery goal of action. Although they do

not refer to the term mastery or task oriented, Garfield and Bennett (1984), Loehr (1995), and Ravizza (1977, 1984) cite evidence that total focus on the activity (not the outcome), and complete task absorption are defining characteristics of superior performance states in athletes.

Peak performance and experience

Understanding elite athletes' experiences, has taken on increasing importance. "The perfect moment in sports when everything is altogether, when muscle, mind and movement flow, when you know you're at your personal best – this is peak performance" (Privette, 1981a, p.51). Privette (1981a) further contends that the "entity, peak performance…..is not limited to transcending an average but is a process by which people are able to use a large proportion of their powers" (Privette, 1981a, p.51).

The phenomenon of peak performance is said to be such a strong, positive force that it is thought to drive an athlete to re-experience it (Krauss, 1980). However, various factors may impact on an athlete being able to attain it or re-experience it. Time is one such factor. Schultz and Curnow (1988) reported a biological window for certain athletic events that set an upper and lower age limit to peak performance. "Brute strength and speed events peak relatively early" while "the attributes of good golfers and baseball players have more to do with precise motor control that may require many years to develop" (Schultz & Curnow, 1988, p.115). In energetic sports the age range for peak performance was said to be narrow (in the 20's). For non-energetic activities such as chess and science the peaks occur in an individual's 30's and 40's, (Schulz, et al. 1994).

Besides being a powerful intrinsic motivator for athletes, peak performance experiences have often been reported to feel trancelike (Deci, 1975). Gallway (1974),

and Jerome (1980) also noted that during these times athletes experience: dissociation and intense concentration, often being unaware of their surroundings; feeling neither fatigue nor pain, as if the body were performing on its own; perceptual changes which include time-slowing down and objects being enlarged; and feeling unusual power and in control of situations. Csikzsentmihalyi (1975a; 1975b) and Krauss (1980) have also described these experiences and subsequent characteristics as flow events.

A study looking at the peak performance experiences of athletes (Ravizza, 1977) found many similarities to Maslow's (1968) description of peak performance. Athletes were totally attentive to their task, completely connected to the experience, with no awareness of time and space. Some athletes reported feeling in total control of the situation. The athletes felt like their performance was effortless and perfect. Fears were unapparent.

Results of Privette's (1981a) study looking at the phenomenology of peak performance in sport also support previous research. The athletes experienced a clear focus with all their attention and energies channelled in the same direction. The focus was spontaneous and unrestrained where motions flowed smoothly together. They also possessed a strong will to reach a desired result, and prior interest and fascination was extremely important to their peak performance experience. They also indicated that their peak performance contained a peak experience as described by Maslow (1962a).

The acceptance of peak experience and peak performance as independent as well as interrelating factors has been acknowledged (Jackson, 1992; Privette, 1981a; 1981b; Privette, 1983), with Privette (1982) concluding that the interaction between these two optimal experiences is 'reciprocal and significant'. Both Maslow (1971), and Mogar

(1965) have also supported the idea of peak performance and peak experience being integrated. Maslow (1971) contends that when experiencing a peak experience, an individual is operating more fully. Mogar (1965) reported that intense joy could trigger positive achievement. More recently, Thornton, Privette, and Bundrick (1999), highlighted this integration when assessing peak performance with business leaders. They determined that the processes peak performance often shares with peak experience are significance and fulfilment (Thornton, Privette, & Bundrick, 1999).

Although peak performance and peak experience have been seen to occur together, Privette's (1981b) study reported that the descriptions and analyses of peak performance support the assumption that people possess potentials that are usually dormant; that peak performance is an independent experience, perceptually different from average behaviour; and that it has distinguishable features from other concepts such as peak experience and flow. She also found that peak performance was a separate concept from personality and thus able to be measured separately.

Privette (1981b) revealed that the dimensions of peak performance included absorption and clarity that comprise clear focus upon both object and self, spontaneity and unrestrained behaviour, and an expression of self. Clear focus upon both the object and self meant "bringing figure into sharp contrast to ground" (Privette, 1981b, p.64) when an individual "sees what is clearly present….and is not simultaneously involved with people or activities other than the focus of the experience and is not directed by the desires or needs of others" (Privette, 1981b, p.65). "The importance of the factor suggests that in the peak moment, the person apprehends the focused object fully, both

perceptually and cognitively, while also maintaining a clear identity of self" (Privette & Landsman, 1983, p.200).

According to Privette (1981b) spontaneity and unrestrained behaviour do not come from "gritting your teeth and squeezing" (Privette, 1981b, p.65) but rather "during peak performances neither inner restraints nor outer limitations interfere. Behaviour occurs effortlessly" (Privette, 1981b, p.65), the experience meets an innate motivational drive for a person. With the expression of self, Privette (1981b) found a person to feel strong "full of force and vitality, and this strength expresses itself naturally and easily". "A person may be keenly aware of the body and psychological self, as the heightened senses are felt in the peak experiences. One feels each part of the self moving in concert…..like a majestic animal running with a grace unspoiled by captivity" (Privette, 1981b, p.65-66). Privette (1983) also contended that peak performance may be a "once in a lifetime event, or it may occur often or, in rare instances continuously" (Privette, 1983, p.1362).

Landsman, originally suggesting the value of rigorous research on positive experience, further examined the full use of individual potential with Privette (Privette & Landsman, 1983). In their study, ninety subjects were asked to give examples of an outstanding and an average level of performance. Those data were compared and found both to offer some unique distinctions and to support Privette's (1981a; 1981b) previous research findings.

Concurring with Privette's original research and findings, peak performance experiences became an identifiable and measurable variable regardless of activity or group of people. Extending the research, Privette and Landsman (1983) reported that the

ordinary performance group was seen to offer "clarity and assurance" attached to the overt response of others, while the peak group did not (Privette & Landsman, 1983, p.200). Transcendence was also a distinguishing factor, being present in the peak group only.

Privette and Landsman (1983) also found differences between experiences with 'the importance of other people' being so strongly denied by subjects in the outcome of their peak performance it was suggested "involvement with others may often prevent achieving potential" (Privette & Landsman, 1983, p.200).

Building upon Privette's work, Fobes (1986) determined that peak performance was frequently at its best during episodes that include marked perceptual alterations. These perceptions ranged along a continuum from "altered attention/concentration, a slowed passage of time, objects appearing larger, detachment and control, reduced fatigue/pain, exceptional energy or strength, serenity, invincibility, psychokinetic or telepathic sensations and out of body sensations" (Fobes, 1986, p.4).

Fobes (1986) in his research found three cognitive components to peak performance: psychological readiness, which entailed having the optimum level of arousal; information processing, which entailed the elements of perception and memory with concentration enhancing performance; and endurance management. Endurance management involved the management of fatigue and pain and was also thought to be necessary for sustaining peak performance. Fobes maintained that peak performance occurs in an uncommon or 'altered state" of consciousness which is impossible to arouse intentionally or by choice (Fobes, 1986). Concurring with Fobes, Garfield and Bennett (1984) noted that sport participants frequently report that during the 'zenith' of a peak

performance, a sense of power occurs which "seems from outside themselves" (Garfield & Bennett, 1984, p.27). They concluded that peak performers draw on the hidden reserves that "transcend everyday life" (Garfield & Bennett, 1984, p.22).

Peak performance experiences have not only been studied with athletes, but have been investigated in other samples, for example, Atkins (1990) studied peak performance with actors, Fobes (1986) with the military and Garfield (1986) in the business area. Garfield (1986) thought that peak performers were exceptional and different from non-peak performers and declared "peak performers are self-managers with a strong internal drive toward meaningful achievement. That is, they think about improving and competing against a standard of excellence that they set for themselves" (Garfield, 1986, p.55). "They can achieve impressive results not just once or twice but repeatedly, consistently. They are willing to evolve and grow, to learn from work as well as to complete it, to be better than I ever was" (Garfield, 1986, p.16).

Likewise, Thornton, Privette, and Bundrick (1999) in their work with business leaders, reported that the internal strength of peak performers resulted in an approach of not just adding skills informally. Most notable within peak performers, was the peak performance dyad of clear sharp focus of self and object, and aspects of peak experience – joy, fulfilment and significance. These characteristics have been consistently found in previous peak performance research.

Summary

In summary, empirical peak performance research has tended to primarily focus upon the behaviour (psychological skills) or personality required to attain an optimal

level of performance. However, the concept of experience, while attracting less attention, appears to be equally important and inextricably linked to behaviour and personality.

Additionally, regardless of whether behaviour (psychological skills), personality and experience are independent constructs, research by numerous scholars indicates the commonality between the behavioural (psychological skills), personality and experience factors required for optimal performance to occur. For example, one such factor, focus appears to be a behavioural factor, a personality trait and inherent in peak performance experiences. Whether different facets of focus manifest themselves in the different scenarios is beyond the scope of this chapter. However, it does serve to reinforce the potential links between experience and cognitive factors and consequently, the importance of addressing both avenues.

"An athlete……sometimes awakens suddenly to an understanding of the fine points of the game and to a real enjoyment of it, just as the convert awakens to an appreciation of religion. If he keeps on engaging in the sport, there may come a day when all at once the game plays itself through him – when he loses himself in some great contest. In the same way a musician may suddenly reach a point at which pleasure in the technique of the art entirely falls away, and in some moment of inspiration he becomes the instrument through which music flows" (Starbuck, cited in James, 1958, p.169).

Chapter 3c

Flow

The focus of most theories of human motivation centres on satisfying unfulfilled needs. However, there is a theory that believes motivation, with enjoyment as the driving force is, and can be, for its own sake. Observations and analysis of self-motivating activities such as chess and dancing, led Csikszentmihalyi (1975b) to coin the term flow, "the holistic sensation that people feel when they act with total involvement" (Csikszentmihalyi, 1975b, p.36). Flow has also been described as a state of optimal experience, involving total absorption in a task at hand; creation of a state of mind where optimal performance is capable of occurring (Csikszentmihalyi, 1990); and an optimal energy zone (Martens, 1987).

Emphasizing the intrinsic nature of flow, Csikszentmihalyi (1975b) stated that it is misnamed "the autotelic experience", even though frequently "action follows action according to an internal logic, that seems to need no conscious intervention by the actor" (Csikszentmihalyi, 1975b, p.36). This misnaming was, he thought, due to the fact that flow may be experienced in any activity, even in activities that seem unlikely, for example a factory assembly line. He believed that a person simply wanted to find their

acts enjoyable. “When a person acts because his behaviour is motivated by the enjoyment he finds in the behaviour itself, he increases his self-confidence, contentment and feeling of solidarity with others; if the behaviour is motivated by external pressures or external rewards, he may experience insecurity, frustration, and a sense of alienation” (Csikszentmihalyi, 1975b p.xi).

According to Csikszentmihalyi (1990), flow is an experience in which attention is given freely so that goals might be attained. The result of such attention is thought to allow an individual to achieve a level of order in their consciousness. This subsequently was said to enable the ‘self’ to develop increasing complexity (Csikszentmihalyi, 1990). Parr, Montgomery, and DeBell (1998) suggested that this “complexity of the self develops from two complementary processes: differentiation and integration. Differentiation gives the self depth and richness; integration gives the self harmony and balance” (Parr, Montgomery, & DeBell, 1998, p.4). Csikszentmihalyi maintained that it is only when the two aspects have the same amount of time invested in them that the ‘self’ is likely to attain this complexity.

From the wealth of research into the area of flow by Csikszentmihalyi (1975a; 1975b), nine elements of the flow experience have been identified: 1) a merging of action and awareness; 2) a centering of attention on a limited stimulus field; 3) loss of self-consciousness; 4) a sense of being in control of one’s actions and the environment, or the paradox of control as Csikszentmihalyi (1990) described it; 5) a demand for action with unambiguous feedback to the person; 6) a challenging activity that requires skills; 7) transformation of time; and 8) clear goals. The final element was an autotelic experience.

This ninth element occurred when all the previous eight elements came together and resulted in the process being intrinsically rewarding.

The first element, merging of action and awareness, meant an individual was aware of his or her actions but not the awareness itself. Flow occurred when the tasks were within the individual's ability to perform, and in "activities with clearly established rules for action, such as rituals, games or participating art forms" (Csikszentmihalyi, 1975b, p.39).

The second element concerned an ability to concentrate on a narrow field of stimuli or a "narrowing of consciousness" (Maslow, 1971, p.63), ensuring other stimuli did not intrude. Within this element, consciousness was deemed not to intervene, with one action following another action automatically. According to Csikszentmihalyi, one dancer typified this as follows "your concentration is very complete. Your mind isn't wandering….you are totally involved in what you are doing" (Csikszentmihalyi, 1975b, p.39).

The third element, loss of self-consciousness, or, "fusion with the world" (Maslow, 1971, p.70), was possible as long as the participants followed some rules of order, to know what should or should not be done. Within this element, a concern for the self disappears resulting in a feeling of being 'at one' with the environment. This feeling, together with concentration (the second element) and feelings of control (the fourth element), causes individuals to seem ego-less and consequently, more relaxed and open.

Control of an individual's action the fourth element of flow, was described by Csikszentmihalyi (1975b, p.44) as being when a person "has no active awareness of control but is simply not worried by the possibility of lack of control". This element

contends that it is the possibility or opportunity of being in control that people enjoy, not necessarily the actuality of being in control. Consequently, in later writings Csikszenmihalyi termed this element the paradox of control (Csikszentmihalyi, 1990).

The fifth element in flow, a lack of non-contradictory demands for action, and unambiguous feedback, was made possible by the restricted field of awareness. "In the artificially reduced reality of a flow experience, one clearly knows what is good and bad…a person is not expected to do incompatible things" (Csikszentmihalyi, 1975b, p.46). Csikszentmihalyi's description of feedback has also focussed on the information provided by an activity, letting the person know about the progress they are making toward the desired goal. While Csikszentmihalyi has highlighted that the feedback should be unambiguous and given without delay, whether it was positive or negative in nature was not discussed. However, the findings of Jackson, Thomas, Marsh, and Smethurst (2001) of a positive relationship between feedback and errors indicates negative feedback may contribute to further errors and consequently less flow.

A challenging activity that requires skills, the sixth element, is thought to be the most critical of elements without which flow cannot be achieved. According to Csikszentmihalyi (1975b) there must be a balance between ability and task demands, where a person's skills must be just right to cope with the demands of the situation. Only when there is a matching of ability and task demands will flow occur.

In such circumstances there is a unified flowing from one moment to the next. Rock climbers, dancers, surgeons, chess players all reported this 'flow' state when the activities possessed this perception (Csikszentmihalyi, 1993). To remain in flow, Csikszentmihalyi and Csikszentmihalyi (1988) assert that it is necessary to increase the

complexity of the activity by developing new skills and taking on new challenges. The continuation of flow by a growth in complexity, was supported by Massimini, Csikszentmihalyi, and Delle Fave (1988).

Csikszentmihalyi (1975b) also suggested that if an individual's ability exceeds the demands of the task then the individual becomes bored, a finding substantiated by Allison and Duncan, (1988), who coined the term anti-flow, to describe tasks that were perceived to be tedious or simplistic. Conversely, if an individual's ability is less than the task demands then the individual will experience anxiety.

The seventh element of flow, transformation of time, encompasses a sense that everything has either speeded up or slowed down. The perception of time is consequently altered. The eighth element, clear goals, states that goals are either clearly set in advance or are developed out of the activity.

The final element, and end result of experiencing these eight elements of 'joy' as Csikszentmihalyi (1990) referred to them, is described as an autotelic experience. This autotelic experience was considered to be an intrinsically rewarding state of mind. Thus flow can be thought of as a form of intrinsic motivation (Deci & Ryan, 1985; Martin & Cutler, 2002). The most dominant characteristic of flow was felt to be the simple joy and happiness involved (McInman & Grove, 1991; Privette & Bundrick, 1987), with people seeking flow primarily because it is fun and pleasurable (Csikszentmihalyi, 1975a).

In summarising a flow experience, people who enjoy what they are doing can enter a state of flow. This might be attained if they concentrate their attention on a limited stimulus field, forget personal problems, lose their sense of time and lose a sense of themselves, feel competent and in control and have a sense of harmony with their

surroundings. To the extent that these elements of flow are present, a person ceases to worry about whether the activity will be productive or whether it will be rewarded (Csikszentmihaly, 1975a; 1975b).

Alternatively, a flow activity is one where flow experiences are possible. Such an activity provides opportunities for action that matches a person's skills, limits the perceptual field, excludes irrelevant data, contains clear goals and adequate means for reaching them, and gives clear and consistent feedback to the individual (Csikszentmihaly, 1975a; 1975b).

The concept of flow has been supported in many different cultures and settings, ranging from life experiences to major life achievements (Csikszentmihalyi & Csikszentmihalyi, 1988). More specifically, flow has been studied with rock climbers (Csikszentmihalyi, 1975b), chess players (Csikszentmihalyi, 1975b), and other peak achievers. It has been a framework in which to study play and leisure activities (Csikszentmihalyi, 1975a), sociological constructs such as alienation (prevailing certainty) and anomie (prevailing uncertainty) (Mitchell, 1988), cross-cultural differences (Massimini, Csikszentmihalyi, & Delle Fave, 1988), women at work (Allison & Duncan, 1988), high versus low achievers among English students (Larson, 1988) and maths students (Nakamura, 1988), ocean cruising (Macbeth, 1988), happiness or subjective well being (Argyle, 1987), actors (Martin & Cutler, 2002) and sport (Jackson, 1992, 1993, 1995, 1996; Jackson & Marsh, 1996). Additionally, flow theory has been applied to the study of individual's who have endured solitary ordeals (Logan, 1988) and to the study of resilience, and how it can be utilised in counselling children (Parr, Montgomery, & DeBell, 1998).

Consistent with Csikszentmihalyi's research, results of studies examining flow states in a variety of contexts, suggest that people consider flow to be an optimal and enjoyable experience (Csikszentmihalyi & LeFervre, 1989; Jackson, 1992, 1996; Scanlan, Stein, & Ravizza, 1989). Further, findings from studies utilising the general concept of flow have also provided consistent support for the nine dimensions identified by Csikszentmihalyi (Jackson, 1992, 1993, 1995; Martin & Cutler, 2002).

Although Csikszentmihalyi was the first to study the area of flow in-depth, Jackson (1992, 1993, 1995, 1996) has investigated the concept of flow in detail over a number of years. She and her colleagues have largely been responsible for examining flow in sport and it's resultant contribution to peak performance (Martin & Cutler, 2002). Jackson (1996) concurred that the flow state is a valued positive experience, and that being able to attain the flow state during sport or exercise participation can elevate an experience to higher levels of enjoyment and achievement. Jackson (1992) conducted the first investigation specifically examining flow states in an elite level athlete population. Ice skaters were asked to describe an optimal experience in their skating that they could describe as the most satisfying personal performance, the one that they would want to remember for the rest of their lives.

Jackson (1992) found respondents to have very clear memories of an optimal experience involving flow. In addition, the ice skaters were able to describe the flow state in general including its antecedents and experiential qualities. While the skaters often had their own terms to describe flow, such as "in the groove, a connection, riding the wave, it clicked" (Jackson, 1992, p.29), it was clear that the optimal experience

involved the concept of flow, that flow was highly valued, and an important contributor to how well they performed.

While all agreed that there was a positive relationship between flow and performing well, flow was not considered necessary to good performance by all the skaters, with over half stating they could still perform well when not in flow. This finding suggested that the concepts of flow and performance were separate entities.

Consistent factors have been found through Jackson's later studies involving a wider range of sports than with her initial study of ice skaters. Confidence or positive mental attitude, the most important factor for skaters, was one of the two most important factors for the other athletes. One other consistent finding has been that when the activity has been perceived as enjoyable athletes described their mental state accordingly (Jackson & Csikszentmihalyi, 1999).

In summary, the dimensions found to be most relevant to an athlete's flow experiences were autotelic experience, action-awareness merging, concentration on the task at hand and paradox of control (Jackson, 1996). While these could be the most critical to how elite athletes experience flow, Jackson states that it must be remembered that flow is a process and that "it is the experiencing of several characteristics together which makes the flow experience so special" (Jackson, 1996, p.10).

Overall, Jackson found that 10 dimensions helped flow, namely, motivation to perform; achieving optimal arousal level before competing; pre-competitive and competitive plans and preparation; optimal physical preparation and readiness; optimal environmental and situational conditions; performance feeling good; focus; confidence and positive attitude; and positive team play and interaction. Additionally, she found a

number of factors that stopped flow from occurring, as well as factors that interrupted the experience of flow.

While Jackson's findings have supported Csikszentmihalyi's descriptors of flow, there have been some differentiators. In Jackson's 1992 study, one item that was not highly endorsed: 'I am not self-conscious', was felt to be as a result of ambiguity surrounding what self-conscious was and meant. In Jackson's 1993 research, the analysis also highlighted notable differences from Csikszentmihalyi's (1990) model.

Whereas Csikszentmihalyi suggested that when in flow movements seem easy and effortless, some athletes were aware of exerting effort during times of flow. According to Jackson (1996) this seems part of the enjoyment of flow. How control is experienced also seemed to differ, with some athletes indicating that worrying about how well they are going to do is part of their preparation for a flow experience. Dimensions of flow not as universally endorsed by athletes were transformation of time and loss of consciousness. Transformation of time was dependent on task requirements. Swimmers for example "stated that they were very aware of the pace clock and used it as a means of obtaining feedback every time they turned the wall" (Jackson, 1996, p.10). Loss of consciousness seemed to encompass a fine line between being self-aware and being self-conscious.

Challenge/skills balance and clear goals were also endorsed less, which according to Jackson (1996) could have been due to these aspects being taken for granted, particularly by an elite population. The uniqueness of the sample was again suggested as the cause of differences in relation to focus. While focus was quoted by Csikszentmihalyi (1990) as "one of the most frequently mentioned dimensions of the

flow experience" (Csikszentmihalyi, 1990, p.58), it did not rate as highly for Jackson's population. According to Jackson (1993) this could have been due to the "eliteness of the sample, which may have meant that focusing was a taken for granted skill" (Jackson, 1993, p.156).

Experience has been suggested as one rationale for the differences obtained. According to Jackson (1993) one individual maintained "you had to have experienced flow before so you knew what it was you were after" (Jackson, 1993, p.158). Consequently, experience allows the elite performer to articulate the flow experience in a more in-depth manner. In summary, experience seemed to have two components, having experienced flow before, and being an experienced person in the activity. This was thought to allow an individual to deal effectively with situations that might prevent or disrupt flow.

Since up to 1996 empirical studies on flow relied mainly on qualitative measures, (Jackson & Marsh, 1996), it may be unsurprising that experience was proffered as one explanation. However, according to Jackson and Marsh (1996), the richness of the flow construct necessitates that measures are inclusive, and incorporate both quantitative and qualitative approaches. Consequently, in an effort to quantify flow, the flow state scale was developed by Jackson & Marsh (1996). This was based upon Csikszentmihalyi's (1990) nine dimensions of flow with each dimension measured by four items.

Russell (2001) in examining the flow state of college athletes using the flow state scale, and qualitative interviews, found that the quantitative results from the flow state scale supported the results from the qualitative interviews. Additionally, it was reported that male and female college athletes across team and individual sport settings generally

reported no differences in the manner in which they experienced flow. Accordingly, findings from this study have extended the validity of the flow state scale, as well as previous flow research, (which has mainly focused upon elite individuals), by indicating that flow can be experienced by less elite athletes, (Russell, 2001).

In addition to Russell (2001), Stein, Kimiecik, Daniels, and Jackson (1995), conducted three studies with non-elite sports people in various sports activities, including tennis, basketball and golf. Martin and Cutler (2002) also examined flow in relation to undergraduate and graduate actors. Although the link between the psychological factors of flow such as goals, competence and confidence was weak, the results of Stein et al.'s (1995) study did show that optimal experience does occur. Most importantly, flow was found to occur in a variety of contexts. Flow was also found to occur in Martin and Cutler's (2002) non-elite acting population. These findings substantiate Csikszentmihalyi's (1990) suggestion that the flow experience can occur in a wide range of people in diverse settings.

Such findings also underlie the idea that there may be individual and/or sport specific differences in how flow is experienced in sport. That type of sport is a factor in whether, or how, flow is experienced, is supported by Kimiecik and Stein (1992). They maintain that the "type of sport cannot be ignored when trying to understand causes of flow" (Kimiecik & Stein, 1992, p.153). Furthermore, the majority of athletes in Jackson's research, (79%), said they thought flow was a controllable state, that is, a state that they could purposefully get into rather than a state that just happened. One statement by a rower emphasises this point "I make it happen. It doesn't happen automatically. I make it happen" (Jackson, 1995, p.158).

Research has additionally indicated that the flow experience "almost always induces an emotional state that is more positive than the humdrum existence of everyday life" (Kimiecik & Stein, 1992, p.146). Consequently, it has been contended that the state of flow is a characteristic that is prized equally highly by a wide range of people. Furthermore, individuals finding such a level of fulfilment in flow experiences are thought to try and recapture the feeling as often as possible (Massimini, Csikszentmiahlyi, & Delle Fave, 1988). It has been maintained that even the mere opportunity to experience flow can motivate individuals to take part in risky activities, for example, climbers taking part in risky expeditions (Delle Fave, Bassi, & Massimini, 2003).

Accordingly, such a commonly held conception that flow stands out perceptibly from an average performance experience, and that individuals seek to repeat it, has led to the view that it remains etched in the person's mind as a goal. This has led to the idea that personally significant experiences are remembered, even years after these experiences occurred. For example, the work of Bloom (1985) with talented people in diverse areas of involvement, demonstrated the usefulness of retrospective interviews when they concern salient experiences in people's lives. Ashcraft (1989) presented evidence for the resilience of autobiographical memory for personally memorable events.

When considering individual and/or sport differences, the above has raised the question of whether level of intensity may also vary among individuals. According to Csikszentmihalyi such variability may exist. While being in 'deep flow' (Csikszentmihalyi, 1975a) might produce such detailed recollections years after an event has occurred, Csikszentmihalyi also suggested that flow might be arranged on a

continuum, ranging from deep flow to micro-flow, with deep flow occurring in activities such as sport, chess and dancing. Micro-flow was said to be prevalent in more everyday activities.

Individual differences

The finding that the intensity of the flow experience may vary, and that there may be individual differences in the capacity of people to attain optimal experiences, has been examined in relation to Csikszentmihalyi's (1990, 1993) theory of the autotelic personality. Csikszentmihalyi's theory suggests that some people may be better psychologically equipped, regardless of the situation, to experience flow.

Research on flow (Csizszentmihalyi & Csikszentmihalyi, 1988), has shown that there are sometimes large differences in the frequency and intensity with which people experience flow, with some people experiencing flow often and others rarely, if at all (Jackson & Csikszentmihalyi, 1999). Various hypotheses have been offered to account for these individual differences. These include differences in how people process information (Hamilton, 1981), with some people better able to concentrate more efficiently. Logan (1988) suggests some people are better able to turn obstacles into challenges and so realise their potential, without being self-conscious. Work in the area of intrinsic motivation (Deci & Ryan, 1985) suggests that those who feel more in control of their own actions are more likely to be intrinsically motivated.

Csikszentmihalyi (1990) stated, that a greater understanding of the autotelic personality is dependent on the ability to assess dispositional factors that may be associated with flow experiences. Although the autotelic personality has not been addressed empirically in sport, Kimiecik and Stein (1992) presented an interactionist

framework that suggested that certain dispositional (e.g. attentional style) and state (e.g. state anxiety) psychological factors interact with various factors in the sport context (e.g. type of sport) to determine whether or not an athlete is likely to experience flow.

In relation to goal orientation (one dispositional factor), Jackson and Roberts (1992) found correlational support for a positive association between task orientation and flow in college athletes. Athletes with a task orientation may be more likely to experience flow than athletes with an ego orientation, due to the fact that task orientation focuses the individual on the task rather than outcomes. These findings support Csikszentmihlayi's (1990) suggestion that when accomplishing the same mental task, people may vary in the number of external cues they need.

Specifically, individuals who rely more on external cues may be more dependent on the external environment. They would have less control over their thoughts, which in turn would make it more difficult for them enjoy the experience. Alternatively, people who need only a few external cues may be more autonomous from the environment. This would allow them to restructure experience more easily, and to achieve optimal experiences more frequently (Csikszentmihalyi, 1990). However, Jackson, Kimiecik, Ford, and Marsh (1998), found no correlation between flow and goal orientation. This suggests that some caution is required regarding the link between flow and goal orientation, and that more research is needed to ascertain whether this link is there or not.

In Jackson, et al.'s (1998) study, the dispositional factors of goal orientation, intrinsic/extrinsic motivation, competitive trait anxiety, and perceived ability were examined. Within this study, trait and state aspects were looked at. Trait/state distinctions were based on the premise that individuals can have both an immediate

emotional state, and a disposition to perceive situations in a particular way. Applying this to the area of flow, it was proposed that flow is a specific psychological state amenable to state based assessments and also that people differ in their propensity to experience flow on a regular basis (Jackson et al., 1998).

Within Jackson et al.'s (1998) study, perceived sport ability, competitive trait anxiety, and an intrinsic motivation were all significantly related. This lent initial support to the proposition that an autotelic personality, or something akin to that concept, could be a factor in explaining individual differences in the propensity to experience flow in sport.

Conditions for flow to occur

Many researchers have investigated the conditions that allow flow to occur (Csikszentmihalyi, 1990; Kimiecik & Stein, 1992; Jackson, 1993). According to Csikszentmihalyi (1990), "while such events may happen spontaneously, it is much more likely that flow will result either from a structured activity, or from an individual's ability to make flow occur, or both" (Csikszentmihalyi, 1990, p.71). According to Kimiecik and Stein (1992) an individual's flow experience "is not caused by an either/or scenario, but almost always by an interaction of the two" (Kimiecik & Stein, 1992, p.149). Consequently, factors that make flow more likely to happen included rules that require the learning of skills, goals, feedback and the possibility of control.

Other researchers, such as Orlick (1998), have supported Csikszentmihalyi's supposition. As Orlick (1998) reports, high levels of excellence in performance require individuals to be clear focussed, clear minded, resilient, and at times immune to distractions, fatigue or pain. He maintained that when an athlete possessed the above

characteristics they were more likely to enter a state of flow. By entering such a state, it allowed the mind and body to work together effortlessly, which in turn enabled the achievement of peak performance (Orlick, 1998).

According to Massimini, Csikszentmihalyi, and Delle Fave (1988) flow starts from the activity itself, concentration, challenges, intrinsic motivation, positive mood, environment, skills, positive feedback, and growth of complexity. However, when looking at the sustainability of the flow experience, three elements were found to be less important, the activity itself, the concentration on the activity and finally challenges. Alternatively, growth in complexity, intrinsic motivation, favourable environment, positive moods and the use of skill were considered more important in relation to sustaining the flow experience. Jackson (1992) reported that the factors that were felt to be important for getting into flow included, positive mental attitude; positive pre-competitive and competitive affect; maintaining appropriate focus; physical readiness; and partner unity (pairs and ice-dancing).

In summary, in relation to the flow experience, while there are clear differences in findings from many of the researchers, it is evident that the researchers are linked by a commonality of factors that they believe are necessary for flow to occur, examples of which include focus, feedback and concentration.

When considering potential flow activities, contrary to expectations, Massimini, Csikszentmihalyi, and Delle Fave (1988) found it was not leisure and mass entertainment that produced the most frequent and intense optimal experiences, it was often everyday work activities, for example reading and studying. This finding as been supported by LeFevre (1988), Csikszentmihalyi, and LeFevre (1989) and Novak, Hoffman, and

Duhachek (2003) who found that flow was more likely to occur in task oriented rather than experiential activities.

Another major source of flow appeared to be sport (Privette & Bundrick, 1987). However, within this, level attained was seen to be crucial. Within the sport environment, Csikszentmihalyi (1975a, 1975b) found beginners do not get a sense of flow. This may have been due to the activity being too demanding and consequently creating too much anxiety. Similarly, it may be a consequence of the beginner having to think more about the activity, or not having spent as much time in the activity. Given this, it is unsurprising that they have not had as many flow experiences. "With more experience, athletes obtain peak moments more frequently" (McInman & Grove, 1991, p.346). Jackson, et al.'s (1998) research provided support for the construct of flow and that high-perceived ability is crucial to facilitating flow states.

According to Csiksezentmihalyi (1975b), the primary condition for flow to occur is the optimal balance between skills and challenge. If the skills of an activity are greater than the challenges of the situation then the results are boredom. Alternatively, if the challenges are greater than the skills then anxiety may occur. Later studies contended that it was insufficient for the skills and challenges to be in balance, but rather that they needed to be at a certain level. Specifically, both dimensions had to be above average or higher (Carli, 1986, cited in Csikszentmihalyi & LeFevre, 1989).

Supporting this contention and in what Csikszentmihalyi called a "conceptual and methodological breakthrough in the measurement of flow" (Csikszentmihalyi & Csikszentmihalyi, 1988, p.260), a modification of the original flow model was proposed. Although the original flow model (Csikszentmihalyi, 1975a) suggested that whenever

challenges and skills were balanced flow would occur, self-report data measuring flow throughout the day (Csikszentmihalyi & Csikszentmihalyi, 1988) did not conform to the theoretical predictions.

Using an approach called the experience sampling method (ESM), data were collected at random times throughout an individual's daily activities. It was suggested from this research that flow experiences only begin when challenges and skills are above a certain level and in balance. Within this research, the personal mean for challenges and skills was used as the operational definition for the starting point above which the experience was thought to start turning positive. Conversely, a balance of challenges and skills at a low level was considered to more likely lead to a state of apathy than flow. Data from ESM studies fit this flow model better than the original flow model.

A critical qualification from the ESM research maintained that in relation to this state of balance, flow was not dependent on the objective nature of the challenges present, or on the objective level of skills, but rather on the individual's perception. Csikszentmihalyi (1975a) states that whether an individual is in flow or not "depends entirely on one's perception of what the challenges and skills are" (Csikszentmihalyi, 1975a, p.50).

Csikszentmihalyi (1990) states that "it is not easy to transform ordinary experience into flow, but almost everyone can improve his or her ability to do so" (Csikszentmihalyi, 1990, p.83). Within seconds, a person experiencing the same objective situation might move from being bored, to being anxious, to being in a state of flow. It all depends on the perception of a situation – what a situation means to a person at a particular time. Concurring with this view, Jackson suggests that an "individual's

ability to restructure consciousness so as to make flow possible" (Jackson, 1995, p139) affects whether flow is attainable or not.

The autotelic personality, while thought to allow some individuals to experience flow more frequently, has also been highlighted as a means to return to flow if it has been interrupted. Given the perceived balance between skills and situation, it is thought possible to return to a flow state by either increasing skills or decreasing challenges. Increasing skills, while being more difficult, allows for more opportunities and a higher level of capabilities. Csikszentmihalyi (1990) describes four rules for developing an autotelic self, derived directly from the flow model.

These rules are: 1) Setting goals and having clear goals to strive for. A difference between a person with an autotelic self and one without, is that an individual with the former knows that it is he or she who has chosen whatever goal he or she is pursuing. 2) Becoming immersed in the activity. A person with an autotelic personality grows deeply involved with what she or he is doing. This is enhanced by the ability to concentrate. However, it also entails balancing the opportunities for action with the skills the individual has. 3) Paying attention to what happens. Having an autotelic self implies the ability to sustain involvement. 4) Learning to enjoy immediate experience. This ability flows from the autotelic-self learning to set goals, to develop skills, to be sensitive to feedback, to know how to concentrate and be involved in an activity. Csikszentmihalyi (1990) points out that learning to enjoy immediate experience is not the result of a laissez-faire attitude to life. To transform an activity into flow requires the development of skills to stretch potential.

This research

As has been previously mentioned, Privette's (1984) peak experience questionnaire will be utilised within this research, since it has been extensively used in examining the areas of peak experience, peak performance, failure and flow.

According to Privette (1983), flow does not imply optimal joy or performance but may include either or both; a finding supported by Jackson (1993). Privette and Bundrick (1987) characterise flow from peak experience and peak performance by play, involvement with other people, outer structure, intention, absorption and need for closure. Within flow and peak performance, the level of activity is thought to be a central feature, with an individual actively taking part in the process. In contrast, peak experience is thought to be more passive or perceptual, and might not involve behaviour at all.

Basing their concept of flow on Csikszentmihalyi's writings, Privette and Bundrick (1987) incorporated the nine areas of merging of action and awareness; centering of attention on a limited stimulus field; loss of self-consciousness; sense of being in control of one's actions and the environment, or the paradox of control as Csikszentmihalyi (1990) described it. They also included a demand for action with unambiguous feedback to the person; challenging activity that requires skills; transformation of time; clear goals and an autotelic experience.

Within their research, Privette and Bundrick (1991) found several items and factors that were predicted to be important for flow were not strongly endorsed. This was attributed to their operational definition of flow. However, the quantitative questions consistently elicited the distinguishing factors found in flow.

"If we know four things about a person – his or her age and three personality traits (Neuroticism, Extraversion, Openness to Experience)- we can predict to a modest degree the kinds of events that will subsequently happen to him or her" (Heady & Wearing, 1989, p.735).

Chapter 3d

Life Experiences

All individuals may or do experience significant and, or stressful life experiences or events, for example, marriage, birth, and redundancy, which have the propensity to have short or long term effects on behaviour and well-being. The level of adjustment or adaptation required as a consequence of the event is thought to determine the amount of affect experienced. Additionally, the perception an individual has of the actual event and its level of appeal, its subsequent impact may be perceived differently, (Bhagat, 1983; Sharpley, Tanti, Stone, & Lothian, 2004).

Response-based theory

Selye (1956) pioneered the concept of a relationship between life events and health. He maintained that significant life events causing any unusual levels of arousal might become precursors of anxiety, depression and physical ill health. The onset of the illness was thought to be a direct result of the arousal itself and the psycho-physiological consequences of that arousal (Selye, 1956). This approach highlighted Selye's primary interest in the physiological response and the development of illness, rather than in the stressor itself (Schwarzer & Schulz, 2002). This 'response-based' perspective of stress

has been reported to have some good qualities (Schwarzer & Schulz, 2002), in addition to having generated significant amounts of research.

However, with consideration of the findings surrounding individuality, it was thought that the neglect of emotions and cognitions was detrimental. Within this view, how an individual interprets the situation was thought to be the critical element in determining whether an event was stressful (Sarason, Johnson, & Siegel, 1978; Schwarzer & Schulz, 2002). Consequently, since different individuals may have different perceptions of the same event, it has been suggested that there is a need for the study of the experience from the individual's point of view (Cox, 1980; Lazarus, 1980; Lazarus & Launier, 1978).

Stimulus-based theory

Highlighting the concepts of change and readjustment, Holmes and Rahe (1967) demonstrated that a cluster of social events requiring "change in on-going life adjustment, is significantly associated with the time of illness onset" (Holmes & Rahe, 1967, p.213). Kobasa (1979), determined a life event "as stressful if it causes changes in, and requires readjustment of, an average person's normal routine" (Kobasa, 1979, p.2).

According to Kobasa (1979), inherent within these approaches, is the view that a consensus exists surrounding the degree to which specific life events involve change and require an adjustment, and that this consensus can be empirically shown. Holmes and Masuda (1974), and Holmes and Rahe (1967) accepted that empirically it could be shown, determining universal stressfulness weights or ratings for the life events obtained.

In contrast to Seley's response-based perspective, (one approach to stress research), this stimulus-based perspective, (a second approach to stress research),

focussed more attention on the particular characteristics of the event (stressor). Within this approach, it is proposed that each event has unique stresses, and that the coping resources of an individual are specifically challenged by these stresses. As a result of such challenges, a stress response is triggered. However, it has also been reported that the use of particular weights for events neglects individuality (Sarason, Johnson, & Siegel, 1978; Schwarzer & Schulz, 2002).

While the 'reactivity' hypothesis (Selye, 1956) has resulted in various life event scales being developed and designed, to determine and assess the occurrence of specific events, the ratings consensus research of Holmes and Rahe (1967) culminated in the development of the Schedule of Recent Life Events (SRE, Holmes & Rahe, 1967). Based upon the SRE, the associated Social Readjustment Rating Scale (SRRS, Holmes & Rahe, 1967) is thought to be one of the most widely used scales (Scully, Tosi, & Banning, 2000) in stress and life event research. This measure also gives consensual weights for events (e.g. on a scale from 1 to 100, where divorce for example, gets a mean score of 73, and pregnancy a value of 40). While the SRRS has received a substantial level of criticism (Schroeder & Costa, 1984; Taylor, 1991), Scully, et al. (2000) in their in-depth review of the SRRS concluded their overall support for the use of the SRRS to predict stress related outcomes. However, Scully et al. also advise "systematic item analysis on both sides of the equation may be advisable for future research using the SRRS to assess stress-related outcomes" (Scully et al., p.875).

The individual, life events, resources, and stress

Generally, it has been proposed (Dise-Lewis, 1988), that typical stress models are underlined by two basic assumptions: that the accumulation of life events produces stress,

and that events requiring greater amounts of psychological change or readjustment on the part of the individual produce greater amounts of stress. Overall, within the models, a relationship between demands and capabilities is described where stress is explained as an imbalance between an individual's perceptions of the demands (life events), and perceptions of the capabilities (resources) available to meet those demands. According to Dise-Lewis (1988) "the authors make it clear that the subject's perceptions of stress events and of his/her available coping abilities are the crucial determinants in the stress situation" (Dise-Lewis, 1988, p.485).

Within more recent models of life stress the concept of individuality has also been highlighted. Inherent in this view is the conceptualisation that there is an interaction between the person and the stressful life event(s) (Bhagat, 1983).

Supporting the proposition of a relationship between the individual, life events, resources, and stress, Bhagat (1983) suggests "personal life stress is the individual's cognitive response to dynamic environmental events" (Bhagat, 1983, p.662). Specifically, the individual or 'stressee' may perceive that a complex situation, or a series of situations, presents a number of options that may ultimately impact emotional and physical well-being. In particular, an individual could interpret the situation or situations in the following ways: as presenting a demand, a constraint or an opportunity (McGrath, 1976, Schuler, 1980). Consequently, Bhagat, like Sarason, Johnson, and Siegel, (1978), Schwarzer and Schulz, (2002), and Gall and Evans (1987), highlights the concept of individual interpretation. According to Gall and Evans, "it was the individual's perception of the life event and not the event itself that had important implications" (Gall

& Evans, 1987, p.544). For any event to have stressful implications for an individual, it must, therefore, be accurately perceived and interpreted as stressful by the 'stressee'.

Cognitive-transactional theory

Encapsulating many aspects of stress research, such as individual interpretation, demands/resources, cognitive aspects, the individual, and the environment, the cognitive-transactional theory is a third approach to stress research (Lazarus, 1966; 1991). Within this theory, stress is defined as a particular relationship between the person and the environment. For example, the individual may assess the situation as being demanding or exceeding their resources, and consequently jeopardising to their well-being. Inherent in the cognitive-transactional theory, stress is described by Lazarus (1991) as an active, ongoing process incorporating causal antecedents (person/environmental variables), mediating processes and effects (coping and appraisal of the demands and available resources).

Lazarus, (1966, 1991) and Lazarus, Averill, and Opton, (1974), emphasised the mediating role of cognitive appraisal in the experience of stressful life events. Cognitive appraisal was determined to be a filtering process that differentiated among the stressful events along several important dimensions. This differentiation was thought to be relevant to an individual's capacity for coping and adaptation. Following Lazarus et al.'s (1974) theory, there were three aspects of the appraisal process identified. The first aspect termed primary or demand appraisal, assessed the importance of a situation or event for an individual's well-being. This was achieved by judging whether the outcomes would be harmful, challenging or threatening.

Depending on the judgment made, it was proposed that each type would be related to its own coping behaviour and emotional reaction (Lazarus & Launier, 1978); a supposition supported by McCrae (1984). The suggestion that personal life stress leads to an emotional reaction has also been supported in stress related research, where three kinds of emotional outcomes for the person: emotional/affective (Kobasa, 1979); cognitive (Korman & Lang, 1978, cited in Bhagat, 1983); and behavioural (Masuda & Holmes, 1978) have been identified.

The secondary or resource appraisal phase assessed an individual's ability to cope with the situation. The individual evaluates his or her competence, social support, and resources that can help them to readapt, and to re-establish balance between themselves and the environment. Lazarus et al. (1974) suggest that "primary and secondary appraisal interpenetrate each other, and the distinction is mainly designed to point to the sorts of cues or information on which the subsequent coping activity and the type of emotion depend" (Lazarus et al. 1974, p.260).

Concurring with this view, Bhagat's (1983) conceptual model outlines how the coping and adaptation skills of the person, (in addition to career stage), moderate the causal impact of stressful life events. This level of impact would then determine the emotional outcomes chosen and displayed. However, these moderators were also influenced themselves by the factors of social and emotional support and organisational control. Emphasising control, Folkman and Lazarus (1985) found that if participants reported feelings of control over an examination, they also assessed the situation as a challenge rather than a threat. Reappraisal, the third and final phase of the cognitive

appraisal process represented a reassessment of the original level of importance given to an event, and its subsequent judgement.

Supporting the significance of cognitive appraisal, Gall and Evans (1987) stated that this approach was more important than the frequency of life events, and/or the types of coping behaviour being used. However, while Gall and Evans held this view, Sharpley et al. (2004) reported findings supporting the concept of a relationship between life events and health as being based upon the frequency of events. Additionally, in relation to the type of coping behaviour used, Lazarus (1993), and Scheier, Weintraub, and Carver (1986) noted that individuals may typically, but not exclusively, favour certain strategies.

Endorsing the view that different variables may have an impact, Aldwin, Sutton, and Lachman, (1996), concur that characteristics of the event such as intensity, duration, predictability, and controllability have some bearing on the way an event is cognitively appraised by individuals. However, they also maintain that personality, social networks and coping resources or vulnerabilities have been seen to have an impact (Aldwin, Sutton, & Lachman, 1996).

Positive or negative events

Extending the research on the links between life events, individual interpretation and the resultant impact on health, Sarason, Johnson, and Siegel (1978) proposed that the assessment of the perceived desirability and consequent impact of various life events, was crucial to gaining a better understanding of the link between these events and ill-health. As a result, Sarason et al. (1978) developed the Life Experiences Survey (LES). This instrument has demonstrated that high negative events scores are associated with

depression, burnout, and anxiety, whereas positive events scores are correlated with a positive outlook on life, relatively low psychological distress and resistance to burnout.

Sharpley et al.'s (2004) findings, that some apparently negative events were experienced as positive and vice versa, have lent some support for Sarason et al.'s contention that individual assessment of desirability and impact were important inclusions in scales of life events. However, Sharpley et al. suggest a particular flaw with this instrument concerned the scales. Specifically, they contend that all the scales were written to include items that were judged as relevant to the USA. Alternatively, Sharpley et al. maintain that the choice of life events in any investigation should be taken from a cultural perspective.

Confirming the links between event desirability and health, Gunnoe, Horodyski, Tennant, and Murphey (2001) found that total and negative life events significantly affected injury status and the possibility of sustaining multiple injuries. These findings support Petrie (1992), and Smith, Smoll, and Ptacek (1990). Petrie (1992) found that football players who were shown to have low social support, demonstrated that life stress was positively related to number of severe injuries, injury time loss and number of games missed. Smith et al. (1990) found athletes who differed in level of social support and coping skills within negative life events accounted for nearly 30% of the injury time.

Taking this research to the ballet domain, Patterson, Smith, Everett, and Ptacek (1998) found that life stress and social support may be important factors in dancers' physical well-being. Specifically, a combination of high life stress and low social support may place dancers at increased risk for subsequent injury. Additionally, positive events were not predictive of subsequent injuries whereas total negative events and minor

negative events were. Correlations between negative events and injuries were substantially larger than those found in prospective studies involving athletes.

Further insights provided by life event and health research, have also indicated that it is not only the occurrence of an event that can impact on health, but also when the event occurs, and whether individuals are subjected to intrusive thoughts. Scully et al. (2000) found events occurring more recently (i.e. life events reported to have occurred over the last 12 months), are more strongly associated with symptom scores than events accumulated over a lifetime. This finding is also reflected in other studies that have found that 'most recent' stressors have the greatest impact (Bebbington & MacCarthy, 1993). Tennant (2002) also proposes "most studies show that the effect of stressors (especially acute stressors) dissipates with time" (Tennant, 2002, p.175). With respect to intrusive thoughts, while there is limited research, Goodhart, (1985), Ingram, (1984), and Sarason, Potter, and Sarason, (1986) have indicated that stressful and traumatic life events are often followed by intrusive thoughts about these events.

Personality and life events

Since Selye's time, the concept of stressful life events and the effects of life stress on health have been the focus of a plethora of studies (Dise-Lewis, 1988; Gunderson & Rahe, 1974; Paykel, 1974; Rahe, 1974). Regardless of the inventory used, a consistent relationship between stress and health outcomes has been noted (Turner & Wheaton, 1997). However, while a wealth of evidence shows relationships between life event stressors and psychological and physiological symptoms, such as depressive episodes and a deleterious effect on academic performance (Dohrenwend & Dohrenwend, 1974;

Holmes & Masuda, 1974; Kessler, 1997; Tennant, 2002), exceptions have also been found (Schroeder & Costa, 1984).

In contrast to many studies, Kobasa (1979) was concerned with how highly stressed subjects who remain healthy, differ from those who show illness along with high stress. According to Kobasa (1979), mediators of the stress and illness connection probably included physiological predisposition, early childhood experiences and social resources, as well as personality. These in turn were thought to be responsible for what Selye (1956) described as an individual's unique way of approaching stressful life events. Kobasa maintained that individuals, who do not fall ill when experiencing high degrees of stress, have a personality structure different from people who became sick under stress. This personality difference was labelled as hardiness.

Hardy persons are considered to possess three general characteristics: the belief that they can control or influence the events of their experience; an ability to feel deeply involved in or committed to the activities of their lives, and the anticipation of change as an exciting challenge to further development. This supposition was supported in her 1979 study.

Elder and Clipp (1989), and Beasley, Thompson, and Davidson, (2003), provide some support for Kobasa's theory. Elder and Clipp, in their study with combat veterans, suggested the possibility that stressors that cause early psychological impairment, can over the long term enhance psychological resilience. They contended that combatants identified with more (expressed) stress symptoms, in response to any combat stressor, are more emotionally resilient individuals in the longer term.

Cognitive hardiness, aspects of coping style and negative life events have also been seen to impact on measures of psychological and somatic distress. Beasley, Thompson, and Davidson (2003), report that in a number of instances there was support for a buffering model, in which cognitive hardiness moderated the effects of emotional coping or adverse life events on psychological distress.

The relationship between personality and life events is sufficiently strong that some researchers have suggested that personality may, to some extent, be the cause of life events (Poulton & Andrews, 1992). In some studies, life stressors and personality variables had independent effects (with no interaction between them) (Gillis & Lanning, 1989; Turner & Noh 1988). Alternatively, other studies have shown some synergy between life events and personality, including such variables as sense of humour (Nezu & Blisset, 1988), self-esteem (Hall, Kotch, Browne, & Rayens, 1996), and perceived competence (Tram & Cole, 2000). As a result, it has been suggested, that the mediating effects of personality characteristics, (like cognitive appraisal), lessen the effects of stressful life events in the generation of personal life stress (Johnson & Sarason, 1979; Kobasa, 1979).

While it is said that certain life events can be predicted by personality traits (Heady & Wearing, 1989), less has been reported about how life experiences may affect personality traits (Vaidya, Gray, Haig, & Watson 2002). Consistent with previous research, Vaidya, et al. (2002) indicated that personality traits predict subsequent positive and negative life events. Additionally, Vaidya, et al. (2002), found that trait affect scores were sensitive to the impact of life events. For example, respondents who experienced a

relatively high number of positive life events showed elevated levels of positive affectivity and lower levels of negative affectivity.

Major versus minor events

In addition to investigations of whether events were positive or negative in nature, the magnitude of event (major life events versus minor events (chronic, everyday stressors)) has also been subject to examination. Previous research suggests that daily hassles in addition to major life events, result in increased levels of daily stress, and that daily stress is more strongly associated with psychological symptoms than major events (Daniels & Moos, 1990; Dubois, Felner, Brand, Adam, & Evans, 1992; Zautra, Reich, & Guarnaccia, 1990).

Further, Rowlinson and Felner (1988) found effects being attributed to daily hassles much more than major life events. Rowlinson and Felner consequently suggested "daily hassles and major life events represent conceptually distinct sources of life stress, each of which can make an independent contribution to the individual's overall level of functioning" (Rowlinson & Felner, 1988, p.441). Although Colton (1985) found that major life events were rated as more stressful than daily hassles, interpersonal hassles were given as the primary explanation for stress ratings rather than major life events. Similarly, although major positive life events were known to impact on stress and other outcomes (Brown & McGill, 1989), it was minor positive life events that were seen to have a greater impact on individuals (Clark & Watson, 1988; DeLongis, Coyne, Dakof, Folkman, & Lazarus, 1982; Lewisohn & Graf, (1973).

DeLongis, et al. (1982), investigated the effectiveness of hassles (irritating, distressing demands, everyday transactions, undesirable events), uplifts (positive

experiences, desirable events) and major life events in predicting concurrent and subsequent somatic symptoms. Like DeLongis et al.'s 'hassle variable', Jandorf, Deblinger, Neale, and Stone (1986), examined the undesirable daily event variable, finding the variable was a more significant factor than major life events. Similar to Delongis et al.'s uplift measure, Jandorf et al. reported that desirable daily events did not contribute significantly to the prediction of symptomatic days. Additionally, Jandorf et al. concur that somatic health is not likely to be affected by single events, but rather depends on a stable pattern of stress. Minor stressors, however, do not necessarily occur independently of major life events, with some researchers maintaining that minor stressors act as an 'important route of transmission' in explaining the effects of major events (Zautra, Reich, & Guarnaccia, 1990).

While frequency (Wagner, Compass, & Howell, 1988) or duration (Elliot & Eisdorfer, 1982), have served as classifications of major and minor events, Pillow, Zautra, and Sandler (1996) based their classification on the impact of the event alone. This was formed on the premise that major life events casue a disruption that in turn creates a 'ripple effect'. Consistent with recent theory and evidence, (Russell & Cutrona, 1991; Wagner et al. 1988), Pillow, Zautra, and Sandler (1996) revealed a mediating effect by minor stressors.

In investigating the interrelationships among life events, global self-concept and dimensions of positive subjective well-being, McCullough, Huebner, and Laughlin, (2000) reported findings of life events being related significantly to positive well-being. Additionally, life events were found to be more central to well-being than global self-concept. For life satisfaction reports, positive daily events appeared to be the most crucial

unique contributor. Alternatively, negative daily events appeared to be the most crucial unique contributor to reports of positive and negative affect. Similar to previous research, daily events contributed over and above major life events.

Cassidy (2000), concurring with Kobasa, maintained that taking a preventative approach and investigating the relationship between stress and healthiness in general, was the next step. Similar to the argument concerning the relative importance of daily hassles versus major life events, Cassidy (2000) stated that major events occur infrequently in the individual, whereas general day-to-day events are a (potential) chronic source of distress.

Like Lazarus and Bhagat, Cassidy proposed that an individual's propensity to experience stress might be better understood in terms of differences in cognition. Cassidy (1994) suggests seven major factors of cognitive style and coping, can explain the person aspect of the stress process. These are attribution style, problem solving style, achievement motivation, perceived control, hopelessness, emotional reactivity and perceived social support. Cassidy (2000) also attempted to relate external factors of life events and daily hassles. The significant correlational findings between daily hassles, stress of life events and perceived stress supported previous findings. Additionally, based on the findings that the more events experienced lead to a lower level of stress, Cassidy suggested that there may be empirical support for the learning effect of major life events. This raised the view that as a learning experience, major life events in terms of number may contribute to stress resistance.

In a similar vein to Kobasa (1979) and Cassidy (2000), Langston (1994) contends that "the bulk of attention in both psychological research and lay thought seemed to be given to how to avoid and cope with the ills that befall us" (Langston, 1994, p.1112),

rather than giving attention to positive experiences. According to Langston (1993), positive events can tell us where our skills and talents lie, who among our acquaintances may become our friends and how we should evaluate ourselves.

Langston (1994) contends however, that for positive events capitalisation is a better term. This terminology was proposed since positive events were seen to be opportunities on which to capitalise, rather than problems to be overcome. According to Langston (1994), however, many questions remain to be asked about the capitalising phenomenon, including how much the effects are mediated by memory.

Life event, recall, and subjective well being

Examining such a phenomenon as memory has occurred in subjective well-being studies. Several studies have used a life-event recall measure to assess long term subjective well-being (SWB) (Diener, Sandvik, Pavot, & Gallagher, 1991; Pavot, Diener, Colvin, & Sandvik, 1991), where it was found that SWB correlated with the number of positive minus negative events recalled. This, according to Seidlitz and Diener (1993), suggested an interesting theory about the memory differences between happy and unhappy persons. Happy individuals may recall more positive events and fewer negative ones, simply because of the frequency with which they experience these events.

Seidlitz and Diener (1993) reported individual differences in the occurrence of positive versus negative events, and in the interpretation of events. Substantiating this view, Shimizu & Pelham, (2004) revealed an association of positive life events with better health in the case of persons with high self-esteem while the reverse was found for persons with low self-esteem.

When examining the links between life events and SWB, numerous studies have shown that the successful pursuit of personal goals plays an important role in maintaining, and increasing psychological well-being (Brunstein, 1993; Emmons, 1986, 1992). During the process of attaining the goal, life events may be used as cues of progression, (Carver & Scheier, 1990a). Consequently, positive events are interpreted as moving forward with SWB increasing. Alternatively, negative events may be seen as a negative outcome, and as a result, SWB decreases.

Heady, Holmstrom, and Wearing (1984), also found that positive life events (modestly) predicted increases in SWB, and that negative events (modestly) predicted decreases in SWB. Like recency of events (Scully et al., 2000; Tenant, 2002), the influence of life events on subjective well-being has been seen to be short lived in adulthood (Heady & Wearing, 1989; Suh, Diener, & Fujita, 1996) even for major events such as winning the lottery (Brickman, Coates, & Janoff-Bulman, 1978). Further, Diener, Sandvik, Pavot, and Fujita (1992) suggest that life event changes do not have a large influence on SWB over long periods of time. Suh et al. (1996) concurred, contending that the effects of life events on SWB was likely to be short term, while personality is likely to have long term effects. More specifically, Suh et al. (1996) reported that the impact of most life events on SWB diminishes in less than 3 months. Lu (1999), incorporating personality and life event models of SWB, revealed significant correlations between personality traits and SWB. In accounting for the change in SWB, positive life events and social support were cited.

In summary, several studies have reported that favourable events can enhance SWB (Block & Zautra, 1981; Heady, Holmstrom, & Wearing, 1984), or possibly buffer

the impact of adverse life events (Cohen, Burt, & Bjorck, 1987). However, Heady and Wearing (1989) proposed a dynamic equilibrium model that stipulated that each person has a normal pattern of life events and a normal level of SWB, both of which are predictable on the bases of stable personality characteristics. They theorised that if the normal pattern of events is maintained, no change in SWB occurs. Alternatively, if there were any deviations from normal events, changes to the normal level of SWB followed. Since stable personality traits were deemed to be a crucial element to the dynamic equilibrium model, it was proposed that a person is likely to revert to their normal levels. Consequently, the change was said to be (usually) temporary,

Finally, on examination of life event research in totality, while the literature demonstrates differing perspectives, scholars are united in their assertion of the importance of stressful life events, their resultant impact upon health, and the role of individuality. This has been emphasised by Schwarzer and Schulz (2002) who highlight that such experiences can, to a large extent, shape individual biographies and affect mental and physical health.

"Success is the ability to go from one failure to another with no loss of enthusiasm" (Winston Churchill 1874-1965).

Chapter 3e

Failure

Regardless of the environment (sport, art, corporate or social), the concepts of success and failure feature prominently. Moreover, common conceptions that without failure lasting success is unattainable, that success and failure are the opposing sides of the same coin, and that failure is considered the opportunity for learning to take place (Nelms, 1992; Pell, 1991), has resulted in the inextricable linking of success and failure. However, while it has been suggested that there cannot be failure without success and vice versa, with failure crucial for success and success crucial for failure, (Nelms, 1992); perceptions of failure have been reported as being an independent concept (Conroy, Poczwardowski, & Henschen, 2001).

According to Weiner (1986), when faced with a situation that can result in success or failure, an individual begins with all of their prior knowledge and experiences, including past performances, attributions and emotions. Weiner termed these causal antecedents. Upon experiencing the outcome, (success or failure), Weiner proposed that the individual was then motivated to answer why that outcome was achieved, and, more specifically, on what basis it was achieved. Depending on the answer, and the attributions given for success and failure, (which could include beliefs about effort and ability, confidence and expectancies of performance), particular emotional reactions

would occur. These reactions were said to not only be related to that particular situation and outcome, but would also predict the individual's behaviour the next time they were faced with an achievement situation. Consequently, the process was seen to be circular, with emotional reactions and behaviours feeding back into the causal antecedents.

Personal failure has been seen to be a significant event for the self (Brown, Dutton, & Cook, 2001). Emphasizing the importance of emotional reactions, Ben-Ze'ev (2000), Keltner and Buswell (1997), Tangney, Miller, Flicker, Barlow (1996), and Tangney, Wagner, Hill-Barlow, Marshall, and Gramzow (1996) conclude that experiences not only foster and elicit emotions, but strong emotions. Since emotions have been considered to be important determinants of behaviour in general (Weiner, 1985, 1986, 1995), the concept of individuality has been highlighted, suggesting, that different individuals may experience different emotions in failure situations. In turn, it has been conjectured that this might lead to different explanations of the same situation, in addition to affecting an individual's choice as to how current and future failure situations might be approached (Lazarus, 1991).

In summary, accepting Weiner's (1986) model, individuals enter a situation with past experiences, and as a result of the outcome the individual makes attributions as to why that outcome occurred. Additionally, acknowledging that emotions, expectancies and approaches for future situations consequently ensue, the remainder of the chapter is organised as follows: the types of attributions individuals make, the resulting emotions and expectancies, and strategies individuals may employ when faced with future achievement situations.

Attribution theory

Weiner (1979, 1983, 1985, 1986, 1995) is considered to be the scholar who has popularized this area, however, Heider (1958) is acknowledged to be the originator of attribution theory. Heider (1958), writing on the various factors to which people can attribute their performance, suggested that performance can be attributed to the person or the situation, and that either of these causes can be stable or unstable. Weiner, Frieze, Kukla, Reed, Rest, and Rosenbaum (1971), extended the theory by reporting that achievement behaviour could be reliably predicted by an individual's affective reactions, and that these result from their reasoning about the causes of their success and failure.

Weiner (1986) asked individuals to generate reasons or attributions for hypothetical success and failure experiences. Within an achievement domain, a relatively small number of causes were found to be relevant. The most dominant causes were found to be ability and effort. Specifically, high ability and hard work were said to be the keys of success, whereas low ability and the absence of trying were the main aspects of failure.

He also noted two further general categories: ease or difficulty of the task, and luck or other external reasons. These categories in turn were said to vary on three different dimensions: locus (internal or external), controllability and stability. For example, individuals attributing success or failure to effort imply the outcome was due to an internal, controllable, and unstable cause. Alternatively, the ascription of ability is seen as internal, uncontrollable and stable. Task difficulty was said to be external, controllable and stable, and, finally, luck was considered to be external, uncontrollable and unstable (Weiner, 1986).

Questioning the universality of Weiner's characterizations of ability and effort, some theorists suggested that not all people see ability as uncontrollable and stable. According to Nicholls (1984) and Dweck and Elliot (1983), for example, many individuals believe that ability has a component that can be influenced. Weiner (1983, 1985), embracing this view, recently revised the four categories scenario, suggesting it is too simplistic, "it is now realised that there are many shortcomings of this classification" (Weiner, 1985, p.5). Weiner, further clarifying this thinking, reported that ability may be perceived as unstable if learning is possible. Effort was also seen to be changeable with tasks being able to be made more or less difficult. Luck, while previously thought of as external and unstable may be thought of as a property of a person (lucky or unlucky), and consequently external and stable. While Weiner accordingly proposed the less ambiguous terms of aptitude, temporary exertion, objective task characteristics and chance (Weiner, 1983), attribution theory in its current form seems well entrenched, accepted, and applied in present day research.

Gender and attributions.

In investigating perceptions of causality and gender, evidence dictates significant differences, with women showing more of a propensity to 'explain away their success', and accept more personal responsibility for failure. Rosenthal (1995), reported that women managers tended to de-emphasise ability more than men, attributing their achievement of success less to their ability and more to hard work, and conversely, their failures more to lack of ability. Women (unlike men) were also more generous with their subordinates, attributing success more to their subordinates' ability than to themselves or their ability (Rosenthal, 1995).

Rosenthal conjectured that reality may be the rationale as to why women managers emphasise effort as the cause of their success. This reality was a manifestation of a woman's realization of the obstacles and challenges that confront them. Rosenthal speculates that women, accepting that they face discrimination and stereotyping, feel that they have to apply more effort, even when unnecessary, in order to achieve targets. Overall, it may be supposed that women, rather than getting complacent when facing success, expend more energy and effort, thereby ensuring their continued success.

Concurring with Rosenthal that gender differences do exist, Feather (1969), Feather and Simon (1973) and Bar-Tal and Frieze (1977), all reported that females attributed success more to external rather than internal factors. An alternative view, however, has been put forward by Hansen and O'Leary (1985) who stated that women may simply be more intrinsically motivated than men.

Emotions and expectancies

Emotional reactions are determined by the attribution of an explanation (such as ability or effort) to a particular outcome (such as success or failure), (Weiner, 1985). For example, feeling competent may result from ascribing success to ability. Alternatively, feeling incompetent may arise from determining a cause of inability. Additionally, the level of self-responsibility may impact emotional reactions. If, as the result of a difficult task failure ensues, self-responsibility is likely to be low due to a lower negative emotional reaction (Weiner, 1985).

However, Weiner, Russell, and Lerman (1978) and Deboer (1985) reported conflicting results. Concurring that attributions may guide emotional reactions, Weiner, Russell, and Lerman (1978) and Deboer (1985) investigating failure, luck and the

resultant emotional reaction reported increased negative emotions. It was speculated that while luck may be determined an unstable factor, and consequently should have less personal responsibility, it may be distressing to think that fate was the reason an outcome was attained.

According to Tangney and Dearing (2002), in failure situations, emotions serve the purpose of deflecting threat from the self. In particular, the emotions of shame, guilt and fear are often associated with, and have been investigated with the experience of failure (Cummings & Anton, 1990; Poulson, 2000; Wicker, Payne, & Morgan, 1983). Each of these emotions has been found to have a different impact on the way an individual explains the failure.

Shame is reported to be a strong negative experience leading to lowered self-esteem. Highlighting the extensive effects of shame, McGregor and Elliot (2005), demonstrated a link between fear of failure, shame, and the whole self. They demonstrated that individuals high in fear of failure were more likely to generalize a specific failure experience to the self as a whole, than those low in fear of failure. Additionally, if individuals believe that others become aware of the failure or that the failure becomes public, it has been reported that the impact of shame is strongly affected (Smith, Webster, Parrott, & Eyre, 2002 ; Tangney & Dearing, 2002). Guilt has been reported as being less sensitive to publicity (Smith, et al. 2002).

Shame has also been linked with avoidance and withdrawal tendencies, with an individual trying to get away from or avoid the context in which the shame happened (Mascolo & Fischer, 1995). Falling short of standards ((Lewis & Haviland-Jones, 1971); attributing failure to lack of ability (Weiner, 1986); and jeopardizing attachments to

significant others (Barrett, 1995) have all been identified as contexts in which the emotional reaction of shame has been said to occur.

The central tenet of guilt rests on personal responsibility (Izard, 1977; Wicker, Payne, & Morgan, 1983). Weiner (1985) conjectured that guilt was linked to controllable causes. Individuals were said to experience guilt due to having (or believing that they had) some control over the outcome, but rather than doing something the individuals choose not to, or attribute the failure to lack of effort. Alternatively, shame was reported to be linked to uncontrollable causes with failure being attributed to lack of ability (Covington & Omelich, 1984).

Within an organisational setting, Tangney and Dearing (2002) and Velayutham and Perera (2004) revealed relationships between shame, guilt and fear. In failure situations where guilt is the emotional reaction, individuals were seen to be more likely to disclose information. Tangney and Dearing (2002) speculated that individuals took this approach so that they could make amends, restore relationships, and learn. Conversely, shame has been thought to result in the withholding of information (Velayutham & Perera, 2004). Emphasising these points, McGregor and Elliot's (2005) findings indicate guilt was associated with explanations. Alternatively, shame was thought to lead to fear of failure, global self-devaluation and avoidance processes (McGregor & Elliot, 2005). Concurring with Tangney and Dearing, (2002) and McGregor and Elliot, (2005) when considering the role of an individual's emotional reaction in the way that they explain failure, Harreli, Shomrat, and Biger (2005) found that guilt resulted in accurate explanations, increased responsibility and approaches helping to maintain good

relationships. Given these fundamental differences in focus and outcome, McGregor and Elliot (2005) further contend that shame and guilt should be looked at independently.

Fear, as an emotion is thought to likely arise when an individual sees a situation as involving a threat to the self (Lazarus, 1991). Flame (1993) also reported the probability that when the level of fear is increased, it can become the dominant emotional experience of the individual (Flame, 1993). Accordingly, within an organizational setting, Harreli, Shomrat, and Biger (2005) contend that fear may overshadow the impact of guilt and shame on an individual's choice of how to explain a failure within an organisation. Consequently, a threatening atmosphere or culture may negate at least some of the beneficial effects of guilt (Hareli, Shomrat, & Biger, 2005).

Failure and context

While the importance of emotions has been established, Conroy, Poczwardowski, and Henschen (2001) proposed that context is a significant factor in determining how the emotional reactions are displayed. Examining the meaning of success and failure from the perspective of American elite athletes and performing artists, Conroy et al. (2001), sought to identify the criteria that athletes and performing artists (ballet dancers, opera singer, musician, and actor) used to evaluate their performance; and, to examine the consequences that performers associated with failure and success.

In particular, failure for athletes and performing artists was associated with an inability to influence themselves, their performance and their career to the degree that would allow them to achieve their desired goals. Symptoms of failure also included disappointing others (e.g. letting down family), or generating negative feelings in themselves. Similarly, when examining the uniqueness and commonality of experiences,

Privette and Bundrick (1991) reported the best descriptor of failure as spirituality, albeit with the quality seen as negative. Additionally, the presence of full focus within failure events was denied (Privette & Bundrick, 1991).

Performers and athletes also indicated a number of consequences of failure including tangible losses (e.g. repeated failure, blocked aspirations), attempted adaptations (e.g. learned and improved performance), and embarrassing self-presentational failure (e.g. public shame). Athletes reported that repeated failure increased motivation to improve and succeed, and a decreased motivation to perform more than performing artists. In contrast, performing artists reported believing "I'm no good" more than athletes. Overall, according to Conroy et al. (2001), an athlete's motivation appeared to be more directly affected by failure than performing artist's motivation. Alternatively, Conroy et al. (2001) relayed that an awareness of changes in self-concept was more prevalent for performing artists than athletes.

In attempting to gain a greater insight and understanding of how athletes and performing artists interpret the meaning of success and failure, Conroy et al. (2001) maintain the importance of investigating such insights across various performance domains. Reporting key differences between athletes and performing artists, Conroy et al. (2001) highlight that performing artists, significantly more than athletes, evaluated failure performances on poor artistic communication, losing perspective on their role in the performance, giving others reason to doubt them, disappointing others and generating negative feeling about themselves. Also, unique aspects of the artistic performance (e.g. effective communication) were not as relevant for failure in sports.

Concurring with Conroy et al. (2001), Podlog (2002), also concludes that definitions of success and failure cannot be simple statements of winning or losing, but are better understood as highly conditional and complex constructs. Podlog (2002) maintains that such constructs may vary on a variety of constructs including being dependent upon the particular sport or activity involved, the level of play, the specific athletes or individuals involved, and, the context in which they perform. Such findings reinforce the perspective that in achievement situations context has a high level of importance.

Failure and cognition

In addition to specific emotional reactions, research has investigated the influence of success and failure experiences on a myriad of variables such as self-esteem, persistence, and power. The majority of this research has been set in an experimental or laboratory setting. Within this setting, participants are placed into a failure, success, failure-success or control category; feedback to the participants is manipulated depending on the category, and outcomes are observed.

Overall, evidence has been presented that suggests success results in more positive self-perceptions of esteem and power. Alternatively, failure has been seen to result in more negative or decreased perceptions (Fry, 1976). Weiner, (1985) linking pride or self-esteem with causality, suggested a positive outcome may be attributed by the individual to themselves resulting in positive self-esteem, or a negative outcome ascribed resulting in negative self-esteem. Persistence on a task was seen to increase when participants were exposed to failure and success conditions simultaneously, rather than just failure or just success (Moore & Holmes, 1974).

According to the cognitive approach to achievement motivation, the reasons people give to explain their success or failure on achievement tasks, not only results in emotional reactions but also influences their expectations for the future, (Weiner, 1980). Weiner has also reported that the expectations of the future and the stability of the attributions are linked (Weiner, 1974). Specifically, individuals who believed their success was caused by stable or enduring factors, such as their ability, were said to expect the same outcome to occur in the future. Such an assertion was expected because characteristics of themselves and the task do not change. Alternatively, individuals may anticipate future changes if they believe unstable factors such as luck or the amount of effort they expended were responsible for their performance (Weiner, 1974).

Concurring with Weiner (1974, 1980), DeBoer (1985), reported that individuals who believed that their performance was the result of stable factors also believed that their future performance would remain relatively stable. Additionally, DeBoer's results mirrored Weiner's (1980) findings where individuals who attributed success to ability and effort, were motivated to carry on. Conversely, individuals who attributed failure to lack of ability were not motivated to continue.

In summary, when answering the question of why people succeed or fail, it has been proposed that an individual's reaction to failure is determined by their perception of why the failure occurred. Anderson and Jennings (1980) agreed that attributing failure to a controllable rather than uncontrollable factor (e.g. ability) should lead to increased success expectancies and increased persistence. However, they also disagreed with the presumption that individuals expect success following failure only when they ascribed failure to effort.

Extending this thinking, Anderson and Jennings (1980) maintained that a directing component was involved, as well as an energizing component e.g. effort. This directing component was equated to a strategy or particular approach used by an individual, and was said to be independent from effort. Zimbardo (1978), amongst others, has provided evidence to suggest that strategy choice can be a major determinant of success and failure, and that individuals often attribute their failure to inappropriate and ineffective strategies. Additionally, Anderson and Jennings (1980) examined how strategy attributions impacted upon success expectations by investigating how individuals reacted to failure when they perceive task outcome as strategy determined rather than ability determined.

Findings revealed that following failure, strategy participants expected more successes in future attempts than did ability participants. Participants attributing task outcomes to strategies monitored the effectiveness of their strategies and concluded that by modifying their strategies they would become more successful.

Strategies

Two strategies frequently employed by individuals, that are said to allow for the protection of a sense of ability or self-competence, are performance avoidance and self-handicapping.

Performance avoidance.

The links between a learning goal orientation, a performance goal orientation and subsequent performance have been well established (Duda, 1987; Nicholls, 1984). While performance goal and learning goal orientations include characteristics of demonstrating competence, being seen positively by others, improving and positive outcomes, more

recently, a third orientation has been revisited (Elliot, 1999). This performance approach focuses upon a performance avoidance orientation, and involves avoiding adverse or negative judgments of ability (Elliot & Church, 1997; Silver, Dwyer, & Alford, 2006).

A central premise to the avoidance orientation concept is that it is grounded in fear of failure. Atkinson (1957) hypothesized a link between the two basic achievement motives, need for achievement, fear of failure and specific emotions. More specifically, Atkinson portrayed fear of failure as "the capacity or propensity to experience shame upon failure" (Atkinson, 1957, p.360). Achievement motivation predicts, that an individual who has such a fear of failure, will engage in specific behaviours to achieve a goal by avoiding the appearance of incompetence. Consequently, particularly challenging tasks with relatively high risks of failure associated with them will be avoided. While Elliot (1999) found individuals with this orientation may succumb to and engage in maladaptive 'helpless' patterns of behaviour, Silver, Dwyer, and Alford (2006) reported that an avoidance orientation may result in self-protective strategies involving cognitive or physical withdrawal from the assigned task.

Determining a link between strategy and resultant emotional reactions, McGregor and Elliot (2005) demonstrated an association between fear of failure and shame. Extending Atkinson's (1957) original supposition that shame may be the foundation of fear of failure, McGregor and Elliot report "clearly important conceptual links exist between the fear of failure and shame constructs. Both constructs are inherently focused on failure, both are grounded in avoidance tendencies, both involve self-evaluation and both connect failure to love loss and abandonment. As such, shame appears well suited to serve as the core emotion of fear of failure motive" (McGregor & Elliot, 2005, p.220).

Similar to many areas of psychology, varying terms have been used to describe comparable concepts. Akin to Elliot and Church's performance avoidance, Seegers, Van Putten, and de Brabander (2002) investigated the concept of self-defeating ego orientation. A self-defeating ego orientation was said to be found when individuals face failure and are mainly occupied with avoiding looking incompetent.

Findings reported by Seegers, et al. (2002) detailed that a self-defeating ego had a negative effect on how an individual estimates their level of competence for a particular task. Data revealed that based on experiencing a previously negative outcome, individuals with a high level of self-defeating ego orientation were less inclined to invest effort when task demands were reduced. Additionally, individuals adjusted the relevance of the task negatively when they feared that failure would be attributed to lack of ability. Consequently, like Elliot and Church, Seegers et al. (2002), suggested that ego orientation may lead to avoidance oriented behaviour when chances of failure are considered high.

Self-Handicapping.

The strategy of self-handicapping involves individuals making successful performance less likely by deliberately creating obstacles. Once the individual creates such barriers if they then do poorly, the barrier serves as an explanation for this failure. However, empirical evidence has also demonstrated that when performance results in success, the barrier becomes useful. Specifically, by achieving a positive outcome, individuals perceive themselves to possess a higher level of ability. This perception was deemed to be a direct result of attaining success, even though an obstacle existed (Tice, 1991).

Similar to performance avoidance, self-handicapping is thought to allow an individual to protect a sense of self-competence, with some individuals systematically employing such self-protective strategies prior to performance. According to Berglas and Jones (1978), individuals who employ such strategies may feel like imposters or pretenders, unable to maintain their present level of success. Consequently, the need to employ self-handicapping strategies was reported as originating from a 'fragile sense of self-worth', and allowed individuals to maintain their self-worth through non-ability attributions of failure. Additionally, Berglas and Jones (1978) maintained that self-handicapping is motivated by the need to protect post attributions of ability rather than future failures. Self-handicapping has thus been defined as "any action or choice of performance setting that enhances the opportunity to externalize (or excuse) failure and to internalize (or reasonably accept credit for) success" (Berglas & Jones 1978, p.406).

While self-handicapping may be thought to result in decreased performance (Jones & Berglas, 1978), investigations have revealed contrasting results. Within evaluative settings, Carver and Sheier (1981), reported that individuals are more aware of their behaviour and any potential discrepancy that may ensue. This perceived discrepancy often impairs performance as a result of reduced effort and/or performance concerns. Alternatively, in their rationale for the performance enhancing effects of self-handicapping, Frankel and Snyder (1978) contend that having experienced failure on a task, individuals are likely to maintain effort and actually improve performance on a second similar task as long as salient, non-ability attributions are given for their potential failure.

According to Sanna and Mark (1995), the pressures experienced within an evaluative situation may be largely alleviated through the employment of a self-handicap. This strategy results in a more adaptive attentional focus, and consequently, better performance. Sanna and Mark (1995) also conclude that under non-evaluative conditions no appreciable difference exists between self-handicapping and performance.

When investigating the variable of efficacy within an evaluative context, Sanna and Mark (1995) revealed that self-handicapping improves performance among subjects with low-efficacy expectations, but not among high efficacy individuals (Sanna & Mark, 1995). Concurring with Sanna and Mark, Jones and Berglas (1978), in their examination of self-handicapping and self-confidence, suggested that only individuals who have low self-confidence are prone to engage in self-handicapping strategies. However, Ryska (2002) examining levels of state self-confidence and claimed self-handicapping, reported both low and high confidence athletes exhibited self-handicapping. However, Ryska (2002) further identified that claimed self-handicapping was more evident for the low confidence group.

Ryska (2002) contended such results were based on personal responsibility and athletes having different rationales for self-handicapping. Individuals with relatively high self-esteem were said to handicap themselves in order to enhance personal responsibility for performance success. Alternatively it has been suggested that individuals with low self-esteem self-handicap in an attempt to minimize personal responsibility and the psychological threat of impending failure (Tice, 1991).

Self-handicapping has also been further categorised as either behavioural (acquired) or self-reported (claimed) (Leary & Shepperd, 1986). Behavioural self-

handicapping refers to obstacles personally inherent within the individual, and as such, are thought to have more of a debilitating effect on performance. Alternatively, claimed self-handicapping refers to barriers that are external to the individual.

The distinction between self-reported and behavioural self-handicapping has been seen to be particularly important with regard to gender. Whilst numerous studies have demonstrated that men are more likely to self-handicap than women, these difference appear to be especially salient in relation to behavioural self-handicapping (Berglas & Jones, 1978; Hirt, Deppe, & Gordon, 1991; Hirt, McCrea, & Kimble, 2000). Hirt, McCrea, and Kimble, (2000) going further, suggested that women do not engage in behavioural self-handicapping at all. Hobden (1997) also found that males behaviourally self handicap, whereas women did not.

One possible explanation for such findings has been given by Snyder, Ford, and Hunt, (1985) who suggest that women are less threatened by failure. They contend that although behavioural self-handicapping provides more benefit, protecting ability, women may determine such an attribution as too costly. According to Snyder, Ford, and Hunt, (1995), women may perceive such behaviour as self-destructive and consequently may not be willing to jeopardize their chances for success. Alternatively, men, if they experience greater threat, may be more willing to accept the costs of behavioural self-handicaps due to the attributional benefits.

That women perceive behavioural self-handicapping as too costly due to the impact on social competence, has been supported by Dietrich (1995). Concurring with this, Hirt, McCrea, and Kimble suggest that while behavioural self-handicappers can excuse failure, they incur significant interpersonal costs. Specifically, Hirt et al. (2000)

reported that women especially tended to dislike behavioural self-handicappers viewing them as lazy and unmotivated.

However, conflicting findings have been reported by Kimble, Hirt, and Huprich, (1994), and Kimble, Funk, and DaPolito, (1990), where evidence was demonstrated that both men and women engage in self-handicapping in the social domain. Dietrich (1995) also found that regardless of domain (social or academic) men behaviourally self-handicapped more than women. Consequently, social competence may not be any more ego-relevant for women as it is for men.

Hirt, McCrea, and Kimble, (2000) proffered an alternative explanation, suggesting women and men have a different attributional focus. Hirt et al. (2000) found women and men did not behave in the same way. When experiencing greater threat, women did not behaviourally self-handicap. Instead their focus appeared to be on doing things that enabled them to perform well.

One possible explanation for this is that women are said to believe that effort is the cause of success. As a result women may see potential failure as a signal that they need to work harder to improve. Conversely, men are said to believe ability is the cause of success. Consequently, they may view potential failure as an indicator that they lack ability, and so when threatened they opt to self-handicap, (Hirt, McCrea, Kimble, 2000).

Empirically, the above contentions have been supported. In the causal attributions of success and failure, Whitley, McHugh, and Frieze, concluded "for success, men made stronger attributions to ability than did women, whereas women made stronger attributions to luck. For failure, men made stronger attributions to ability and effort,

whereas women made stronger attributions to the task and to luck" (Whitley, McHugh, & Frieze, 1986, p.110).

In summary, by becoming the 'best' at something, an individual is placed in the precarious position of having everything to lose. As a result, many successful people have been said to develop a handicap, rather than putting their reputation on the line again. Such an approach may allow them to keep their position (Ryska, 2002).

However, although self-handicapping has been found to be effective in the short-term, it has been proffered that individuals who make excuses or create barriers over the long term, generally tend not to live up to their true potential, and ultimately do not retain their level. Consequently, "although the short-term benefits of self-handicapping include reduced psychological stress resulting from personal failure, as well as an illusion of maintained skill and ability, these benefits come at the long-term expense of performance success" (Ryska, 2002, p.464).

….First have a definite, clear, practical, ideal; a goal, an objective. Second, have the necessary means to achieve your ends; wisdom, money, materials, and methods. Third, adjust all your means to that end. (Aristotle, Ancient Greek philosopher, scientist and physician, 384BC-322BC).

Chapter 4

Cognitive Factors

Human resource research, in organisation sustained competitive advantage, suggests that a noticeable difference in the sustainability of competitive advantage within organisations is demonstrated by cognitive factors. Since the aforementioned area is very broad, it was necessary to identify specific variables upon which the current research could begin to examine individual sustainability.

The following three chapters contain a review of goal orientation, cognitive interference and confidence. These constructs have been selected for their applicability to the nominated theoretical framework, their theoretical relevance to the area of sustainable performance, as well as being based on empirical data that suggests possible relationships with sustainable performance.

However, while these areas will be investigated, it is not claimed that they are the only ones applicable. Rather, it is believed that this approach is a viable beginning point to a better understanding of individual sustainable performance or individual competitive advantage.

….First have a definite, clear, practical, ideal; a goal, an objective. Second, have the necessary means to achieve your ends; wisdom, money, materials, and methods. Third, adjust all your means to that end. (Aristotle, Ancient Greek philosopher, scientist and physician, 384BC-322BC).

Chapter 4a

Goal Orientation

While many researchers have defined motivation, (Atkinson, 1964; Crandall, Katkovsky, & Preston, 1962; McClelland, Atkinson, Clarke, & Lowell, 1953; Roberts, 1992a, 1992b), the salient characteristics of the definitions depict a concept that involves gaining approval and avoiding disapproval, and/or being in competition with others, and/or being evaluated in relation to a standard of excellence. The majority of scholars are also in agreement that, generally, there is some type of objective or goal to an individual's behaviour. Such goals are thought to allow an individual to have direction, choice and persistence (Pintrich & Garcia, 1991).

Motivation as a concept has generated significant amounts of interest, research and consequently, numerous theories. The Achievement Motivation Theory (Atkinson, 1964; McClelland, Atkinson, Clark, & Lowell, 1953) evolved out of the work of Murray (1938). More recently, other social cognitive approaches have contributed to the understanding of motivation, including the Self-Efficacy Theory (Bandura, 1977), Perceived Competence (Harter, 1978), and Goal Achievement (Ames, 1984; Duda, 1989a; Dweck, 1986; Nicholls, 1984).

Since a primary area of concern within this research is goal orientation (with particular regard for task versus ego orientation), the majority of this chapter will surround the goal achievement theory. However, it is also acknowledged that although each researcher and theory retains some level of uniqueness, most of the motivational researchers and theories are united by the common foundation of Atkinson's (1964) concept of achievement motivation (Beaubien & Payne, 1999).

For example, Nicholls (1984), who may be considered to be one of the originators of goal orientation research, similar to Atkinson, suggests that motivational dispositions impact upon the type of situation an individual seeks, for the purposes of maintaining specific evaluations of performance. Also inherent is the distinction between approach and avoidance. For example, Nicholls (1984) defines achievement behaviour as "that behaviour in which the goal is to develop or demonstrate – to self or to others – high ability, or to avoid demonstrating low ability" (Nicholls, 1984, p.328).

However, unlike Atkinson (1964), Nicholls makes separate predictions for task and ego involvement. He also distinguishes between normative difficulty and expectancies of success. Nicholls (1984) holds that the key feature of achievement behaviour is competence or perception of competence. Consequently, it would seem necessary (and otherwise remiss) to briefly explore Atkinson's concept, in addition to goal achievement theory.

Achievement motivation theory

Atkinson (1964), described achievement motivation as a concept that incorporated individual and situational dispositions. According to Atkinson (1964), achievement motivation is applicable when "an individual knows that his performance

will be evaluated (by himself or others) in terms of some standard of excellence, and that the consequences of his actions will be either favourable evaluation (success), or an unfavourable evaluation (failure)", (Atkinson, 1964, p.240-241).

Within this approach, Atkinson (1964), took into account conflicting motives of individuals and proposed an overall behavioural tendency to achieve success and avoid failure. Two personality dispositions were identified, motive to approach success, and motive to avoid failure, in addition to various situational dispositions, such as perceived difficulty of task and incentive value, (Atkinson, 1964). Atkinson further proposed that individuals motivated to achieve success have a preference for tasks with moderate difficulty and also a positive persistence for success. Whereas, individuals motivated to avoid failure, were thought to select easy or difficult tasks and to avoid achievement related activities.

More recently, Duda (1989a), and Roberts (1992), suggested that the motive states identified in the Achievement Motivation Theory, did not provide sufficient understanding of motivation and that "the function and meaning of behaviour must be taken into account so that the goals of the action may be identified" (Roberts, 1992, p.14). Additionally, according to Duda (1989a), "the understanding and prediction of motivated behaviours in sport is critical to researchers and practitioners alike…. Behaviours such as participation, persistence, intensity, choice of activity, and performance are held to be goal directed" (Duda, 1989a, p.42).

Theory of goal orientation

Goal achievement research is generally classifiable into two distinct categories, goal setting behaviour and goal orientation. Accoording to Hofmann (1993), "Locke's

seminal work on goal setting theory prompted a plethora of research" that has "resulted in goal setting becoming one of the most documented findings within applied psychology" (Hofmann, 1993, p.1827). While many scholars have contributed significantly to goal setting behaviour research (Locke & Latham, 1990; Wood & Locke, 1990; Wood, Mento, & Locke, 1987), investigations have tended to focus upon whether individuals set goals, the type and nature of the goals, (for example, assigned or self set; whether they are clear, specific, measurable), and the subsequent impact on the results achieved. In summary, the central tenet of goal setting research, therefore, is whether individuals actually set or have objective goals to achieve their desired result.

Alternatively, goal orientation is concerned with the approach an individual takes in achieving the set goal and consequently, their desired result. Specifically, goal orientation has focussed upon an individual's performance disposition, and the resulting impact this disposition has upon performance. The critical element of achievement behaviour is said to be the meaning inherent in the dispositions (Smith, Duda, Allen, & Hall, 2002).

Goal orientation as a concept has been significantly studied in sport (Duda & Nicholls, 1992); academic settings (Ames & Archer, 1988; Maeher & Nicholls, 1980; Nicholls, 1984, 1989); exercise (Duda, 1992; Papaioannou, 1995; Papaioannou & Macdonald, 1993); elite sport (Duda & White, 1992); and organisational settings (Janssen & Van Yperen, 2004). Performing arts may also be considered an area that incorporates a significant achievement focus, however, it has been maintained that goal theory has had limited direct application within the dance arena (Nieminen, Varstala, & Manninen, 2001).

Although some studies have reported that dancers both value intrinsic rewards such as improving skills (Alter, 1977), and emphasise task orientated goals more than ego oriented goals (Nieminen, Varstala & Manninen, 2001), Nieminen et al. (2001) have hypothesised that the lack of research may be due to a more traditional outlook amongst performing artists, who are not open to new methods. However, many findings and theories from sport studies have been applied to the dance domain since dance and sport are believed to share many qualities (Nieminen, Varstala, & Manninen, 2001). Examples of commonality include competition, where there is the pressure for selection (Stinson, Blumenfield-Jones, & VanDyke, 1990) and public/peer/art director recognition.

Several researchers have contributed to the development of the characteristics of goal orientation (Duda, 1989a, 1989b, 1989c; Dweck, 1986; Nicholls, 1984). While the terminology and conceptualisations have differed, each recognises that there are two predominant goal perspectives in achievement situations. Dweck (1986) chose the terms learning and performance goals, while Nicholls (1984), Duda (1989a) and Jagacinski (1992) refer to these goal perspectives as task and ego involvement or orientation. Similarly, Ames (1984) describes these same perspectives as mastery and performance orientations.

Regardless of which set of descriptors are chosen, the two goal perspectives are accepted as impacting significantly upon an individual's behaviour (Duda, 1989a). Additionally, they have been shown to be an important part in helping to understand the motivations of individuals (Duda, 1992; Nicholls, 1992). Consequently, for no other reasons except ease, consistency, and the hypothesis set out in the current research, the labels of task and ego orientation will be utilised in the remainder of the chapter.

Ego orientation.

With task and ego orientation, while it is possible to be high or low on either or both of these factors, within achievement situations individuals are thought to have a preference for one over the other (Duda, 1992). Generally, regardless of whether the individuals are youth (Boyd & Callaghan, 1994), adults (Duda & White, 1992), students (Nicholls, 1984), athletes (Duda & Nicholls, 1992), dancers (Nieminen, Varstala, & Manninen, 2001), or business people (VandeWalle, Brown, Cron, & Slocum, 1999), all researchers seem to be in agreement (Snow, Corno, & Jackson, 1996), that individuals with an ego orientation disposition are likely to report one or more of the following: being motivated by recognition and status; having motives associated with competition; desire to outperform others; comparison with others to judge ability or an external referent of comparison; a focus on winning; and perceived success relative to peers regardless of individual effort, (Dweck, 1986, 1989; Nicholls, 1984; Papaioannou & Theodorakis, 1994; White & Duda, 1994; Zahariadis & Biddle, 2003). This supports the view that ego-oriented individuals are motivated by more extrinsic factors (Nicholls, 1989; Papaioannou & Mcdonald, 1993; White & Duda, 1994).

Deiner and Dweck (1978), also found that individuals display cognitive difficulties if they adopt an ego goal orientation, and subsequently face issues in task performance. Specifically, cognitive difficulty was experienced as low persistence, ineffective strategies, and negative attributions of ability. Consistent with Nicholls' (1984) research, individuals with this disposition sought easy situations that ensured positive evaluations of their capabilities. Because they self-evaluate relative to others and view their abilities as more stable, failure to achieve was thought to reflect negatively on

the self. Consequently, for ego-oriented individuals, failure is associated with the withdrawal of attention and effort (Dweck, 1989).

Task orientation.

All researchers seem to be in agreement (Snow, Corno, & Jackson, 1996), that individuals who have a task-oriented disposition are more likely to report one or more of the following: being concerned with learning and personally mastering a task; adopting more intrinsic motivational patterns such as skill development and enjoyment; stressing skill development, fitness and to a lesser degree affiliation, team membership and competition as reasons for their sport involvement; having self-referenced ability conceptions, viewing their capabilities as malleable, believing that effort directed toward exploration and learning will yield self-improvement.

Task oriented individuals were also found to be more resilient to challenge, persisting in the face of obstacles and failures, utilising more effective strategies even in the face of failure. Persistence was thought to be as a result of feeling more competent and in control. Inherent in the concept of self-improvement, errors and feedback were regarded as opportunities for further diagnostic analysis, with a task disposition allowing individuals to explore the task, make errors, and learn from these errors, (Anderson & Jennings, 1980; Duda, 1988; Dweck, 1986, 1989; Kozlowski, Gully, Brown, Salas, Smith, & Nason, 2001; Nicholls, 1984; Papaioannou & Theodorakis, 1994; White & Duda, 1994; Zahariadis & Biddle, 2003).

Goal orientation and behavioural outcome.

Within the area of achievement motivation, many scholars have reported, and consistently demonstrated, the links between differing goal perspectives and an

individual's behaviour and rationalisation of their competence (Dweck & Elliott, 1983; Nicholls, 1984). Elliott and Dweck (1988), for example, have reported that an individual's goal perspective, level of perceived ability and subsequent behaviour are related in the academic domain. While Duda (1993), when investigating the area of competition, suggested that although competition may, initially, be thought to be associated with ego orientation alone, task oriented people have also been found to be competitive (Duda, 1993). Specifically, ego oriented individuals were found to emphasise the winning aspect of competition (Zahariadis & Biddle, 2003). Alternatively, task-oriented individuals have been found to judge their competence in self-referenced terms, doing their best in the competitive environment (Duda, 1993).

Additionally, goal orientation has been seen to have the potential to improve learning (Colquitt & Simmering, 1998), and impact upon sportsmanship, (Ryska, 2003) motivation, (Duda, 1989a; Nicholls, 1989), self-efficacy, (Stevens & Gist, 1997), training outcomes, (Kozlowski et al. 2001), persistence (Zahariadis & Biddle, 2003) and performance, effort and choice of task difficulty (Duda, 1988; Nicholls, 1989). Within all areas, task orientation was associated with positive effects, while an ego orientation was associated with perceived negative effects. For example, intrinsic reasons for sports participation predicted higher levels on multiple dimensions of sportsmanship, whereas, extrinsic reasons tended to lower levels of sportsmanship (Ryska, 2003).

Further links between goal orientation and behavioural outcomes have been demonstrated by Kreiner-Phillips (1990) who supported findings by Orlick and Partington (1988), where the most consistently successful performers remained task or process oriented rather than focussed on the results or outcome of a competition. Duda,

(1988), drawing from the work of Nicholls (1984) and Csikszentmihalyi (1975a, 1975b), stated that, "task involvement increases the probability that a person will experience subjective success and/or the "flow" state, and consequently, will want to continue his or her involvement in the activity" (Duda, 1988, p.103).

Single or independent traits

Nicholls' (1984) leading work on goal orientation, acknowledged that either task and/or ego orientation can be employed by individuals, although the concept has typically been conceptualised as a single bipolar trait. However, more recent research has viewed task and ego orientation as separate traits with the ability to interact. Individuals would, as a result, be capable of having both, rather than one or the other (Button, Mathieu, & Zajac, 1996; Duda, 1988; Hofmann & Strickland, 1995; Hom, Duda, & Miller, 1993; Pintrich & Garcia, 1991).

Duda's (1989a) findings, and the work of Hom, Duda, and Miller (1993), Van Yperen and Janssen (2002) and Duda (1988) have all lent support for the possibility that having both orientations may be optimal for sport achievement, having been seen to impact significantly upon intrinsic motivation, persistence and performance (Steinberg, Singer, & Murphey, 2000). Duda (1989a) reported, that adolescents who are regular participants and have persisted in organised competitive sport, demonstrated both task and ego dispositions. Hom, Duda, and Miller, (1993) studied relationships of goal orientations among young athletes and addressed the issues of satisfaction and enjoyment in youth sport. Findings illustrated that athletes who stressed both goal orientations reported having more enjoyment and satisfaction in basketball. They also indicated that both a task and ego oriented approach allowed for different origins of success and

competence. Van Yperen and Janssen (2002), in their study with university employees, supported the link between having a high level of both goal orientations and impact on satisfaction.

Re-emphasising the concept of being able to draw from different sources, Duda (1988), maintained "a person who stresses both goal perspectives has two sources of success and several reasons to continue participation in an activity" (Duda, 1988, p.103). Steinberg, Singer, and Murphey, (2000), and Swain and Hardwood (1996), support the existence of this level of flexibility, as well as having the opportunity to draw upon information from both orientations. Swain and Hardwood (1996), suggested that individuals would not be dissatisfied since if one orientation failed, the other could act as a 'satisfaction guarantor'.

Extending this thinking, further research has suggested that cognitive and self-regulatory processes rather than depending on single goals are more likely to be reliant upon the joint and interactive effects of goals (Wentzel, 1992). Riveiro, Cabanach, and Arias, (2001), in exploring how this may be manifested, concluded that even though an individual may be mainly concerned with mastery, they may enjoy showing more skill than others, as well as reporting satisfaction for having succeeded so well. Accordingly, achievement behaviour may be regulated by several goals interacting in complementary ways. "Performance goals are inextricably linked to learning goals in that it is impossible to obtain positive judgements of ability without first achieving some level of task mastery" (Wentzel, 1991, p.190).

Gender and situational factors

Numerous motivational theorists (e.g. Deci & Ryan, 1985; Duda & Nicholls, 1992) have shown the benefits of adopting intrinsically oriented styles of motivation. As a product of investigating intrinsic motivation, researchers have raised questions about gender differences (Duda, 1988), and how situational factors play a role in determining the goals individuals adopt in achievement situations (Gano-Overway & Ewing, 2004).

Overall, gender differences have been seen to emerge between task and ego orientation and purpose of sport involvement (Duda, 1988), with females reporting higher levels of task orientation than males. In contrast, males reported higher levels of ego orientation than females. In relation to purposes of sport, females emphasised perceived mastery and cooperation, while males emphasised competitiveness, social status and career opportunities. The researcher indicated that this finding could be attributed to the idea that females emphasised working hard, whereas for males, a competitive atmosphere was more important (Duda, 1988). Such outcomes support previous research by Duda (1985, 1986), where females were reported as being less competitive and not as ego-involved as males.

In investigating high achieving adolescents, Yun Dai (2000) extended gender research by reporting that there were more negative effects of ego orientations for girls than for boys, in addition to corroborating the existence of both types of orientation within individuals. Specifically, boys' perceptions of high performance expectations by peers and teachers were associated with high task orientation, high confidence, perceived high competence in math and science, and high persistence as well as high ego orientations. For girls, however, ego superiority and ego protection were associated with

high performance expectations by peers and teachers. Consequently, girls took a more socially defensive ego-protective stance when they perceive themselves at a disadvantage, rather than boys who tended to take a more socially aggressive position.

The suggestion that goal orientations and the perceived motivational climate may influence one another, can be traced back to Atkinson (1964). This notion has been supported in more recent research, where the perceived motivational climate, was related to a change in goal orientations (Dweck & Leggett, 1988; Gano-Overway & Ewing, 2004; Nicholls, 1989).

Goal orientation and perception of self

Differing approaches to how success is defined have also been found to impact on other cognitive aspects of an individual. Goal orientation, as well as impacting on effort, ability, intrinsic motivation, purpose of sport and differences in gender (Boyd & Callaghan, 1994; Duda, 1989b; Duda & Nicholls, 1992), may also influence how individuals perceive themselves.

The perception of success through self-referenced sources, may impact on an individual's ability to develop their self-confidence differently, from those who perceive success through externally referenced sources (Voight, Callaghan, & Ryska, 2000). Voight, Callaghan, and Ryska's, (2000) findings highlighted that those individuals demonstrating a high ego orientation and a low level of self-confidence, experienced higher trait anxiety. High ego orientation and low perceived competence has also been seen to lead to withdrawal of effort (Jagacinski & Nicholls, 1990). However, regardless of achievement levels, self-perceptions of competence in a specific domain and general

self-confidence were found to regulate the expression of task and ego orientations, (Yun Dai, 2000).

Numerous scholars have supported the notion that task performance can be hindered by the misuse and misapplication of resources, (Dweck, 1989; Kanfer & Ackerman, 1989; Wood & Locke, 1990). Kanfer and Ackerman (1989), who equate ability with the amount of cognitive resources available to apply to the task, found that goal-setting interventions were most influential in the later stages of task performance, when the task is well learned. Goals were dysfunctional when applied during initial stages of acquisition, when the task is highly resource dependent. In addition, the dysfunctional aspect of the goal setting interventions was more dysfunctional for low – as opposed to high - ability individuals (Kanfer & Ackerman, 1989).

These findings suggest that cognitive abilities may very well moderate the relationship between goal-setting and task performance on complex tasks. Wood and Locke's (1990) hypothesis that challenging and specific goals on complex tasks "may create an arousal level that interferes with the cognitive processes involved in the selection and development of task specific plans, leading to the misdirection of attention and effort" (p.95) was supported by Hofman (1993). Hofman (1993) found that an indirect effect of an ego goal orientation was that it was associated with increases in cognitive interference. This increase in cognitive interference was subsequently associated with poorer performance.

Hofman's results relate to Nicholl's (1984) discussion regarding the influence of an ego orientation on task performance. Specifically, for individuals who have low perceived ability, an ego goal orientation is hypothesised to be anxiety inducing, with this

anxiety producing negative consequences. Individuals with high-perceived ability, according to Nicholl's (1984), are not adversely influenced by this anxiety.

In summary, the links between an individual's goal disposition and their subsequent behaviour have been consistently shown, (Dweck & Elliott, 1983; Nicholls, 1984). Accepting the individual impact of each perspective, Duda's (1989a) findings, and the work of Hom, Duda, and Miller, (1993), Van Yperen and Janssen (2003) and Duda (1988) have all lent support for the possibility that while having one approach may afford some benefits, having both orientations may be optimal for sport achievement.

"If I were asked to choose one mental skill that distinguishes the athletes at the top, I would name their ability to adapt and refocus in the face of distractions"
(Orlick, 1990, p.87)

Chapter 4b

Cognitive Interference

For effective performance, the ability to identify, direct and control attention, without being distracted, is thought to be crucial (Maynard & Howe, 1987, 1989; Nideffer, 1976; Singer et al. 1990; Smith, 1996). While the affects of the external environment have been the main focus of concentration research (Eysenck & Keane, 1995), Eysenck and Keane also maintained that generally, investigation into the impact of self-generated thoughts had been neglected.

Within the education field, the concept of cognitive interference has been utilised to examine the area of self-generated thoughts. On-task intrusive or disruptive thoughts that an individual can experience, are said to be the main aspects of cognitive interference (Sarason et al. 1986; Sarason, Pierce, & Sarason, 1996). These intrusive or disruptive thoughts are believed to compete for attentional resources (Pierce et al. 1998), the result of which impacts on subsequent performance and/or behaviour.

Cognitive interference has been found to demonstrate cross-situational consistency (Pierce et al. 1998), and to take many forms, such as attentional bias and distraction, memory lapses, and several kinds of intrusive thoughts or thought patterns, for example, daydreaming, mind-wandering, and worry (Sarason et al. 1986). Key features of these disruptive or intrusive thoughts include that they are typically concerned

with worry, they are internally generated, that the person is usually aware or conscious of them, and that within a specific type of situation, they have trait-like characteristics (Pierce et al. 1998; Sarason et al. 1986; Yee & Vaughan, 1996).

Common to all theorists is the understanding that cognitive interference is negative, distressing, and impacts (negatively) upon performance. Additionally, those individuals who experience relatively high levels of intrusive thoughts are seen to perform more poorly than individuals who experience less distraction (Pierce et al. 1998; Sarason at al. 1986; Sarason, Pierce, & Sarason, 1996).

Theoretical explanations

Several theoretical explanations have been offered to account for cognitive interference. Klinger (1996), suggests that when normally adaptive thought regulation mechanisms become dysfunctional, cognitive interference ensues. Specifically, Klinger contends that thought content shifts as a result of an individual encountering a cue that arouses emotion. This arousal and emotion is thought to occur due to the cue being associated with one of the individual's current concerns or goals. Consequently, the interference may be considered to be a conflict between the normal functioning of that mechanism and the individual's self-stated goals (Klinger, 1996).

Alternatively, Carver and Scheier (1988) and Carver (1996), interpret the effects of cognitive interference relative to a control process model of attention, or behavioural self-regulation model. Such an approach emphasises that individuals regularly process information in relation to the attainment of goals. In this model, there is a purpose to behaviour. Individuals are said to establish goals in relation to certain values.

When attempting to achieve the goals, individuals periodically check on their progress and activities by interrupting their efforts. During this interruption the likelihood of attaining the goal is assessed. If, during this comparison, a discrepancy is noted between their perceptions of the likelihood of success and their reference values, individuals experience interfering thoughts. Typically, this discrepancy and the resultant interfering thoughts will result in a change in behaviour, aimed at either renewing efforts to achieve the goal, or removing or lowering the discrepancy. Removal can be achieved by either physical or mental means depending on the situation (Hatzigeorgiadis & Biddle, 2002). In summary, individuals display a continuous loop of establishing goals, using feedback as a guide to progress, and adjusting behaviour to match these values/goals.

Sarason et al. (1986), offer a more direct interpretation of the causal effect of cognitive interference, suggesting that it "keeps the individual from directing sufficient attention to the task at hand. These intrusive thoughts divide attention and create cognitive time-sharing overloads" (Sarason et al. 1986, p.216). Concomitant with this view, Kanfer and Ackerman, (1996), in their integrated resource allocation model, suggested cognitive interference influenced performance through the impact on the amount of attentional resources devoted to the task. Similar to Carver and Scheier (1988), and Carver (1996), they propose that the allocation of attentional resources occurs as a result of self-regulatory processes.

Within this approach, cognitive interference occurs either when self-regulatory processing diverts resources away from the task to negative emotional processing, or when there is a failure by self-regulatory processing to redirect the resources back towards the task. Kanfer and Ackerman (1996), also emphasise the link between type of

cognitive interference experienced and level of skill acquisition, a link supported by Smith (1996). This view has led to the contention that the study of cognitive interference should be broadened to include learning and skill acquisition (Kanfer & Ackerman, 1996).

Anxiety and cognitive interference

One general shortcoming within cognitive interference research is that primarily, the measure of assessment has been by instruments originally intended to assess various aspects of psychological dysfunctioning. Examples of such dysfunctioning include anxiety, depression (Siebert & Ellis, 1991) and mood states (Howell & Conway, 1992). Research from several viewpoints, (including undergraduates, Italian schoolchildren, and computer anxious students), support that cognitive interference may be an important result of anxiety that subsequently has an influence over performance (Comunian, 1993; Sarason et al., 1986; Smith & Caputi, 2001).

Evidence has accumulated that it is the worry component of elevated anxiety, rather than the arousal component, that is most strongly predictive of impaired cognitive performance (Morris, Davis, & Hutchings, 1981). Accordingly, it has been suggested that individuals are managing more task irrelevant information, which in turn takes up more cognitive processes. This subsequently leads to a decline in performance, (Sarason, 1984). There is also considerable data that high anxious individuals have more interfering thoughts than low anxious people impairing their performance (Kurosawa & Harackiewicz, 1995; Sarason, 1978), with studies in general suggesting that the test anxious worry more, and experience more disruptive cognitions, under evaluative or self awareness conditions.

Pierce et al. (1998), concur with Beck & Emery, (1985), Peterson and Seligman, (1984), Klinger (1996), and Sarason et al. (1986) that depression and anxiety may lead to cognitive interference. Smith (1996), in his review of cognitive interference, performance anxiety and concentration in relation to sports, also supports this view, reporting that several constructs in the field of sport anxiety research appear to assess specific aspects of cognitive interference. Also in support of the relationship between cognitive anxiety and performance, Burton (1988), Kolt and Kirkby, (1994), and Rodrigo, Lusiardo, and Perseira (1990) in their studies with swimmers, gymnasts and footballers respectively, found that cognitive anxiety was negatively related to performance.

Intrusive thoughts have also been associated with the experience of stress, (Craig, Heisler, & Baum, 1996). Life-stress, has been shown to correlate with real life job performance (Gopher, 1982, Green, 1985). Green (1985), also reported that life-stress may be a major contributor to aircraft pilot errors. Coddington and Troxell (1980), and Pierce, Henderson, Yost, and Loffredo (1996), also concur with this view proposing a link between negative life events and amount of injuries or accidents sustained.

Measuring cognitive interference

While Sarason et al. (1986), maintain that "much of the literature on cognitive interference concerns its relation to test anxiety" (Sarason et al. 1986, p.217), Hatzigeorgiadis and Biddle, (1999) contend that not all differences in cognitive interference could be attributed to test anxiety (Hatzigeorgiadis & Biddle, 1999). Further, Terry and Slade (1995) and Maynard and Howe (1987) failed to find a relationship between cognitive anxiety and performance.

Giving additional support to such a proposition, cognitive interference has been seen to cause problems in relationships and social behaviour (Clark & Arkowitz, 1975), with researchers having tried to identify other factors (study skills, task difficulty, evaluation, and perceived ability) that might stimulate and/or generate interfering thoughts (Arkin, Detchon, & Maruyama, 1982; Paulman & Kennelly, 1984; Zatz & Chassin, 1983). However, the factors that researchers attempted to identify were looked at alongside test anxiety, and how they resulted in the stimulation and generation of interfering thoughts, rather than looking directly at cognitive interference itself.

There appear to be very few studies that have attempted to assess cognitive interference directly in a sport context (Hatzigeorgiadis & Biddle, 2002; Hatzigeorgiadis & Biddle, 1999; Man, Stuchlikova, & Kindlmann, 1995), and these studies failed to produce significant results. However, Pierce et al. (1998), like Hatzigeorgiadis and Biddle (1999), support the view that not all differences in cognitive interference could be attributed to test anxiety.

The criticality of looking at some functional, positive aspects of personality in relation to cognitive interference is emphasised by the research of Locke and Latham (1990), and Bandura (1991), who suggest that individuals who maintain a strong sense of confidence or self-efficacy during performance show task persistence and a higher level of performance. In addition, high anxious students who were given instructions to focus on the task demonstrated an improved performance (Sarason, 1975, 1984). This suggests that other factors may have a positive impact on cognitive interference.

However, the direct measurement of cognitive interference had remained largely problematic (Sarason et al. 1986), until Sarason et al. (1986) established the measurable

links between cognitive interference and cognitive anxiety. This was achieved in their development of the Cognitive Interference Questionnaire (CIQ) and the Thought Occurrence Questionnaire (TOQ). The CIQ and the TOQ were developed to look at cognitive interference primarily, with the CIQ designed to assess the thoughts that intrude while a person is working on a task (Sarason & Stoops, 1978), and the TOQ to assess a person's general propensity for experiencing intrusive thoughts. Previous to the development of the CIQ and TOQ, questionnaires looking at intrusive thoughts were primarily designed on the concept of anxiety with intrusive thoughts being a subcomponent.

Personality and situational conditions

The possibility that individuals may vary in their susceptibility to experience cognitive interference, and that individuals may have a general tendency to experience intrusive thoughts, has been proffered by several researchers (Hunsley, 1987; Klinger, 1996; Sarason et al. 1986). Susceptibility to cognitive interference has been addressed via the concept of action versus state orientation (Kuhl & Beckmann, 1994). When a given situation arises, action oriented individuals are said to be able to evoke suitably appropriate responses when required, whereas state oriented individuals are said to focus on their current state. By maintaining a state focus, Kuhl and Beckmann (1994) reports that an individual's ability to carry on functioning productively on planned activities is impacted, as well as experiencing more task and situation irrelevant thoughts. According to Klinger (1996), in relation to focus and what it is best to focus on, state oriented individuals have a more skewed focus.

The increased susceptibility to cognitive interference of state oriented individuals was further highlighted by Brunstein (1994) who, when failure was induced, found that state oriented individuals employed fewer strategic plans and more inefficient task strategies, than action oriented individuals. In addition, they experienced less self-confidence, gave themselves fewer instructions and were more preoccupied with loss of control (Brunstein, 1994). State orientation has also been found to have a strong correlation to anxiety (Kammer, 1994; Klinger & Murphy, 1994) and depression (Kammer, 1994).

Support for the premise that disruptive thoughts appear to be the outcomes of both situational conditions and personality characteristics has been acknowledged by Prins, Groot, and Hanewald, (1994), Smith (1996) and Sarason et al. (1986) who stated that "some individuals seem to be generally preoccupied. Others may experience preoccupation only occasionally or in specific types of situations that may vary with the individual because of personal relevancy" (Sarason et al. 1986, p.223). This general tendency to experience intrusive thoughts (Sarason et al. 1986) has also been referred to as dispositional intrusive thinking (Pierce et al. 1998). According to Pierce et al. (1998), this feature of personality appears distinct from depression and anxiety although they do acknowledge that both of these also play a role in cognitive interference.

Pierce et al. (1998), maintain that most research on cognitive interference has focussed on its manifestation in certain types of situations, whereas they hypothesised that cognitive interference might be conceptualised and investigated as a personality characteristic with "transituational implications" (Pierce et al. p.1016). This is a conceptualisation Pierce et al. (1998) confirmed, providing evidence that cognitive

interference reflects a personality characteristic with transituational properties, in addition to revealing that it had cross-situational consistency. These findings corroborated previous support for the interaction between personality, the situation and resulting cognitive experience by Sarason et al. (1986), Hunsley (1987) and Zatz and Chassin (1983), who proposed that state and trait cognitive interference and dispositional intrusive thinking had some stability across time and across situations.

Consistent with Kurosawa and Harackiewicz's (1995) study, Pierce et al. (1998) also found that the situations evaluative component influenced cognitive interference, with greater cognitive interference occurring in evaluative rather than self-reflective situations. Additionally, the more evaluative situation produced more task related intrusive thought, and the self-reflection situation produced more task unrelated thoughts. Such findings, together with the data that when individuals are exposed to failure, increased off task thoughts ensue, (Mikulincer & Nizan, 1988) lend further support to the proposition that the situation or context matters.

Situation, personality and cognitive interference

According to Carver (1996), there are several questions that may be asked about the interaction between the situation, personality characteristics and the resultant intrusive thoughts, including what circumstances induce it? And can anything impact on it? Since not all situations are susceptible to this interference, for example, flow (Csikszentmihalyi, 1990) or peak experiences (Privette, 1983), it has been assumed that interruptions probably occur when there are obstacles or unexpected outcomes (Carver, 1996). Carver (1996) suggested that situations such as these cause people to consider whether they will be able to carry on. He also maintained a link between an individual's

level of confidence and the level of questioning, with people who have more confidence not doing as much assessment. Memories of prior outcomes, what additional resources they may bring into play and whether there is an alternative approach were also aspects on which individuals were thought to depend (Carver, 1996).

Mediating factors

A significant element of Sarason et al.'s (1986) research, concerned the finding that manipulation of attentional focus seemed to change cognitive behaviour. Building on previous research, (Sarason, 1984), Sarason et al. found that level of cognitive interference is sensitive to instructions. When participants were given instructions that emphasised the importance of focussing attention on the task at hand and ignoring their personal preoccupations, "highly test anxious people, and people with a higher propensity for experiencing cognitive interference showed significant decrements in cognitive interference and increases in performance" (Sarason et al. 1986, p.223).

This finding, together with the findings by Sarason, Sarason, and Pierce (1990), Strickland and Galimba (2001), and Carver (1996), suggests that cognitive interference may be influenced significantly by mediating factors. Sarason, Sarason, and Pierce (1990), found that social support impacted upon level of cognitive interference, with individuals high in social support reporting experiencing less cognitive interference. Strickland and Galimba, (2001), found those who set goals reported less cognitive interference, indicating that they were not as distracted while working. Carver's (1996), proposition that an individual's level of confidence, their dependence on memories of prior outcomes and what additional resources they may bring into play, and whether there

is an alternative approach, leads to the question of whether concepts such as self-confidence and goal orientation may also be mediating factors.

Taking this concept further, Hatzigeorgiadis and Biddle (1999), stated that "considering the self centred character of ego orientation, in comparison to the task centred character of task orientation, and the self-preoccupying nature of cognitive interference as opposed to a task related focus, a link between achievement goal orientation and cognitive interference seems plausible" (Hatzigeorgiadis & Biddle, 1999, p.484). Hatzigeorgiadis and Biddle built on research by Kanfer and Ackerman (1989), who suggested that ego-oriented individuals use up resources that could otherwise be applied to the task. They also incorporated Deiner and Dweck (1980) and Newton and Duda's (1993) research that ego oriented children rather than task oriented ones engaged in task irrelevant verbalisations, (Deiner & Dweck, 1980), and that task orientation was negatively correlated with performance worry (Newton & Duda, 1993).

Hatzigeorgiadis and Biddle's (1999) results revealed that ego orientation, in a low perceived ability group was related to experiencing thoughts of escape. Hatzigeorgiadis and Biddle's (2002) subsequent research revealed a similar finding, with individuals high in ego orientation and low in task orientation having more thoughts of escape, than individuals with high task orientation and low ego orientation.

One explanation for the finding that no difference in worries was noted, stated that individuals adopting different goals may experience similar worries, but that the source of these worries and consequently the response to these worries might be different (Hatzigeorgiadis & Biddle, 2002). Task oriented athletes may respond to worry with

increased effort, whereas ego oriented athletes' worry may result in effort withdrawal, a concept supported in educational research (Deiner & Dweck, 1978, 1980).

A link has also been suggested between this and Carver's (1996) self-regulation model. In particular, if an individual's expectations of a successful outcome are sufficiently positive, an increase in effort to attain the goal is said to be likely. However, if an individual's expectations are sufficiently negative, the individual is driven to withdraw effort and/or removal from the goal (Carver & Scheier, 1990). These findings lend increased support for the premise that there may be a need to broaden the concept of cognitive interference to include thoughts of escape and avoidance as well as fear and worry (Sarason, Pierce, & Sarason, 1996).

Summary

In summary, regardless of the research or explanations offered for cognitive interference, a concurrent theme throughout is the acknowledgement that cognitive interference results in resources being deflected from the goal or the task at hand; is thought to result in a competition for the allocation of resources; and that the amount of cognitive interference experienced may be open to change depending upon the situation and certain personality characteristics of the individual.

For individuals with a predisposition for experiencing cognitive interference, it is thought that they tend to experience this concept in a range of situations; that the nature of the interference can differ depending upon the evaluative nature of the situation; and that the level of cognitive interference experienced can be affected by negative characteristics such as depression and level of anxiety or can be tempered by other mediating factors.

Smith (1996) suggested that mediating factors or situational interventions such as physical conditioning, modelling interventions and psychological interventions (such as stress management training and psychological skills training), could impact positively on cognitive interference and subsequently performance. Additionally, Martin and Gill (1991) established a link between confidence and cognitive interference. They reported that athletes who were confident in their ability to perform effectively in sport oriented situations, experienced fewer intrusive thoughts and concerns about the possible outcomes of their performance when engaged in such tasks (Martin & Gill, 1991).

Given Carver's (1996) writings on the possibilities of cognitive interference being tempered by self confidence; memories of prior outcomes, and what additional resources individuals may bring into play, the links between prior experience, self-confidence and cognitive interference in relation to sustainability of performance should also be very worthwhile exploring.

"Self confidence is the first requisite to great undertakings" (Samuel Johnson, English poet, critic and writer, 1709-1784).

Chapter 4c

Self-confidence

Cognitive factors such as confidence have been acknowledged to impact significantly on performance generally (Smith, 2002), within sports (Feltz, 1988; Vealey, Hayashi, Garner-Holman, & Giacobbi, 1998), organizations and businesses (Ireland, Hitt, & Wiliams, 1992; Lindsley, Brass, & Thomas, 1995). Extending this view, several researchers have stated that self-confidence may be the single most important factor either for successful performing or influencing sport performance (Vealey, et al. 1998). Hardy (1996a) additionally suggested, that self-confidence in elite performers might be one of the most powerful qualities. Gould, Dieffenback, and Moffett, (2002) also focussing upon elite performers, found that confidence was one of the characteristics of Olympic champions.

General self-confidence

Without aligning themselves to a particular self-confidence concept, researchers have looked at general self-confidence and its resultant impact upon performance. Typically, these investigations have been concerned with interactions between self-confidence and/or anxiety and/or performance, for example, Burton (1988); Covassin and Pero (2004); and Woodman and Hardy (2003).

Characteristically, self-confidence has been seen to be a positive predictor of athletic performance and general performance, (Burton, 1988; Jones, Swain, & Hardy, 1993; Krane, Marks, Zaccaro, & Blair, 1996; Smith, 2002; Treasure, Monson, & Lox, 1996). Additionally, Smith (2002) advocated that consideration of confidence and motivation, allowed for a more complete and accurate evaluation of performance. Furthering this contention, Tavani and Losh (2003), focusing on levels of students' internal characteristics, such as motivation and self-confidence, reported that these strongly influenced students' achievements during their high school careers. In addition, academic performance significantly correlated with students' motivation, self-confidence and encouragement.

Findings from the sports area also suggest that those individuals with more confidence in their capabilities tend to exhibit greater task effort, persistence and improvement (George & Feltz, 1995; Schunk, 1995). Less worry, concern regarding performance outcome, and the reporting of less distracting thoughts have also been linked to greater self-confidence in highly successful athletes (Garfield & Bennett, 1984; Moran, 1996).

Commensurate with the discipline of sport, an increasing number of executives within a business environment are recognising the significance of self-confidence, acknowledging the close relationship between self-confidence, risk and effective decision-making processes (Ireland, Hitt, & Williams, 1992). Reporting findings similar to the sport area, confident individuals were seen to more often establish challenging goals, be more persistent in their pursuit, and devote more effort (Ireland, Hitt, & Williams, 1992). Like Vealey (1986), Ireland, Hitt, and Williams (1992) maintained that

self-confidence was not thought to be a uni-dimensional concept, but rather a product of the interaction between personal and situational factors.

Terminology

Similar to many areas of psychology, a dilemma faced in this area surrounds the use of the term self-confidence. An individual's perceived ability or probability of reaching a certain level of performance has been described in a plethora of ways including, self-confidence, self-efficacy, perceived ability and perceived competence. Feltz (1988), for example, describes self-confidence as "the belief that one can successfully execute a specific activity, rather than a global trait that accounts for overall performance optimism" (Feltz, 1988, p.423). Alternatively, Bandura (1977) distinguished between self-efficacy and self-confidence, believing self-confidence referred to the strength of the belief or conviction, while not specifying the level of perceived competence. Finally, Vealey (1986), focusing on the area of sport, defines sport self-confidence as "the belief or degree of certainty, individuals possess about their ability to be successful in sport" (Vealey, 1986, p.222).

A universal reliable and valid measure of confidence

According to Feltz (1988), Bandura's theory of self-efficacy has been the most extensively used theory for investigating self-confidence in sport and motor performance. Bandura's approach advocates undertaking a detailed analysis of the origins and functions of perceived self-efficacy. By promoting such an in-depth method, it has resulted in the development of unique, separate measures of self-efficacy for specific uses which "supports a growing body of evidence that particularized measures of self-efficacy have greater explanatory and predictive power than global measures" (Feltz, 1988,

p.429). However, this approach has, by consequence, inhibited the development of a universal measure of self-efficacy that has been extensively validated and utilized, which has the ability to be utilized in a variety of settings or situations.

The depiction of self-efficacy and self-confidence in a plethora of ways within sport settings, led Vealey (1986), to develop a model and instrumentation for sport self-confidence. According to Vealey (1986) this model and instrumentation allows for more consistent predictions of behaviours across different sport situations. This model and instrumentation has been thoroughly validated, and has been endorsed by other researchers (Lirgg, 1991; Manzo, Silva, & Mink, 2001; Martin & Gill, 1991; Ribeiro & Aroso, 2004). It has also been utilised cross-culturally (Fung, Ng, & Cheung, 2001), and (unlike other concepts of self-confidence) provides universal measures that can be utilized in a variety of settings and situations. Consequently, Vealey's model and instrumentation of self-confidence are the ones that will remain the focus of this chapter, in addition to being used for this research.

Sport self-confidence theory.

Conceptualising a theory of self-confidence, Vealey, (1986), developed the theory of sport self-confidence. Since the model was specific to sport rather than general self-confidence, the term sport-confidence was adopted. The integration of self-efficacy, perceived competence and performance expectancies formed the basis for the sport-confidence model and based on this, Vealey, (1986), defined sport confidence as the "belief or degree of certainty that individuals possess about their ability to be successful in sport" (Vealey, 1986, p.222).

Accepting the importance of individual differences, Vealey (1986) acknowledged the need for measuring the goals upon which sport-confidence was based, and so included a 'competitive orientation' aspect to the model. This aspect determined what types of goal individuals were striving toward, either performing well (performance goals) or winning (outcome goals). Vealey (1986) further distinguished between trait sport confidence (SC-trait) and state sport confidence (SC-state). Vealey defined trait sport confidence as the "belief or degree of certainty individuals *usually* possess about their ability to be successful in sport", and state sport-confidence as the "belief or degree of certainty individuals possess *at one particular moment* about their ability to be successful in sport" (Vealey, 1986, p.223).

Given the distinctions identified, three instruments were deemed to be appropriate for the comprehensive measurement of sport confidence, namely SC-trait (Trait Sport Confidence Inventory – TSCI), SC-state (State Sport Confidence Inventory - SSCI), and a measure for competitive orientation (Competitive Orientation Inventory – COI).

The model of sport confidence depicted an interaction between competitive orientation and trait sport confidence. This interaction was said to determine how an athlete perceives and responds to a specific sport situation (Vealey, 1986). This resultant SC-state, according to Vealey is "predicted to be the most important mediator of behaviour as it is based on the mutual influence of situational factors and individual differences" (Vealey, 1986, p.224).

From initial trials, SC-trait and competitive orientation were reported as being significant predictors of pre-competitive and post-competitive SC-state, as well as several subjective outcomes. Vealey (1986) suggests that the key finding of the initial research

was that high SC-trait performance oriented athletes were significantly higher in SC-state than all the other groups. However, the hypothesis that SC-state would predict performance was not supported. Regardless of the results found, and the fact that Vealey considered the study "an effective conceptualisation of self-confidence as manifested in sport situations" (Vealey, 1986, p.238), she still maintained that some caution was required until further validation of the model and instrumentation occurred.

Extending the analysis of the sport confidence model, Martin and Gill (1991) integrated the three constructs of sport confidence proposed by Vealey (1986), and investigated the relationship between sport confidence, self-efficacy and performance. According to Martin and Gill (1991) "an individual's enduring and consistent level of sport confidence (SC-trait) is a powerful predictor of his or her more transitory pre-competitive state sport-confidence levels" (Martin & Gill, 1991, p.155). This provided further support for the influence of SC-trait on SC-state, as proposed by Vealey, (1986).

Martin and Gill (1991) also found that relationships existed between self-efficacy, sport confidence and performance where the TSCI (Vealey, 1986), was a significant predictor of outcome self-efficacy. However, unlike Vealey, Martin and Gill (1991) also found a relationship between SC-state and performance. According to Martin and Gill (1991) such a finding may have been due to the level and experience of the individual taking part. Supporting Martin and Gill's findings, Gayton and Nickless (1987) in their research to validate the TSCI and SSCI with marathon runners, found significant relationships existed between trait scores and predicted finishing times, as well as actual finishing time. One explanation for such results highlighted the methodology Gayton and Nickless used, administering the SSCI and TSCI at the same time. Similarly to Vealey,

the researchers acknowledged that trait scores seemed to have more significance, with trait scores rather than state scores being a better predictor. The significant impact of trait scores was further emphasised by Lirgg (1991) who suggested that trait sport confidence was a stable condition that consequently influenced pre and post competitive state sport confidence.

Investigating the differences between individuals who participated in team versus individual sports, Zeng (2003) reported that team sport athletes have higher levels of state self-confidence, state sport confidence and trait sport confidence as compared to individual sport athletes. However, Zeng did acknowledge that little research was available in this area and so further substantiation was required. Supporting the view that little research on team confidence exists, Short and Sullivan (2003) reported that team confidence affects individual confidence and that the most powerful source of confidence was previous performances.

Applications of the sport self-confidence theory

Wider applications of the sport confidence model may be seen in relation to self-handicapping and imagery. Within an evaluative physical activity setting, levels of state self-confidence and claimed self-handicapping have been seen to interact and impact on performance (Ryska, 2002). Self-handicapping has been described as invoking self-protective strategies prior to performance. Jones and Berglas (1978), reported greater self-handicapping predicted faster run times among participants with low self-confidence, whereas the impact of self-handicapping was not as evident among the highly confident group of runners. They originally contended that only those individuals who have low self-confidence or what they termed "basic uncertainty about how competent one is"

(Jones & Berglas, 1978, p.406) are prone to engage in self-handicapping strategies. Alternatively, Ryska's (2002) findings showed that self-handicapping was exhibited by high confident and low confident runners.

While Tice (1991) provided a plausible explanation to account for these conflicting results, there is still no definitive explanation. According to Tice, individuals with relatively high self-esteem typically handicap themselves so that they can take a greater amount of personal credit for the resulting success. Conversely, self-handicapping by low self-esteem individuals was said to be due to a desire to minimise the psychological threat of imminent failure (Tice, 1991).

Research has also demonstrated a positive association between imagery and sport confidence (Callow, Hardy, & Hall, 1988; 2001; Callow & Waters, 2005) with high sport confident athletes reportedly being better imagers than low sport confident athletes. Additionally, high sport confident individuals were found to use certain types of imagery more than low sport confident individuals (Moritz, Hall, Martin, & Vadocz, 1996). Callow and Waters (2005) investigating the effects of a specific type of imagery, kinesthetic imagery (the feeling content of the imagery), reported partial support for the relationship between kinesthetic imagery and state confidence. Specifically, while participants recorded increases in levels of confidence these increases were not significant.

Within imagery research, while improvements in state sport confidence have been seen as a result of imagery interventions (Callow, Hardy, & Hall, 1988; 2001), less research has been carried out in relation to trait sport confidence and imagery. To address this situation, Abma, Fry, Li, and Relyea (2002), investigated trait sport

confidence and imagery with track and field athletes. Like Moritz et al. (1996) Abma et al. (2002) found high sport confident individuals used significantly more of certain types of imagery than low sport confident athletes. However, unlike Moritz et al. (1996), Abma et al. (2002) found that high trait sport confident athletes utilised all types of imagery more than low trait sport confident athletes.

Some explanations for this have been offered. Trait sport confidence is concerned with how an individual usually feels, whereas state sport confidence is linked to a particular situation. Consequently, state sport confidence might be linked to one major source of imagery, rather than a range of sources like trait sport confidence. Alternatively, context was hypothesised as the differentiator between findings (Abma et al., 2002).

Focusing on imagery ability rather than imagery use, Moritz et al. (1996) found that high sport confident athletes exhibited a significantly higher imagery ability than low sport confident athletes, whereas, Abma et al. (2002) did not find a difference. It was suggested that this may be due to the different populations examined in the two studies, with Moritz et al's. (1996) participants being elite in nature. However, again while these explanations have been offered, no definitive answer has been given as to why such results should be found. Abma et al. further identified experience as a non-confounding variable, with no differences being noted between use or ability of imagery and number of years in the profession (Abma et al. 2002).

Moderating effect of self-confidence

Approaching self-confidence from a different perspective, Voight, Callagham, and Ryska, (2000), and Hanton, Mellalieu, and Young, (2002), rather than investigating

an individual's propensity for self-confidence, examined the moderating effects of self-confidence. Like Hardy (1996b), Voight, Callagham, and Ryska, (2000), and Hanton, Mellalieu, and Young, (2002), maintained that symptoms often associated with competitive anxiety and performance, were moderated by self-confidence.

Specifically, Voight, Callagham, and Ryska, (2000) found that sport self-confidence was a mediating factor in which motivational goals predict trait anxiety among Mexican-American adolescent athletes. Additionally, Hanton, Mellalieu, and Young, (2002) found that anxiety increases as competition approaches, and that self-confidence acts a moderating variable that either increases or decreases anxiety levels based on the perception of the upcoming event. According to Hardy (1990), self-confidence can moderate the effects of cognitive anxiety and physiological arousal on performance. Woodman and Hardy (2003) supporting this view found that self-confidence was significantly more strongly related to sport performance than cognitive anxiety.

Level of performance

Looking at the varying levels of performance in individuals, Vealey (1988) determined that in relation to trait sport-confidence, a difference existed between elite and college or high school participants, with elite individuals exhibiting higher trait sport confidence than either college or high school individuals. These differences were substantiated by Jones, Hanton, and Swain, (1994), and Jones and Swain, (1995) in their studies of self-confidence and elite and sub-elite performers. It was reported that elite performers had significantly greater levels of self-confidence when compared to their

sub-elite colleagues. Ribeiro and Aroso (2004) and Ng, Cheung, and Fung, (2001) further corroborated this finding.

Ribeiro and Aroso (2004) reported that athletes who perform in top leagues, where there is a higher competitive level and better physical and psychologically conditioned athletes, have higher stable sport confidence. Investigating the role of trait and state sport confidence with elite and non-elite athletes in China, Ng, Cheung, and Fung, (2001), reported that differences existed between levels of participant. Based on the results, state sport confidence appeared to play a more important role for non-elite participants. In addition, depending on the type of event, non-elite participants appeared to be affected adversely by sport confidence whereas for the elite group, trait and state sport confidence were affected regardless of event.

Further emphasising a difference between levels of participants, Woodman and Hardy (2003) and Ribeiro and Aroso (2004) also found that self-confidence and trait sport confidence respectively were higher for higher standard athletes/footballers than lower standard athletes/footballers. The level of pressure has been offered as one plausible explanation. However, Woodman and Hardy stress that the lack of studies involving truly elite athletes poses a problem in terms of generalising results, and suggest that further research with this level is needed.

Self/sport confidence and gender

Within physical or business settings, the view that women often have lower levels of self-confidence than men is well supported (Corbin, 1981, Corbin, Laurie, Gruger, & Smiley, 1984; Ireland, Hitt, & Williams, 1992). However, Corbin et al. (1984)

demonstrated that females' confidence could be improved by exposing them to vicarious experiences.

Lenney (1977) suggested three explanations as to why females may have lower levels of self-confidence. Females tend to have lower performance expectancies if the nature of the task is typically masculine, if the emphasis is placed on social comparison, and if performance feedback is unclear. Additionally, Corbin (1981) found a significant interaction between sex of participant, opponent and ability. Females who played an opponent of greater perceived ability, rated themselves as less capable of beating the same opponent than the males who played an opponent of greater perceived ability. Corbin (1981) indicated "the threat of playing a 'good' opponent seems to create a vulnerability in females that is not present in males" (Corbin, 1981, p.269).

Corbin, Landers, Gruger, & Smiley, (1983) extended this work with male boastfulness and lack of female confidence, in relation to a motor performance task. Corbin et al. found that there was no significant difference between actual performance time for males and females considering that both groups perceived the task as more masculine. However, a difference was found in relation to self-confidence and performance estimates between males and females. The males reported higher performance estimates than the females. Vealey (1988) also reported gender differences on trait self-confidence between males and females.

Sources of self-confidence

While the general concept of self-confidence has been extensively investigated, Vealey, Hayashi, Garner-Holman, and Giacobbi (1998) maintain that no determinants or sources of sport confidence have been examined. Vealey, et al. (1998), do acknowledge

that some research has been carried out on sources of self-confidence. However, they highlight that these have often been identified through the four sources of self-efficacy (performance accomplishments, vicarious experience, verbal persuasion, psychological states) as proposed by Bandura, (1977; 1986), rather than for sport specifically.

This lack of specificity to the sport arena is echoed in the following statement "although the self-efficacy theory has proved to be a fruitful theoretical framework to examine sources of self-efficacy, the question remains as to whether these sources are the most salient to athletes within the unique sport context" (Vealey et al. 1998 p.55). To address this deficiency, Vealey et al. (1998) extended the concept of sport-confidence to examine sources of self-confidence to the sport environment.

The researchers proposed two major categories that influenced sources and levels of sport confidence. According to Vealey et al. (1998), organizational culture "includes such factors as competitive level, motivational climate and the goals of particular sport programmes" (Vealey et al. 1998 p.57). The second category, athlete characteristics, encompasses "all of the personality characteristics, attitudes and values of individual athletes, as well as demographic factors" (Vealey et al. 1998, p.57).

In addition to organizational culture and athlete characteristics, several other factors were also incorporated into the model. According to Vealey et al. (1998) the framework also predicts that sources of sport-confidence have an impact on levels of sport confidence that in turn impact the affect, behaviour and cognitions of the athlete. The resultant affect, behaviour and cognitions then feedback to influence sources of self-confidence, sport confidence and athlete characteristics.

The consideration of this feedback loop was emphasised by Vealey et al. (1998) who suggested that it aided in understanding how and why various sources of sport confidence develop. As part of a multiphase study, Vealey et al. investigated the constructs predicted to influence sources of sport confidence. As a result of this stage, the Sources of Sport Confidence Questionnaire (SSCQ) was developed. From an overall perspective, nine sources of sport confidence used by athletes were supported within the sport confidence framework originally proposed by Vealey (1986). These nine sources are as follows: physical/mental preparation; social support; mastery; demonstration of ability; physical self-presentation; environmental comfort; vicarious experience; situational favourableness; and coaches' leadership. However, as with Vealey's original model, she cautions that additional research should be undertaken to further verify the SSCQ.

Specific findings of the multiphase study demonstrated that 'physical/mental preparation' was a significant predictor of SC-trait. In addition, it was found that 'physical/mental preparation' was a source of sport confidence that was used by more performance-oriented athletes than outcome oriented athletes. Conversely, 'demonstration of ability' was more salient for outcome oriented athletes, than for performance oriented athletes.

Levels of SC-trait were also predicted to influence affect, behaviour and cognition. Specifically, affect and cognition were measures of intrinsic motivation (IMI; Ryan, 1982), competitive state anxiety and state self-confidence (CSAI-2; Martens et al. 1990), respectively. Researchers found that athletes high in SC-trait were more intrinsically motivated and had lower cognitive and somatic anxiety scores (Vealey et al.

1998). Additionally, state self-confidence was higher for SC-trait athletes than low SC-trait athletes.

Interaction between factors

Like self and sport confidence, gender differences emerged for both the high school and college samples. High school females rated social support as a more significant source of sport confidence. However, high school males rated demonstration of ability as a more important source. In the college sample physical self-presentation and social support was rated for females.

Several researchers have acknowledged the possible links between sources of sport confidence and an individual's goal orientation (Duda & Nicholls, 1992; Galloway, 2003; Nicholls, 1984; Magyar & Feltz, 2001; Willaims, 1994). Williams (1994) within the sport arena, found a link between goal orientation and the selection of sources of competence information. Specifically, task-oriented individuals were said to prefer using goal attainment, learning and improving as information about their competence; whereas ego oriented athletes were more likely to compare themselves with others. Galloway (2003), in his study with elite athletes reported that the athlete's predisposition towards goal setting determined self-confidence levels. He further stated that task oriented achievers were able to increase their confidence levels while ego motivated overachievers decreased their confidence significantly.

Examining the relationship between goal orientation and sport confidence, Shane (2000, cited in Chie-der, Chen, Hung-yu, & Li-Kang, 2003), reported that male and female athletes are significantly different in task orientation, ego orientation and several other aspects related to the source of sport confidence, such as skill perfection,

demonstration of ability and physiological/psychological preparation. Like Vealey et al. (1998), Shane also found that sources of sport confidence differed depending on level of performance. Investigating the link between goal orientation and trait sport confidence, Mills (1996) reported that athletes who were more task orientated had more years of competitive volleyball experience and scored higher on trait sport confidence, than ego-oriented athletes.

Furthering the research on sources of sport confidence, Magyar and Feltz (2001, 2003) investigated whether an individual's goal orientation, perception of climate, or a combination of the two would predict the selection of either adaptive (self-referenced) or maladaptive (normative referenced) sources. Using a classification slightly different from Vealey's categorisation, Magyar and Feltz hypothesised that an individual with a predisposition for task orientation would influence the use of self-referenced sources of confidence (sources that are in the direct control of the athletes). Alternatively, an individual with a predisposition for ego orientation would be associated with the selection of normative sources (sources that are dependent on the presence of others and not within the athletes immediate control). This hypothesis was supported. Task orientation was linked to mastery and physical/mental preparation sources, whereas ego orientation was associated with demonstration of ability, physical self-presentation and situational favourableness. These findings additionally supported Williams (1994) findings, and provided further credence to the view that dispositional tendencies impact on patterns of confidence.

Examining the interaction between sources of sport confidence and trait sport confidence, Wilson, Sullivan, Myers, and Feltz, (2004) supported Vealey et al.'s (1998)

supposition that physical/mental preparation was ranked one of the highest sources among athletes. Wilson et al. (2004) also reported that mastery was ranked equally as highly. In addition, physical/mental preparation and demonstration of ability were significant predictors of trait sport confidence for master athletes. However, like Vealey et al., Wilson et al. suggested that the SSCQ needed more psychometric work when used with the master athlete population.

Using a validated modified questionnaire, Chie-der, et al. (2003) validated Vealey et al. (1998) and Shane's (2000, cited in Chie-der, et al. 2003) findings. Significant differences in perceived ego climate and three factors of sources of sport confidence, (perfection of skills, demonstration of ability and physical performance) were found between male and female players. The sources of sport confidence, were also closely related to player task orientation, perceived task climate and perceived ability.

In summary, numerous researchers have investigated general self-confidence albeit from a variety of perspectives. Overall, regardless of approach, there appears to be a consensus surrounding the importance and significance of such a concept with respect to level of participant, performance and other cognitive factors.

Chapter 5

Research Paradigms

The contextual constructivism paradigm

While Guba and Lincoln (1994) maintain the criticality of employing a research paradigm before and when pursuing empirical research, numerous paradigms have resulted in disagreement amongst researchers (Toma, 1997). Kuhn (1969), defining paradigms as the framework within which 'normal science' operates, or as a way of looking at the world, provides some rationalisation as to why such discord should exist. Acknowledging that 'normal science' eventually produces anomalies that one particular paradigm cannot explain, Kuhn contends that this necessitates and results in a new paradigm being established. However, new paradigms are either not accepted by the old paradigm or, researchers consign anomalies to normal variations. Specifically, Kuhn maintains, "the proponents of competing paradigms practice their trades in different (conceptual) worlds" (Kuhn, 1969, p.109).

Even though such disagreement exists, all concur that paradigms are belief systems about questions of reality, truth, objectivity and method. These fundamental assumptions are said to cause scholars to approach research in very particular ways (Guba, 1993). Consequently, as Guba and Lincoln (1994) report, the influence of a research paradigm is important for understanding the nature of information collection and analysis in a non-experimental study. This importance is reflected as follows:

> …Both qualitative and quantitative methods may be used appropriately with any research paradigm. Questions of method are secondary to questions of paradigm, which we define as the basic belief system or worldview that guides the investigator, not only in choices of method but in ontologically and epistemologically fundamental ways (Guba & Lincoln, 1994, p.105).

Given the nature of this particular study, bridging both qualitative and quantitative methodologies may be the appropriate direction. The constructionist paradigm containing a grounded theory approach, (revealing pre-existing phenomena and the relationships between them by capturing lived experience), is perhaps the most compatible of the methodological paradigms. A contention supported by Charmaz (1995), who suggests that grounded theory may be ideal in linking both positivist (quantitative) and interpretive (qualitative) methods.

In general, constructivism emphasises the individual, and maintains that knowledge is built or constructed within an individual's mind by the individual. Individuals acquire knowledge and use it to draw their own conclusions and develop their own beliefs. As the individual gains more information, it is added to and mixed with previous information and beliefs. Within this paradigm, construction of new knowledge is strongly influenced by prior knowledge. Knowledge creation is consequently seen as an active process (Guba & Lincoln, 1994).

Due to knowledge being constantly acquired, integrated and developed within an individual, this particular paradigm requires the interpretation or identification of the meaning of an individual's words and phrases. Within the constructionist approach, the

researcher thus acts "as orchestrator and facilitator of the inquiry process" (Guba & Lincoln, 1994, p.114) since the individual has their own perception or reality. Constructivists also recognise that due to this approach, bias is inevitable. As a result they maintain that the most effective way of dealing with this bias is to openly identify the researcher and their biases, (Geelan, 1997). Concurring that a connection or relationship will ensue between the participant and the researcher, Henwood and Pidgeon (1994) further suggest that a constructionist methodology allows for the direction of the knowledge to be influenced, not only by the individual's values, but also the value system and beliefs of the researcher.

It is believed that the ultimate aim of the constructionist paradigm is the understanding and reconstruction of the individual constructions of reality that people hold, with an aim towards completeness and consensus (Guba & Lincoln, 1994). However, the inclusion of a 'permeability' factor (Stiles, 1993) was also recognised as essential. Such an addition allows for change or new interpretations as a result of more information (Guba & Lincoln, 1994; Stiles, 1993).

Contextual constructivism

An extension of the constructionist paradigm is contextual constructivism, whose pioneer was said to be Cobern (Geelan, 1997). Several approaches to constructivism have been classified, including personal constructivism, social constructivism, contextual constructivism and critical constructivism. As with many areas, however, terminology has been seen to be an issue with Geelan (1997) reporting that while he may use the term contextual constructivism, other researchers use different terms for describing the same concept. Despite slightly differing emphases, all approaches believe that knowledge is

actively constructed, and that the individual creates their own perception and reality. In addition, Cobern (1993) contends that all strands of constructivism should be brought back together as all perspectives are required.

The contextual constructivist paradigm holds the belief that the individual and the researcher are conscious beings, rather than holding the assumption of one reality through the application of 'correct' methodology (Madill, Jordan, & Shirley, 2000). Contextualism further maintains that the knowledge being investigated is local, provisional and situation dependent (Jaeger & Rosnow, 1988). Consequently, the relationship between the information provided by the participant and the situations in which they were produced or the context is given primary importance. However, similarly to the constructionist paradigm, an interconnection is thought to be present between the researcher and the individual being researched. Rather than an emphasis on objectivity and distance, the subjective elements of researcher/participant role, values and cultural predispositions are accepted. According to Madill et al. (2000), "by implication, all accounts, whether those of participants or of researchers are understood to be imbued with subjectivity, and therefore not prima facie invalidated by conflicting with alternative perspectives" (Madill et al. 2000, p.9).

In identifying and accessing information, the emphasis within the contextual paradigm is on the use of multiple theoretical and methodological approaches to deal with the complexity of human behaviour. Feyerabend (1975) suggests that no single methodological framework is adequate for describing the multiplicity of complex ways in which scientific knowledge grows, instead:

> A scientist who wishes to maximise the empirical content of the views he holds and who wants to understand them as clearly as he possibly can must therefore introduce other views; that is he must adopt a *pluralistic methodology*…..knowledge so conceived is not a series of self-consistent theories that converges towards an ideal view; it is not a gradual approach to the truth. It is rather an ever increasing *ocean of mutually incompatible (and perhaps even incommensurable) alternatives*, each single theory, each fairy tale, each myth that is part of the collection forcing the others into greater articulation and all of them contributing, via this process of competition, to the development of our consciousness (Feyerabend, 1975, p.30, italics in original).

This view implies that all perspectives have value whether consistent with other views or not. According to Feyerabend opposing theories make each other more powerful and useful since they each provide what the other lacks; they do not damage each other but are necessary. The concept of contextual triangulation lends itself to the use of such multiple methods as a means of investigating a particular experience.

Contextual triangulation

Researchers have accepted the benefits of combining methods in research (Barbour, 1999; Shih, 1998), with researchers taking the view that quantitative and qualitative methods can act as partial correctives to each other. In general, it is agreed that this integration will capitalise on the strengths of different methods, while compensating for their weaknesses. Highlighting the limitations associated with the use

of singular methods of data collection Grove, Lavallee, and Gordon, (1997) state: "In sum, we believe there is a need for a multi-method approach to research…." (Grove et al., 1997, p.200).

Given the complex nature of human behaviour, it is thought that there is a need for a design that specifically mirrors the multidimensionality and complexity of human behaviour. Triangulation has been said to have the potential to provide such a multifaceted view. Using both qualitative and quantitative methods of data collection may serve the dual purpose of confirmation, as well as completion, by capturing a more complete, holistic and contextual portrayal of the individual under study. For example, specific types of qualitative research such as those based on constructivism are thought to provide powerful insights into the process of knowledge production (Coyle & Williams, 2000).

However, as Tindall (1994) cautions, while the multi-method approach has the ultimate goal in gaining a more complete understanding of the experience by broadening the information base, "we must remember that we are not gaining the impossible, a complete picture: we may in the final analysis be made more aware of gaps in our understanding" (Tindall, 1994, p.147).

Triangulation involves the use of multiple methods and measures of an empirical phenomenon in order to "overcome the problems of bias and validity" (Blaikie, 1991, p.115). Overall, triangulation refers to a methodological approach where to obtain an accurate representation of reality, the researcher selects a range of methods, investigators and/or theories in one study of a single phenomenon to broaden the enquiry process (Brannen, 1992; Denzin, 1989).

Extending the research, Denzin (1978) distinguished between data triangulation (data collected at different times/sources); investigator triangulation (different researchers independently collect data and compare results); methodological triangulation (multiple methods of data collection are used); and theory triangulation (different theories are used to interpret a set of data). Janesick's (1994) investigation further added to this distinction by adding the category of interdisciplinary triangulation (the research process is informed by more than one discipline such as dance, psychology, history).

From a contextualist perspective, the goal of triangulation is one of completeness rather than confirmation (Madill et al. 2000), not necessarily in the sense of having discovered all possible information relevant to the event, but a more complete approach, that allows for the interpretation of data that is both consensual and conflicting. "Thus a particular strength of the contextualist approach to triangulation is the possibility of retaining truly novel perspectives which may have been discounted when consensus (and hence probably conventional) understandings are valued" (Madill et al. 2000, p.10).

A hypothetical and non-hypothetical approach

The purpose of the current research was to approach the collection and analysis of the data respecting and taking into account previous research, as well as the contextual constructivism perspective and triangulation. While previous research has indicated relationships that are likely to exist in sustainability between certain variables and outcomes, other variables and relationships may also exist. Consequently, understanding the relationships, similarities and differences in perceptions and behaviours of the individuals involved will be guided by both research aims and specific hypotheses.

Given the complex nature of human behaviour and the individuality of specific experiences or events, this approach should provide the flexibility to provide a more in-depth look at the variables of experience and cognitive factors.

Focus, aims and hypotheses

The primary focus of this research was to identify the processes (individual and historical variables) that are characteristics of sustained performers at an elite level. So that this may be achieved the following aims and hypotheses were proposed:

1. To determine the relationship between levels of sustained performance and specific individual and historical variables. The specific hypotheses associated with this aim are as follows:

i). Sustainable performers will have higher levels of task orientation and confidence;

ii). Sustainable performers will have less negative cognitions;

iii). Sustainable performers will have greater incidences of peak experience experiences, peak performance experiences and flow experiences, and fewer incidences of failure; and

iv). Sustainable performers will have experienced a greater number of life events more often. The level of significance attached to the life events will be the same as that attached by non-sustainable performers.

2. To identify whether differences exist as a function of gender.

3. To identify whether differences exist due to type of performance discipline.

The specific hypothesis attached with this aim is as follows: Characteristics of sustainable performance will differ according to the practising environment.

4. To identify variables that are predictive of sustainable performance. And

5. To determine if any of the variables found to be significant predictors of sustainable performance can be classified as rare, valuable, inimitable and non-substitutable.

Chapter 6

Method – Organisations and Participants

The primary focus of this research was to identify the processes (individual and historical variables) that are characteristics of sustained performers at an elite level. Prior to such an aim being achieved, however, specific factors required identification and rationalisation.

Since within this research, discipline was a key variable under investigation, the selection of the discipline and a rationale for why a particular discipline was chosen were critical components. Equally, the reasoning as to why elite performers were the focus of research rather than non-elite was also required. As a consequence of such questions, further consideration surrounded determining the selection criteria against which organisations and participants within the disciplines should take part. Once all the previous components were in place, the final forays concerned gaining agreement from organisations and participants, detailing which organisations and participants took part, and clarifying issues such as organisation and participant confidentiality and participant withdrawal from the study.

Selection of discipline

A large number of anecdotal reports, and applied research, regarding the similarities between successful leaders and organisations in the sport and business areas are in existence. For example, coaches of highly successful teams and individuals

regularly talk to multinational corporations on the factors required for success and peak performance, and sport or performance psychologists have written about the links between sport and business (Weinberg & McDermott, 2002).

The performing arts have also been said to have much in common with sport (Hays, 2002; Nieminen, Varstala, & Manninen, 2001), with Csikszentmihalyi (1993) suggesting that games, sport and artistic performances are designed to facilitate flow. Martin and Cutler (2002) share the view that many similarities exist between sport and the performing arts. Specifically they maintain "to achieve excellence both require long hours of practice over many years, sustaining motivation over time in the face of failure and disappointment also is important. Both actors and athletes are responsible for their own performances which occur in socially evaluative settings in front of an audience". Additionally, "similarly to athletes actors require mental skills such as concentration, anxiety management and thought control in order to perform well" (Martin & Cutler, 2002, p.344-345).

While such statements referred to the performance discipline of acting, they were also thought to be able to be (cautiously) extended to include figure skating and other performing arts such as ballet and dance (Martin & Cutler, 2002). Hays (2000) and Orlick and Partington (1988) further highlight the similarities between sports and arts suggesting that both athletic and artistic performances integrate mental and physical performance in socially evaluative settings.

Although the above anecdotes and applied research suggest that there is a link between being successful in sport, business, or the arts, the empirical evidence directly comparing the factors critical for sport success versus those critical for business success

is lacking (Rollins & Roberts, 1997). This lack of evidence is also applicable to dance (Hamilton, Hamilton, & Meltzer, 1989), where the personality of the dancer has received relatively little attention. Even though research has shown that classical ballet exceeds professional football in terms of the mental and physical demands of athletic performance (Nicholas, 1975), no such profile has been determined for the national ballet dancer (Hamilton et al., 1989). In addition, Hamilton et al. (1989) contend that the psychological factors required by performing artists for optimal performance have yet to be established. Bliss (1996) further concurs that knowledge of enhanced performance states in dancers is limited. Additionally, the lack of psychological research with dancers has resulted in drawing on findings in other areas, such as sport (Nieminen, Varstala, & Manninen, 2001).

In addition to focussing on the similarities between dancers and athletes, differences are also in evidence. Bliss (1996) suggests that the core nature of modern dance is very different from the competitive orientation of sport, with modern dance focusing on aesthetic expression and creativity. Bliss consequently concludes that more dance specific information needs to be explored (Bliss, 1996).

In summary, the current situation is one where a lack of empirical evidence exists between interdisciplinary research. The primary focus has also been on identifying and emphasising similarities between disciplines, rather than highlighting the differences. The consequences of such an approach are (potentially) significant, since the generic application of findings from related disciplines may or may not be appropriate or detrimental.

Aside from the goal of providing additional empirical evidence of the links and differences between the sport, corporate and arts disciplines, further support for the selection of all three disciplines is evidenced by the methodological choice of interdisciplinary triangulation. Within this methodology the research process is enhanced by the investigation of more than one discipline (Janesick, 1994).

Level of performance

Maintaining the highest level in sport is considered the mark of a true champion (Jackson, Mayocchi, & Dover, 1998). However, Jackson, et al. (1998) also highlight that achieving this pinnacle is difficult. Moreover, they contend that the reasons why it is so difficult are not well understood.

Within the sustainable competitive advantage literature on organisations, there has been the suggestion "it is to firms with performance that is consistently above industry average that strategists and scholars must look for sustained competitive advantage" (Rouse & Daellenbach, 1999, p.488). Consequently, while sustainable peak performance has been seen to occur in many walks of life, and amongst a wide range of individuals (Csikszentmihalyi, 1975a; Garfield, 1986), it seems reasonable when examining the concept of individual sustainability, that looking at individuals who are consistently sustaining an above average level is where initial effort should be placed.

However, by taking this approach, while it may give some insight into how sustainable peak performers are doing what they do, it would not provide an insight into the differences between those who are consistently sustaining above average performance, and those who get to an above average level and cannot, for whatever reason, sustain that level.

As a consequence, this research is proposing to not only include those individuals who are consistently sustaining an above average level, but also to include those who have attained an above average level, but who are not sustaining that level. In addition, acknowledging Rouse and Daellenbach's (1999, p.488) contention, the organisations from which individuals are selected will also be limited to those consistently performing at an above average level.

Additional support for initially targeting elite level participants may be found in expertise research, where findings have demonstrated that attaining a level of expertise only occurs after 10 years in the particular discipline (Chase & Simon, 1973). This, together with Jackson and Csikszentmihalyi's (1999) assertion that improving skill levels in sport will increase the potential for flow experiences, and Ravizza's (1977) view that peak experiences may only happen when individuals no longer have to concentrate on learning the technical skills, lend backing for the selection of elite level participants.

However, a key issue surrounding elite participants is sample size. Rouse & Daellenbach, (1999) accepting Csikszentmihalyi and Garfields' findings that sustainable performance can occur in many walks of life, concede that taking the approach of looking at those who are consistently sustaining an above average level would severely restrict sample size. However, they argue that it must happen if researchers are to isolate the components of sustained competitive advantage. Slekar (2005) has also supported this approach, maintaining that the choice of sample selection can be purposely chosen, so that all the important details can be highlighted. Specifically, Slekar maintains that "knowing this to be the case using a small sample purposely chosen so as to present detailed descriptions of phenomena is appropriate" (Slekar, 2005, p.82).

Consistent with qualitative methodologies, therefore, (Lincoln & Guba, 1985; Patton, 1990), purposive sampling was used to select the participants. The use of purposive sampling is thought to be most effective with small numbers of individuals or groups when the understanding of human perceptions, behaviours and contexts is required. The power of purposive sampling is seen to be in the selection of information rich cases for in-depth study. Purposive sampling is acknowledged to be able to be used with both quantitative and qualitative studies (Commonwealth Educational Media Centre for Asia).

Selection of organisations

Since there is no global professional body that provides definitions of elite sports, corporate or dance companies, it was necessary to look both within each field, in addition to the Shorter Oxford English Dictionary, to obtain a classification of elite. According to the Shorter Oxford English Dictionary, Elite may be defined as " a group in society considered to be superior because of the power, talent, privileges, etc of its members" (The Shorter Oxford English Dictionary, page 280).

Sport.

Within sport specifically it has been stated " elite sport is professional in many senses of the word. It includes hard training, high quality of performance and is often a full time job" (Breivik, 1998, p.4). In addition, elite sport has been said to "cater for high performance athletes competing at a national or international level" (Sport and Recreation, Queensland Government). As a result, organisations were chosen based on the following: being seen to be superior based on talent, to include hard training, high

quality of performance, full time job for their athletes and involving competition at a national or international level.

Dance.

For the dance industry, although there seems to be independent recognition and consensus of who is an elite company by individuals within the dance world, there appears to be no definition by any dance body. Consequently, the same criteria were used to identify dance companies as sport organisations with the exception of competing at a national or international level. In this instance this was replaced by performing at a national or international level.

Corporate.

Within the corporate industry, each year Forbes and Fortune compile the top 100 and 500 organisations respectively. The criteria for selection into the top 100 and 500 includes those organisations that are most admired globally, and those that have financial success. Given the stringent criteria in which companies are selected, in addition to the universal acceptance of the 'eliteness' associated with attaining entry on these lists, the top 100 and 500 were scrutinised for the years 1999, 2000, and 2001 to ascertain which organisations appeared in all three years. From this list three organisations were approached to take part. In order to provide a further level of uniqueness to the study a cross-cultural dimension was added by the selection of organisations in Australia and the U.K.

Participants

Step 1 – Identification of general criteria.

Once organisations had been identified, a selection of participants within these elite organisations who fell into sustainable peak performer, neither or non-sustainable peak performer categories needed to be ascertained. As no previous research was available to shed light on this categorisation, the following sources of information were utilised: the investigator's current research into the area of individual sustainable performance, and information obtained from key personnel working in all three disciplines. Examples of key personnel included sport psychologists, coaches, players, dancers, executives and consultants.

Specifically, two key personnel were identified within each discipline. Personnel from the dance company included the physiotherapist, the artistic director or choreographer; the physiotherapist, the coach or the sport psychologist from the sports organisations; and from each corporate organisation the manager, human resources manager/director or organisation development manager/director. The two people were selected based on the level of knowledge of the possible participants, and level of knowledge of the particular discipline.

Other key personnel such as dancers, athletes and executives were randomly chosen purely to glean information on what sustainability or non-sustainability might look like. These individuals were randomly chosen as follows: As well as discussing criteria for categorising sustainable and non-sustainable performance, the two main key people were also asked to provide three names of individuals with whom the researcher could talk. The additional names were placed in a hat and two names drawn out. Each of

the two individuals were contacted to ascertain whether they would talk to the researcher, for the purposes of identifying what they thought sustainable performance and non-sustainable performance might look like.

While a formal interview was not undertaken, all talks covered the areas of what criteria could be established for sustainable versus non-sustainable performance, and how long a reasonable timeframe would be, to assess whether an individual is sustaining performance. Consistent with the paradigm of contextual constructivism, by basing the outcomes on a participant's actual description, it embodied their unique views (Tindall, 1994).

The output from this step was the identification of general criteria for the categorisation of sustainable, neither, and non-sustainable performance. Based on the general criteria generated by this approach, a rating system was produced allowing for a more specific categorisation of participants into sustainable, neither and non-sustainable performers. The general criteria identified were as follows:

- The definition, 'consistently performing at a recognized high level, which is close to or exceeds your/their personal best over at least a two year time frame allowing for slight variations in a range of conditions and situations' was developed through initial discussions with key personnel, research into the area of peak performance, and definitions of 'sustainable', 'peak', and 'performance' contained within the shorter Oxford English dictionary. Sustainable was defined as " to keep up or maintain", peak was defined as "reached the highest point" and performance as "achievement".

  In relation to a two-year time frame, when examining the issue of sustainability, despite numerous authors discussing sustainability, the concept remains largely

undefined (Reed & DeFillippi, 1990). Given that Wiggins and Ruefli (2002) suggested that 10 or more years was sustained for an organisation, it seemed reasonable to conjecture that one fifth of this, two years or more, is a sensible time frame for individuals to be considered as sustaining their performance. Overall, key personnel also endorsed two years as a reasonable time frame;

- Number of productions chosen to take part in/consistency of working (dance);
- Number of major injuries resulting in time away from dance;
- Statistics e.g. number of games played, goals scored, runs made, injuries resulting in time away from sport, selection into national/international squad (sport);
- Individual achievements recognition (sport and corporate);
- Offer of secondment and success of secondment (corporate);
- Age range 18-40. Time was identified as an important factor that might be for or against an individual. Schultz and Curnow (1988) reported a biological window for certain athletic events that set an upper and lower age limit to peak performance. "Brute strength and speed events peak relatively early" while "the attributes of good golfers and baseball players have more to do with precise motor control that may require many years to develop" (Schultz & Curnow, 1988, p.115). In vigorous sports the age distributions centred in the 20's. For non-vigorous activities, the peaks occur in an individual's 30's and 40's, (Schulz, et al., 1994). Consequently, to account for all three disciplines, the age range of 18-40 was established.

Step 2 – Identification of participants, rating scale and specific criteria.

The two key personnel within the company who were either the physiotherapist, the artistic director, choreographer, physiotherapist, coach, sport psychologist, manager, human resources manager/director or organisation development manager/director were asked to identify six peak performers within their organisation, three of whom were sustaining this level, and three who were seen to have more variation in their performance. The two key people were selected based on the level of knowledge of the possible participants.

To be categorised as a sustainable peak performer or a non-sustainable peak performer, each possible participant was given a sustainability rating score based on specific criteria, along a continuum using a five point Likert scale (+2 sustainable peak performer; +1 just sustainable peak performer; 0 neither a sustainable or non sustainable peak performer; -1 just non-sustainable peak performer; -2 non-sustainable peak performer). Specific criteria for each score may be viewed below. Only those people who achieved a +2, +1, -2, -1 rating were eligible to be included in the study. If a name was provided and subsequently achieved a rating of zero they were excluded from further consideration, and key personnel were duly asked to provide an additional name.

Specific Criteria

+2 Sustainable Peak Performer

- Placement of participant in sustainable performance category by two members of the organisation
- Definition of sustainable peak performance applied to participant

- Offer and success of secondment (measured by not being recalled or removed from position) (Corporate)
- Company award or prize (corporate)
- Consistent promotion (every 2-3 years, corporate)
- Number of major injuries 1-2 (dance or sport)
- Have won one medal/trophy or top 5% of sport for runs made or goals scored (sport)
- Utilisation greater than 95% (dance or sport)
- Placement of participant in sustainable performance category by participant

  +1 Just Sustainable Peak Performer
- Placement of participant in sustainable performance category by one member of the organisation
- Definition of sustainable peak performance applied to participant
- Offer of secondment (Corporate)
- Company award or prize (corporate)
- Promotion but not consistent (corporate)
- Number of major injuries 3-4 (dance or sport)
- Have won one medal/trophy or top 5% of sport for runs made or goals scored (sport)
- Utilisation greater than 80% (dance or sport)
- Placement of participant in sustainable performance category by participant

  0 neither a sustainable peak performer or a non-sustainable peak performer
- Inability to place participant in sustainable performance category by two members of the organisation

- Placement of participant as a peak performer only by two members of the organisation
- Definition of sustainable peak performance not applied to participant
- Participant unable to place themselves in sustainable performance category but does categorise themselves as a peak performer

  -1 Just Non-Sustainable Peak Performer
- Placement of participant in non-sustainable performance category by one member of the organisation
- Definition of sustainable peak performance not applied to participant
- Offer of secondment with non-success (Corporate)
- No company award or prize (corporate)
- No promotion offered for 3-4 years (corporate)
- Number of major injuries 5-7 (dance or sport)
- Have won no medals/trophy's or bottom 50% of sport for runs made or goals scored (sport)
- Utilisation less than 60% (dance or sport)
- Placement of participant in non-sustainable performance category by participant

  -2 Non-Sustainable Peak Performer
- Placement of participant in non-sustainable performance category by two members of the organisation
- Definition of sustainable peak performance not applied to participant
- No offer of secondment (Corporate)
- No promotion offered (corporate)

- No company award or prize (corporate)
- Number of major injuries more than 8 (dance or sport)
- Have won no medals/trophy's or bottom 25% of sport for runs made or goals scored (sport)
- Utilisation less than 40% (dance or sport)
- Placement of participant in non-sustainable performance category by participant.

Details of participants taking part in the study

Every person who fulfilled the criteria of being a sustainable or non-sustainable performer was included, with 25 names being provided for sport, 25 names for corporate and 20 names for dance. The researcher undertook to contact each person by telephone during 2002 in order to advise them of the nature of the research; to ascertain their willingness to take part and have a questionnaire forwarded to them; and to ask how they saw themselves, either as a sustainable peak performer or a non-sustainable peak performer based on the criteria given above. If a discrepancy occurred between the individual's perception, and the key person's perception, they were to be excluded from further consideration. However, remarkably, this situation did not occur with all participants mirroring the views of the key people.

Of the 70 names provided, 11 sports people were either away, or on tour, and were contactable only through the coach or the sports psychologist. All 11 people agreed to have a questionnaire forwarded to them. Of the remaining 59 people, all agreed to have a questionnaire forwarded to them making 100% of the original sample. All questionnaires were coded for the purposes of confidentiality, and all included a reply paid envelope.

In addition, to the questionnaire (Appendices A and B), each pack contained consent forms (Appendices D and E) that were to be sent back with the questionnaire, an information sheet to be kept by participants (Appendix F), and an information sheet for the participating organisation (Appendix F). The researcher explained to the participants, that in addition to the questionnaire a random sample of people were to be selected for an in-depth interview. This was to give participants prior notice that this may happen, and that selection was based upon names being pulled randomly out of a hat, rather than on the questionnaire being returned.

Specifically, the selection process for the interview was as follows. For each organisation taking part, participants were (based on the specified criteria) placed in either a +2 or +1 sustainable peak performance or a –2 or –1 non-sustainable peak performance category. As this research was primarily concerned with sustainability versus non-sustainability rather than varying degrees of sustainability, +2 and +1 sustainers were all placed together as were –2 and –1 non-sustainers. All sustainable performer participants' names were then placed in a hat and one name randomly chosen out of the hat. The same procedure was invoked for the non-sustainers. This process was repeated for each organisation taking part.

Of the 70 questionnaires forwarded to participants during 2002, 50 were returned completed (71% return rate). Fourteen questionnaires were returned from arts, (70% return rate). Of the 14 returned, 7 were from females and 7 from males. Nineteen questionnaires were returned from corporate (78% return rate). Of the 19 returned 12 were from females and 7 from males. Finally, 17 questionnaires were returned from sport (68% return rate). Of the 17 returned, 9 were from females and 8 from males. A

reminder telephone call was given to participants who had not returned questionnaires, with advice that they were under no obligation to participate should they have changed their mind.

From the 50 participants taking part in the research, 26 people were approached to take part in an in-depth interview (Appendix C), of which 18 in-depth interviews were actually completed (69% of the original targeted sample). Of the ballet companies taking part, six participants were approached to complete an in-depth interview of which five actually took place (three female and two male); of the corporate organisations 12 participants were approached to complete an in-depth interview of which seven actually took place (four female and three male); and of the sports organisations, eight participants were approached to complete an in-depth interview of which six actually took place (four male and two female).

A summary of the participants, organisations and sustainable and non-sustainable performers involved in the study may be found in tables 1-4.

Table 1

Summary of Sports Participants

Discipline: Sports				
Country		Aus		UK
Area	Football – AFL	Cricket	Waterpolo	Cricket
Male	6	0	0	2
Female	0	4	5	0
Total	6	4	5	2
Total Male	8			
Total Female	9			
Total	17			

Table 2

Summary of Arts Participants

Discipline: Arts			
Country		Aus	UK
Area	Ballet	Ballet	Ballet
Male	2	1	4
Female	3	2	2
Total	5	3	6
Total Male	7		
Total Female	7		
Total	14		

Table 3

Summary of Corporate Participants.

Discipline: Corporate						
Country		Aus			UK	
Area	Fmcg	Fmcg	Svce	Fmcg	Fmcg	Svce
Male	1	2	2	0	2	0
Female	0	3	3	2	2	2
Total	1	5	5	2	4	2
Total Male	7					
Total Female	12					
Total	19					

** Fmcg = Fast moving consumer goods; Svce = Service organisation*

Table 4

Summary of number of sustainable and non-sustainable performers

	Sport	Corporate	Arts
Sustainable Performers	10	14	11
Non-Sustainable Performers	7	5	3

Confidentiality and withdrawing from the research

All participants were guaranteed confidentiality. This was ensured by each questionnaire being coded prior to being sent to the participant for completion. Participants were also made aware, when the questionnaires were initially sent out, and again before the interview, that they could at any stage withdraw from the research with no questions being asked.

During the interview process all interviewees were informed that they could, at any stage, request the tape recorder be turned off. This may have been for the purposes of discussing a particular aspect off line, or because of wanting to take a break. All participants were again guaranteed confidentiality by all interviews being coded.

Chapter 7

Method - Approach

Development of questionnaire: Measures

To measure the variables detailed in the previous chapters, a questionnaire of nineteen pages, segmented into six sections was developed by the researcher. The primary purpose of the questionnaire was to derive information that can be used to describe the characteristics of the individuals in this particular sample.

Five standardised scales were formulated into the questionnaire, together with closed questions relating to life events or experiences. Details of the standardised and non-standardised measures that were incorporated into the sustainability questionnaire are detailed below.

Task and Ego Orientation in Sport Questionnaire.

The Task and Ego Orientation in Sport Questionnaire (TEOSQ; Duda & Nicholls, 1992) was used to measure goal orientation and sport beliefs. The TEOSQ is comprised of 13 items relating to goal orientations, and categorised into the two subscales of 'task orientation' (7 items) and 'ego orientation' (6 items), with participants required to respond on a five point Likert scale (1=strongly disagree, 2= disagree, 3= neutral, 4= agree, 5=strongly agree). Details of items relating to each of the main subscales may be found in appendix H. Responses to the goal orientation items follow the statement "I felt really successful when……." (Duda, 1989; Duda & Nicholls, 1992). Goal orientation statements included "I learn a new skill by trying hard" (task orientation), and "I can do better than my friend" (ego orientation). Scoring procedures for the TEOSQ involved

totalling the seven items for task orientation and dividing this number by seven. For ego orientation, scoring involved adding the six items and dividing by six.

Duda and Nicholls (1992) reported four goal orientation factors, with the two main orientations relating to task orientation and ego orientation. Task orientation represents an individual's motivation to achieve goals relating to improving skill or gaining knowledge or insight, and perceptions that success is related to effort. Ego orientation represents the goal of establishing superiority over others, and the perception that success relates to superior ability. Two sub-categories of goal orientation are co-operation, which involves the goal of collaboration with peers in order to achieve objectives, and work avoidance where the goal is not to work hard to achieve success.

The psychometric properties of the TEOSQ have been found to be internally reliable and consistent. Duda (1989) used a principal-components exploratory factor analysis to establish the two separate factors of task orientation and ego orientation in two samples of participants. Cronbach's (1951) alphas for task orientation were found to range from .62 to .82; and for ego orientation .85 to .89 across both samples. Chi and Duda, (1995) further tested the TEOSQ finding alpha coefficients ranging from .71 to .77 for task orientation and .8 to .87 for ego orientation.

In addition to investigating the validity of a two-factor structure across distinct groups, gender invariance among the items was deemed to be desirable. Li, Harmer and Acock, (1996), examined measurement invariance and latent mean structure differences across gender, and did not find support for variance between different groups, as did Chi and Duda (1995). Undergraduate male and female students ($\underline{N}$ = 467) completed the scale (Duda, 1989, Duda & Nicholls, 1992). Li, et al. (1996) reported factor loadings of

task orientation and ego orientation for the 13 items invariant across both genders, with findings that males reported higher scores on ego orientation than females. However, the difference was not significant (Li et al. 1996). No such gender differences were found for task orientation.

Modified scales of the TEOSQ.

Given that the present study centred on elite sports, corporate and arts, question 9 "I score the most points/goals/hits" was felt to be sport specific and not relevant for corporate and arts. As a consequence two further questions were added "I achieve more targets/bring in the most money" for corporate, and "I get chosen for the most performances/my performances are better than others" for ballet. The remainder of the questions were felt to be generic enough to work for all three disciplines.

Cronbach Alpha for this research.

For ego orientation, alpha coefficients for the sport, corporate and arts disciplines were .80, .83, and .84 respectively. Task orientation had an alpha of .78. The TEOSQ would appear, therefore, to have acceptable psychometric properties for these populations.

Trait Sport-Confidence Inventory, TSCI (Vealey, 1986).

The TSCI is concerned with assessing an individual's inherent level of confidence. More specifically, SC-Trait may be defined as "the belief or degree of certainty individuals *usually* possess about their ability to be successful in sport" (Vealey, 1986, p.223). Twenty items were generated by Vealey, (1986) to form the initial item pool, with 16 items being retained after evaluation on content and face validity, in addition to clarity. These sets of items were placed in the inventory using a 5-point

Likert scale. Scoring procedures for the TSCI are additive, with the total score being the sum of all item responses. These scales were based on a high-low scale of sport confidence. The inventory was subjected to a rigorous five-phase analysis. Phase 1 was concerned with assessing internal structure, individual item characteristics, and the degree to which social desirability influenced responses to the inventories. Factor analysis was used to determine whether the TSCI measured unidimensional or multidimensional constructs. The method of factor analysis was the principal axes method. Based on the results of this phase, changes were made to the TSCI. The purpose of phase 2 was to replicate phase 1 using the modified version.

Based on the results, the final version of the TSCI was developed with the inventory having 13 items, and a 9-point Likert scale labelled high, medium and low. Specifically, 1-3 was labelled low, 4-6 labelled as medium, and 7-9 as high. Scoring procedures for the TSCI remained additive, with the total score being the sum of all item responses. All respondents were asked to rate each statement with respect to how confident they would generally feel, and not how they would like to feel. Examples of items include: "compare your confidence in your ability to execute the skills necessary to be successful to the most confident athlete you know"; "compare your confidence in your ability to perform under pressure to the most confident athlete you know".

An Alpha coefficient of .93 was found in phase 2 and the following reliability coefficients were obtained in phase 3: 1 day .86 and 1 month .83. The test-retest reliability across samples and time was found to be .86, a level well above the .6 criterion that is usually accepted (Nunnally, 1978). The acceptance of a .6 criterion level in exploratory research was also endorsed by Hair, Anderson, Tatham, and Black, (1998)

who wrote “the generally agreed upon lower limit for Cronbach’s alpha is .70…..although it may decrease to .60 in exploratory research” (Hair et al. 1998, p.118). Phase 4 was concerned with concurrent reliability, and phase 5 construct reliability. All correlations were significant in the predicted directions. Within Vealey’s study, sport confidence had been demonstrated to be an effective conceptualisation of self-confidence as manifested in sport situations.

Modified questions.

Given that the current research centred on sports, corporate and arts (ballet), the instructions were modified. The original instructions were as follows: “Think about how self confident you are when you compete in sport. Answer the questions below based on how confident you generally feel when you compete in your sport. Compare your self-confidence to the most confident athlete you know. Please answer as you really feel, not how you would like to feel.”

This was modified to: “Think about how self confident you are when you compete in sport, compete for selection into a ballet or a role, or attempt to hit your targets. Answer the questions below based on how confident you generally feel when you compete in your sport, compete for selection into a ballet or a role, or attempt to hit your targets. Compare your self-confidence to the most confident athlete, dancer or corporate you know. Please answer as you really feel, not how you would like to feel”.

In addition, for each item the question was modified from “compare your confidence in your ability to……to the most confident athlete you know” to include the most confident athlete, dancer, corporate you know. Specific items that were modified were as follows: Item 6 “compare your confidence in your ability to adapt to

different game situations and still be successful to the most confident athlete you know" was modified to "compare your confidence in your ability to adapt to different game, ballet, corporate situations and still be successful to the most confident athlete, dancer, corporate you know"; Item 10 "compare your confidence in your ability to think and respond successfully during competition to the most confident athlete you know" was modified to "compare your confidence in your ability to think and respond successfully during competition, a performance, day to day activities, to the most confident athlete, dancer, corporate you know"; and Item 11 " compare your confidence in your ability to meet the challenge of competition to the most confident athlete you know" was modified to " compare your confidence in your ability to meet the challenge of competition, the challenge of performing , the challenge of hitting your targets to the most confident athlete, dancer, corporate you know".

Cronbach Alpha for this research.

An overall Cronbach Alpha of .93 was found for the questionnaire used in this research. The TSCI would appear, therefore, to have acceptable psychometric properties for the populations under investigation.

Sources of Sport Confidence Questionnaire (Vealey, Hayashi, Garner-Holman, & Giacobbi, 1998).

The Sources of Sport Confidence Questionnaire, (SSCQ, Vealey, et al. 1998) was administered to assess the sources of sport confidence as proposed by Vealey et al. (1998). It was modified to also assess sources of corporate and arts confidence (see modified questions below). The questionnaire contains two parts. Part 1 consists of 21 items and part 2, 23 items. All 44 items are subsequently contained in nine factors with

'mastery' comprising 5 items, 'demonstration of ability' 6 items, 'physical/mental preparation' 6 items, 'physical self-perception' 3 items, 'social support' 6 items, 'leadership' 5 items, 'vicarious experience' 5 items, 'environmental comfort' 4 items, and 'situational favourableness' 3 items. Details of items relating to each of the main subscales may be found in appendix H. The stem for each item was "I usually gain self-confidence in my sport when I ……." (Vealey, et al. 1998). Responses ranged from 1 = Not at all important, to 7 = of highest importance, on a 7-point Likert scale. Examples of items include: "keep my focus on the task"; "feel I look good"; "prove that I am better than my opponents"; and "develop new skills and improve".

Within phase one of the study, initial sources of confidence were identified and items and instruction development occurred. After reviewing feedback, slight adjustments were made to the wording of both instructions and items. The second phase involved investigating the psychometric properties of the SSCQ, and the perceived importance of the sources of sport confidence. Completing an exploratory factor analysis, using both principal-components and principal-axis factoring extractions, along with varimax and oblique rotations, a total of seven factors emerged accounting for 63.4% of the variance. The seven factors were as follows: physical/mental preparation; demonstration of ability; social support; vicarious experience; luck/superstition; mastery; and environmental comfort. The remaining three factors accounted for 4-5% of the total variance and represented a small number of items.

The additional source of physical self-presentation was identified from an open-ended section to the questionnaire. Researchers generated items for this additional source that was to be tested in the next phase of the study. Phase three involved participants

completing the seven factors previously presented in the SSCQ, and the additional physical self-presentation source. Again completing a principal components factor analysis with a varimax rotation, Vealey et al. (1998) reported eight factors. Outcomes from this phase included the revision of factor labels with environmental comfort being changed to situational favourableness, and the addition of another source termed leadership. In addition, while alpha coefficients were established at the acceptable .70 level, the newest factor, physical self-presentation did not meet this criteria. Vealey et al. (1998), however, decided to retain this factor for further investigation in the next phase.

The final phase of the investigation involved the SSCQ retaining nine factors. Vealey et al. (1998) conducting a confirmatory factor analysis, found support for the nine-factor model with a percentage of explained variability of .90, supporting the construct validity of the scale. Alpha reliability coefficients were calculated for the scales, ranging from .71 to .93. More specifically, environmental comfort had a coefficient of .93; leadership, .92; vicarious experience, .9; social support, .88; mastery, .88; demonstration of ability, .86; physical/mental preparation, .79; physical self-presentation, .78, and situational favourableness, .71.

Vealey et al. (1998), further investigating the sources of sport confidence, found that for females physical/mental preparation was the largest predictor of sport confidence (.41), followed by environmental comfort (.23), and physical self-presentation (.22). For males, physical/mental preparation was also the most significant predictor of sport confidence (.28). In summary, Vealey et al., (1998) concluded "from an overall psychometric standpoint, evidence was found across the phases of this study to support

the reliability and validity of the SSCQ as a multidimensional measure of sources of sport confidence" (Vealey, et al., 1998, p.75).

Modified questions.

Given that the present study centred around sports, corporate and arts, the stem "I usually gain self-confidence in my sport when I……" was felt to be inappropriate. Consequently, the stem was modified as follows, "I usually gain self-confidence in my sport, corporate or ballet when I……". In addition the instructions given to participants were also modified to include the words corporate and ballet where they expressly mentioned sport.

Modification of specific questions in part 1 were as follows: question 6 was modified from "get breaks from officials/referees" to include managers and artistic directors; question 7 "perform in an environment (gym)" was modified to include gym, theatre, company; question 10 "believe in my coach's abilities" to coaches/manager's/artistic directors; question 12 "see successful performances by other athletes" to other athletes, dancers and corporates; question 18 "know my coach will make good decisions" to know my coach, manager, artistic director will make good decisions; question 20, "show my ability by winning" to show my ability by winning, placing, selection, promotion" and finally question 21 "watch another athlete I admire perform successfully" to watch another athlete, corporate, dancer…".

In relation to specific questions in part 2, question 24 "feel comfortable in the environment (gym) in which I am performing" was modified to gym, company, theatre; question 27, "know my coach is a good leader" to know my coach, manager, artistic director; question 28 "am encouraged by coaches and/or family" to coaches, managers,

art director, teachers; question 29, “know I can outperform opponents” to opponents, other dancers, employees; question 35, “have trust in my coach’s decisions” to coach’s, manager’s, art director’s; question 36, “get positive feedback from coach and/or family” to coach, manager, art director and/or family; question 37, “prove I am better then my opponents” to opponents, other dancers, employees; question 41, “show I am one of the best in my sport” to in my sport, corporate, dance; and finally question 44, from “feel my coach provides effective leadership” to coach, manager, art director.

Cronbach Alphas for this research.

Scholars have acknowledged that while a criterion level of .70 or above is ideal, a .60 criterion can be accepted in exploratory research, (Hair et al., 1998; Nunnally, 1978). For this particular context and sample, even though the overall alpha coefficient for the questionnaire was .83, when looking at the nine factors some discrepancies were clearly apparent.

Specifically, while for the factors of mastery, demonstration of ability, physical self-perception, support and vicarious experience this research returned alphas greater than .60 (.67, .64, .83, .71, .61 respectively), for mental and physical preparation, environmental comfort, situational favourableness and leadership, this research returned alphas less than the accepted level (.58, .24, .47, .53 respectively).

One rationale for why such differences in levels were obtained may be the context and sample used in this particular research. For example, when looking at leadership and its corresponding items in detail, it became clear that if one item was deleted (item 43), the Cronbach alpha rose from .53 to .62, and when two of the items were deleted (items 43 and 34) the Cronbach alpha rose to .73. Examining this in detail, leadership contained

the following items: “belief in my coach’s/manager’s/artistic director’s abilities”; “know my coach, manager, or artistic director will make good decisions”; “know my coach, manager, or artistic director is a good leader”; “have trust in my coach’s, manager’s, or artistic director’s decisions”; and “feel my coach, manager, or artistic director provides effective leadership”. The two items that were shown to impact on the Cronbach alphas were the last two, “have trust in my coaches, managers, or artistic directors decisions”; and “feel my coach, manager, or artistic director provides effective leadership”.

Consequently, within an elite population while respondents believe that their coach, manager or artistic director has good abilities, will make good decisions and is a good leader, there appears to be a question as to whether they trust those decisions in relation to themselves, and whether they perceive their leadership as effective for them. This may or may not be a result of having reached such a high level in their particular field, or that they believe that while their coach, manager or artistic director has many good qualities, there is a limit as to what the coach, manager or artistic director can provide them, and/or they have more belief in themselves and their own capabilities.

When looking at mental and physical preparation, the initial Cronbach alpha for this research sample was .58; however, when one item was deleted (item 31) this rose to .64, and when two items were deleted (items 31 and 38) this rose to .67. Again when examining the factor in detail the following items were the ones that appeared to make the difference, “prepare myself physically and mentally for a situation”, and “believe in my ability to give maximum effort to succeed”. Other items corresponding to this factor were “keep my focus on the task”; psych myself up; know that I am mentally prepared for the task”; and “stay focused on my goals”. One rationale for the above findings may

be that elite respondents feel that preparation and giving maximum effort are given entities for their particular level while the other items are more open for variation. While such a rationale is hypothetical, it does match Jackson's (1993) interpretation of the differences between her and Csikzentmihaly's (1990) research, where she contends that (possibly) at an elite level factors such as focus and effort are a given.

In relation to the factors of environmental comfort and situational favourableness, it was not possible to alter the Cronbach alphas to a meaningful level for this particular sample. This leads to the question of whether the factors "environmental comfort" and "situational favourableness" are relevant for these particular populations. Consequently, these factors were not utilised further. For this particular research, therefore, the SSCQ would appear to have acceptable psychometric properties for seven of the nine factors. Further details of Cronbach Alpha analysis may be located in Appendix G.

Thought Occurrence Questionnaire, TOQ (Sarason, Sarason, Keefe, Hayes, & Shearin, 1986).

The TOQ was designed as a measure of an individual's general tendency to divert attention to off task thoughts. The demands created by intrusive thoughts on an individual's attentional capacity, whether associated with the task at hand or irrelevant to it, might be expected to influence performance on difficult tasks. People who are generally able to maintain a task focus should be better than those who are less well focused, to meet the demands of a situation that involves distraction from the main task.

A 28-item questionnaire was developed, with responses being measured on a 5-point Likert scale. Specifically, respondents are asked to estimate how often each thought had occurred to them, by placing the appropriate number next to the particular statement.

Measures were 1 = never, 2 = once, 3 = a few times, 4 = often, and 5 = very often. Scoring is additive, with the higher the score indicating the higher level of interference. Sarason et al. (1986) also reported three factors associated with thought interference. Factor one was concerned with thoughts of social relations and emotions unrelated to the task, and included items 10-20; factor two was concerned with thoughts of escape, and included items 21-26 and item 28; finally, factor three was concerned with task irrelevant worries, and included items 1-9. Factor analysis used principal factors with iteration and varimax rotation, and a Cronbach Alpha of .93. For each factor, Cronbach Alphas were as follows: factor one .91, factor two .87 and factor three, .84. The test-retest reliability was .81. The TOQ would appear, therefore, to have acceptable psychometric properties.

Studies using the TOQ (Pierce, et al. 1998; Sarason et al., 1986) have suggested that people who say they generally experience cognitive interference, report higher interference levels after performing on a demanding task, than do people who describe themselves as experiencing interference less often in daily life. This indicates the potential usefulness of the TOQ as a measure of a persons' typical pattern of cognitive activity.

Modified questions.

Given the generic subject of thought interference, no modification of the questionnaire was required.

Cronbach Alphas for this research.

The overall Cronbach alpha was .91. For each factor, Cronbach alphas were as follows: factor one, .89, factor two, .80 and factor three .74. The TOQ would appear,

therefore, to have acceptable psychometric properties for the populations under investigation.

Peak Experience Questionnaire (Privette, 1984).

The PEQ (1984) is a research questionnaire constructed on the basis of a content analysis of literature that pertained to peak experience, peak performance and flow experiences. An analytic comparison (Privette, 1983) purported that these three experiences share many qualities and have unique differences and overlaps. According to Privette (1986), the instrument "contains all of the unique and shared attributes found by the comparative analysis" (Privette, 1986, p.491).

The PEQ is comprised of two parts. Part one is self-report in answer to a central question. For example for peak performance the stimulus question was "will you describe one incident in your life characterised by functioning at your best. Tell what happened and your inner experience". For the purposes of this study, Part one was not included in the questionnaire. This was due to the time involved in completing the questionnaire. However, part one was utilised in the in-depth interviews. Part two asks 42 descriptive statements on a five-point Likert scale ranging from 1 (no importance), to 5 (much importance). Examples of items are: "The events were intense" and "I had clear focus".

In addition to the 42 items contained in part two, five additional items were presented. These were assessed on a five or a seven point Likert scale. As each additional item was labelled differently, each will be outlined. The item "check the description that best fits your performance in this event" was measured by respondents marking one of the following: personal best, high performance, effectiveness, mediocrity,

inefficiency, inadequacy and failure. The item "check the description that best fits your feeling in this event" was measured as follows: highest happiness, joy, enjoyment, neutrality, boredom, worry and misery.

The item "what was the role of other people" was measured by respondents' marking one of the following: interfering, not present, present only, contributing and essential. The item "how do you characterise your feeling afterwards?" was measured by respondents marking one of the following: extremely positive, positive, neutral, negative and extremely negative. Finally, the item "how do you characterise the after-effects" was measured by marking one of the following: turning point, significant, some, little or none. The additional five items outlined above resulted in a total number of 47 items for part two. While no modification to part two was made, due to a specific research aim two additional items were added (see modified/additional items below). Details of items relating to each factor assessed by the PEQ may be found in appendix H.

The PEQ has been used with men and women ranging in age from under 20 to over 50, from various occupational interests including: social services, science, business, arts, humanities, education, military and sports (Privette, 1986). One study found that nine experimental factors discriminated among five construct events: peak experience, peak performance, flow, misery, failure, and average (neutral). "By effectively linking observable events with accessible inner phenomena, the study supports experiential content and self-report methods in human research" (Privette, 1986 p.233).

The PEQ has been shown to have an overall test-retest reliability of 0.7 after one week, with 33 paired trials and 42 individual test items (Privette, 1986). This was considered a strong coefficient correlation for a subjective instrument. The Dale-Chall

Readability Formulae indicated that the readability was at the upper limits of the 9th and 10th grade (Privette, 1986).

The PEQ has been tested for phenomenological support of validity. The procedure asked 123 respondents for their self-perceptions in levels of performance and feeling, associated with six phenomena events: peak performance, peak experience, flow, average event, misery and failure. Two thirds of the subjects were women, all were between the ages of 21-35 years, with arts and humanities representing 21% of the group. The results showed that participants were able to rate the feeling and performance levels on all six construct events, from peak performance to failure, and from peak experience to misery. "Although this consistency is not validation of the constructs, it may be construed as phenomenological support for the constructs. People appear to conceptualise feeling and performance components of events and to organise these experiential states in identifiable gradients" (Privette, 1985 p.558).

Modified/additional questions.

The PEQ was designed to look at peak experience, peak performance, flow, average event, failure and misery. The same 47 items were asked in each of the areas. Since each area could be investigated separately, and given the nature and aims of the current study, the areas were limited to peak experience, peak performance, flow and failure. No modification was made to the 47 items asked in each of the areas.

Additionally, the current research was not only seeking to look at whether experience had an effect on sustainability but also whether frequency of experience was a factor. Hence two additional questions were asked in each area namely, "how often do

you experience this kind of event in your work life?" and "how often do you experience this kind of event in your general life?"

Cronbach alphas for this research.

In relation to frequency of experience, the Cronbach alphas obtained for peak performance experiences, peak experience experiences, flow experiences and failure experiences were an acceptable: .74; .72; .77; and .86 respectively. Additionally, normality for some factors was in question. For detailed analysis relating to achieving acceptability, see Appendix G.

Closed questions – Life Events or Experiences.

The remainder of the questions contained in the questionnaire concerned life events or experiences that may or may not have been experienced by the participants. Participants were asked to tick whether they had ever experienced a particular life event, what level of significance it had had upon them (high, medium, low, not significant), and the frequency of the event, whether it had happened once, twice, few times or many times.

A substantial array of life scale inventories are in existence, however, according to Turner and Wheaton (1995) "none stands out as definitively superior to the others" (Turner & Wheaton, 1995, p.34). In addition, they suggest that research implies that a list of appropriate events that can be applied across a range of study populations cannot be specified, and consequently should not be recommended. While it is acknowledged that individuals vary significantly, Turner and Wheaton (1995) maintain that it is "crucial to ensure that the event list incorporates a reasonable and balanced representation of events that are of potential relevance to respondents occupying differing constellations of

role sets" (Turner & Wheaton, 1995, p.34). "Beyond this requirement, appropriate item content of a selected or devised inventory depends upon the nature of the population and of the outcomes being studied" (Turner & Wheaton, 1995, p.34). Such a contention supports Hurst (1979). This approach is thought to have a unique advantage in terms of instrument sensitivity and relevance over more 'standardised' procedures (Monroe, 1982).

Consequently, following on from Stallings, Dunham, Gatz, Baker, and Bengston, (1997), and Turner and Wheaton (1995), a total of 56 life events were selected from a variety of life event inventories. Selection was based on level of commonality, and also whether events related to the particular populations under investigation. Examples of items include: burnout; problems with in-laws/partners family; change in residence; marriage; and divorce.

Internal reliability of the checklist was not undertaken based on Turner and Wheton's (1995) contention that the development of a checklist is conceptually different from test construction, due to the fact that items are not alternative estimates of a single underlying construct, characteristic or experience. Since it is not necessarily the case that the experience of one event increases the likelihood of another, it was suggested that there should be no expectation that event inventories display internal reliability as estimated by Cronbach's (1951) Alpha.

Pilot Study

A 19 page questionnaire was developed which was segmented into six sections (Appendices A & B), together with an information letter for participants (Appendix F),

an information letter for organisations (Appendix F), and consent forms (Appendices D & E).

The original draft of the questionnaire was distributed to six people, two from the arts, two from a corporate background, and two from a sports background, whose ages ranged from 18-40. The target sample consisted of people who fell into the category of either a sustainable performer or a non-sustainable performer based on the criteria outlined in the previous chapter. Due to the researcher's desire to maintain a degree of confidentiality regarding the nature of the project during the development stage, and due to the small sample of elite personnel in general, a small sample was used to check the questionnaire.

The participants were asked to check the questionnaire for appropriate format, and identify any questions that were difficult to understand or needed rewording. They were also asked to complete the questionnaire to assess the time that it would take. No modifications were undertaken, as a result of all participants reporting that they did not encounter any difficulties.

Given the unique nature of the research, and the need for the researcher to design a questionnaire, a pilot study would normally have been conducted prior to the selection of the research sample. However, in this situation a pilot study was not undertaken for the following reasons:

Whilst there are many elite corporate and sport organisations to choose from, the number of elite ballet companies is quite limited. The personnel in the ballet industry from which the sample could be drawn was, consequently, already very small. With this being the case, the use of any of this sample in a pilot programme would have further

reduced the number available for the primary data collection. As this study was to be a comparison of the sports, corporate and arts industries, the sole use of sports and corporates in a pilot programme would significantly impact on the primary purpose of this research, in addition to impacting theoretically on the main study. Additionally, as this study was concerned with elite personnel, sub-elite could also not be used.

Confounding of study: Once identification of participating organisations was complete, confidentiality of the study was desirable to ensure no possible participant would have prior knowledge of the questionnaire or interview questions.

Sustainable performers versus non-sustainable performers: In initial discussions with elite organisations, the identification of non-sustainable performers within the corporate and arts industries was met with some reluctance. This could be a reflection of the cultures of these disciplines. However, given this reticence, and the subsequent small sample of names, a pilot study would have resulted in a reduction of participants for the main study.

Data preparation for quantitative analysis

The researcher used the SPSS statistical computer software for statistical analysis. Data screening of all quantitative variables was undertaken prior to analysis. Where missing values occurred randomly in the continuous measures, the mean value for that variable was used to replace the missing value in each case (Tabachnik & Fidell, 1996). No extreme outliers were identified on any of the continuous variables, and testing of assumptions was found to be satisfactory. Internal reliability analysis was conducted on all standardised measures.

The minimum significance criteria of a .05 alpha coefficient level, was used to conduct all statistical analysis. Where applicable, a Bonferroni correction was also employed. Due to the non-directional nature of the aim and research questions of the study, descriptive statistics were employed. More specifically, since assumptions relating to sampling and normality were met, (unless clearly stated otherwise), Independent T-Tests, Univariate Analysis of Variance, appropriate post hoc tests such as Scheffe, and Logistic Regression were used to test differences associated with variable groupings. Assumptions of homogeneity of variance were also met for each t-test unless otherwise stated.

As this research was concerned with sustainability versus non-sustainability, as well as varying degrees of sustainability, +2 and +1 sustainers were investigated separately in addition to being placed together. The same approach was utilised for non-sustainers, with -2 and –1 non-sustainers being examined separately and together. Analysis was conducted with respect to the specific research questions posed in the current research.

Interview procedure

The primary purpose of the interview was to derive information that can be used to describe the experiences and characteristics of the individuals of the particular sample under investigation. Interviews were arranged at a time and place that were suitable for the interviewee. A tape recorder was used to record the interviews. Interview times ranged from one to two hours with the average time being one hour. The interview followed a semi-structured format, and generally reflected the issues that were raised in the questionnaire. Interviews may be classified as structured, semi-structured or

unstructured (Fontana & Frey, 2000). A semi-structured interview format was chosen as this provided a format that included predetermined questions and/or topic areas (Berg, 1995), but, with some freedom for the interviewer to digress and probe. A copy of the interview may be located in Appendix C. Examples of interview questions follow, together with key areas targeted:

- Will you describe one incident in your life characterised by functioning at your best or optimal level? Can you please start this off with a headline so that if I was to pick up a newspaper and there was a headline about this incident what would it say? I would then like you to tell me what happened and your inner experiences.
- How often do you experience this kind of event in your work life?
- How often do you experience this kind of event in your general life?
- What is your current level of stress on a scale of 1-5, with 5 being very highly stressed, and 1 not at all stressed?
- What are the differences in being a sustainable performer from a peak performer?
- Think of someone who you feel is a sustainable performer and someone who is a peak performer but who is not sustaining that level. What do they have in common and what makes them different?
- Peak performance, peak experience, flow and failure. Description of an event that depicted each of the previous concepts; what the participant felt they did to achieve peak performance, peak experience, flow or failure; what

participants felt stopped them from achieving such experiences; and the frequency of experiencing such concepts;

- Cognitive factors such as level of confidence and level of focus; and
- Clarification of 2 years as a reasonable time to sustain performance.

Participants were advised that they were free to withdraw from the interview at any stage without providing an explanation, and that they could request for the tape recorder to be switched off at any time, should they wish to discuss any matter 'off the record'. The researcher then transcribed each interview verbatim. Two copies of the interview transcript were sent to the participants. Participants were asked to read through the transcript and identify any information that they would prefer not to be used in the thesis, or that they wished to amend for accuracy. Any changes were to be noted on one copy and returned to the interviewer via reply paid mail. Participants retained a copy of the transcript and any changes to the interview were made before qualitative analysis was undertaken. Returning interview transcripts to participants for verification is considered to be one way of enhancing the credibility (and trustworthiness) of data obtained from the interview process (Lincoln & Guba, 1985).

Data preparation for Qualitative Analysis

The selection process for the interview was as follows. For each organisation taking part participants were (based on the specified criteria) placed in either a +2 or +1 sustainable performance, or a –2 or –1 non-sustainable performance category. As this research was primarily concerned with sustainability versus non-sustainability, +2 and +1 sustainers were all placed together, as were -2 and –1 non-sustainable performers. All sustainable performer participants' names were then placed in a hat and one name

randomly chosen out of the hat. The same procedure was invoked for the non-sustainers. This process was repeated for each organisation taking part.

From the 50 participants taking part in the research, 26 people were approached to take part in an in-depth interview of which 18 in-depth interviews were actually completed (69% of the original targeted sample). More specifically, of the ballet companies taking part, six participants were approached to complete an in-depth interview of which five actually took place (three female and two male); of the corporate organisations, 12 participants were approached to complete an in-depth interview of which seven actually took place (four female and three male); and of the sports organisations, eight participants were approached to complete an in-depth interview of which six actually took place (four male and two female).

All interviews were transcribed verbatim, and responses to interviews were analysed by the researcher using the qualitative software NVivo. This programme allows the researcher to code data, and to monitor the occurrence of themes throughout the information being analysed.

In detail, the process of data analysis involved dovetailing Lincoln and Guba's (1985) description of a synthetic analysis, with NVivo's methodology. The first task for the qualitative researcher is to become thoroughly familiar with the data. Since the researcher transcribed all of the interviews she became very familiar with the nuances and written transcriptions of the participants' responses. Each interview resulted in approximately 17-35 pages of transcribed text, with the total number of pages of data generated being 417, and the average per interview 23.

Computer assisted analysis facilitates the tasks of coding, indexing and sorting (Kelle, 1995). While there have been proponents and opponents of computer assisted data management (Gibbs, 2002; Kelle 1995, respectively), there is no question that the use of computers in the management of data has increased over the last 10 years. In the current study the Nvivo software programme was used to assist with data management (Gibbs, 2002).

The NVivo software's first level of analysis was to conduct open coding. This involved the identification of salient categories or themes. Within the NVivo programme these themes are termed nodes (Bazeley & Richards, 2000). These were then transformed into a set of raw data themes (quotes or paraphrased quotes) that may not necessarily be related. Within the Nvivo programme these are termed free nodes. If open coding involves the fragmentation of data with the aim of identifying and labelling categories (Coffey & Atkinson, 1996) the next stage, axial coding, involves putting the data back together again in new ways making connections between categories and subcategories (Strauss & Corbin, 1998). Consequently, the next level was the creation of higher-order themes that linked similar raw data themes together in a higher order concept. The final level of analysis linked the higher order themes into more general themes. These later themes have been termed general dimensions. Within NVivo methodology one process is called modelling where models explore and explain what is happening in the data. Modelling can be used to show relationships between the various items; to demonstrate the theory being developed; or how the data supports (or not) the research questions or hypothesis.

Maintaining confidentiality, quotations used in the results section of this study only indicate the gender and discipline of the participant to whom the quote is attributed.

Chapter 8

Results – Description of Sample

Demographics - general

The participants in this study were 22 male, and 28 female elite performers in the sport, corporate and arts industries. At the time of data collection their ages ranged from 19 to 40 years ($M = 29.89$, $SD = 6.48$). The participants had been in their organisations between 2 and 24 years ($M = 87.33$, $SD = 64.86$).

For the sports organisations, time within the organisation ranged from two to eight years with the average time being 5.16 years; for the corporate organisations time within the organisation ranged from 2 to 24 years with the average time being 8.6 years; and, for the arts organisations time ranged from 2 to 16 years with the average time being 5.89 years.

The majority of participants came from Australia (72%), with the remainder (28%) being based in the UK. Marital status indicated the majority of participants to be single (60%), followed by being married (26%). The remainder of participants were either de-facto (a legally recognised state in Australia of two people living together), or divorced.

In relation to marital status and operating environment, a significant difference ($p = .039$), emerged between the sports and arts organisations compared to the corporate domain. More specifically, the majority of participants in the sports (88%) and the arts (71%) disciplines were single, while the majority of participants were married in the

corporate discipline (55%). In relation to the care of children, corporate participants were identified as being the majority carers (88%). Within this discipline, no discernable difference was evident between number of children, and placement in a sustainable or non-sustainable category.

Demographics - description per discipline

Sport.

A total of 17 participants took part. From Australia, the sports participating were Football (AFL), Cricket and Waterpolo. Within these sports the total number of participants was six (35%), four (25%) and five (31%) respectively. From the UK the sport participating was Cricket, with a total of two (12.5%) participants. The total number of males was eight and females nine.

Corporate.

Within the corporate discipline, a total of 19 participants took part. From Australia the companies participating were two global fast moving consumer goods organisations. Within the corporate domain, fast moving consumer goods companies manufacture and distribute consumable goods with a high turnover rate, such as fast food. The number of participants was one (5%) and five (26%) respectively. One global service company also took part, with the number of participants being five (26%). Examples of service companies include those firms that provide a service to the public, such as accounting firms.

From the UK, the same three global companies took part in the research. The participant numbers taking part were two (10.5%), four (21%) and two (10.5%) respectively.

For the first fast moving consumer goods company, the total number of participants cross-culturally was three (15.79%), for the second fast moving consumer goods company the total was nine (47.36%), and for the services company the total was seven (36.84%). The total number of males cross-culturally was 7, and the total number of females was 12.

Arts.

Within the arts discipline, a total of 14 participants took part. From Australia two ballet companies participated. The number of participants was five (35.7%) and three (21%) respectively. From the UK one ballet company took part in the research. The number of participants was six (42.9%). The total number of males was seven and the females seven.

Categorisation of sustainable and non-sustainable performers

A total of 35 sustainers and 15 non-sustainable performers took part in the research, making a total of 50 participants.

Of the 50 participants taking part, there was an equal distribution of male participants across the sustainable and non-sustainable categories (see Table 5). For female participants there was a clear difference between categories (see Table 5). Consequently, classification as a sustainable or non-sustainable performer resulted in a significant difference between males and females ($p = .026$).

Table 5

Classification of Sustainable and Non-Sustainable Performers

	Gender		Total
	Male	Female	
Sustainable Performer	11	24	35
Non-sustainable performer	11	4	15
Total	22	28	50

Table 6 details a more specific classification of sustainable and non-sustainable performers using the criteria previously described in chapter 6. This resulted in all participants being ranked as sustainable, just sustainable, just non-sustainable or non-sustainable performers. The category of neither a sustainable or non-sustainable performer was not utilised by key personnel. The data indicates that the category of just sustainable performer is more frequently utilised than the category of sustainable performer; and, the category of just non-sustainable is more frequently utilised than non-sustainable performer.

Table 6

Detailed Classification o f Sustainable and Non-Sustainable Performers

	Frequency
Sustainable performer	14
Just sustainable performer	21
Just non-sustainable performer	10
Non-sustainable performer	5
Total	50

Interview Process

Table 7

Details of Participants Taking Part in the Interview Process

		Sport	Corporate	Arts
Approached		8	12	6
Interviewed	Male	4	3	2
	Female	2	4	3
	Total	6	7	5
Location	UK	2	3	2
	Aus	4	4	3
Age		22-30	33-40	21-39
Ranking	Sustainable performer	2	4	3
	Just sustainable performer	1	0	0
	Just non-sustainable performer	3	1	1
	Non-sustainable performer	0	2	1

Sport Discipline.

From table 7 it may be seen that of the sports organisations, eight participants were approached to complete an in-depth interview of which six actually took place (four male and two female). A total of two interviews were carried out in the UK and four in Australia. The ages of participants ranged from 22-30, with three participants being classed as sustainable performers and three as non-sustainers. More specifically, based on the ranking process, two were classed as sustainable performers, one as just sustainable and three as just non-sustainable.

Corporate discipline.

Of the corporate organisations, table 7 depicts that 12 participants were approached to complete an in-depth interview of which seven actually took place (four female and three male). In the UK three interviews were carried out, and in Australia four. The ages of participants ranged from 30 -40, with four participants being classed as sustainable performers and three as non-sustainers. More specifically, based on the ranking process, four were classed as sustainable performers, one as just non-sustainable and two as non-sustainable.

Arts discipline.

Table 7 indicates that of the ballet companies taking part, six participants were approached to complete an in-depth interview of which five actually took place (three female and two male). A total of two interviews were carried out in the UK and three in Australia. The ages of participants ranged from 21 - 39, with three participants being classed as sustainable performers and two as non-sustainers. More specifically, based on the ranking process, three were classed as sustainable performers, one as just non-sustainable and one as non-sustainable.

Chapter 9

Results – Experience and Knowledge

The hypotheses set out for this investigation have partly been supported. Sustainable performers were found to have fewer incidences of the failure experience. Characteristics of sustainable performance appeared to differ according to the practising environment, and differences do exist as a function of gender.

Findings also indicated that while sustainable performers did not experience a greater number of life events more often, they attached more meaning to events. Additionally, although as hypothesized the number of experiences did not produce differentiation, the type and focus of the experience qualified by participants did. These experiences were specifically found to differ depending upon industry and performance (sustainable or non-sustainable).

Sustainability versus non-sustainability

Peak performance.

Utilizing both qualitative and quantitative data, within peak performance, 100% of the sample endorsed the characteristics of focus, drive and achieving the desired result. Concurring with Privette and Bundrick's (1987) research, focus was seen to be the most relevant aspect of peak performance, with goal drive being another distinguishing characteristic. An ANOVA was conducted on the sustainable and non-sustainable performers and relevant subgroups. An effect was found between the two more generic groupings of sustainable and non-sustainable performers in relation to self in clear

process, where non-sustainable performers were found to exhibit a higher level [$F(1, 42) = 4.71$, $p = .036$] (See Table 8). Clear focus was also found to be significantly different, with non-sustainable performers demonstrating a higher level than sustainable performers [$F(1, 42) = 4.18$, $p = .047$]. Further, in regards to peak performance full focus, a significant difference was evident amongst the four groups level [$F(3, 38) = 4.01$, $p = .014$]. Post hoc comparisons revealed that just-sustainable and just non-sustainable performers differed from each other, as did just non-sustainable and non-sustainable performers (See Table 8).

Table 8

Mean Scores for Aspects of Peak Performance as a Function of Performance Grouping

	Performer Group							
Peak Performance subscale	Sustainable		Just sustainable		Non-sustainable		Just non-sustainable	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Self in clear process	2.87	0.65	2.60	0.80	3.12	0.86	3.41	0.84
Total	2.71, 0.75				3.22, 0.83			
Clear focus	3.27	0.75	3.02	0.99	3.71	1.01	3.58	0.99
Total	3.12, 0.89				3.67, 0.97			
Full focus	2.39	0.42	2.20	0.73	1.92	0.76	2.46	0.78
Total	2.27, 0.62				2.28, 0.79			

The experiences described by participants in the interview may give some clarification as to why, even though all participants endorsed focus, drive, and a strong sense of self, a significant difference was found between sustainable performers and non-sustainable performers.

Regardless of industry, while sustainable and non-sustainable performers endorsed the qualities of self-belief, focus and absorption, sustainable performers also consistently endorsed the qualities of realism, crediting others, and humility, where non-sustainers did not. These additional aspects may allow the sustainable performer to approach a situation in a more balanced, less unidirectional way as illustrated by the experiences of one female within the corporate domain:

> I was challenged by the president of the company ….it had never been done before….we didn't have the technology to run 24 hours, we didn't have the systems in the UK to fulfill a 24 hour operation. So we started with doing some basic stuff.
>
> That's me I set the task, when I say we, I work with a team of managers, and you can't do it on your own, so when I say we, I am talking about my management team. I then went and worked with IBM to work out how I could run a till system for 24 hours….I then worked with the programmers to tell them what I wanted operationally, and they were then going to do it technically….we achieved that….we had to go to interviews and board meetings, and we achieved all that. When I say we, this was a team effort, because if I didn't get everybody involved it wasn't going to work. I had to have everyone….wanting to do this.
>
> This was done by getting them involved. It became their idea. It wasn't me saying we will do, it was how can we do this, can we achieve this? There were lots of technical issues that we had never dealt with

before……technically we had to change the construction of the building. From the beginning of this project to when we went live, it took me eight months to deal with the technicalities, licensing, building and the technical issues with the till system.

I must point out that another restaurant went 24 hours before me. So, I took the initiative to go and visit them, but what they hadn't done was work through the issues technically. They had calculators to work through the night, and were imputing the information back into their till system the next morning. I wasn't prepared to do anything like that.

Because I don't trust people. Money changes people's attitudes, money sitting on counters, how much money would go into the till of…….and how much would go into the crew or manager's pockets…….they technically hadn't worked out how they would get what we call a hold item to a car, were they prepared to open the door and hand it to them? I wasn't prepared to do that, security point of view open that front door, no thank you very much, I had to make sure that my people were secure.

Basically what I would like to say is that they got the idea, thought that yes they could do this, and did it within a month. So, it just made me happy that I had waited and had done it properly. When we went live I had predicted that we would do a 12% sales increase, we actually had a 55% sales increase.

> The positive thing I won the presidents award for this achievement….and going through my mind was, wow, how have I done this, do I deserve to be here, I want my whole team of people with me…..yes I had won it in name, but realistically, it was a team of people who had achieved that.

While not statistically significant, data indicated that sustainers may demonstrate less passivity than non-sustainers. Support for this direction and the more active sustainers may be found when examining qualitative data, where a distinguishing characteristic concerned the approach taken by sustainable performers. Qualitative data suggest sustainers demonstrate a higher use of energy and excitement. According to Quick, Quick, Nelson, and Hurrell, (1997), such factors may be linked to eustress. It is suggested that eustress allows an individual to choose action options, and to channel the stress-induced energy properly. The situation consequently becomes an opportunity for success and achievement, stimulates productivity and supports optimum performance.

Non-sustainers appeared to have an approach based on adrenalin. According to Quick, et al. (1997), this may be linked to distress. When stress becomes a threat, and the threat response is elicited too intensely, stress-induced energy may not be channelled correctly. This results in distress and the restriction of information processing, (Staw, Sandelands, & Dutton, 1981).

As one female sustainable performer from the arts discipline revealed:

> The event was my premier of Swan Lake as the main swan queen, which is the leading role in the ballet, and it is one of the most important classical ballets to do. It was the beginning of this year

> after the summer, and I started rehearsing about September or so, and my first performance was November I think…and yeah I rehearsed everyday. I was new and my partner was new, and we had to start from scratch really, and it was very exciting….the experience was fantastic. Energy creates energy I guess….(Dancer).

Also indicating the presence of eustress, one male sustainable performer from the sports arena maintained the following: "It was the most exciting day of my life and the most intimidating and overpowering…."(Sport).

However, one female corporate non-sustainable performer and one female sport non-sustainable performer suggested that: "I had that heightened sense of being alert…. almost obsessive about it thinking….the difference is the adrenalin, that's the difference…"(Corporate). "You just assess the situation, when you are out there the nerves don't really get to you, when you are sitting back in the sheds that's when you start panicking about the situation ….exhausted, a lot of adrenalin….."(Sport).

Peak experience.

For peak experience, on examination of qualitative and quantitative data, similar to peak performance, the characteristics endorsed were focus and drive for completion. In addition, significance (one aspect of peak experience, as noted by the peak experience questionnaire) was also highlighted as a factor that differed significantly between the groups [$F(3, 38) = 4.40$, $p = .009$]. Post hoc comparisons revealed just non-sustainable performers differed significantly from sustainable, just sustainable and non-sustainable performers (see Table 9).

Table 9

Mean Scores for Aspects of Peak Experience as a Function of Performance Grouping

	Performer Group							
Peak Experience subscale	Sustainable		Just sustainable		Non-sustainable		Just non-sustainable	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Significance	2.10	0.36	2.02	0.66	2.13	0.36	2.40	0.77
Total	2.06, 0.58				2.31, 0.66			

One rationale for the finding that sustainable performers have less meaning or value attached to a peak experience may be found when examining the qualitative data. Using cross-tabulations results indicated that in contrast to non-sustainable performers, sustainable performers suggested that their peak experiences always involved peak performances. This finding approached significance , χ^2 (2, N = 18) = 5.73, p = .054 (See Table 10). Consequently, sustainable performers may attach less meaning to peak experiences due to always experiencing a peak performance with it.

Table 10

Percentage of Participants Indicating Peak Performance with Peak Experience

	Peak Experience involved Peak Performance			
Performer Category	Yes	No	Sometimes	Total
Sustainable				
Observed	8 (80%)	2 (20%)	0 (0%)	10
Expected	5.6	3.9	0.60	
Non Sustainable				
Observed	2 (55.6%)	5 (62.5%)	1 (12.5%)	8
Expected	4.4	3.1	0.40	
	10	7	1	

Flow.

Flow was characterized by spirituality. Other people were also a feature of flow and these events demonstrated some focus and drive. Using univariate analyses of variance and post-hoc tests to look in more detail at sustainable and non-sustainable performers, and levels of sustainable and non-sustainable performers, a significant difference was evident for flow spirituality [$F(2, 38) = 4.63$, $p = .007$]. Sustainable performers suggested the presence of a higher level of spirituality than non-sustainable performers, and further post hoc tests revealed a difference between just sustainable performers and non sustainable performers. Participants characterised as sustainers also attached greater significance to their flow experiences [$F(1, 38) = 5.87$, $p = .020$] and scored higher on unpreparedness [$F(1, 38) = 5.79$, $p = .021$] (See Table 11).

Table 11

Mean Scores for Aspects of Flow as a Function of Performer Group

	Performer Group							
	Sustainable		Just sustainable		Non-sustainable		Just non-sustainable	
Flow subscale	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Significance	3.41	1.06	3.42	0.90	2.65	1.38	3.11	0.94
Total	3.41, 0.95				2.96, 1.07			
Spirituality	2.81	0.96	2.53	0.63	1.82	1.09	2.55	0.88
Total	2.64, 0.77				2.31, 0.98			
Unpreparedness	6.50	1.87	5.85	1.78	4.87	3.25	5.20	2.40
Total	6.11, 1.82				5.09, 2.59			

As illustrated by one female sustainable performer from the arts discipline:

> ….the solo experience, and it wasn't long only 3-5 minutes long or something like that, but the experience was…. everything worked at the right time, and at the right moment, and what started to happen was that I started to split off from my body and started to look at myself performing. So, I felt physically outside of myself. So when I thought that I was about to fall off balance, because I was 2 seconds ahead of myself, or so it appeared to be, I was able to pull myself back on track….

Failure.

Overall, on examination of qualitative and quantitative data, the same differences that were evident between sustainable and non-sustainable performers in relation to focus and goal drive, as shown in peak performance and peak experience, were evident for the experience of failure. Quantitatively, significant differences were evident amongst the various groups in relation to self in clear process and clear focus.

Specifically, results from ANOVA indicate a significant difference between sustainable peformers and non-sustainable performers [$F(1, 42) = 4.71$, $p = .036$] in relation to self in clear process, where non-sustainers demonstrated a higher level than sustainers. Within the subgroupings of these types of performers (that is, sustainable, just sustainable, non-sustainable, just non-sustainable) results approached significance [F (3, 42) = 2.80, $p = .052$]. Pairwise comparisons suggested that differences exist between the just sustainable and just non-sustainable groups, and between the just sustainable and

non-sustainable groups (See Table 12). In terms of clear focus, results indicated that sustainable performers differed significantly from non-sustainable performers [$F(3, 42) = 4.01$, $p = .014$] (See Table 12).

Table 12

Mean Scores for Aspects of Failure as a Function of Performer Group

	Performer Group							
	Sustainable		Just sustainable		Non-sustainable		Just non-sustainable	
Failure subscale	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Self in clear focus	21.07	2.65	19.63	3.89	21.80	3.29	22.90	2.34
Total	20.21, 3.48				22.17, 2.97			
Clear focus	24.67	5.51	21.62	4.68	16.22	8.64	24.33	2.83
Total	22.49, *5.78*				21.59, *7.43*			

Qualitatively, sustainable performers indicated a lower level of significance for failure events. The experiences described by participants in the interview may give some indication as to why sustainable performers may place a lower level of meaning or value to failure than non-sustainable performers. Regardless of industry, while sustainable and non-sustainable performers endorsed the qualities of focus, drive and absorption, sustainable performers also consistently endorsed the quality of resilience where non-sustainers did not. This additional aspect may allow the sustainable performer to approach a failure situation in a different way.

According to two female sustainable performers from the arts industry:

> It's just the sheer willpower too, and I love it, and that keeps me going…..no matter how tired I am, I pull out my reserves, and maybe I perform better when I am tired because you have to pull out that extra bit, and you find, well I find, that I do better sometimes because there is that higher power maybe, or higher something….force that keeps me going….(female sustainable performer, arts).

> At an audition you are up against a few, sometimes many people, but it doesn't matter how many there are if you don't get the part, or don't get to the next round, or are eliminated……..I don't call that failure to that extent, because you think well, there's going to be another audition around the corner…(female, sustainable performer, arts).

One male sustainable performer from the sports arena also emphasized the resilient perspective and attitude as follows: "Failure is a funny thing, and I suppose it's how you interpret the word. If you fail at things at first you always have a chance to go at things again…."(male sustainable performer, sport)

Findings from the quantitative data on general life events, and frequency of experience, may indicate additional aspects of resilience for sustainable rather than non-sustainable performance. Sustainable performers were found to attach less meaning to

incidences of failure. They were also seen to experience less failure experiences in their work and non-work lives. In addition, a significant result indicated that sustainable performers ($F(1, 42) = 4.11$, $p = .036$) demonstrated a higher level of meaning for life events in general (M=38.38, SD=18.69), than non-sustainers ($M = 26.70$, $SD = 16.11$).

Accordingly, for sustainable performers, by placing more meaning on events generally occurring in their lives, rather than on specific types of event, a broader repertoire of experience may ensue. As a result, many additional resources may be created from which the sustainable performer can draw, (rather than a few created by specific events). This in turn may impact on the level of resilience.

Industry

Commensurate with the hypothesis under investigation, industry does appear to be a distinguishing factor in relation to how certain experiences are qualified. Within the sports and corporate disciplines, flow was seen to be experienced differently.

Within the sports arena characteristics of the flow experience included higher levels of significance (one aspect of flow as noted by the peak experience questionnaire) [$F(2, 38) = 7.68$, $p = .002$] and spirituality [$F(2, 38) = 9.00$, $p = .001$]. Post Hoc tests confirmed these differences between the sporting industry and the corporate industry, (See Table 13).

Further to this, differences were also noted in terms of Flow – other people [$F(2, 38) = 3.52$, $p = .040$], where the sports industry scored higher than the corporate world; Flow – goal drive [$F(2, 38) = 3.80$, $p = .031$], where the corporate industry differed significantly from both the sporting and arts industries; Flow – play [$F(2, 38) = 5.36$, $p = .009$] and full focus [$F(2, 38) = 6.91$, $p = .003$], where the corporate industry again

differed significantly from both other industries; and Flow – unpreparedness which neared significance [$F(2, 38) = 3.23$, $p = .051$], with the same pattern reiterated amongst the industries. That is, corporate differed significantly from the others.

Specific aspects of peak performance and failure were also distinguishable between industries (Table 13). For example, in terms of the failure subscale, for those in the sporting industry, other people were seen to be part of the failure experience to a greater extent than other groups [$F(2, 38) = 8.63$, $p = .001$]. Post hoc comparisons indicated that this difference existed between the arts, and both the sports and corporate participants.

Further, significant differences were also noted in the peak performance scale. Specifically, the sport industry indicated higher levels of spirituality than the corporate industry [$F(2, 38) = 3.25$, $p = .050$], and the corporate industry recorded higher scores for full focus compared to arts and sport. In relation to peak experiences, significant differences were noted between the corporate and arts industries, where arts pariticipants scored higher [$F(2, 38) = 3.73$, $p = .033$] (See Table 13).

Table 13

Mean Scores by Industry Type and Aspects of Peak Performance, Peak Experience, Flow and Failure

	Industry					
	Sports		Corporate		Arts	
Subscale	*M*	*SD*	*M*	*SD*	*M*	*SD*
Flow						
Spirituality	2.98	0.95	2.20	0.73	2.47	0.64
Significance	3.78	1.01	2.95	1.05	3.12	0.64
Other people	2.77	0.80	2.30	1.01	2.41	0.85
Goal drive	3.68	0.91	3.31	1.14	3.30	0.62
Play	2.50	0.62	2.07	0.78	2.35	0.36
Full focus	3.47	1.01	3.05	1.27	3.01	0.67
Unpreparedness	5.76	1.91	5.25	2.54	6.62	1.47
Failure						
Other people	12.89	2.34	12.46	2.93	10.09	3.09
Peak Performance						
Spirituality	18.24	3.63	14.66	4.20	15.71	4.78
Full focus	2.22	0.65	2.34	0.65	2.26	0.76
Peak Experience						
Significance	2.17	0.65	2.01	0.46	2.26	0.75

Additionally, quantitative data taken from the interview suggested that the approach taken by each discipline was different. Significant differences were evident between corporate, sport and arts disciplines with respect to process and outcomes. Specifically, corporate participants focussed on both process and outcomes equally, sport

focussed mainly on process, and arts on outcomes [χ^2 (4, N = 18) = 17.87, p = .001; Fischers exact = 14.10, p = .001] (See Table 14).

Table 14

Type of Focus by Industry

Industry		Focus: Process	Focus: Outcome	Focus: Both process and outcome	Total
Sport					
	Observed	6 (100%)	0 (0%)	0 (0%)	6
	Expected	2.7	2	1.3	
Corporate					
	Observed	1 (14.3%)	2 (28.6%)	4 (57.1%)	7
	Expected	3.1	2.3	1.6	
Arts					
	Observed	1 (20%)	4 (80%)	0 (0%)	5
	Expected	2.2	1.7	1.1	

Differences were also evident between corporate and sports/arts in relation to long-term focus [χ^2 (8, N = 18) = 20.89, p = .003; Fischers exact test = 16.82, p = .001] (See Table 15), and organisational awareness [χ^2 (10, N = 18) = 19.85, p = .005; Fischers exact test = 17.43, p = .004] (See Table 16). In both instances corporate demonstrated more than either of the other areas, indicating that industry matters.

Table 15

Percentage of Participants as a Function of Industry Types by Long Term Focus Scores

	Long term focus				
Industry	2	3	4	5	5
Sport					
Observed	3 (50%)	2 (33.3%)	0 (0%)	0 (0%)	1 (16.7%)
Expected	1	1.3	1.7	1	1
Corporate					
Observed	0 (0%)	0 (0%)	5 (71.4%)	2 (28.6%)	0 (0%)
Expected	1.2	1.6	1.9	1.2	1.2
Arts					
Observed	0 (0%)	2 (22.2%)	0 (0%)	1 (20%)	2 (40%)
Expected	0.80	1.1	1.4	0.80	0.80

Table 16

Organisational Awareness by Industry Type

	Organisational Awareness					
Industry	2	3	4	4	5	5
Sport						
Observed	0 (0%)	2 (33.3%)	0 (0%)	4 (66.7%)	0 (0%)	0 (0%)
Expected	0.30	1.7	0.30	1.3	0.30	2
Corporate						
Observed	1 (14.3%)	0 (0%)	1 (14.3%)	0 (0%)	1 (14.3%)	4 (57.1%)
Expected	0.40	1.9	0.40	0.40	0.40	2.3
Arts						
Observed	0 (0%)	3 (60%)	0 (0%)	0 (0%)	0 (0%)	2 (40%)
Expected	1	1.4	0.30	1.1	0.30	2.3

Gender

In regards to gender differences, analyses were conducted within each group (sustainable and non-sustainable performers). Given the number of tests conducted, as per Tabachnick and Fidell (2004), the more stringent alpha level of .01 was used to guard against Type I error. Although a number of findings reported below exceed this level, qualitative data confirms the differences noted.

Factorial ANOVA was also conducted across gender and level of performance where no main effects or interactional effects were noted. Within the group of performers categorised as sustainable performers, several distinctions were noted between males and females. Differences were found in regards to the Flow subscale: Significance [$t(33) = 2.18$, $p = .036$]; Full focus [$t(33) = 2.44$, $p = .020$]; Goal drive [$t(33) = 2.43$, $p = .020$]; and Clear focus [$t(33) = 2.24$, $p = .032$] where females scored higher than males. In regards to the Peak performance subscale, females scored lower than males in regards to Passivity [$t(33) = 1.98$, $p = .033$] and on the Failure subscale, females scored higher than males on: Significance [$t(33) = 2.04$, $p = .050$]; Goal drive [$t(33) = 2.37$, $p = .024$]; and Play [$t(33) = 2.63$, $p = .013$] (See Table 17).

Within the group of performers categorised as non-sustainale performers differences were found within the Peak performance subscale: Spirituality [$t(13) = 2.32$, $p = .038$] and Passivity [$t(13) = 3.17$, $p = .007$]. On the Failure subscale females scored higher than males in regards to: Frequency [$t(13) = 4.32$, $p = .001$] and Passivity [$t(12.216) = 2.59$, $p = .023$]. However, males scored higher than females on unpreparedness [$t(13) = 3.01$, $p = .025$] (See Table 17).

Within this research, the finding that females displayed lower levels of passivity than males is consistent with research on gender and management. Within this research, females in leadership positions were found to display more effort and be more proactive than males, and males demonstrated a more laissez-faire style than females (Bass & Avolio, 1994)). Conversely female non-sustainable performers demonstrated a higher level of passivity than males. No gender distinctions were evident in relation to peak experience experiences.

Table 17

Mean Scores for Flow, Peak Performance and Failure as a Function of Gender

	Sustainable performers				Non-sustainable performers			
	Male		Female		Male		Female	
Subscale								
Flow								
Significance	2.95	0.63	3.54	0.79				
Full focus	2.76	0.80	3.51	0.86				
Goal drive	2.95	0.66	3.64	0.83				
Clear focus	3.58	1.00	4.43	1.07				
Peak performance								
Goal drive	2.41	0.63	2.96	0.63				
Passivity	6.91	1.51	5.33	2.11	5.79	1.61	9.33	2.69
Spirituality					14.57	5.19	21.18	3.71
Failure								
Significance	20.73	6.09	25.06	5.72				
Goal drive	12.64	3.85	15.83	3.36				
Play	10.62	3.43	13.21	2.33				
Frequency					5.05	0.88	7.75	1.55
Passivity					3.67	2.40	5.67	0.54
Unpreparedness					6.64	1.70	3.67	1.66

Frequency of experiences

The data from the questionnaire indicated that, while number of incidences of peak experience experiences, peak performance experiences, flow experiences and life events did not impact on whether sustainability was attained, the number of incidences of failure experiences did appear to have a significant effect.

A Factorial ANOVA revealed a main effect for Gender in regards to failure in both non-work [$F(1, 42) = 9.06$, $p = .004$] and work life [$F(1, 42) = 12.25$, $p = .001$]; a main effect for group (sustainable or non-sustainable performer) for both non-work [$F(1, 42) = 9.06$, $p = .001$] and work life [$F(1, 42) = 11.65$, $p = .002$]; and a main effect for subgroups (sustainable, just sustainable, non-sustainable, just nonsustainable) for both non-work [$F(3, 42)$, $p = .002$] and work life [$F(3, 42) = 5.35$, $p = .003$]. No interactions were present.

In relation to failure in non-work life, females exhibited higher levels; non-sustainers scored higher; and Scheffe post hoc tests revealed that there were also significant differences between Just sustainers and Just non-sustainers. In regards to failure in work life, females again scored higher than males; Non-sustainers scored higher than sustainers; and Scheffe post hoc tests revealed significant differences between Sustainers and Just non-sustainers, and between Just sustainers and Just non-sustainers (See Table 18).

Table 18

Mean Scores for Failure in Non-work and Work Life, by Gender and Performer Group

Variable		Failure Non-work		Failure Work	
		M	*SD*	*M*	*SD*
Gender					
	Male	3.01	0.23	3.01	0.22
	Female	4.09	0.28	4.20	0.26
Performer					
	Sustainable	2.80	0.19	3.03	0.18
	Non-sustainable	4.30	0.31	4.19	0.29
Subgroups					
	Sustainer	2.72	0.28	3.12	0.27
	Just sustainer	2.88	0.25	2.93	0.23
	Non-sustainer	4.44	0.40	4.63	0.38
	Just non-sustainer	4.17	0.47	3.75	0.44

Overall, levels of frequency within the flow experience also revealed a statistically significant difference between the sports and corporate industries ($F(2, 38) = 3.84$, $p = .041$) with sports, ($M = 6.02$, $SD = 1.13$) demonstrating a higher level of frequency than corporate ($M = 4.12$, $SD = 2.32$). No differences were evident between arts ($M = 5.22$, $SD = 1.05$) and sport/corporate.

Chapter 10

Results – Cognitive Factors

The hypotheses set out for this investigation have partly been supported. Sustainable performers were found to display higher levels of innate confidence, and differences did exist as a function of gender in relation to specific aspects of sources of self-confidence and cognitive interference.

Specifically, females generally were found to suggest higher levels of support (one aspect of sources of self-confidence), stress and organizational awareness. Female non-sustainable performers were also found to have lower levels of mental and physical preparation, and higher levels of task irrelevant worries and thoughts of escape. In comparison, males were identified as demonstrating higher levels of confidence through vicarious experiences (one aspect of sources of self-confidence).

No further differences were evident between sustainable and non-sustainable performers with respect to cognitive interference, goal orientation or industry.

Sustainability or non-sustainability

A 2 (Sustainable vs Non-sustainable performer) x 4 (Sustainable, Just sustainable, Non-sustainable, Just non-sustainable) ANOVA was conducted on the Trait Self Confidence Inventory (TSCI). Results revealed a signifcanct main effect for sustainable vs non-sustainable groups, where sustainers (M = 82.11, SD = 2.33) scored significantly higher than non-sustainers (M = 72.31, SD = 3.55) on innate confidence [F (1, 46) = 5.46, p = .024].

As revealed by two female sustainable performers from the corporate and arts industries:

> …. so if you were going to do an engineering exercise, instead of just having a rational thought, you would actually start to understand how to manage people's expectations, how to manage interventions. All these techniques that I had been practising, but I hadn't realised that I had been practising them in any structured way, they actually gave me the discipline to put all my experiences into context and use these techniques actively going forward…. performing at one's best came from very shortened time scales, the very complexity of the tasks, trying to perform new skills at the same time, and doing that successfully….it was high profile….for me it all came together and for me it was an affirmation that I was good if that doesn't sound too arrogant (Female Sustainable Performer - Corporate).

> The most consistent thing that I have found over all the experiences that I have had, is when you know that your body is on, it's switched on, and its doing everything that you know it should be doing, that you want it to do, and it's doing things above and beyond, and it gives it to you at that moment. Confident…quietly, because there is something about being humble. You know, and you don't have to advertise what you know, and so to be confident, yes I am, but I don't get on the loud speaker and say that I am the greatest, I am the best, I know that internally, I know what I have and what I have to offer (Female Sustainable Performer – Arts).

Conversely, as indicated by the following male corporate non-sustainable performer:

> ….The first time that I had done a presentation in front of about 150 people. At the end of it I came across stunned silence, and I thought have I done something wrong here? Any questions? And the next minute 30 or 40 questions were thrown across at me continually. I feel like the presentation, at some stage maybe, I went over the top and came across as too enthusiastic, but I think the norm on the day was that, I wouldn't say the other presentations were dull or drab, but they were kind of uniformed, and there wasn't very much inspiration in them. So, with the presentation that I gave, I felt that I got a good reaction from a large majority of the people there, and that was a good feeling to have. I am sure there could be areas that could be improved, I feel like I get a lot of confidence from that one because it was really good, I still strive to be as good as that one even though in my eyes….well other people's eyes it wasn't as good as I thought it was at the time (Male Non-sustainable Performer – Corporate).

When examining levels of sustainable and non-sustainable performers, a difference was evident between just non-sustainable peformers and non-sustainable performers in relation to cognitive interference, as measured by the Thought Occurrence Questionnaire (TOQ) ($F(3, 38)=2.86$, $p = .039$). Non-sustainable performers, ($M=101.40$, $SD=31.49$) demonstrated a higher level of cognitive interference than just non-sustainable performers ($M=54.84$, $SD=20.16$)

The following two examples illustrate how cognitive interference manifests itself by just non-sustainable performers:

> ….it was probably one of the worst seasons that I have had. I just couldn't pick up the ball cleanly…..you are supposed to pick up the ball cleanly and get rid of it straight away, but it was hitting my hands, missing run outs, I was just diving over the ball, and it just didn't happen, and my confidence was really low. Every time the ball came to me I was thinking the worst things, like don't come to me, don't drop it, and then of course that happens….. (Just non-sustainable performer - sports).

> …….if I haven't noticed myself, but if I have noticed it, and I have pointed out to someone else to get it done and it's not done, then I feel failure in that way, because if I haven't followed up, or before the person has turned up I haven't double checked, which is probably the same thing in that respect…I would say I was distracted by other issues…(Just non-sustainable performer – corporate).

In comparison, the following two examples by non-sustainable performers, demonstrate a more in-depth intensity of cognitive interference:

> ….for me it was more about relaxing and not worrying so much. I tend to be a fairly nervous person, I tend to worry, and one of the things that I do is work too hard, I put too much into it, and I actually need to let it settle and just let it happen, rather than trying to muscle it through or pushing it

> hard……I don't feel like doing what I could be doing, and it's just not working or that sort of thing. I can get very angry with myself for not being able to do it, and that never really helps at all. I will break everything down into tiny pieces and try and put it back together again, and I find that actually doesn't help as it breaks the coordination and the movement, and I usually get frustrated, usually it's better to get the flow of the movement rather than being so analytical and pedantic on each and every aspect, it's the whole thing that matters (Non-sustainable performer – arts).
>
> ….we weren't in control…. I couldn't answer a lot of the questions that were being asked, but there was no support, like everyone was missing, it wasn't a team panel. I think that there was panic…..my head was starting to go, oh my god, and trying to come up with things and think of things but it just blanked out….(Non-sustainable performer – corporate)

Industry

Using univariate analyses of variance, and post-hoc tests to look in more detail at industry, a significant finding was evident between sources of self-confidence and industry. The arts discipline was more concerned with self-presentation (one source of self-confidence), ($F(2, 38) = 3.14$, $p = .032$) demonstrating a higher level ($M = 11.49$, $SD = 3.33$) than the sports discipline ($M = 8.01$, $SD = 3.21$).

Gender

Quantitative data revealed significant differences between sustainable and non-sustainable performers in relation to confidence (see Table 19) and cognitive interference. However, no gender distinctions were evident in relation to goal orientation.

Table 19

Confidence Types as a Function of Gender and Performance Group

	Gender				
	Male		Female		
Confidence Subscale by Group	*M*	*SD*	*M*	*SD*	*F* statistic
Support					
Sustainers	27.88	3.50	31.52	2.27	(3,38) = 7.32, $p < .05$
Non-sustainers	32.33	2.52	23.33	3.30	(3,38) = 7.32, $p < .05$
Mental & Physical Preparation					
Non-sustainers	22.42	2.53	18.75	3.18	(3,38) = 4.98, $p < .05$
Leadership					
Non-sustainers	16.58	1.53	9.50	3.89	(3,38) = 3.17, $p < .05$

While innate confidence was the primary distinguishing factor between sustainable and non-sustainable performance, sources of confidence appeared to be the key differentiator between genders. Overall, vicarious experience (one aspect of sources of self-confidence) showed a higher level for males, while female sustainable performers suggested a higher level of support (one aspect of sources of self-confidence).

Conversely, female non-sustainable performers indicated a lower level of support than male non-sustainers. Male non-sustainable performers also suggested higher levels

of leadership and mental and physical preparation than female non-sustainable performers. Such results complement findings within gender management research where women managers were found to have an approach based on support, (Tannen, 1990).

According to one female sustainable performer from the corporate domain, and one female sustainable performer from the arts arena:

> Yes, what really stood out for me was the amount of coaching that I got from my chief executive….and family, definitely the encouragement that I get from my family, we have a very performance oriented atmosphere at home being ….I think that's a primary factor….so definitely my family life and the early encouragement that I got from school were primary factors (corporate).
>
> ….Having that support, and I look at the performers around me for support as we are a team, we are not individuals, even though there might be individual players within that team you are only as good as the performers that you have around you and what you have to offer, so I think all of those things….my family and where I grew up, and how I was brought up. The fact that I thank god for the family that I have and the support that I have, I have always been supported. You know, when you think of what goes on the world and in families, like divorce, and so on, it's just no wonder people end up doing what they do, so I thank god that I have had a supportive environment….and I think the partners that I have had have always supported me, and that has also been a really great thing no one

has ever said what do you mean that you are going away for 6 months, what do you mean (arts).

In regards to the TOQ, a significant effect was found for gender on factor 2, thoughts of escape [F (1, 42) = 9.86, p = .003], where females (M = 11.14, SD = 1.10) scored higher than males (M = 6.64, SD = 0.92). This pattern was also reiterated on factor 3, task irrelevant worries, [F (1, 42) = 4.41, p = .042], where females (M = 18.23, SD = 1.32) again scored higher than males (M = 14.60, SD = 1.11).

However, when examined in more detail, it transpired that female non-sustainable performers (M = 11.79, SD = 0.71) indicated more thoughts of escape than male non-sustainable performers (M = 3.76, SD = 2.39) [F(3, 38) = 3.06, p = .041]. Female just non-sustainable performers also had more task irrelevant worries than male just non-sustainable performers. According to one female sports just non-sustainable performer:

> I guess there was some distraction because I wasn't focused on what was happening, but I was thinking about 101 other different things….all the thoughts going through my head….I just didn't seem to be as focused….your eyes tend to wander and you would think oh yeah ball's coming…. and on a day when I am not performing very well, I may start to think what's so and so thinking about me, and am I going to get into this side because of this performance?

Conversely, one male just non-sustainable performer revealed:

> Yesterday was a bit like that, umpires' decisions they are always

against me, the ball was bouncing my way, I was in the game, the whole game, and I was getting a lot of touches, but everything was against me to the fact that I was so frustrated, made the tackle got a free kick. But then I punched a guy and threw the free kick away, and it was just through….I had never done that before and that was where my frustration came in, and I knew I was frustrated and I was telling myself to control my anger, and I was until this point where I just exploded, and I couldn't believe that I did it and afterwards……

From the interview data using cross-tabulations, evidence emerged that in relation to overall stress levels, females have a higher level than males [χ^2 (2, N = 18) = 15.00, p = .017; Fischers exact = 13.12, p = .018] (See Table 20). In relation to organizational awareness females have a higher level than males, χ^2 (5, N = 18) = 10.20, p = .025 (Fischers exact = 10.05, p = .025) (See Table 21). One female corporate sustainable performer illustrated: "Understand who are the stakeholders in the company, who can help you influence and help you get to where you want to be, be very clear about the outcomes, and start positioning yourself so that you can achieve the outcomes". However, one male non-sustainable performer from the corporate industry maintained: "….make it difficult to achieve a peak performance? Probably the organisational politics. Not being able to contribute to an outcome. I may not necessarily find the motivation to continue with something like that, and if that is the case, then I would probably focus on something else then".

Table 20

Stress Levels by Gender

	Stress Level				
Gender	1	2	2	3	3
Male					
Observed	1 (11.1%)	1 (11.1%)	1 (11.1%)	1 (11.1%)	3 (33.3%)
Expected	0.50	0.50	2	0.50	1.5
Female					
Observed	0 (0%)	0 (0%)	3 (33.3%)	0 (0%)	0 (0%)
Expected	0.50	0.50	2	0.50	1.5

Table 21

Orgainsational Awareness by Gender

	Orgainsational Awareness				
Gender	2	3	4	4	5
Male					
Observed	1 (11.1%)	3 (33.3%)	1 (11.1%)	3 (33.3%)	1 (11.1%)
Expected	0.50	2.5	2	2	0.50
Female					
Observed	0 (0%)	2 (22.2%)	0 (0%0	1 (11.1%)	0 (0%)
Expected	0.50	2.5	0.50	2	0.50

Chapter 11

Results – Resource Based Theory

Variables predictive of sustainable performance

The results of this study suggest that a number of variables are predictive of sustainable performance. In order to test the predictive power of a set of variables, and to assess the relative contribution of each individual variable, Logistic Regression was employed. Logistic regression (table 22) indicated that while gender was the most important aspect of sustainability, this was followed by failure experiences in non-work life, innate confidence, peak performance self in clear process, (one aspect of peak performance), and failure experiences in work life.

Table 22

Logistic Regression Predicting Type of Performer (Sustainable vs Non-sustainable)

Predictor	*B*	S.E.	Wald	*df*	*P*
Gender	4.61	1.59	8.36	1	.004
Peak performance self in clear process	-1.13	.50	5.12	1	.024
Failure work life	-1.09	.50	4.75	1	.029
Failure non-work life	-1.64	.65	6.30	1	.012
TSCI	.084	.04	5.80	1	.016
Constant	3.13	4.46	.55	1	.457

Sustainability, therefore, was likely to be attained if you were female, and had a complete, successful non-work life with limited perceived major failure experiences. In

addition, characteristics that females displayed were innate confidence, strong sense of self, clarity of inner processes and a sense of wholeness.

Resource based theory

Barney's (1991) definition of resources has been used as the basis for this research (see chapter 2, a resource based perspective). Barney (1991) defined organisational resources to include "all assets, capabilities, organisational processes, firm attributes, information, knowledge, etc. controlled by a firm, and that enable it to conceive of and implement strategies that are efficient and effective" (Barney, 1991, p.101). Resources were also defined more broadly as any assets, tangible or intangible, that help firms implement strategies to improve their efficiency and effectiveness.

For sustained competitive advantage (Figure 7) a resource was required to be valuable – the resource must contribute significantly to the organisation's effectiveness and efficiency; rare; non-substitutable - the resource cannot be acquired by competitors to achieve the same strategic outcomes; and inimitable – firms that do not possess the resource cannot obtain it.

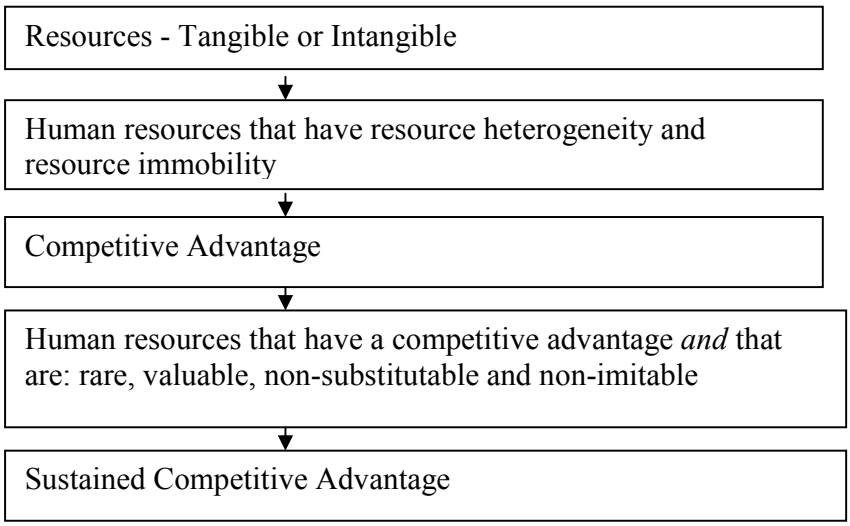

Figure 7. Resource based theory – Sustained competitive advantage

On examination of each variable predictive of sustainable performance, it is clear that with the exception of gender, all variables can be said to demonstrate all four requirements of sustained competitive advantage.

Failure in non-work life, and peak performance self in clear process, are specific aspects of experiences. For sustainable performers, the number of incidences of failure in non-work life was statistically less than that for non-sustainers, thereby demonstrating aspects of being rare. Since having a strong sense of self, clarity of inner processes and innate confidence, are factors that should be normally distributed in the population, these high quality human resources may also be said to be rare.

Less failure in non-work life, having a strong sense of self, clarity of inner processes and innate confidence also contribute significantly to the individual's effectiveness and efficiency. These factors may therefore be perceived as valuable. Failure experiences, peak performance experiences and innate confidence of each individual, by definition, are likely to be unique to that individual, and accordingly will be non-substitutable and inimitable.

Consequently, a lack of perceived startling failure experiences in non-work life, innate confidence and self in clear process (one aspect of peak performance) might be said to be predictors of individual sustained competitive advantage or individual sustained performance. According to the resource based theory, while gender may not be considered to be a key resource and a source of individual sustained competitive advantage, the findings suggest that once females attain sustainability they maintain this more successfully than males, who appear to have more variability in performance.

"It's a combination of flexibility and support" (Wood, 2007, cited by Sexton & Fleming, 2007). "Nobody learns anything from success….you only learn from your mistakes" (Lagerfeld, 2007, cited by Associated Press, 2007).

Chapter 12

Discussion

The first aim of this research was to determine the relationship between sustained performance (including levels of sustained performance), and specific individual and historical variables. Findings from the study revealed relationships between sustained performance and some variables, for example innate confidence, while no relationship was highlighted between others, for example sustained performance and goal orientation. Such findings concur with Orlick (1998), and Kreiner-Phillips (1990), who maintain that there are distinctions between reaching a peak level of performance and sustaining such a level.

The second aim was to determine whether differences existed as a function of gender. A number of findings indicate the criticality of gender with respect to sustaining an individual competitive advantage. Females, once they reach the top appear to maintain this level more than males, providing their non-work lives are perceived as successful. They also have a high level of innate confidence and retain a strong sense of self. While females remain active and indicate support as an essential source of confidence, males seem to become more passive once they reach the top, with vicarious experiences appearing to be a critical source of their confidence.

Identifying whether characteristics of sustainable performance, differed due to the type of operating or practising environment was the third aim of the research. While the findings did not directly support this hypothesis, industry was seen to be a distinguishing factor regarding whether participants focused upon the process, outcome or both, in addition to how certain experiences were interpreted. Accordingly, since aspects of sustainable performance are dependent on the practise environment, it is reasonable to contend that this would inhibit the generic application of criteria from one discipline to another.

The fourth aim was to identify the variables that are predictive of sustainable performance or sustained competitive advantage, with results indicating that some variables are more predictive than others. Such results also provided evidence to support the fifth aim of the study, namely the value of using the resource based theory as a framework for determining and analysing sustainable performance.

A more detailed discussion of the specific content relevant to each of the five aims follows.

Aim 1 - To determine the relationship between sustained performance, levels of sustained performance, and specific individual and historical variables

This section begins with an overview of the hypotheses, and the specific findings from the current research in relation to this first aim. It is followed by an interpretation of the findings with respect to the cognitive, experience and knowledge variables under investigation. Based upon the interpretations given, profiles of a sustainable and non-sustainable performer are offered. The final component of this section, concerned

whether sustainable or non-sustainable performers perceived the variables under investigation to be independent or dependent concepts.

Hypotheses and findings.

The hypotheses within this aim were either experience/knowledge or cognitive based. More specifically, sustainable performers were predicted to have higher levels of task orientation and confidence; less negative cognitions; greater incidences of peak experiences, peak performance experiences, and flow experiences; and fewer incidences of failure experiences. Sustainable performers were also expected to experience a greater number of life events more often, with the level of significance attached to the life events the same as that attached by non-sustainable performers.

The hypotheses set out for this investigation have partly been supported. Sustainable performers were found to have higher levels of innate confidence and fewer incidences of the failure experience. However, sustainable performers were not found to have higher levels of task orientation, less negative cognitions or greater incidences of peak experiences, peak performance experiences, and flow experiences.

While not under investigation, findings also indicated that although the number of experiences did not produce differentiation, the type of experience qualified by participants did. These experiences were seen to differ depending upon industry and performance (sustainable or non-sustainable). Significant differences were also found between sustainable performers and non-sustainable performers, on specific dimensions of experiences, such as frequency of failure experiences in work life and non-work life; peak performance - self in clear process, (one aspect of peak performance within the peak

experience questionnaire); and peak experience and failure - meaning, (one aspect of peak experience and failure within the peak experience questionnaire).

Additionally, contrary to the hypothesis under investigation, sustainable performers were found not to experience a greater number of life events more often, and the level of significance attached to the life events was not the same as that attached by non-sustainable performers. Rather, sustainable performers were shown to attach more value and meaning, and place greater emphasis upon life events generally. Such events incorporated both major and minor (daily) activities.

Interpretation – confidence, goal orientation and cognitive interference (cognitive variables).

In attempting to shed light upon the results, it is acknowledged that the current research incorporated a unique and consequently, small sample. Accordingly, while the study has proffered some significant differences, (and potential indicators), between the individuals under investigation, all the interpretations given throughout this chapter should be considered within this light.

Overall, it may be summarised that for the cognitive based hypotheses innate confidence was the only differentiator for sustainability, with goal orientation and cognitive interference being seen not to have an impact. Such findings concur with previous researchers such as Hardy (1996a, 1996b) and Vealey, Hayashi, Garner-Holman, and Giacobbi, (1998), who maintain that for either successful performance, or influencing (sport) performance, confidence may be the single most important (cognitive) factor.

Within this investigation, sustainable performers were identified as having higher levels of innate confidence than non-sustainable performers. All the participants in this study were considered to be at an elite level, and sustainable performance may be (potentially) thought of as either a higher level or a more difficult level to peak performance. Thus the results from this investigation, support and follow the same trend as previous studies on confidence, which indicate that levels of confidence increase commensurate with increases in level of performance (Jones, Hanton, & Swain, 1994; Jones & Swain, 1995; Ng, Cheung, & Fung, 2001; Ribeiro & Aroso, 2004; Vealey, 1988; Woodman & Hardy, 2003).

Such findings also contribute in alleviating the issue highlighted by Woodman and Hardy (2003) who stressed the lack of studies involving truly elite athletes. This predicament was said to pose a problem in terms of generalising results. The fact that innate self-confidence was found to be higher in sustainable performers, provides additional evidence that trait confidence is not only a factor at an elite level, but that it also (potentially) differentiates between sustainability and non-sustainability.

Furthermore, the current research gives support to the assumption, that it is not necessarily the case that being secure in their abilities, or being confident of their position, are inevitable factors in individuals once an elite level is attained. One possible explanation is that elite non-sustainers have a preference for chasing rather than being chased, a concept first introduced by Gould and Krane (1992) in relation to top performers. The change in motivation required from chasing to being chased, and the resultant impact upon level of arousal, may consequently affect an individual's ability to become a sustainable performer.

An alternate view is embedded in sources of confidence, where sustainable performers may have different sources of confidence than non-sustainers, which in turn have an impact upon overall level of confidence. That source of confidence can impact upon overall confidence has been supported by Vealey et al. (1998). However, regardless of the explanation, self-confidence is unlikely to be a one-dimensional construct, rather it is likely to be the result of the interaction between factors for example, personal and situational. Consequently, while innate self-confidence has been identified as having an impact upon sustainability, further investigation would be beneficial in elucidating the contributing factors that produce such an outcome.

That cognitive interference and goal orientation were not contributing factors to sustainability supports previous research. Martin and Gill (1991), for example, reported that athletes who were confident in their ability to perform effectively in sport oriented situations, experienced fewer intrusive thoughts and concerns about the possible outcomes of their performance. In addition, Yun Dai (2000) maintained that self-perceptions of competence in a specific domain, and general self-confidence, regulated the expression of task and ego orientations. Finally, Hatzigeorgoadis and Biddle (1999; 2002), when attempting to assess cognitive interference directly in a sports context, failed to find significant results on all aspects investigated.

The findings from the current study, taken together with previous research, may indicate that confidence could be mediating the effects of such variables. Alternatively, goal orientation and cognitive interference may simply not be differentiators at this level. The levels of goal orientation and cognitive interference may be the same for sustainability as that required to reach an elite level, with no more or less being required.

Interpretation – Peak experience, peak performance, flow, failure, life events (experience/knowledge variables).

Reiterating the cautionary note above, the unique and consequently, small sample, while allowing insight, also emphasises that degrees of restraint are required in the 'carte blanche' acceptance of the findings, and resultant explanations offered.

For the experience and knowledge based hypotheses, frequency of failure experiences and failure experiences in general, were the biggest differentiators between sustainable and non-sustainable performance. This was followed by peak performance experiences, and peak experience experiences. Flow experiences had the least impact upon sustainability. Such results emphasise that sustainable (and non-sustainable) performers experience all types of events, rather than just one type. It also serves to highlight the particular importance of failure experiences and their link to sustainability. While this supports Wilson and Spencer's (1990) view, that intense negative experiences can be as meaningful as intense positive experiences, it also extends such thoughts, since this research suggests that failure is, in fact, more meaningful in relation to sustainability.

Additionally, the findings from this research emphasise that even though all individuals experience all the types of events, sustainable performers appear to have a different approach in relation to specific aspects within each experience.

When examining the findings in detail, the current research revealed that sustainable performers have less failure experiences than non-sustainable performers. When they do experience failure situations, they seem, compared to non-sustainers, to have a clearer understanding of the boundaries, understanding their role and what is or is not possible. They also maintain a more objective focus than non-sustainers, analyzing

the relationship between themselves and the failure, attempting to gain an understanding of what went wrong and why.

While sustainable performers examine failure situations in-depth, they attach less meaning to incidences of failure than non-sustainers, suggesting that while sustainable performers want to understand what went wrong, failure experiences do not have the same level of impact as that experienced by non-sustainers. This lower level of meaning or attachment by sustainable performers was also evident for peak performance experiences and peak experience experiences.

A rationale for such findings may be linked to the result that sustainable performers attach more meaning or significance to general life events (daily/minor and major activities), than non-sustainers. Concurring with Rowlinson and Felner (1988) and Zautra, Reich, and Guarnaccia (1990), the results from this research support the contention that daily or minor stressors do not necessarily occur independently of major life events. Rather, daily or minor events may possibly act as transmitters or mediators, providing a buffer or cushion, and prepare an individual for the effects of major events.

Sustainable performers, by placing more meaning on general events (daily/minor and major) occurring in their lives, rather than on specific types of event, generate more of a 'robust' approach, and also a broader repertoire of experience. The plethora of opportunities provided by daily events, may provide an environment of constant learning, and the development of new resources. The availability of such resources allows sustainable performers to draw strength or knowledge from numerous avenues.

Since the qualitative data revealed resilience as a differentiating factor between sustainable and non-sustainable performers, the strength or knowledge resulting from the

creation of such a plethora of resources may be a contributory factor to resilience in sustainability. Such a contention may be supported by the writings of Warschaw and Barlow (1995) whose primary area of focus is resiliency. Additionally, the previous assertions that sustainable performers have a clearer understanding of the boundaries, understanding their role and what is/is not possible; have also been identified as being integral to Warschaw and Barlow's concept of resilience. They contend that resilient individuals have insight and perception, can comprehend the broader context of their situation, and can correctly interpret their role in it. They were also seen to consider alternatives and possibilities more than non-resilient people.

When faced with peak performance situations, the current research indicated that sustainable performers again have a clearer understanding of the boundaries, understanding their role and what is or is not possible, compared to non-sustainers. Such findings suggest a level of similarity between failure and peak performance. Equally, and possibly more importantly, it implies a consistency of approach by sustainable and non-sustainable performers regardless of type of experience. However, unlike failure situations, sustainable performers analyze the relationship between themselves and the peak performance less than non-sustainers, feeling that they do not need to understand in-depth what went right and why. This is in stark contrast to non-sustainers who do not analyse failure experiences, but do analyse peak performance experiences.

Overall, such findings may indicate that sustainable performers do not need constant reinforcement of their achievements, and are comfortable confronting their failures, possibly believing that such situations afford more opportunities for learning and growth, than successful situations. Conversely, non-sustainable performers may need

more positive reinforcement, wanting to replay their successes while avoiding being confronted by, and examining their failures.

One plausible explanation for the above contention is embedded within failure research. When answering the question of why people succeed or fail, it has been proposed that an individual's reaction to failure is determined by their perception of why the failure occurred. Anderson and Jennings' (1980) maintained that attributing failure to a controllable factor (e.g. effort), rather than an uncontrollable factor (e.g. ability), should lead to increased success expectancies and increased persistence. Consequently, if sustainable performers are comfortable confronting failure, the possibility is that they may attribute failure to effort, which should have minimal impact. Alternatively, if non-sustainers confront success only (an outcome determined by high ability and hard work (Weiner, 1980)), the likelihood is that they may attribute failure to lack of ability. Given Anderson and Jennings (1980) writings, such an attribution is likely to have a substantial impact upon success expectancy and persistence.

Gender and failure research lends some support for the above contention, where it has been found that women believe that effort is the cause of success. As a result women may see potential failure as a signal that they need to work harder to improve. Men on the other hand are said to believe that ability is the cause of success. Consequently, they may view potential failure as an indicator that they lack ability. Extrapolating from this, sustainers may approach failure and success situations in much the same way as women, attributing outcomes to effort. Conversely, non-sustainers may approach the same situations like men, attributing outcomes to ability.

It may be conjectured then, that non-sustainers by focusing on success rather than failure are able to self-protect and reinforce their ability, rather than directly challenge their own self and their ability. On the other hand, sustainers have little need to self-protect since they attribute outcomes to effort, a controllable factor. According to Birney, Burdick, and Teevan, (1969) such an attribution is critical for people to feel satisfied with their performance, and to be confident in their capacity to do well in the future. In summary, sustainers have a level of comfort concerning failure situations that non-sustainers could not and do not.

Findings from the qualitative research support the quantitative findings, and also re-emphasise that sustainable and non-sustainable performers may have different approaches. Sustainable performers were found to have an approach based on realism, humility, and crediting others. Such results support the quantitative results that sustainable performers understand their role more clearly and do not get so absorbed.

Complementing this view are the findings from gender and failure research where Rosenthal (1995) reported that women managers were more generous with their subordinates, attributing success more to their subordinates' ability than to themselves or their ability. Additionally, such results support Gould, Jackson, and Finch's, (1993) contention that the likelihood of repeating success by elite athletes, came with the realisation that the only way to perform successfully after failure, was performing for themselves again. They maintained that the most likely psychological explanation for the 'inability to repeat phenomenon' included increased expectations and responsibilities, and a shift in motivational orientation in which arousal increased and was interpreted negatively.

That increased arousal and the resultant negative interpretation may be responsible for individuals not repeating success has some support from this research, albeit from a slightly different perspective. Qualitative data indicated that sustainable performers were found to be more active and to have an approach based on energy and excitement.

Data from the interviews highlighted that sustainable performers appeared to understand that once they reach the top, they need to remain active not taking their success for granted and expecting it to just continue. They understand that they have more to gain, and need to continue to do the things to make this happen. According to Quick, et al. (1997), an individual who chooses action options, and channels the stress-induced energy properly demonstrates eustress. By employing eustress, the situation is interpreted as an opportunity for success and achievement, stimulates productivity and supports optimum performance.

Non-sustainers were found to have an approach based on using adrenalin. By employing adrenalin, an individual may fear that they may have something to lose. Stress-induced energy may not be channelled correctly when stress becomes a threat, and the threat response is elicited too intensely (such as adrenalin), (Quick, et al.,1997). This results in distress, the restriction of information processing (Staw, Sandelands, & Dutton, 1981) and the potential reduction in activity.

Profile of a sustainable performer.

Given the previous writings it is hypothesised, (from the researcher's perspective), that individuals who sustain a high level of performance or a competitive advantage invoke a different strategy. Without question all individuals who reach an elite

level of performance demonstrate certain qualities. However, once this level is attained it would appear that to maintain it requires the individual to do some things the same way, but also to do some things differently. In summary, once individuals reach a high level of performance they either view their position as one to be maintained by their own and others' growth, or one to be maintained by comparison and defence.

Specifically, individuals who sustain a high level of performance maintain their level by allowing themselves and others to grow, while retaining a realistic, in-depth knowledge of what is or is not possible. They have a level of confidence and security in themselves that allows them to acknowledge others' contributions, without unduly emphasising their own roles in the attainment of successful outcomes. They also have an approach based on constant learning from everyday events, rather than just highlight events, which allows the build up of a wide range of resources from which they can draw when necessary.

They do not have the need to self protect their image, preserve their identity or to constantly reinforce their level of ability, basing their outcomes on controllable sources such as effort. They do not view their position as something that they are afraid of losing and so consequently see everything as a threat, but rather they view their position as something that they can gain more from, creating more opportunities for themselves and others. They understand that they could not do what they do, be who they are and maintain what they do without others. Sustainable performers will approach a situation with a clear sense of their values, goals and capabilities and a strong tendency toward active involvement.

Given the cautions previously stated, proffering such a profile may seem overly ambitious. While the above is based on the current research data, and incorporates a different as well as additional perspective; the profile of a sustainable performer also 'repackages' and amalgamates a number of other researcher's findings. For example, Maslow's (1970) description of 'peakers' incorporated characteristics of finding their lives more meaningful, feeling more assured, reflective, inner-directed, self-aware, realistic, and self-confident, are aspects evident in sustainable performers. Warschaw and Barlow (1995) maintained more resilient individuals demonstrate a more in-depth knowledge of what is or is not possible, being fully cognizant of the boundaries.

Profile of a non-sustainable performer.

Individuals who do not sustain a high level of performance have an approach based on defence, as well as not having a realistic awareness of what is or is not possible. They do not have a level of confidence and security in themselves that allows them to acknowledge others' contributions; rather they continue to emphasise and reinforce their own roles in the attainment of successful outcomes. They have an approach based on learning more from highlight events, and more specifically from successful major events.

Such an approach restricts the build up of resources, and more importantly biases which resources are taken on board, since non-sustainable performers tend to examine successful performances only rather than failure experiences. Consequently, the range of resources from which non-sustainable performers can draw may be somewhat limited in comparison to sustainable performers. They appear to have the need to self protect their image, preserve their identity and to constantly reinforce their level of ability, potentially basing their outcomes on uncontrollable sources such as ability. Non-sustainable

performers may view their position as something that they are afraid of losing and so consequently see everything as a threat. Accordingly, they attempt to constantly defend their position. They do not fully understand that they could not do what they do, be who they are and maintain what they do without others.

Additionally, supporting Garfield and Bennett's (1984) view that for peak performers "only the action they are engaging in seems to exist" (Garfield & Bennett, 1984, p.26), and that attention and energy are channeled in a single direction, non-sustainable performers were also found to have a higher level of general focus and self focus. While Privette (1985) maintained clear focus to be the main element of the peak performance, this research puts a different light on such a finding. It would appear that for sustainability, it is the level of clear focus that seems critical. Non-sustainers would seem to have too much of it, focusing completely on the job at hand and not seeing either a wider or realistic picture.

Independent or related concepts.

Sustainable performers and non-sustainable performers were also identified as having differences in whether the events were experienced as independent constructs or related. Due to disagreements in the current literature, an exploratory research question was asked. This question was whether flow, peak performance and peak experience were recognized by participants as independent concepts, or whether they were identified as being related constructs. From the qualitative results it is concluded that for non-sustainers they are independent experiences, with participants maintaining that one experience did not necessarily involve another. Whereas, for sustainers, peak

experiences seem to be related to peak performance, with participants maintaining that peak experiences always involved peak performances.

Jackson (1992) maintained peak performance, peak experience, and flow were integrated concepts, with flow being the result of peak performance and peak experience. Conversely, Privette (1982) maintained they were separate concepts. However, she also acknowledged that peak performance often had attributes of peak experiences in them, and concluded that the interaction between these two optimal constructs is 'reciprocal and significant'.

This research suggests another scenario. For sustainable performers, a peak experience was always accompanied by a peak performance (the opposite of Privette), suggesting the two are interlinked. However, all other constructs were seen as independent. This idea of an integration of peak experience and high performance supports Mogar's (1965) finding that intense joy could trigger positive achievement. This connection meant that productivity was linked to the full human experience including feelings of joy, fulfillment and meaning.

Such results indicate that further quantitative and qualitative investigation is required in attempting to understand, how or why levels of performance dictate the independence or connection between constructs.

Aim 2 - To identify whether differences exist as a function of gender

This section is subdivided into three areas: gender and sources of confidence; gender and sustainability; and finally, type of experience and gender.

Gender and sources of confidence.

While innate confidence was seen as the primary (cognitive) distinguishing factor between sustainable and non-sustainable performance, sources of confidence were seen to differentiate between genders. Overall, vicarious experience (one aspect of sources of self-confidence) was higher for males. Vicarious experiences are concerned with looking at others' success, and how well other people are doing. With vicarious experiences you primarily gain confidence from measuring your level of performance against other people's performances. The implication from vicarious experiences is that the individual's level of confidence increases, if they assess they are doing well in comparison to others. Conversely, if others are doing better, the level of confidence may not be quite so high.

Female performers suggested a significantly higher level of support (one aspect of sources of self-confidence). The focus of support is on getting positive feedback from others, knowing that support from others is there, having other peoples' belief in the individual's abilities, and getting encouragement from others. Support results in more confidence in yourself as a person and your abilities.

Given this, one interpretation is that the main differentiator between vicarious confidence and support confidence, is that vicarious confidence comes from externally referencing others, and by implication, measurement against an external standard of excellence. Alternatively, confidence from support comes directly from internally referencing the self, and measurement against an internal standard of excellence. Such results complement findings within gender management research (Tannen, 1990). Additionally, supporting the proposition that for females support and level of

performance are interlinked, the findings also support Petrie (1992), Smith, Smoll, and Ptacek (1990), and Patterson, et al. (1998).

Petrie (1992) and Smith et al. (1990), investigating social support within the sports arena, found a link between level of support and number of injuries sustained. Patterson et al. (1998), within the ballet domain, found much the same, with level of social support impacting on a dancer's well-being and propensity for injury. Thus support may contribute to performance, which in turn may contribute to sustainability. The endorsement of support by females also mirror Vealey et al.'s (1998) findings within high school and college samples. High school females rated social support as a more significant source of sport confidence, while college females rated physical self-presentation and social support.

The importance of social support may be due to the demanding and competitive environments of sport, corporate and arts. Previous research has shown, that if individuals perceive that they lack the social resources that can provide them with caring and support, they cope significantly more poorly on a range of well-being measures (Sarason, Sarason, & Pierce, 1990). In contrast, perceptions of available social support (even if it is not utilised by the individual) appear to buffer the impact of stress. Commensurate with the assertion that support is essential for females to sustain performance, this research revealed that female non-sustainers rated themselves as having a lower level of support than non-sustainable males.

Contrary to Vealey's and other's assertions, this research found males rated vicarious experiences as the most significant aspect of sources of confidence, rather than a demonstration of ability as a more important source. Additionally, male non-

sustainable performers implied higher levels of leadership, and mental and physical preparation were more important sources of confidence, than for female non-sustainable performers.

Examining previous research on the interaction between sources of sport confidence and trait sport confidence, the results found in relation to male non-sustainable performers mirror previous writings. Wilson, Sullivan, Myers, and Feltz, (2004) supported Vealey et al.'s (1998) supposition that physical/mental preparation was ranked one of the highest sources of confidence among athletes. Wilson et al. (2004) also reported that mastery was ranked equally as highly. In addition, physical/mental preparation and demonstration of ability were significant predictors of trait sport confidence for master athletes. Since all the individuals within this study are classed as elite, it is therefore unsurprising that physical/mental preparation was ranked highly. However, this aspect of confidence was only mentioned by male non-sustainers.

The conclusion reached, based on this investigation, is that for males the role of others in relation to themselves seems to change with respect to sustainability. More specifically, up to an elite level physical/mental preparation and leadership still ranked highly. The confidence gained from physical/mental preparation is obtained from self-referencing, being concerned with focus, preparation, and a belief in giving maximum effort. The confidence gained from leadership is primarily a result of believing in their manager, director or coach, and having confidence that they want the best for them, believing that they are working in a partnership, toward the attainment of their, (the performers), goal.

From an elite level, in order to sustain performance, males suggest that their confidence stems from vicarious experiences. Since vicarious experiences are concerned with comparison against others, and an external standard of excellence, it would seem that males stop directly self-referencing once they get to the top and start to reference others. In summary, it might be contended that for males once they reach the top they become more concerned with how others are performing and the possible resultant competition, rather than just focussing on themselves. Whether this change in focus is a result of male sustainers believing and perceiving that others are more of a threat, or that their position requires defending, or that they need to reinforce and demonstrate their abilities to others, requires further investigation.

Evidence such contentions may be valid have been found in the work of Gaeddert (1985), and Travis, McKenzie, Wiley, and Kahn, (1988). Gaeddert states that a considerable amount of research has noted that men are acutely focused on demonstrating their competence to others, and are more driven by external standards. Whereas, according to Travis, McKenzie, Wiley, and Kahn, (1988), women are closely focused on the accomplishment itself, leading to the use of intrinsic standards.

Vealey et al. (1998), from a practical perspective suggested that the nine sources of sport confidence fell within three broad domains. They maintained that athletes gained confidence from an achievement domain that included both mastery and demonstration of ability. The sources of confidence incorporated within the second domain of self-regulation, included physical and mental preparation and physical self-presentation. The last domain was a positive and achievement nurturing climate, which included the sources of social support, coaches' leadership, vicarious experience, environmental

support and situational favourability. According to Vealey et al. (1998), therefore, the achievement of goals, effective self-regulation, and training or competing in a climate that was supportive as well as challenging and motivating, allowed athletes to attain confidence.

Examining the findings from the current research in relation to these broad domains, it becomes evident that for males and females a positive and nurturing climate is the most critical aspect. However, within that positive and nurturing environment, males and females have a different focus. Concurring again with Tannen (1990), for females, for a positive and nurturing environment to ensue they require an environment of symbiotic relationships, based on support and, drawing on Gaeddert's views, intrinsic standards. However, for males the same outcome is obtained by having non-symbiotic relationships, based upon gaining or maintaining an advantage over others, thereby avoiding loss of power, and again drawing on Gaeddert's views, extrinsic standards. That such differences in approach have been identified is consistent with the work of Magyar and Feltz (2001), who reported that dispositional tendencies could impact upon patterns of confidence.

Gender and sustainability.

When examining sustainability and gender, rather than gender alone, peak performance/spirituality and peak performance/passivity were the only differentiators. Female non-sustainers demonstrated a higher level of spirituality and passivity than male non-sustainers, and female sustainers demonstrated a lower level of passivity than male sustainers.

That female non-sustainers demonstrated a higher level of spirituality within peak performances is contrary to previous research by Privette and Bundrick (1987), who reported that high levels of spirituality were inherent in peak experiences rather than peak performances. However, this finding concerned the link between gender and sustainability, which by implication focuses on an achievement dimension. Additionally, female non-sustainers also reported having a more passive approach, lower levels of mental/physical preparation and leadership. Quantitative data also revealed differences between non-sustainable performers in relation to cognitive interference, where females were found to display higher levels of thoughts of escape and task irrelevant worries.

In examining the above in totality, it may be concluded that females, if they are not sustaining, want to remove themselves from the situation, experiencing more anxiety and cognitive restrictions. The current research suggests a rationale as to how they might achieve this. Females, not wanting to apportion blame to themselves and/or others, attribute their situation to more spiritual factors. By employing such an approach, it would afford them the smoothest, most non-confrontational way of getting out of the situation.

Providing some support for a female's desire to withdraw non-confrontationally, and mentally if not physically, from the situation, Carver and Scheier (1986) maintained that withdrawal symptoms are likely to be expressed mentally when physical withdrawal from the setting is not appropriate or negatively valued.

The alpha coefficients in relation to some of the experiences, within this research, were well below acceptable limits, suggesting some caution is required in interpreting some findings. The outcome from the current study, that female sustainers are more

active, while consistent with research on gender and management, is one such area. Within gender and management research, females in leadership positions were found to display more effort and be more proactive than males, (Bass & Avolio, 1994).

Gender and failure research provides some indications as to why females may be more active and males more passive. Performance outcomes (success/failure) in many situations are uncertain. With this being the case, there is the potential to create and project negative self-images to others, for example inadequate ability (Leary, 1995).

In order to minimize such possibilities, some individuals systematically employ self-protective strategies prior to performance, for example, self-handicapping. Self-handicapping is thought to allow an individual to protect a sense of self-competence. According to Berglas and Jones (1978), individuals who invoke such strategies may feel like imposters or pretenders. Consequently, self-handicapping strategies were reported to stem from a fragile sense of self-worth, and allowed individuals to maintain their self-worth. Additionally, Berglas and Jones (1978) maintained that self-handicapping is motivated by the need to protect ability attributions for previous successes rather than future failures.

Consequently, males may be demonstrating a higher level of passivity due to a desire to maintain and protect their self-worth. Conversely, females, not having this desire remain more active. Findings from behavioural and self-reported self-handicapping research lend support for, and clarify, such a contention. Behavioural self-handicapping refers to obstacles personally inherent within the individual, and is thought to have more of a debilitating effect on performance. Alternatively, claimed self-

handicapping refers to barriers that are external to the individual such as bad mood, (Leary & Shepperd, 1986).

This distinction between self-reported and behavioural self-handicapping has been seen to be especially relevant in relation to gender. With particular regard to behavioural self-handicapping, numerous scholars have demonstrated that men are more likely to self-handicap than women, (Berglas & Jones, 1978; Hirt, Deppe, & Gordon, 1991; Hirt, McCrea, & Kimble, 2000). Hirt, McCrea, and Kimble, (2000), and Hobden (1997) going further, suggested that women do not engage in behavioural self-handicapping at all.

One possible explanation for such findings has been given by Snyder, Ford, and Hunt, (1985) who suggest that women are less threatened by failure, and that they consider behavioural self-handicapping as too costly, impacting severely on their performance. Hirt, McCrea, and Kimble, (2000) proffered an alternative explanation, suggesting women and men have a different attributional focus. Hirt et al. (2000) found women and men did not behave in the same way. When experiencing greater threat, women did not behaviourally self-handicap, instead they appeared to maintain a focus on doing the things necessary to perform well, rather than engaging in a self-protecting strategy of effort withdrawal.

Consequently, since females may see that effort is the cause of success, they may see potential failure as a signal that they need to work harder to improve. Conversely, men are said to believe ability is the cause of success. As such, they may view potential failure as an indicator that they lack ability. Given this, females are likely to show a higher level of activity than males.

The previously discussed findings that males gain confidence from vicarious experiences, that they may be self-protecting their image and belief in their ability, and that they start to reference others more than themselves, has raised further exploratory questions. Once males attain an elite level, do they perceive the competitive setting as a constant overwhelming threat to personal competence? And, consequently are they motivated to manage such threat by chronic self-handicapping, thereby impacting on their sustainability?

Type of experience and gender.

With respect to the type of event experienced by participants, failure appeared to be the main differentiator between genders generally, followed by flow and then peak performance. For failure experiences, gender differences stem from goal drive, significance (one aspect of peak performance, flow and failure as noted by the peak experience questionnaire), play, passivity, frequency and unpreparedness. Flow was typified by goal drive, significance (one aspect of peak performance, flow and failure as noted by the peak experience questionnaire), full focus, and clear focus. Finally, peak performance incorporated passivity and spirituality. In all aspects females demonstrated higher levels than males.

For flow, failure and peak performance, females remained focused and driven, but females also reported taking more meaning from flow situations than males. Also, in failure and peak performance situations they retained a sense of fun, not being quite so serious as males. That females retain a sense of fun and focus in most of the experiences, lends further support to Warschaw and Barlow's (1995) research and the importance of resilience. Resilient individuals were seen to be fun loving yet focused. Humour was

thought to provide relief from the realities of life, and to offer balance to views and situations that can become too serious or self-absorbed. Consequently, humour may be thought of as an acceptable way to remove tension, while having fun allows females to be more realistic.

Aim 3 - To identify whether differences exist due to type of performance discipline

The hypothesis within this aim was that characteristics of sustainable performance should differ according to practising environment. While not commensurate with the hypothesis under investigation, industry does appear to be a distinguishing factor in relation to how certain experiences are qualified. Specifically, within the sports and corporate disciplines, flow was seen to be experienced differently.

Flow for the sports arena, was highlighted by higher levels of goal drive, play, unpreparedness, significance (one aspect of flow as noted by the peak experience questionnaire), and spirituality. In speculating as to why such differences were found, one explanation surrounds the concept of flow itself. Even though previous research has reported that flow can be, and is, experienced in a variety of disciplines, the main components of flow have been derived from a sports setting. Consequently, while flow may be experienced by all disciplines, the levels of the actual components differ. What constitutes flow in a sports environment does not seem to constitute flow in a business environment.

For example, reiterating spirituality as a source of difference, findings revealed peak performance to be accompanied by a higher level of spirituality. However, again spirituality was more evident for sports followed by corporate and then arts. Dillon and Tait (2000), examining the relationship between spirituality and "being in the zone" in

team sports, suggest that their empirical findings provide "verification for the relationship between spirituality and being in the zone in sports", (Dillon & Tait, 2000, p.91).

Other aspects of peak performance, peak experience and failure were also distinguishable between industries. For example, while other people were seen to be part of a failure experience, they were deemed to have more presence in sports, followed by corporate and then arts. It may be possible to conclude that for failure within the sports environment, individuals perceive other people to have more of a role in the outcome. Whether it can be said that sports individuals therefore accept less responsibility than corporate and arts individuals, requires additional investigation.

Findings from the current research also found that individuals within the corporate domain retained more of a long-term focus and more organisational awareness than either the sports or arts industries. Such outcomes highlight that when working with differing industries distinct approaches and methods are required. More importantly, the implication is that findings from one discipline cannot be applied 'carte blanche' to differing industries.

Emphasizing such a contention, individuals within the arts arena were more concerned with physical self-perception (one source of self-confidence) than the sports arena. Conroy, Poczwardowski, and Henschen's, (2001) research suggested that the consequences of failure for performing arts individuals included feelings of "I'm no good" more than athletes (Conroy, Poczwardowski, & Henschen, 2001, p.317). They also wrote that affiliative failure was more significant for performing artists than athletes. Such revelations could well provide some additional insights into why physical self-perceptions were more of a focus for the arts arena. As Conroy, Poczwardowski, and

Henschen suggest, performing artists might be more attuned to changes in their self-concepts as a result of failure.

Reiterating that different industries may have distinct components and focuses, quantitative data taken from the interview reported that the approach taken by each discipline was different. Significant differences were evident between corporate, sport and arts disciplines with respect to process and outcomes. Corporate participants focussed on both process and outcomes equally, sport focussed mainly on process, and arts on outcomes. That such a result was obtained, in this researcher's view, is critical for future practical applications of any performance or development programme. Again as to why such findings materialized requires further investigation. Clearly the implication is that different environments create different focuses.

One possible explanation for such a finding could be linked to Poczwardowski and Conroy's (2002) suggestion as to how performance is evaluated. They maintained that subjective criteria such as audience and/or reviews were integral for the evaluation of performance in arts. Alternatively, objective criteria such as time and/or score were central in sports reviews. If it is accepted that this is the case, it is unsurprising that the arts organisations taking part in this research were found to have an outcome focus, since on a number of occasions "others criticisms about their performances were wrong and therefore they were motivated to prove others wrong" (Poczwardowski & Conroy, 2002, p.322).

It is also unsurprising that the sports organisations taking part in this research should have a process focus, since objective criteria are the primary measures within football (AFL) and cricketing environments. Consequently, measurements based upon

their performance cannot be changed. However, not all sports may have a distinct process focus, for example, diving and gymnastics are judged against objective and subjective components. Conversely, ballroom dancing while primarily a performing art also has objective and subjective measures. With this being the case, certain sports and arts may be seen to be more akin to corporate environments. As to why individuals within the corporate arena should have both a process and outcome focus is clearly linked to the industry itself where performance is judged both on subjective criteria, such as a manager's assessment, and objective criteria, such as projects completed.

The implications of such thoughts may be crucial since it seems that what it takes to be successful in one industry, is different from what it takes in another industry on some important aspects. In summary, understanding the context seems critical.

Aim 4 - To identify variables that are predictive of sustainable performance

While a number of variables indicated significant differences between sustainable performers and non-sustainable performers, only gender, innate confidence, failure experiences in non-work life, peak performance self in clear process (one aspect of peak performance as noted by the peak experience questionnaire), and failure in work life, were identified as being predictive of sustainable performance. Sustainability, therefore, was likely to be attained if you were female, and had a complete, successful non-work life with limited perceived major failure experiences. In addition, characteristics that females displayed were innate confidence, clear understanding of what is boundary appropriate, focus, and a sense of wholeness.

Why these, rather than other factors, should be determined as being the most important predictors for sustainability can be ascertained by previous writings within this chapter.

When examining the factors in totality, it can be summarized that females perceive the need to work harder, remain active and not take things for granted. Having a sense of realism and resilience also appear to be critical factors for sustainability. Since they primarily gain their confidence from support, it seems logical that failures in non-work life would impact substantially on such a factor, which in turn may impact on level of innate confidence. These findings serve to highlight the prospective importance of the links between work and non-work lives in the attainment of sustainability.

Such a link (work/non-work) is hardly a new concept. However, previous research in the area has tended to be based on the balance between work and non-work. Additionally, writings have tended to be based on observation and personal insights. The current research provides, empirically, additional insights. While not negating the benefits or the importance of balance, this research maintains that a focus should also be placed on how to maintain a successful non-work life as an entity in its own right, since this appears to have a direct impact upon sustainability. By focusing on this concept, it can be hypothesized that such a result impacts upon an organization's profitability.

According to this researcher's knowledge, organizations and industries have disregarded successful non-work life as 'a nice to have' aspect, but one not directly relevant to them or the business. However, this research begins to question whether in relation to women, organisations can afford not to look into such a concept more closely.

Aim 5 - To identify if any of the variables that are predictive of sustainable performance, can be classified as rare, valuable, inimitable and non-substitutable as determined by the resource based theory.

Common methodology.

One goal of the current research was to identify a common methodology that could be utilized by researchers wishing to investigate the area of individual sustainable performance, or individual competitive advantage. The resource-based theory was chosen since it provided a solid foundation embedded in organizational sustained competitive advantage research. The crux of the theory was that resources were any assets, tangible or intangible, that help firms implement strategies to improve their efficiency and effectiveness. Additionally, while resources were said to enable a competitive advantage to occur (providing certain criteria were met, namely, resource heterogeneity and immobility), only a key resource can result in sustained competitive advantage (providing additional criteria were met, namely, a resource was required to be valuable – the resource must contribute significantly to the organisation's effectiveness and efficiency; rare; non-substitutable - the resource cannot be acquired by competitors to achieve the same strategic outcomes; and inimitable – firms that do not possess the resource cannot obtain it).

On examination of the findings from this study, the indication is that the resource-based theory is a useful tool that may be utilized as a methodology. Such uses include analysing data from research with a similar focus, and also in assessing the potential components of sustainability prior to inclusion in research. However, additional research is necessary to support such a claim. A number of variables were found to differentiate

between sustainable and non-sustainable performers, for example innate confidence, while many were found not to differentiate, for example goal orientation. When exploring each variable in-depth it becomes evident that the variables that do differentiate, demonstrate all the criteria required for competitive advantage, and more importantly, for sustained competitive advantage.

Innate confidence, and some of the dimensions of some of the experiences demonstrated can be said to be variable within and between individuals. For example, innate confidence is likely to be normally distributed in the population, while experiences (based on tacit knowledge) are clearly unique to the individual. Such compliance leads to a competitive advantage. They may also be seen to be rare, valuable, non-substitutable and inimitable, thereby leading to sustained competitive advantage. For those that did not differentiate, such as goal orientation, if it is at an optimum level, it could not vary across individuals. Consequently, goal orientation would not attain a competitive advantage or, more importantly, a sustained competitive advantage.

In summary, while the resource-based theory appears to have merit as a common framework, what is clear from the current research is that individual sustained competitive advantage or individual sustained performance is a complex concept. The findings from this research can, and were, looked at from a variety of views, and so to attempt to fit such a concept to one methodology could be unnecessarily limiting. Whether it is possible to take multiple methodologies and identify the common links in relation to sustainability may be an approach to take. However, such an approach is certain to include numerous difficulties.

Limitations

The findings from this study allow an insight into certain aspects of the concept of individual sustainability, while also providing an illustration of the complexity of individual sustainable performance, or individual sustained competitive advantage. However, there are a number of limitations that must be acknowledged when considering the interpretations, implications and conclusions.

Firstly, the uniqueness and size of the sample prevents generalizations to a broader population. Given the topic under investigation, while it is unsurprising that the size of the sample would be limited, this does constrain applicability to individuals who may not necessarily be considered elite performers at the top of their field, but still manage to maintain a consistent level of performance.

Linked to this first consideration is the number of participants within each of the categories. The current research had a total sample size of 50. As this was further divided into sustainable and non-sustainable performers, and then further sub-divided into sustainable, just sustainable, just non-sustainable and non-sustainable, the numbers within each cell reduced substantially.

An additional limitation related to the uniquesness and size of the sample, concerns the collection of data from a single source. Such situations may result in response biases and implications for statistical power or generalisability.

The topic under investigation was also another limitation. While sustainability as a concept has been acknowledged, no specific investigations that attempt to understand the intricacies and complexities of such a concept have been forthcoming. Consequently, the present study, to this researcher's knowledge, is the first such attempt in trying to

identify the components of sustainability. One major hurdle was identifying the initial criteria against which individuals were categorized as sustainable performers, just sustainable performers, neither, just non-sustainable performers or non-sustainable performers. The criteria, and subsequent placement into a category, can be considered the linchpins of this study. If these were (or are) slightly awry the impact upon the study would (or could) be catastrophic.

A second major hurdle directly associated with criteria identification, and subsequent categorisation, concerned preconceived ideals. Coaches, managers, directors and elite individuals themselves, all held the views that reaching a high level was the ultimate goal, with sustainability seen as a 'nice to have' but rare thing. They all acknowledged that elite performance was something they understood (or thought they understood), was more usual and could be attained, having been researched and talked about 'ad infinitum'. Conversely, sustainability was approached in a more skeptical manner. Consequently, suggesting that alternate or different factors may be required for such a concept to thrive, on some level, could be perceived as a direct challenge to their current approaches - a challenge that they may not necessarily have sought or wanted.

Methodologically, a multi-method approach (quantitative and qualitative) enables a researcher to explore in a much more in-depth manner the experiences, events and outcomes individuals encounter. It also allows a deeper exploration of situations that fall outside the realms of a single method approach. However, it is also subject to the preferences of the researcher in terms of the interview content, and the interpretation of the findings, thereby limiting the generalization and comparability of the study.

The retrospective nature of the investigation can also be considered a limitation. While this approach has some benefits, in that participants can reflect and bring in additional insights, it also has difficulties. Such problems include a distorted recollection of the event. Since this study was also concerned with assessing the level of impact and significance of events, given the nature of time, the true level of impact may have been diminished or enhanced.

While the resource-based theory is considered to be a robust, tried and tested theory for examining sustained competitive advantage, it must be acknowledged that this has been from an organizational viewpoint. To date the resource-based theory has not been utilized for investigating an individual's sustained competitive advantage. While this study sought to do just that minor changes were required. Further investigations concerning whether such an application is justified are consequently required.

A final limitation concerns the scale of the study. The current study identified criteria for sustainability against which individuals were subsequently categorized as sustainable performers, just sustainable performers, just non-sustainable performers or non-sustainable performers. It then determined three cognitive and five experience or knowledge variables against which sustainability was examined. It then sought to examine whether the resource-based theory could be utilized as a common framework for understanding sustainability of performance. Finally, the current research attempted to examine industry as a potential differentiator.

Future considerations

Differences were identified between sustainable and non-sustainable performers, gender, gender and sustainability, and finally between industries. Consequently, it may be

conjectured that more in-depth research is required into these areas. The following details some of the directions that such research may take. Additionally, some of the considerations would overcome several of the limitations detailed previously.

The main outcomes from the present research surround the concepts of sustainability and failure, and sustainability and gender. Within the chapter on failure it is evident that failure as a concept is significant in its impact upon individual emotions, attributions and strategies. However, research stems from many years ago, and consequently, it is fair to conclude that the topic of failure, and its role for individuals, appears not to have been, for a significant period of time, fashionable. Certainly, even though failure experiences form part of the peak experience questionnaire, an instrument that has been utilized significantly over many years, failure as a concept has received little or no attention. This is in stark comparison to peak performance, peak experiences and flow, the other focuses of the peak experience questionnaire that have received substantially more emphasis.

Given that failure seems to be a clear predictor of sustainability, and that many aspects of failure differentiate between sustainability and non-sustainability, the implications are that the inequality of such actions should not be allowed to continue. Failure as a concept, therefore, deserves to be brought back into view, and explored more fully in relation to how individuals sustain a competitive advantage.

The same outlook may be applied to gender and sustainability. Gender was found to be the first predictor of sustainability, with gender differentiating on many variables. While a number of findings concurred with previous gender management research, this tended to be in the direction of confirming that there are differences in the approaches of

males and females. However, this study clearly brought additional insights into how gender can impact performance, and more importantly upon sustainability of performance. Consequently, a new direction that may be of benefit is to examine in more depth the linkages between gender, approach, performance level and sustainability of performance.

Additionally, questions that have been raised by the current research include: Whether males are driven by external standards, and conversely whether females are driven by internal standards? Whether the role of others changes for males as they attempt to reach sustainability? Whether males perceive situations as a constant overwhelming threat to their personal competence that results in management by self-handicapping? What are the links between females, support, the number of failures experienced in non-work life and sustainability? Is the domain of a positive and achievement nurturing environment the most critical and, specifically how do males and females differ in relation to this?

A longitudinal approach that identifies and follows individuals from inception to high performance, elite performance and sustainable or non-sustainable performance (using both qualitative and quantitative methods) is likely to provide the most comprehensive and accurate representation of individual experiences. The opportunity also exists to conduct research into the different levels of performance and their relationship to sustainability. For example, while an individual may not achieve elite performance, they may attain a junior level of performance or a high performance and maintain this level of performance consistently. In summary, an individual does not have

to reach an elite level in order to achieve sustainability. Rather, sustainability can be attained at all levels.

This longitudinal approach, and acceptance that all levels can attain sustainability while providing a more in-depth insight, should also allow the criteria against which sustainability can be assessed to be further tested and determined. This in turn would result in a more confident allocation of individuals to categories of sustainability.

The qualitative component of this study also allowed the researcher to gain a comprehensive amount of information. This serves to provide a compelling argument for the continued use of multi-method data collection processes in future research designs. The use of such approaches allows the researcher to consider experiences that do not fall within the boundaries of statistically significant results. Although there is a need to have statistical rigor and support for making conclusive statements, there is also the need to accept individuality and consider the experiences of individuals who may fall outside the norm. In any real life event, the experiences of the small percentage that fall at either end of the continuum are just as valid as the experiences of the majority, and are of vital importance for practitioners involved in the development and implementation of programmes that help individuals sustain a level of performance.

Furthermore, although the resource-based theory has been extensively utilized to examine organizational sustained competitive advantage, the same cannot be said for individual sustained competitive advantage. While this study sought to do just that, there is no doubt that further investigation would be beneficial. This is especially true in light of the current findings. These provide some compelling evidence for the need to continue working towards the development of multi-method approaches using a common

framework(s) for investigating and understanding the concept of sustainability. While the benefit of collecting comprehensive data from real life events is indisputable, there is also a necessity to develop a model from which to 'hang' results.

While accepting that experience, knowledge and cognitive factors are critical, it may be more prudent to examine a more limited number of variables in future studies, focusing on one or two at a time. For example, while this study has identified that sustainable performers utilize certain aspects of failure experiences, peak performance experiences and peak experience experiences more than non-sustainable performers, it needs to be understood at a more in-depth level. Additionally, this study identified innate confidence as a predictor of sustainability. Understanding the components of self-confidence is clearly going to be of benefit. Likewise do cognitive interference and goal orientation have optimum levels?

Reported findings that have also raised questions that can only be answered by further research, is understanding the components of resilience in relation to Warschaw and Barlow's (1995) research, and whether performance level dictates whether experiences are interlinked or independent constructs?

Finally, this study highlighted differences between industries, with sports, corporate and arts organizations all having a different approach, and the flow experience being interpreted differently by sports and corporate organisations. Such findings illustrate the importance of conducting cross-domain investigations. This is especially relevant in present times, where coaches from sports organizations are asked to talk to corporate personnel on how to achieve a top level of performance, and vice versa.

"All I wish to do here with this brief mention is to correct the tendency of some to identify experiences of transcendence as only dramatic, orgasmic, transient, 'peaky', like a moment on top of Mt. Everest. There is also the high plateau where one can stay 'turned-on'". (Maslow, 1971, p.349)

Conclusion

The overall aim of this study was to begin to determine some of the components of sustainable performance, and to assess whether differences existed between level of sustainability, gender, and performance discipline (sports, corporate and arts) in relation to these components. The researcher can say, with a degree of certainty, that this has been achieved, with the results of this research providing a unique and thought provoking insight into the concept of sustainability.

The interpretations given, and the possible explanations explored, (while mindful of the inherent limitations), begin to add to the wealth of information surrounding the attainment of performance. It is also contended, however, that at the same time, such thoughts begin to build on such information, highlighting that sustainability is not just a 'nice to have', hit and miss concept, but rather, an achievable, concrete concept that is, and can be, attained.

With regard to the specificities of the study, in relation to sustainability, it can be said that those individuals who do sustain performance seem to do so by employing a different approach or strategy, than those individuals who do not sustain performance. There is also an indication that some factors may reach an optimum level, and consequently have no further impact on performance or attaining sustainability, while other factors are applied differently, depending on level of performance.

One of the most important issues to be highlighted by the current research is the concept of failure. It is evident that such a concept has an integral role to play in the attainment of sustainability of performance, and it would seem that as a direct result of experiencing failure in non-work life, the achievement of sustainability is compromised.

Failure as a concept, however, has received scant attention in recent years. When it has received attention it has invariably been, more often than not, as the opposing end of the success continuum, rather than as a concept in its own right. Such an approach would appear to be an injustice given the findings from the current research. The potential links between failure, self-handicapping, attributions and sustainability clearly require more understanding and research.

Likewise, the concepts of self-confidence, resilience, humour, realism, humility and focus, and their links to sustainability, would benefit from a more in-depth understanding. While the current research identified such concepts as being components of sustainability, it also identified the potential that the concepts may be part of Warshaw and Barlow's (1995) concept of resilience. Consequently, while the indications are that a significant number of the findings from this research sit under the resilience umbrella discussed by Warschaw and Barlow (1995), further clarification is needed.

The criticality of gender was also demonstrated, not only in relation to gender generally, but also with regard to sustainability, with females seeming to be able to sustain performance more than males. The rationales as to why this should be so dovetailed substantially with the rationales as to why differences were obtained between sustainable and non-sustainable performers.

Although the following is a summary, it must be emphasized that not all females behaved the way sustainable performers do, and not all males behaved the same way as non-sustainable performers. In summary therefore, sustainable performers and females tended to have an approach based on effort, consensus, support, and crediting others that allowed them to just get on with the job at hand. Males and non-sustainable performers tended to view life at the top as a position to be defended, and a comparison against others. This approach resulted in them wanting to self-protect, and potentially invoke strategies such as self-handicapping.

When considering practical applications, the implications are potentially vast. It may be that coaches, managers, and artistic directors are shortchanging their people, and equally, if not more concerning, individuals may be shortchanging themselves. It is clear that amongst other things, the emotional and physical aspects required to reach a high level of performance are significant. Equally, the emotional and physical requirements to sustain such a level are considerable.

Currently, however, programmes are designed to help individuals attain a top level of performance only. Since sustainable performers may be operating differently, by implication, the current programmes cannot fulfill the requirements that are necessary for sustainability. Consequently, future development programmes need to be designed and employed that allow individuals to reach *and* sustain performance. Additionally, such programmes should be implemented at all levels, rather than just at an elite level, if it transpires from future research that differences in sustainability are evident at differing levels.

If replication of the current research is undertaken using a similar approach, it may be possible to make more definitive conclusions about the relative importance or otherwise of certain variables. This information will in turn provide practitioners with a greater knowledge base from which they can design, tailor and implement effective context specific development programmes, aimed at achieving sustainable performance.

However, accepting that a combination of variables do exist in the achievement of sustainability, the replication of this research may find the importance or relevance of individual variables may alter depending on the study sample. For example, while this research revealed that males, females and industries have different approaches, a different sample may yield different findings.

Given the current research and subsequent findings, letting the oversight continue of seeing elite performance as the ultimate goal, will only serve to act as a disservice to any individual investing significant emotional and physical aspects. Additionally, if individuals as well as organizations are going to achieve sustainability, organizations have a responsibility to provide the environment, tools and support to allow such an outcome to occur.

In conclusion, the investigation of the experiences and cognitions of this unique group of individuals provides an informative and illustrative example of the complexity of sustainability. The results of the study provide further support for many findings previously reported in the literature, but also highlighted conflicting results and unique experiences that add to the existing knowledge base. Such findings emphasise the views that peak performance cannot be seen to be the end point, but rather that development needs to take into account that the same, different and/or more things are required to stay

at the top. Finally, since sustainable performance has been identified as being a mixture of experience and cognitive factors, both avenues must be equally explored in the search for further identifying and confirming the components of individual sustainable performance, or individual sustained competitive advantage.

Chapter 14

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Appendix A

Questionnaire 1

Name – _____

Industry – sport corporate ballet

Current Position – _____

Time with current organization – _____

Gender – M F Age -

Marital status – _____

Number of children – _____

Age of children - _____

Country of residence - UK Aus

The following questionnaire has 6 sections. Please answer all sections. Please answer all questions from you industry perspective only. For example if you are from the corporate industry please answer from a corporate perspective and so on. This questionnaire ***only takes 45-60 minutes to complete.***

Section 1

This section concerns the kinds of thoughts that go through people's minds when they have to concentrate on something, such as working, memorizing a 'phone number, reading directions, reading a book or doing something important. The following is a list of thoughts, which, in your past experience you may have had while working on various types of tasks. Please indicate by circling one of the alternatives the degree to which each of the following statements is true for you.

4 = Very often 3 = Often 2 = Occasionally 1 = Seldom
0 = Never

WHILE CARRYING OUT A TASK I OFTEN THINK ABOUT:

1.	How poorly I am doing.	4	3	2	1	0
2.	Pleasant future experiences.	4	3	2	1	0
3.	What someone will think of me.	4	3	2	1	0
4.	How I should be more careful.	4	3	2	1	0
5.	How well others will do on what I am trying to do.	4	3	2	1	0
6.	Unpleasant future experiences.	4	3	2	1	0
7.	How difficult what I am doing is.	4	3	2	1	0
8.	My level of ability.	4	3	2	1	0
9.	The purpose of what I am doing.	4	3	2	1	0
10.	How I would feel if I were told how I performed.	4	3	2	1	0
11.	Past pleasant experiences.	4	3	2	1	0
12.	How often I get confused.	4	3	2	1	0
13.	Other activities (for example assignments, work).	4	3	2	1	0
14.	Members of my family.	4	3	2	1	0
15.	Friends.	4	3	2	1	0
16.	Something that makes me feel guilty.	4	3	2	1	0
17.	Personal worries.	4	3	2	1	0
18.	Something that makes me tense.	4	3	2	1	0
19.	Something that made me feel angry.	4	3	2	1	0
20.	Something that happened earlier in the day.	4	3	2	1	0
21.	Something that happened in the recent past (for example in the last few days).	4	3	2	1	0
22.	Past unpleasant experiences.	4	3	2	1	0
23.	Something that happened in the distant past.	4	3	2	1	0
24.	Something that might happen in the future.	4	3	2	1	0
25.	Stopping what I'm doing for a minute or two.	4	3	2	1	0
26.	How unhappy I am.	4	3	2	1	0
27.	How hard it is.	4	3	2	1	0
28.	How I can't stand it anymore.	4	3	2	1	0

29.	Future dangers.	4	3	2	1	0
30.	Quitting.	4	3	2	1	0
31.	Taking something (e.g. pills, a drink) to make it easier.	4	3	2	1	0
32.	Going to bed/or to sleep.	4	3	2	1	0
33.	Something that will happen in the future.	4	3	2	1	0
34.	My successes.	4	3	2	1	0
35.	My failures.	4	3	2	1	0
36.	How satisfied I am.	4	3	2	1	0
37.	How dissatisfied I am.	4	3	2	1	0
38.	Frustrations in my life.	4	3	2	1	0
39.	Something that made me feel blue.	4	3	2	1	0
40.	Pleasant fantasies or daydreams.	4	3	2	1	0
41.	How bored I am with what I'm doing.	4	3	2	1	0
42.	What someone will think of what I'm doing.	4	3	2	1	0
43.	How angry I am.	4	3	2	1	0
44.	Ways of avoiding the task in the future.	4	3	2	1	0
45.	Why I am doing what I'm doing.	4	3	2	1	0
46.	How I could be doing something else.	4	3	2	1	0

Section 2

For the next section please read each of the statements listed below and indicate how much you personally agree with each statement by circling the appropriate response.

When do you feel most successful? In other words, when do you feel an activity has gone really good for you?

I feel most successful in my area (sport, corporate or ballet) when……..

1 = Strongly disagree 2 = disagree 3 = neutral 4 = agree 5 = strongly agree

1	I'm the only one who can do the play/skill/role/project/activity	1	2	3	4	5
2	I learn a new skill and it makes me want to practice/use it more	1	2	3	4	5
3	I can do better than my friends	1	2	3	4	5
4	The others can't do as well as me	1	2	3	4	5
5	I learn something that is fun to do	1	2	3	4	5
6	Others mess up and I don't	1	2	3	4	5
7	I learn a new skill by trying hard	1	2	3	4	5
8	I work really hard	1	2	3	4	5
9	Sport - I score the most points/goals/hits etc	1	2	3	4	5
10	Corporate – I achieve more targets/bring in the most money	1	2	3	4	5
11	Ballet – I get chosen for the most performances/my performances are better than others (technically/emotionally)	1	2	3	4	5
12	Something I learn makes me want to go and practice/use it more	1	2	3	4	5
13	I'm the best	1	2	3	4	5
14	A skill I learn really feels right	1	2	3	4	5
15	I do my very best	1	2	3	4	5

Section 3

We are interested in learning about things **you** feel are **important in helping YOU to be self-confident** when participating in your sport, within your company or in ballet.

Think back to times when you felt very confident when participating in your sport, in your company, or in your ballet company. It can be during competition, during practice, or when you were learning your sport; during a project, everyday management, when you were learning a new skill, technique; during a performance, during rehearsal or when you were learning a new dance, technique, role. What things made you feel confident in those situations? What things helped you believe in your abilities and gave you confidence that you would be successful?

Listed below are some things that may help you feel confident in sport, corporate and ballet situations. For each statement, circle the number which indicates **HOW IMPORTANT THAT IS IN HELPING YOU FEEL CONFIDENT IN YOUR SPORT, CORPORATE OR BALLET**. Please respond to every question even though they may seem repetitive. There are no right or wrong answers because every athlete, corporate and dancer is different. Please be honest - your answers will be kept completely confidential.

I usually gain self-confidence in my Sport, Corporate, Ballet when I...

1 = not at all important 2 = not very important 3 = slightly important 4 = of average importance 5 = very important 6 = extremely important 7 = of highest importance

1. get positive feedback from my teammates/colleagues and/or friends.....
   1 2 3 4 5 6 7
2. win.....
   1 2 3 4 5 6 7
3. keep my focus on the task.....
   1 2 3 4 5 6 7
4. psych myself up.....
   1 2 3 4 5 6 7
5. master a new skill in my sport, corporate, ballet.....
   1 2 3 4 5 6 7
6. get breaks from officials/referees, managers, artistic director
   1 2 3 4 5 6 7

7. perform in an environment (gym, theatre, company.)
   1 2 3 4 5 6 7
8. that I like and in which I feel comfortable.....
   1 2 3 4 5 6 7
9. feel good about my weight.....
   1 2 3 4 5 6 7
10. believe in my coach's/manager's/artistic director's abilities..
   1 2 3 4 5 6 7
11. know I have support from others that are important to me..
   1 2 3 4 5 6 7

1 = not at all important 2 = not very important 3 = slightly important 4 = of average importance 5 = very important 6 = extremely important 7 = of highest importance

12. demonstrate that I am better than others.....
   1 2 3 4 5 6 7
13. see successful performances by other athletes/corp's/dancers
   1 2 3 4 5 6 7
14. know that I am mentally prepared for the situation.....
   1 2 3 4 5 6 7
15. follow certain rituals (e.g., wearing a lucky shirt,
   eating certain food, etc.).....
   1 2 3 4 5 6 7
16. improve my performance on a skill .....
   1 2 3 4 5 6 7
17. see the breaks are going my way.....
   1 2 3 4 5 6 7
18. feel I look good.....
   1 2 3 4 5 6 7
19. know my coach/manager/art director will make good decisions
   1 2 3 4 5 6 7
20. am told that others believe in me and my abilities.....
   1 2 3 4 5 6 7
21. show my ability by winning, placing, selection, promotion.....
   1 2 3 4 5 6 7

22. watch another athlete, corporate, dancer I admire perform successfully.....

1 2 3 4 5 6 7

Part 2 - I usually gain self-confidence in my Sport, corporate, ballet when I...

21. stay focused on my goals.....

1 2 3 4 5 6 7

22. improve my skills.....

1 2 3 4 5 6 7

24. feel comfortable in the environment (gym, company, theatre etc.) in which I'm performing.....

1 2 3 4 5 6 7

23. feel that everything is "going right" for me in that situation.

1 2 3 4 5 6 7

24. feel my body looks good.....

1 2 3 4 5 6 7

25. know my coach, manager, artistic director is a good leader...

1 2 3 4 5 6 7

28. am encouraged by coaches, managers, art director, teachers and/or family.....

1 2 3 4 5 6 7

29. know I can outperform opponents, other dancers, employees

1 2 3 4 5 6 7

30. watch a teammate/colleague perform well.....

1 2 3 4 5 6 7

31. prepare myself physically for a situation.....

1 2 3 4 5 6 7

1 = not at all important 2 = not very important 3 = slightly important 4 = of average importance 5 = very important 6 = extremely important 7 = of highest importance

32. prepare myself mentally for a situation.....
    1 2 3 4 5 6 7
33. increase the number of skills I can perform.....
    1 2 3 4 5 6 7
34. like the environment where I am performing.....
    1 2 3 4 5 6 7
35. have trust in my coach's/manager's/art director's decisions....
    1 2 3 4 5 6 7
36. get positive feedback from coaches/manager's/art director and/or family.....
    1 2 3 4 5 6 7
36. prove I am better than my opponents, other dancers, employees
    1 2 3 4 5 6 7
37. see a friend perform successfully.....
    1 2 3 4 5 6 7
38. believe in my ability to give maximum effort to succeed...
    1 2 3 4 5 6 7
39. receive support and encouragement from others.....
    1 2 3 4 5 6 7
40. show I'm one of the best in my sport, corporate, dance.....
    1 2 3 4 5 6 7
41. watch teammates/colleagues who are at my level perform well
    1 2 3 4 5 6 7
42. develop new skills and improve.....
    1 2 3 4 5 6 7
44. feel my coach/manager/art director provides effective leadership
    1 2 3 4 5 6 7

Section 4

Think about how self confident you are when you compete in sport, compete for selection into a ballet or for a role or attempt to hit your targets. Answer the questions below based on how confident you generally feel when you compete in your sport, compete for selection into a ballet or for a role or attempt to hit your targets. Compare your self-confidence to the most self-confident athlete, dancer, corporate you know. Please answer as you really feel, not how you would like to feel.

		Low				Medium				High
1	Compare your confidence in you ability to execute the skills necessary to be successful to the most confident athlete, dancer, corporate you know	1	2	3	4	5	6	7	8	9
2	Compare your confidence in your ability to make critical decisions during competition, during a performance, or during your job to the most confident athlete, dancer, corporate you know	1	2	3	4	5	6	7	8	9
3	Compare your confidence in your ability to perform under pressure to the most confident athlete, dancer, corporate you know	1	2	3	4	5	6	7	8	9
4	Compare your confidence in your ability to execute successful strategy to the most confident athlete, dancer, corporate you know	1	2	3	4	5	6	7	8	9
5	Compare your confidence in your ability to concentrate well enough to be successful to the most confident athlete, dancer, corporate you know	1	2	3	4	5	6	7	8	9
6	Compare your confidence in your ability to adapt to different games, ballets, corporate situations and still be successful to the most confident athlete, dancer, corporate you know	1	2	3	4	5	6	7	8	9
7	Compare your confidence in your ability to achieve your competitive goals to the most confident athlete, dancer, corporate you know	1	2	3	4	5	6	7	8	9
8	Compare your confidence in your ability to be successful to the most confident athlete, dancer, corporate you know	1	2	3	4	5	6	7	8	9
9	Compare your confidence in your ability to consistently be successful to the most confident athlete, dancer, corporate you know	1	2	3	4	5	6	7	8	9
10	Compare your confidence in your ability to think and respond successfully during competition, a performance, day to day activities to the most confident athlete, dancer, corporate you know	1	2	3	4	5	6	7	8	9

11	Compare your confidence in your ability to meet the challenge of competition, the challenge of performing, the challenge of hitting your targets to the most confident athlete, dancer, corporate you know	1	2	3	4	5	6	7	8	9
12	Compare your confidence in your ability to be successful even when the odds are against you to the most confident athlete, dancer, corporate you know	1	2	3	4	5	6	7	8	9
13	Compare your confidence in your ability to bounce back from performing poorly and be successful to the most confident athlete, dancer, corporate you know	1	2	3	4	5	6	7	8	9

Section 5

Which of the following life events have happened to you, how significant were they and how frequently have you experienced them?

Life event	Please tick if they have happened	Significance (high, medium, low, not sig)	Frequency (once, twice, few times, many times)
Burnout			
Slumping			
Choking			
Change in manager, coach, artistic director			
Minor issues with your manager/coach/artistic director			
Minor issues with your subordinates			
Minor issues with your teammates/other players			
Minor issues with your peers			
Minor issues with other dancers			
Minor issues with assistant coaches/teachers/physio/trainers/media			
Major issues with your manager/coach/artistic director			
Major issues with your subordinates			
Major issues with you teammates/other players			
Major issues with your peers			
Major issues with other dancers			
Major issues with assistant coaches/teachers/physio/trainers/media			
Change in level e.g. amateur-pro; core-solo; middle-senior manager			
Major errors on the field/stage/work			
A significant change in sleeping habits			
A significant change in eating habits			
A significant change in your usual type and/or amount of recreation			
A significant change in your social activities			
A significant change in religious			

activities			
A significant change in number of family get-togethers			
Separation from family, girl/boyfriend			
A significant change in financial state			
Problems with the in-laws/partners family			
A significant change in the relationship with your partner – positive			
A significant change in the relationship with your partner – negative			
Major personal injury or illness – work time/play time/dance time lost			
Minor personal injury or illness – work time/play time/dance time lost			
A Death			
Gaining a new family member			
Significant change in the health or behaviour of a family member			
Change in residence			
Change to a new position			
Minor violations of the law e.g. parking ticket			
Detention in jail or other institution			
Major business/club/company readjustment/restructure			
Marriage			
Divorce			
Separation			
Reconciliation			
Outstanding personal achievement			
You leaving home/brother or sister leaving home			
Major change in working/playing/dancing hours or conditions			
Major change in responsibilities			
Being fired/dropped/redundancy			
Experimenting with drugs (alcohol/hard/soft) or increase in drug			
Partner beginning or ceasing work			
Taking out a mortgage/bigger mortgage			

Taking out a loan			
Holiday			
Changing to a new team/company			
Pregnancy			
Any other			

Appendix B

Section 6

Peak Performance

The following is a definition of peak performance - An episode where you have performed/operated at your optimal level. Where you were performing at your best or highest. The peak performance experience(s) can have lasted for a short, medium or long time.

How often do you experience peak performance(s) in your work life?

1 Never 2 Once a year 3 A few times a year 4 Several times a year 5 Many times a year 6 Nearly always 7 Always

How often do you experience peak performance(s) in your non-work life?

1 Never 2 Once a year 3 A few times a year 4 Several times a year 5 Many times a year 6 Nearly always 7 Always

Thinking about all those times that you have experienced peak performance(s), circle the number that best describes the importance of each item on average across all the experiences.

5 = Great importance 4 = Much importance 3 = Some importance 2 = Little importance 1 = No importance

1	The event(s) involved action or behaviour	1	2	3	4	5
2	I had prior related involvement	1	2	3	4	5
3	The event(s) was/were spontaneous or triggered, not planned or structured	1	2	3	4	5
4	The event(s) was/were intense	1	2	3	4	5
5	A process seemed to “click” on	1	2	3	4	5
6	The event(s) was/were practiced	1	2	3	4	5
7	My actions and thoughts were new	1	2	3	4	5
8	The event(s) seemed an emergency	1	2	3	4	5
9	I had clear focus	1	2	3	4	5
10	The event(s) involved a personal value	1	2	3	4	5
11	I was absorbed in what I was doing	1	2	3	4	5
12	I felt a need to continue until completion	1	2	3	4	5
13	I was interactive	1	2	3	4	5

14	I had a strong sense of self	1	2	3	4	5
15	Actions or thoughts just came out spontaneously	1	2	3	4	5
16	I felt free from outer restrictions	1	2	3	4	5
17	My inner process was clear	1	2	3	4	5
18	I was aware of my own power	1	2	3	4	5
19	My intentions were strong	1	2	3	4	5
20	The event(s) was/were non-motivated	1	2	3	4	5
21	I felt all together	1	2	3	4	5
22	The event(s) involved understanding or expression that was personal	1	2	3	4	5
23	I had a sense of personal responsibility	1	2	3	4	5
24	The experience(s) overwhelmed other senses and thoughts	1	2	3	4	5
25	The experience(s) involved unity or fusion of self with the environment	1	2	3	4	5
26	The experience involved loss of self	1	2	3	4	5
27	The event was playful	1	2	3	4	5
28	Differences were resolved	1	2	3	4	5
29	Rules, motivation and goals were built into the situation	1	2	3	4	5
30	The event(s) was/were fun	1	2	3	4	5
31	The event(s) had a spiritual or mystical quality	1	2	3	4	5
32	The event(s) was perceptual, rather than behavioural	1	2	3	4	5
33	I was receptive and passive	1	2	3	4	5
34	I enjoyed another person or person during the event	1	2	3	4	5
35	I experienced a loss of time and space	1	2	3	4	5
36	The event(s) was an encounter with a person or something outside myself	1	2	3	4	5
37	The event(s) had great meaning for me	1	2	3	4	5
38	Other people influenced the outcome	1	2	3	4	5
39	The event was brief	1	2	3	4	5
40	The event was beyond words	1	2	3	4	5
41	The experience(s) was/were its/their own reward	1	2	3	4	5
42	I experienced joy and fulfillment	1	2	3	4	5

Check the description that best fits your performance on average over this/these event(s):

Personal best	High performance	Effectiveness
Mediocrity	Inefficiency	Inadequacy
Failure		

Check the descriptions that best fit your feeling on average in this/these event(s)

Highest happiness Joy Enjoyment Neutrality
Boredom Worry Misery

What was the role of other people in this/these event(s)?

Interfering Not present Present only Contributing
Essential

On average, how do you characterize your feeling afterwards?

Extremely positive Positive Neutral Negative
Extremely negative

On average how do you characterize the after effects?

Turning point Significant Some Little None

Peak Experience

The following is a definition of peak experience - Moments of highest happiness and fulfillment. Peak experience(s) can have lasted for a short, medium or long time.

How often do you experience this kind of event in your work life?

1 Never 2 Once a year 3 A few times a year 4 Several times a year 5 Many times a year 6 Nearly always 7 Always

How often do you experience this kind of event in your non-work life?

1 Never 2 Once a year 3 A few times a year 4 Several times a year 5 Many times a year 6 Nearly always 7 Always

Thinking about all those times that you have experienced peak experience(s), circle the number that best describes the importance of each item on average across all the experiences.

5 = Great importance 4 = Much importance 3 = Some importance 2 = Little importance 1 = No importance

1	The event(s) involved action or behaviour	1	2	3	4	5
2	I had prior related involvement	1	2	3	4	5
3	The event(s) was/were spontaneous or triggered, not planned or structured	1	2	3	4	5
4	The event(s) was/were intense	1	2	3	4	5
5	A process seemed to "click" on	1	2	3	4	5
6	The event(s) was/were practiced	1	2	3	4	5
7	My actions and thoughts were new	1	2	3	4	5
8	The event(s) seemed an emergency	1	2	3	4	5
9	I had clear focus	1	2	3	4	5
10	The event(s) involved a personal value	1	2	3	4	5
11	I was absorbed in what I was doing	1	2	3	4	5
12	I felt a need to continue until completion	1	2	3	4	5
13	I was interactive	1	2	3	4	5
14	I had a strong sense of self	1	2	3	4	5
15	Actions or thoughts just came out spontaneously	1	2	3	4	5
16	I felt free from outer restrictions	1	2	3	4	5
17	My inner process was clear	1	2	3	4	5
18	I was aware of my own power	1	2	3	4	5
19	My intentions were strong	1	2	3	4	5
20	The event(s) was/were non-motivated	1	2	3	4	5

21	I felt all together	1	2	3	4	5
22	The event(s) involved understanding or expression that was personal	1	2	3	4	5
23	I had a sense of personal responsibility	1	2	3	4	5
24	The experience(s) overwhelmed other senses and thoughts	1	2	3	4	5
25	The experience(s) involved unity or fusion of self with the environment	1	2	3	4	5
26	The experience involved loss of self	1	2	3	4	5
27	The event was playful	1	2	3	4	5
28	Differences were resolved	1	2	3	4	5
29	Rules, motivation and goals were built into the situation	1	2	3	4	5
30	The event(s) was/were fun	1	2	3	4	5
31	The event(s) had a spiritual or mystical quality	1	2	3	4	5
32	The event(s) was perceptual, rather than behavioural	1	2	3	4	5
33	I was receptive and passive	1	2	3	4	5
34	I enjoyed another person or person during the event	1	2	3	4	5
35	I experienced a loss of time and space	1	2	3	4	5
36	The event(s) was an encounter with a person or something outside myself	1	2	3	4	5
37	The event(s) had great meaning for me	1	2	3	4	5
38	Other people influenced the outcome	1	2	3	4	5
39	The event was brief	1	2	3	4	5
40	The event was beyond words	1	2	3	4	5
41	The experience(s) was/were its/their own reward	1	2	3	4	5
42	I experienced joy and fulfillment	1	2	3	4	5

Check the description that best fit your performance on average over this/these event(s):

Personal best	High performance	Effectiveness
Mediocrity	Inefficiency	Inadequacy
Failure		

Check the descriptions that best fit your feeling on average in this/these event(s)

Highest happiness	Joy	Enjoyment	Neutrality
Boredom	Worry	Misery	

What was the role of other people in this/these event(s)?

Interfering	Not present	Present only
Contributing	Essential	

On average, how do you characterize your feeling afterwards?

Extremely positive Positive Neutral Negative Extremely negative

On average how do you characterize the after effects?

Turning point Significant Some Little None

Flow

The following is a definition of flow - Intrinsically enjoyable experience where the challenge/skills balance was equal and there was a sense of loss of time. Where everything seemed to just come together. Flow experience(s) can have lasted for a short, medium or long time.

How often do you experience this kind of event in your work life?

1 Never 2 Once a year 3 A few times a year 4 Several times a year 5 Many times a year 6 Nearly always 7 Always

How often do you experience this kind of event in your non-work life?

1 Never 2 Once a year 3 A few times a year 4 Several times a year 5 Many times a year 6 Nearly always 7 Always

Thinking about all those times that you have experienced flow experience(s), circle the number that best describes the importance of each item on average across all the experiences.

5 = Great importance 4 = Much importance 3 = Some importance 2 = Little importance 1 = No importance

1	The event(s) involved action or behaviour	1	2	3	4	5
2	I had prior related involvement	1	2	3	4	5
3	The event(s) was/were spontaneous or triggered, not planned or structured	1	2	3	4	5
4	The event(s) was/were intense	1	2	3	4	5
5	A process seemed to “click” on	1	2	3	4	5
6	The event(s) was/were practiced	1	2	3	4	5
7	My actions and thoughts were new	1	2	3	4	5
8	The event(s) seemed an emergency	1	2	3	4	5
9	I had clear focus	1	2	3	4	5
10	The event(s) involved a personal value	1	2	3	4	5
11	I was absorbed in what I was doing	1	2	3	4	5
12	I felt a need to continue until completion	1	2	3	4	5
13	I was interactive	1	2	3	4	5
14	I had a strong sense of self	1	2	3	4	5
15	Actions or thoughts just came out spontaneously	1	2	3	4	5
16	I felt free from outer restrictions	1	2	3	4	5
17	My inner process was clear	1	2	3	4	5
18	I was aware of my own power	1	2	3	4	5

19	My intentions were strong	1	2	3	4	5
20	The event(s) was/were non-motivated	1	2	3	4	5
21	I felt all together	1	2	3	4	5
22	The event(s) involved understanding or expression that was personal	1	2	3	4	5
23	I had a sense of personal responsibility	1	2	3	4	5
24	The experience(s) overwhelmed other senses and thoughts	1	2	3	4	5
25	The experience(s) involved unity or fusion of self with the environment	1	2	3	4	5
26	The experience involved loss of self	1	2	3	4	5
27	The event was playful	1	2	3	4	5
28	Differences were resolved	1	2	3	4	5
29	Rules, motivation and goals were built into the situation	1	2	3	4	5
30	The event(s) was/were fun	1	2	3	4	5
31	The event(s) had a spiritual or mystical quality	1	2	3	4	5
32	The event(s) was perceptual, rather than behavioural	1	2	3	4	5
33	I was receptive and passive	1	2	3	4	5
34	I enjoyed another person or person during the event	1	2	3	4	5
35	I experienced a loss of time and space	1	2	3	4	5
36	The event(s) was an encounter with a person or something outside myself	1	2	3	4	5
37	The event(s) had great meaning for me	1	2	3	4	5
38	Other people influenced the outcome	1	2	3	4	5
39	The event was brief	1	2	3	4	5
40	The event was beyond words	1	2	3	4	5
41	The experience(s) was/were its/their own reward	1	2	3	4	5
42	I experienced joy and fulfillment	1	2	3	4	5

Check the description that best fits your performance on average over this/these event(s):

Personal best	High performance	Effectiveness
Mediocrity	Inefficiency	Inadequacy
Failure		

Check the descriptions that best fit your feeling on average in this/these event(s)

Highest happiness	Joy	Enjoyment	Neutrality
Boredom	Worry	Misery	

What was the role of other people in this/these event(s)?

Interfering	Not present	Present only
Contributing	Essential	

On average, how do you characterize your feeling afterwards?

Extremely positive Positive Neutral Negative Extremely negative

On average how do you characterize the after effects?

Turning point Significant Some Little None

Failure

The following is a definition of failure - Where things have not gone the way that you wanted or things have not turned out the way that you wanted. Failure experience(s) can have lasted for a short, medium or long time.

How often do you experience this kind of event in your work life?

1 Never 2 Once a year 3 A few times a year 4 Several times a year 5 Many times a year 6 Nearly always 7 Always

How often do you experience this kind of event in your non-work life?

1 Never 2 Once a year 3 A few times a year 4 Several times a year 5 Many times a year 6 Nearly always 7 Always

Thinking about all those times that you have experienced failure(s), circle the number that best describes the importance of each item on average across all the experiences.

5 = Great importance 4 = Much importance 3 = Some importance 2 = Little importance 1 = No importance

1	The event(s) involved action or behaviour	1	2	3	4	5
2	I had prior related involvement	1	2	3	4	5
3	The event(s) was/were spontaneous or triggered, not planned or structured	1	2	3	4	5
4	The event(s) was/were intense	1	2	3	4	5
5	A process seemed to “click” on	1	2	3	4	5
6	The event(s) was/were practiced	1	2	3	4	5
7	My actions and thoughts were new	1	2	3	4	5
8	The event(s) seemed an emergency	1	2	3	4	5
9	I had clear focus	1	2	3	4	5
10	The event(s) involved a personal value	1	2	3	4	5
11	I was absorbed in what I was doing	1	2	3	4	5
12	I felt a need to continue until completion	1	2	3	4	5
13	I was interactive	1	2	3	4	5
14	I had a strong sense of self	1	2	3	4	5
15	Actions or thoughts just came out spontaneously	1	2	3	4	5
16	I felt free from outer restrictions	1	2	3	4	5
17	My inner process was clear	1	2	3	4	5
18	I was aware of my own power	1	2	3	4	5
19	My intentions were strong	1	2	3	4	5
20	The event(s) was/were non-motivated	1	2	3	4	5
21	I felt all together	1	2	3	4	5

22	The event(s) involved understanding or expression that was personal	1	2	3	4	5
23	I had a sense of personal responsibility	1	2	3	4	5
24	The experience(s) overwhelmed other senses and thoughts	1	2	3	4	5
25	The experience(s) involved unity or fusion of self with the environment	1	2	3	4	5
26	The experience involved loss of self	1	2	3	4	5
27	The event was playful	1	2	3	4	5
28	Differences were resolved	1	2	3	4	5
29	Rules, motivation and goals were built into the situation	1	2	3	4	5
30	The event(s) was/were fun	1	2	3	4	5
31	The event(s) had a spiritual or mystical quality	1	2	3	4	5
32	The event(s) was perceptual, rather than behavioural	1	2	3	4	5
33	I was receptive and passive	1	2	3	4	5
34	I enjoyed another person or person during the event	1	2	3	4	5
35	I experienced a loss of time and space	1	2	3	4	5
36	The event(s) was an encounter with a person or something outside myself	1	2	3	4	5
37	The event(s) had great meaning for me	1	2	3	4	5
38	Other people influenced the outcome	1	2	3	4	5
39	The event was brief	1	2	3	4	5
40	The event was beyond words	1	2	3	4	5
41	The experience(s) was/were its/their own reward	1	2	3	4	5
42	I experienced joy and fulfillment	1	2	3	4	5

Check the description that best fits your performance on average over this/these event(s):

Personal best	High performance	Effectiveness
Mediocrity	Inefficiency	Inadequacy
Failure		

Check the descriptions that best fit your feeling on average in this/these event(s)

Highest happiness	Joy	Enjoyment	Neutrality
Boredom	Worry	Misery	

What was the role of other people in this/these event(s)?

Interfering	Not present	Present only
Contributing	Essential	

On average, how do you characterize your feeling afterwards?

Extremely positive Positive Neutral Negative Extremely negative

On average how do you characterize the after effects?

Turning point Significant Some Little None

Appendix C

Interview Protocol

Study of Sustainable Peak Performance – Comparative look between the corporate, sports and arts worlds

Introduction – introduce yourself, role

I am conducting a study to compare the factors needed to sustain performance between the corporate, sports and arts worlds. The purpose of this interview is to collect information about what sustainable performance might be and how it is achieved.

The questions that I will be asking you will be about your experiences within and outside your industry. Take as much time as you like with each question. If there is something that you do not understand then please let me know and I will put it another way. It is OK if you do not know the answer to a question and there are no right or wrong answers. I will be asking you to recall events that have happened to you. If you cannot recall an event, what happened or how you were feeling then it is OK, please do not try to guess at an event, what happened or how you were feeling during that event.

The interview itself should last for approximately 2 hours and will be taped to comply with research methodology procedures. This tape will be transcribed at a later date. The interview tape and transcription will be kept securely and at no time will anyone have access to this tape or transcription apart from the principal researcher, which is myself and my supervisor. To increase the confidentiality the transcription will be coded – at no stage will your name be identified.

At the end of the interview you will be asked for a contact address to send the transcript. Again this will be coded and consequently you will not be identifiable. You will have access to feedback from this study should you wish to take it up. Feedback will be available once the study is complete.

OK, any questions before we start?

Biographical Data

Name

Male/Female

Age

Marital Status

Children – if yes, how many, and how old are they

Industry

How long with organization/club/sport

Current role

When did you become professional?

How many organizations have worked for over career

Country of residence

Peak experience/peak performance/flow. Sustainable and non-sustainable performance.

1. **Peak performance**:
    a. Will you please describe one incident in your life characterized by functioning at your best or optimal level? Can you please start this off with a headline so if I was to pick up a newspaper and there was a headline about this incident what would it say? I would then like you to tell me what happened and your inner experiences.

    If participants can describe the event easily then the following probes will apply

    b. Probe – was there anything else in this experience that was significant, either positive or negative?
    c. Probe – I need to fully understand what it is about this experience that made it so significant for you. So thinking back what was it about …..that made it a significant experience for you?
    d. How confident were you during this event? What led to that level of confidence? Where did it come from? How confident are you generally?
    e. What were the results of this event based on? Do you feel that the results of this event were based on you being the best, or was it due to you mastering the situation and working hard? Explain.
    f. Did you get distracted during this event at all? If yes, by what? How easy was it for you to refocus?

    However if they cannot easily bring an event to mind ask whether the following descriptions have ever applied and if so what was the event.
    Full focus – absorption, attention, intensity
    Self in clear focus – awareness of power, inner clarity, clear focus

2. How often do you experience this kind of event in your work life?

1 Never 2 Once a year 3 A few times a year 4 Several times a year
5 Many times a year 6 Nearly always 7 Always

3. How often do you experience this kind of event in your general life?

1 Never 2 Once a year 3 A few times a year 4 Several times a year
5 Many times a year 6 Nearly always 7 Always

4. -Do you see yourself generally as a peak performer?
5. What did you do to become a peak performer?
    a. Probe - What characteristics did you display?
    b. Probe - How did you get to your current position? If I were a video camera what would I have seen you doing to get to your current level?
    c. Probe - What factors helped you achieve a peak performance?
    d. Probe - What factors make it difficult to achieve a peak performance?

6. **Peak experience**:
    a. Will you please describe one incident in your life characterized by highest happiness? Can you please start this off with a headline so if I was to pick up a newspaper and there was a headline about this incident what would it say? I would then like you to tell me what happened and your inner experiences.

    If participants can describe the event easily then the following probes will apply

    b. Probe – was there anything else in this experience that was significant, either positive or negative?
    c. Probe – I need to full understand what it is about this experience that made it so significant for you. So thinking back what was it about …..that made it a significant experience for you?
    d. How confident were you during this event? Why did you have that level of confidence? Where did it come from? How confident are you generally?
    e. What were the results based on? Do you feel that the results of this event were based on you being the best, or was it due to you mastering the situation and working hard? Explain.
    f. Did you get distracted during this event at all? If yes, by what? How easy was it for you to refocus?

    However if they cannot easily bring an event to mind ask whether the following descriptions have ever applied and if so what was the event.

    Fulfillment – feelings of ecstasy exemplifying a strong contrast to boredom
    Significance – turning point
    Spirituality – beyond words, sense of unity with self with the environment and loss of time and space

7. How often do you experience this kind of event in your work life?

1 Never 2 Once a year 3 A few times a year 4 Several times a year

5 Many times a year 6 Nearly always 7 Always

8. How often do you experience this kind of event in your general life?

1 Never 2 Once a year 3 A few times a year 4 Several times a year

5 Many times a year 6 Nearly always 7 Always

What factors helped you achieve a peak experience?
What factors make it difficult for you to achieve a peak experience?

9. **Flow**:
    a. Will you please describe one incident in your life at work characterized by being in the zone? That stands out as being better than average in some way, an experience where you were totally absorbed in what you were doing. Can you please start this off with a headline so if I was to pick up a newspaper and there was a headline about this incident what would it say? I would then like you to tell me what happened and your inner experiences.

    If participants can describe the event easily then the following probes will apply

    b. Probe – was there anything else in this experience that was significant, either positive or negative?
    c. Probe – I need to full understand what it is about this experience that made it so significant for you. So thinking back what was it about …..that made it a significant experience for you?
    d. How confident were you during this event? Why did you have that level of confidence? Where did it come from? How confident are you generally?
    e. What were the results based on? Do you feel that the results of this event were based on you being the best, or was it due to you mastering the situation and working hard? Explain.
    f. Did you get distracted during this event at all? If yes, by what? How easy was it for you to refocus?

    However if they cannot easily bring an event to mind ask whether the following descriptions have ever applied and if so what was the event.

    Uniquely fun, playful
    Other people
    Outer structure

10. How often do you experience this kind of event in your work life?
1 Never 2 Once a year 3 A few times a year 4 Several times a year

5 Many times a year 6 Nearly always 7 Always

11. How often do you experience this kind of event in your general life?

1 Never 2 Once a year 3 A few times a year 4 Several times a year

5 Many times a year 6 Nearly always 7 Always

What factors helped you achieve flow?
What factors make it difficult for you to achieve flow?

12. **Failure**:

a. Will you please describe one incident in your life characterized by failure? Where things have not turned out the way that you want or have not gone the way that you want? Can you please start this off with a headline so if I was to pick up a newspaper and there was a headline about this incident what would it say? I would then like you to tell me what happened and your inner experiences.

If participants can describe the event easily then the following probes will apply

b. Probe – was there anything else in this experience that was significant, either positive or negative?
c. Probe – I need to full understand what it is about this experience that made it so significant for you. So thinking back what was it about …..that made it a significant experience for you?
d. How confident were you during this event? Why did you have that level of confidence? Where did it come from? How confident are you generally?
e. What are the results based on? Do you feel that the results of this event were based on you being the best, or was it due to you mastering the situation and working hard? Explain.
f. Did you get distracted during this event at all? If yes, by what? How easy was it for you to refocus?

13. How often do you experience this kind of event in your work life?

1 Never 2 Once a year 3 A few times a year 4 Several times a year

5 Many times a year 6 Nearly always 7 Always

14. How often do you experience this kind of event in your general life?

1 Never 2 Once a year 3 A few times a year 4 Several times a year

5 Many times a year 6 Nearly always 7 Always

What factors contributed to you achieving failure?
What factors would make it easier to avoid failure?

15. For the times you have peak performances did they involve a peak experience (highest happiness) or flow (total absorption, loss of time?)
16. For the times you have peak experiences did they involve a peak performance (optimal performance) or flow (total absorption, loss of time?)
17. For the times you have flow experiences did they involve a peak experience (highest happiness) or peak performance (optimal performance?)
18. Do you see yourself as a sustainable performer where sustainable performance is defined as ……consistently performing at a recognized high level, which is close to or exceeds your personal best over at least a 2 year time frame allowing for slight variations in a range of conditions and situations.
19. Do you consider 2 years a reasonable length of time to sustain performance?
    a. Probe – is this too long?
    b. Probe – Is this too short?
    c. Probe – what do you consider a reasonable length of time is within your industry?
20. On a scale of 1 to 10, with 10 being continually sustaining performance, where would you rate yourself?
21. Why do you think that of yourself? What characteristics do you display as a sustainable performer?
22. What are the differences in being a sustainable performer from a peak performer?
    a. Probe – What do you do now that is different and what do you do that is the same?
    b. External factors – any factor outside you. Are they same or are they different? Internal factors – any factor within you. Are they the same or are they different?
23. Think of someone who you feel is a sustainable peak performer and someone who is a peak performer but who is not sustaining that level. What do they have in common and what makes them different?
24. How would you rate your current (over the last few weeks) stress level on a scale of 1-5 where 1 = minimal stress and 5 = highly stressed?
25. Do you have beliefs about who you are and what you are capable of doing? In a sentence what are they?
26. Do you get distracted by internal, external things or both? What are they?
27. Do you know what your strengths and limitations are?
28. When approaching tasks what is your balance between process and outcomes?
29. Please rate your level of internal (within org) and external (outside org) support on a scale of 1-5. 1=very low, 5=very high.
30. Please rate your level of focus, short term and long term on a scale of 1-5. 1=very low, 5=very high.
31. Please rate your level of concentration on a scale of 1-5. 1=very low, 5=very high.
32. Please rate your level of organization/political awareness on a scale of 1-5. 1=very low, 5=very high.
33. What advice, if any, you would give up and coming people in your industry who are wanting to achieve a peak level of performance?

34. What advice, if any, you would give up and coming people in your industry who are wanting to get to the top and stay there?

Address for sending transcription

Appendix D

This consent form was printed on UWS letterhead

Consent Form

Participants

Comparative Study between the corporate, sports and art disciplines looking at sustainable peak performance - University of Western Sydney Macarthur

Employers, sponsors and competitions all look for 'the best' or 'superior' performance, however, little account is taken of how people sustain this performance over extended periods of time.

Consequently, this study aims to examine the concept of sustainable performance and what this means to individuals across the sports, arts and corporate worlds. Whilst it is recognised that what constitutes 'sustainable performance' for these three domains may be different, it is believed that this study will give the opportunity to explore such considerations in greater depth. This study is being conducted by Debbie Goldman to meet the requirements for the degree of Doctor of Philosophy under the supervision of Associate Professor Patsy Tremayne (02 9772-6568) of the Department of Psychology, University of Western Sydney. If you would like at any stage to contact Debbie or Patsy regarding this study, please use the contact numbers given at the end of this consent form.

The information being sought from you may be two fold. Firstly you will be asked to complete a questionnaire that should take no longer than 45 minutes to complete. Secondly, you may be asked to participate in a face-to-face interview. This interview will explore your views as what you believe sustainable performance is. The interview is scheduled to take approximately 1.5 hours and will be taped to comply with research methodology. This tape will be transcribed at a later date. The interview and the questionnaire will be carried out at separate times. No other requirements are needed to participate in this study.

To ensure confidentiality, a coding system will be put into place that will ensure all participants will remain anonymous. This coding system will not allow any participant to

be identified through their interview or questionnaire. The only people who will have access to the coding system will be Associate professor Patsy Tremayne and Debbie Goldman. The information will be kept for a time period of five years before being destroyed.

The benefits of participating in this study will be the knowledge that your input will be contributing to the developing field of sustainable performance. There are no risks or disadvantages that can be seen by participating in this study. It should be made clear, however, that there are no disadvantages, penalties or adverse consequences for not participating, or for withdrawing prematurely from the research. Similarly for interviews participants will have the opportunity to preview the interview transcript before it is used and will also have the opportunity to withdraw any information at the end of the interview. However participants cannot be guaranteed the right to withdraw "at any time" as the data, once submitted, cannot be identified with specific individuals.

Whilst these results may have the possibility of being published, any publication will not include information identifying individual participants.

I (the participant) have read and understand the information above, and any questions I have asked have been answered to my satisfaction. I understand that my participation is voluntary and I agree to participate in this research, knowing that I can withdraw, pre data submission, without reason and without consequences. I also agree that the research data gathered for the study may be published, provided my name is not used. I have been given a copy of this form to keep.

Participant's Name:.....(block letters)

Participant's Signature:.....Date:.....

Investigator's Name:.....(block letters)

Investigator's Signature:.....Date:.....

<u>Contact Details</u>
Supervisor - Assoc. Prof. Patsy Tremayne (tel: 9772 6568);
Ph.D. Candidate - Debbie Goldman (tel:041 222 4674)

The ethical respects of this study have been approved by the University of Western Sydney Ethics Review Committee (Human Subjects). If you have any complaints or reservations about the ethical conduct of this research, you may contact the Ethics Committee through the Executive Officer, Human Research Ethics Committee, Research and Consultancy Unit, University of Western Sydney, Hawkesbury, 2753, tel: 02 4570 1688. Any issues you raise will be treated in confidence and investigated fully, and you will be informed of the outcome.

Appendix E

This consent form was printed on UWS letterhead

Consent Form

Organisation

Comparative Study between the corporate, sports and art disciplines looking at sustainable peak performance - University of Western Sydney Macarthur

Employers, sponsors and competitions all look for 'the best' or 'superior' performance, however, little account is taken of how people sustain this performance over extended periods of time.

Consequently, this study aims to examine the concept of sustainable performance and what this means to individuals across the sports, arts and corporate worlds. Whilst it is recognised that what constitutes 'sustainable performance' for these three domains may be different, it is believed that this study will give the opportunity to explore such considerations in greater depth. This study is being conducted by Debbie Goldman to meet the requirements for the degree of Doctor of Philosophy under the supervision of Associate Professor Patsy Tremayne (02 9772-6568) of the Department of Psychology, University of Western Sydney. If you would like at any stage to contact Debbie or Patsy regarding this study, please use the contact numbers given at the end of this consent form.

The information being sought from your people may be two fold. Firstly they will be asked to complete a questionnaire. This should take no longer than 45 minutes to complete. Secondly, they may be asked to participate in a face-to-face interview. This interview will explore their views as what they believe sustainable performance is. The interview is scheduled to take approximately 1.5 hours and will be taped to comply with research methodology. This tape will be transcribed at a later date. The interview and the questionnaire will be carried out at separate times. No other requirements are needed to participate in this study.

To ensure confidentiality, a coding system will be put into place that will ensure all participants will remain anonymous. This coding system will not allow any participant to

be identified through their interview or questionnaire. Confidentiality is also guaranteed for the participating organisation. No individual organisation will be identified and a coding system will be put into place that will ensure all organisations remain anonymous. All organisations will be placed under the following categories: Elite corporate, elite sports or elite arts. The only people who will have access to the coding systems will be Associate professor Patsy Tremayne and Debbie Goldman. The information will be kept for a time period of five years before being destroyed.

The benefits of participating in this study will be the knowledge that your input will be contributing to the developing field of sustainable performance. There are no risks or disadvantages that can be seen by participating in this study. It should be made clear, however, that there are no disadvantages, penalties or adverse consequences for not participating, or for withdrawing prematurely from the research. Similarly for interviews participants will have the opportunity to preview the interview transcript before it is used and will also have the opportunity to withdraw any information at the end of the interview. However participants cannot be guaranteed the right to withdraw "at any time" as the data, once submitted, cannot be identified with specific individuals.

Whilst these results may have the possibility of being published, any publication will not include information identifying individual participants.

I (on behalf of the organisation) have read and understand the information above, and any questions I have asked have been answered to my satisfaction. I understand that my organisations participation is voluntary and I agree to participate in this research, knowing that the organisation can withdraw, pre data submission, without reason and without consequences. I also agree that the research data gathered for the study may be published and that whilst the organisations name may be mentioned as having taken part, no specific data from our organisation will be identified. I have been given a copy of this form to keep.

Organisation's Name:.....(block letters)

Representative's Name:.....(block letters)

Representative's Signature:.....Date:.....

Investigator's Name:.....(block letters)

Investigator's Signature:.....Date:.....

<u>Contact Details</u>
Supervisor - Assoc. Prof. Patsy Tremayne (tel: 9772 6568);
Ph.D. Candidate - Debbie Goldman (tel:041 222 4674)

The ethical respects of this study have been approved by the University of Western Sydney Ethics Review Committee (Human Subjects). If you have any complaints or

reservations about the ethical conduct of this research, you may contact the Ethics Committee through the Executive Officer, Human Research Ethics Committee, Research and Consultancy Unit, University of Western Sydney, Hawkesbury, 2753, tel: 02 4570 1688. Any issues you raise will be treated in confidence and investigated fully, and you will be informed of the outcome.

Appendix F

This information sheet was printed on UWS letterhead

Information Sheet for Organizations and Participants

Comparative Study between the corporate, sports and art disciplines looking at sustainable peak performance - University of Western Sydney Macarthur

Employers, sponsors and competitions all look for 'the best' or 'superior' performance, however, little account is taken of how people sustain this performance over extended periods of time.

Consequently, this study aims to examine the concept of sustainable peak performance and what this means to individuals across the sports, arts and corporate worlds. Whilst it is recognised that what constitutes 'sustainable peak performance' for these three domains may be different, it is believed that this study will give the opportunity to explore such considerations in greater depth. This study is being conducted by Debbie Goldman to meet the requirements for the degree of Doctor of Philosophy under the supervision of Associate Professor Patsy Tremayne (02 9772-6568) of the Department of Psychology, University of Western Sydney. If you would like at any stage to contact Debbie or Patsy regarding this study, please use the contact numbers given at the end of this information sheet.

The information being sought from participants may be two fold. Firstly participants will be asked to complete a questionnaire that should take no longer than 45 minutes to complete. Secondly, participants may be asked to participate in a face-to-face interview. This interview will explore their views as what they believe sustainable performance is. The interview is scheduled to take approximately 1.5 hours and will be taped to comply with research methodology. This tape will be transcribed at a later date. The interview and the questionnaire will be carried out at separate times. No other requirements are needed to participate in this study.

To ensure confidentiality for participants, a coding system will be put into place that will ensure all participants will remain anonymous. This coding system will not allow any participant to be identified through their interview or questionnaire. Confidentiality is

also guaranteed for the participating organisation. No individual organisation will be identified and a coding system will be put into place that will ensure all organisations remain anonymous. All organisations will be placed under the following categories: Elite corporate, elite sports or elite arts. The only people who will have access to the coding systems will be Associate professor Patsy Tremayne and Debbie Goldman. The information will be kept for a time period of five years before being destroyed.

The benefits of participating in this study will be the knowledge that your input will be contributing to the developing field of sustainable performance. There are no risks or disadvantages that can be seen by participating in this study. It should be made clear, however, that there are no disadvantages, penalties or adverse consequences for not participating, or for withdrawing prematurely from the research. Similarly for interviews participants will have the opportunity to preview the interview transcript before it is used and will also have the opportunity to withdraw any information at the end of the interview. However participants cannot be guaranteed the right to withdraw "at any time" as the data, once submitted, cannot be identified with specific individuals.

Whilst these results may have the possibility of being published, any publication will not include information identifying individual participants. In addition, whilst the organisations name may be mentioned as having taken part, no specific data from our organisation will be identified.

<u>Contact Details</u>
Supervisor - Assoc. Prof. Patsy Tremayne (tel: 9772 6568);
Ph.D. Candidate - Debbie Goldman (tel:041 222 4674)

The ethical respects of this study have been approved by the University of Western Sydney Ethics Review Committee (Human Subjects). If you have any complaints or reservations about the ethical conduct of this research, you may contact the Ethics Committee through the Executive Officer, Human Research Ethics Committee, Research and Consultancy Unit, University of Western Sydney, Hawkesbury, 2753, tel: 02 4570 1688. Any issues you raise will be treated in confidence and investigated fully, and you will be informed of the outcome.

Appendix G

Cronbach Alpha Coefficients and Normality

Sources of Sport Confidence Questionnaire (SSCQ, Vealey, Hayashi, Garner-Holman & Giacobbi, 1998). Cronbach Alphas for this research.

A criterion level of .70 or above is ideal, but a .60 criterion can be accepted (Nunnally, 1978). For this particular context and sample, even though the overall alpha coefficient for the questionnaire was .83, when looking at the nine factors some discrepancies were clearly apparent.

More specifically, while for the factors of mastery, demonstration of ability, physical self-perception, support and vicarious experience this research returned alphas greater than .60 (.67, .64, .83, .71, .61 respectively), for mental and physical preparation, environmental comfort, situational favourableness and leadership, this research returned alphas less than the accepted level (.58, .24, .47, .53 respectively).

Consequently for each of the following factors, mental and physical preparation, environmental comfort, situational favourableness and leadership, further analysis was applied. Firstly, Using SPSS, the mean across the items was established to create a new variable that represented the factor. Item to total correlations and inter-item correlations, scale, means and scale if an item was deleted were calculated and looked at.

For the factor of leadership, when looking at leadership and its corresponding items in detail, it became clear that if one item was deleted (item 43) the Cronbach alpha rose from .53 to .62, and when two of the items were deleted (items 43 and 34) the Cronbach alpha rose to .73. More specifically, leadership contained the following items:

believe in my coaches/managers/artistic directors abilities; know my coach, manager, or artistic director will make good decisions; know my coach, manager, or artistic director is a good leader; have trust in my coaches, managers, or artistic directors decisions; and feel my coach, manager, or artistic director provides effective leadership. The two items that were shown to impact on the Cronbach alphas were the last two, have trust in my coaches, managers, or artistic directors decisions; and feel my coach, manager, or artistic director provides effective leadership.

Consequently, within an elite population while respondents believe that their coach, manager or artistic director has good abilities, will make good decisions and is a good leader, there appears to be a question as to whether they trust those decisions in relation to themselves, and, whether they perceive their leadership as effective for them. This may or may not be a consequence of having reached such a high level in their particular field that they believe that while their coach, manager or artistic director has many good qualities, there is a limit as to what the coach, manager or artistic director can provide them, and/or they have more belief in themselves and their own capabilities.

When looking at mental and physical preparation, the initial Cronbach alpha for this research sample was .58, however, when one item was deleted (item 31) this rose to .64 and when two items were deleted (items 31 and 38) this rose to .67. Again when examining the factor in detail the following items were the ones that appeared to make the difference, prepare myself physically and mentally for a situation, and believe in my ability to give maximum effort to succeed. Other items corresponding to this factor were keep my focus on the task; psych myself up; know that I am mentally prepared for the task; and stay focused on my goals. Although again hypothetical, one rationale for the

above findings may be that elite respondents feel that preparation and giving maximum effort are given entities for their particular level while the other items are more open for variation.

In relation to the factors of environmental comfort and situational favourableness, it was not possible to alter the Cronbach alphas to a meaningful level for this particular sample. This leads to the question of whether the factors environmental comfort and situational favourableness are relevant for this particular sample. Consequently, these factors were not utilised further. For this particular research, therefore, the SSCQ would appear to have acceptable psychometric properties for seven of the nine factors.

Normality

Peak Experience Questionnaire.

Normality of the distribution of scores for the factor peak performance, clear focus was investigated. Values of skew and kurtosis were calculated for the distribution of scores for this variable. To test whether the distributions skew significantly deviated from that of a normal distribution, the value for skew (-1.28) was divided by the standard error of the skew (.34). This yielded a z-score of (-3.8). A similar procedure was conducted for kurtosis where the value for kurtosis (3.62) was divided by the standard error of kurtosis (.66). This yielded a z-score of (5.47). Where z-scores did not exceed a value of 3, scores were found to be not significantly different to those of a normal distribution. Where this was not the case, the scores for this variable were first reflected, then square root transformation was applied, and to maintain the rank order of the original raw scores where there was a negative skew, the scores were reflected to produce

a new variable (clf_sq). Following the same general procedures, values for the skew (.09), standard error of the skew (.34), skew z-score (.27), kurtosis (.62), standard error of kurtosis (.66) and the kurtosis z-score (.94) of the transformed scores were found to be not significantly different to those of a normal distribution. The transformed variable (clf_sq) was used in all subsequent analyses.

Normality of the distribution of scores for the factor peak performance, feeling was investigated. Values of skew and kurtosis were calculated for the distribution of scores for this variable. To test whether the distributions skew significantly deviated from that of a normal distribution, the value for skew (-1.06) was divided by the standard error of the skew (.34). This yielded a z-score of (-3.1). A similar procedure was conducted for kurtosis where the value for kurtosis (1.53) was divided by the standard error of kurtosis (.66). This yielded a z-score of (2.3). Where z-scores did not exceed a value of 3, scores were found to be not significantly different to those of a normal distribution. Where this was not the case, the scores for this variable were first reflected, then square root transformation was applied, and to maintain the rank order of the original raw scores where there was a negative skew, the scores were reflected to produce a new variable (feel_sq). Following the same general procedures, values for the skew (.33), standard error of the skew (.34), skew z-score (.97), kurtosis (.12), standard error of kurtosis (.66) and the kurtosis z-score (.18) of the transformed scores were found to be not significantly different to those of a normal distribution. The transformed variable (feel_sq) was used in all subsequent analyses.

Normality of the distribution of scores for the factor peak performance, functional goal drive was investigated. Values of skew and kurtosis were calculated for the

distribution of scores for this variable. To test whether the distributions skew significantly deviated from that of a normal distribution, the value for skew (-.89) was divided by the standard error of the skew (.34). This yielded a z-score of (-2.6). A similar procedure was conducted for kurtosis where the value for kurtosis (-2.35) was divided by the standard error of kurtosis (.66). This yielded a z-score of (-3.56). Where z-scores did not exceed a value of 3, scores were found to be not significantly different to those of a normal distribution. Where this was not the case, the scores for this variable were first reflected, then square root transformation was applied, and to maintain the rank order of the original raw scores where there was a negative skew, the scores were reflected to produce a new variable (fgd_sq). Following the same general procedures, values for the skew (.45), standard error of the skew (.34), skew z-score (.1.3), kurtosis (.56), standard error of kurtosis (.66) and the kurtosis z-score (.84) of the transformed scores were found to be not significantly different to those of a normal distribution. The transformed variable (fgd_sq) was used in all subsequent analyses.

Normality of the distribution of scores for the factor peak performance, frequency was investigated. Values of skew and kurtosis were calculated for the distribution of scores for this variable. To test whether the distributions skew significantly deviated from that of a normal distribution, the value for skew (-1.11) was divided by the standard error of the skew (.34). This yielded a z-score of (-3.3). A similar procedure was conducted for kurtosis where the value for kurtosis (1.80) was divided by the standard error of kurtosis (.66). This yielded a z-score of (2.73). Where z-scores did not exceed a value of 3, scores were found to be not significantly different to those of a normal distribution. Where this was not the case, the scores for this variable were first reflected,

then square root transformation was applied, and to maintain the rank order of the original raw scores where there was a negative skew, the scores were reflected to produce a new variable (ppfq_sq). Following the same general procedures, values for the skew (.37), standard error of the skew (.34), skew z-score (1.08), kurtosis (.13), standard error of kurtosis (.66) and the kurtosis z-score (.20) of the transformed scores were found to be not significantly different to those of a normal distribution. The transformed variable (ppfq_sq) was used in all subsequent analyses.

Normality of the distribution of scores for the factor peak performance, full focus was investigated. Values of skew and kurtosis were calculated for the distribution of scores for this variable. To test whether the distributions skew significantly deviated from that of a normal distribution, the value for skew (-1.89) was divided by the standard error of the skew (.34). This yielded a z-score of (-5.60). A similar procedure was conducted for kurtosis where the value for kurtosis (6.53) was divided by the standard error of kurtosis (.66). This yielded a z-score of (9.89). Where z-scores did not exceed a value of 3, scores were found to be not significantly different to those of a normal distribution. Where this was not the case, the scores for this variable were first reflected, then square root transformation was applied, and to maintain the rank order of the original raw scores where there was a negative skew, the scores were reflected to produce a new variable (ff_sq). Following the same general procedures, values for the skew (.35), standard error of the skew (.34), skew z-score (1.03), kurtosis (.30), standard error of kurtosis (.66) and the kurtosis z-score (.46) of the transformed scores were found to be not significantly different to those of a normal distribution. The transformed variable (ff_sq) was used in all subsequent analyses.

Normality of the distribution of scores for the factor peak performance, self in clear process was investigated. Values of skew and kurtosis were calculated for the distribution of scores for this variable. To test whether the distributions skew significantly deviated from that of a normal distribution, the value for skew (-1.30) was divided by the standard error of the skew (.34). This yielded a z-score of (-3.86). A similar procedure was conducted for kurtosis where the value for kurtosis (3.84) was divided by the standard error of kurtosis (.66). This yielded a z-score of (5.82). Where z-scores did not exceed a value of 3, scores were found to be not significantly different to those of a normal distribution. Where this was not the case, the scores for this variable were first reflected, then square root transformation was applied, and to maintain the rank order of the original raw scores where there was a negative skew, the scores were reflected to produce a new variable (pscf_sq). Following the same general procedures, values for the skew (.24), standard error of the skew (.34), skew z-score (.71), kurtosis (.70), standard error of kurtosis (.66) and the kurtosis z-score (1.06) of the transformed scores were found to be not significantly different to those of a normal distribution. The transformed variable (pscf_sq) was used in all subsequent analyses.

Normality of the distribution of scores for the factor peak experience, other people was investigated. Values of skew and kurtosis were calculated for the distribution of scores for this variable. To test whether the distributions skew significantly deviated from that of a normal distribution, the value for skew (-1.27) was divided by the standard error of the skew (.34). This yielded a z-score of (-3.76). A similar procedure was conducted for kurtosis where the value for kurtosis (2.74) was divided by the standard error of kurtosis (.66). This yielded a z-score of (4.15). Where z-scores did not exceed a

value of 3, scores were found to be not significantly different to those of a normal distribution. Where this was not the case, the scores for this variable were first reflected, then square root transformation was applied, and to maintain the rank order of the original raw scores where there was a negative skew, the scores were reflected to produce a new variable (peop_sq). Following the same general procedures, values for the skew (.22), standard error of the skew (.34), skew z-score (.65), kurtosis (.66), standard error of kurtosis (.66) and the kurtosis z-score (1.00) of the transformed scores were found to be not significantly different to those of a normal distribution. The transformed variable (peop_sq) was used in all subsequent analyses.

Normality of the distribution of scores for the factor peak experience, clear focus was investigated. Values of skew and kurtosis were calculated for the distribution of scores for this variable. To test whether the distributions skew significantly deviated from that of a normal distribution, the value for skew (-1.96) was divided by the standard error of the skew (.34). This yielded a z-score of (-5.8). A similar procedure was conducted for kurtosis where the value for kurtosis (4.80) was divided by the standard error of kurtosis (.66). This yielded a z-score of (7.27). Where z-scores did not exceed a value of 3, scores were found to be not significantly different to those of a normal distribution. Where this was not the case, the scores for this variable were first reflected, then square root transformation was applied, and to maintain the rank order of the original raw scores where there was a negative skew, the scores were reflected to produce a new variable (pecf_sq). Following the same general procedures, values for the skew (.57), standard error of the skew (.34), skew z-score (1.68), kurtosis (.81), standard error of kurtosis (.66) and the kurtosis z-score (1.22) of the transformed scores were found to

be not significantly different to those of a normal distribution. The transformed variable (pecf_sq) was used in all subsequent analyses.

Normality of the distribution of scores for the factor peak experience, significance was investigated. Values of skew and kurtosis were calculated for the distribution of scores for this variable. To test whether the distributions skew significantly deviated from that of a normal distribution, the value for skew (-1.84) was divided by the standard error of the skew (.34). This yielded a z-score of (-5.4). A similar procedure was conducted for kurtosis where the value for kurtosis (5.07) was divided by the standard error of kurtosis (.66). This yielded a z-score of (7.68). Where z-scores did not exceed a value of 3, scores were found to be not significantly different to those of a normal distribution. Where this was not the case, the scores for this variable were first reflected, then square root transformation was applied, and to maintain the rank order of the original raw scores where there was a negative skew, the scores were reflected to produce a new variable (pesig_sq). Following the same general procedures, values for the skew (.52), standard error of the skew (.34), skew z-score (1.54), kurtosis (1.53), standard error of kurtosis (.66) and the kurtosis z-score (1.51) of the transformed scores were found to be not significantly different to those of a normal distribution. The transformed variable (pesig_sq) was used in all subsequent analyses.

Normality of the distribution of scores for the factor peak experience, play was investigated. Values of skew and kurtosis were calculated for the distribution of scores for this variable. To test whether the distributions skew significantly deviated from that of a normal distribution, the value for skew (-1.79) was divided by the standard error of the skew (.34). This yielded a z-score of (-5.31). A similar procedure was conducted for

kurtosis where the value for kurtosis (4.80) was divided by the standard error of kurtosis (.66). This yielded a z-score of (7.27). Where z-scores did not exceed a value of 3, scores were found to be not significantly different to those of a normal distribution. Where this was not the case, the scores for this variable were first reflected, then square root transformation was applied, and to maintain the rank order of the original raw scores where there was a negative skew, the scores were reflected to produce a new variable (peplay_sq). Following the same general procedures, values for the skew (.68), standard error of the skew (.34), skew z-score (2.01), kurtosis (.22), standard error of kurtosis (.66) and the kurtosis z-score (.33) of the transformed scores were found to be not significantly different to those of a normal distribution. The transformed variable (peplay_sq) was used in all subsequent analyses.

Normality of the distribution of scores for the factor peak experience, functional goal drive was investigated. Values of skew and kurtosis were calculated for the distribution of scores for this variable. To test whether the distributions skew significantly deviated from that of a normal distribution, the value for skew (-1.59) was divided by the standard error of the skew (.34). This yielded a z-score of (-4.7). A similar procedure was conducted for kurtosis where the value for kurtosis (3.97) was divided by the standard error of kurtosis (.66). This yielded a z-score of (6.02). Where z-scores did not exceed a value of 3, scores were found to be not significantly different to those of a normal distribution. Where this was not the case, the scores for this variable were first reflected, then square root transformation was applied, and to maintain the rank order of the original raw scores where there was a negative skew, the scores were reflected to produce a new variable (pefgd_sq). Following the same general procedures,

values for the skew (.02), standard error of the skew (.34), skew z-score (.06), kurtosis (1.93), standard error of kurtosis (.66) and the kurtosis z-score (2.92) of the transformed scores were found to be not significantly different to those of a normal distribution. The transformed variable (pefgd_sq) was used in all subsequent analyses.

Normality of the distribution of scores for the factor peak experience, full focus was investigated. Values of skew and kurtosis were calculated for the distribution of scores for this variable. To test whether the distributions skew significantly deviated from that of a normal distribution, the value for skew (-2.01) was divided by the standard error of the skew (.34). This yielded a z-score of (-5.97). A similar procedure was conducted for kurtosis where the value for kurtosis (5.10) was divided by the standard error of kurtosis (.66). This yielded a z-score of (7.73). Where z-scores did not exceed a value of 3, scores were found to be not significantly different to those of a normal distribution. Where this was not the case, the scores for this variable were first reflected, then square root transformation was applied, and to maintain the rank order of the original raw scores where there was a negative skew, the scores were reflected to produce a new variable (peff_sq). Following the same general procedures, values for the skew (.73), standard error of the skew (.34), skew z-score (2.16), kurtosis (.21), standard error of kurtosis (.66) and the kurtosis z-score (.32) of the transformed scores were found to be not significantly different to those of a normal distribution. The transformed variable (peff_sq) was used in all subsequent analyses.

Normality of the distribution of scores for the factor peak experience, self perception was investigated. Values of skew and kurtosis were calculated for the distribution of scores for this variable. To test whether the distributions skew

significantly deviated from that of a normal distribution, the value for skew (-1.61) was divided by the standard error of the skew (.34). This yielded a z-score of (-4.78). A similar procedure was conducted for kurtosis where the value for kurtosis (3.15) was divided by the standard error of kurtosis (.66). This yielded a z-score of (4.77). Where z-scores did not exceed a value of 3, scores were found to be not significantly different to those of a normal distribution. Where this was not the case, the scores for this variable were first reflected, then square root transformation was applied, and to maintain the rank order of the original raw scores where there was a negative skew, the scores were reflected to produce a new variable (pesp_sq). Following the same general procedures, values for the skew (.11), standard error of the skew (.34), skew z-score (.32), kurtosis (.15), standard error of kurtosis (.66) and the kurtosis z-score (.23) of the transformed scores were found to be not significantly different to those of a normal distribution. The transformed variable (pesp_sq) was used in all subsequent analyses.

Normality of the distribution of scores for the factor flow, clear focus was investigated. Values of skew and kurtosis were calculated for the distribution of scores for this variable. To test whether the distributions skew significantly deviated from that of a normal distribution, the value for skew (-2.16) was divided by the standard error of the skew (.34). This yielded a z-score of (-6.4). A similar procedure was conducted for kurtosis where the value for kurtosis (-6.02) was divided by the standard error of kurtosis (.66). This yielded a z-score of (9.12). Where z-scores did not exceed a value of 3, scores were found to be not significantly different to those of a normal distribution. Where this was not the case, the scores for this variable were first reflected, then square root transformation was applied, and to maintain the rank order of the original raw scores

where there was a negative skew, the scores were reflected to produce a new variable (flclf_sq). Following the same general procedures, values for the skew (.56), standard error of the skew (.34), skew z-score (1.65), kurtosis (.98), standard error of kurtosis (.66) and the kurtosis z-score (1.48) of the transformed scores were found to be not significantly different to those of a normal distribution. The transformed variable (flclf_sq) was used in all subsequent analyses.

Normality of the distribution of scores for the factor flow, significance was investigated. Values of skew and kurtosis were calculated for the distribution of scores for this variable. To test whether the distributions skew significantly deviated from that of a normal distribution, the value for skew (-1.60) was divided by the standard error of the skew (.34). This yielded a z-score of (-4.75). A similar procedure was conducted for kurtosis where the value for kurtosis (3.57) was divided by the standard error of kurtosis (.66). This yielded a z-score of (5.41). Where z-scores did not exceed a value of 3, scores were found to be not significantly different to those of a normal distribution. Where this was not the case, the scores for this variable were first reflected, then square root transformation was applied, and to maintain the rank order of the original raw scores where there was a negative skew, the scores were reflected to produce a new variable (flsig_sq). Following the same general procedures, values for the skew (.35), standard error of the skew (.34), skew z-score (1.04), kurtosis (1.99), standard error of kurtosis (.66) and the kurtosis z-score (3.01) of the transformed scores were found to be not significantly different to those of a normal distribution. The transformed variable (flsig_sq) was used in all subsequent analyses.

Normality of the distribution of scores for the factor flow, other people was investigated. Values of skew and kurtosis were calculated for the distribution of scores for this variable. To test whether the distributions skew significantly deviated from that of a normal distribution, the value for skew (-1.08) was divided by the standard error of the skew (.34). This yielded a z-score of (-3.2). A similar procedure was conducted for kurtosis where the value for kurtosis (1.86) was divided by the standard error of kurtosis (.66). This yielded a z-score of (2.8). Where z-scores did not exceed a value of 3, scores were found to be not significantly different to those of a normal distribution. Where this was not the case, the scores for this variable were first reflected, then square root transformation was applied, and to maintain the rank order of the original raw scores where there was a negative skew, the scores were reflected to produce a new variable (flop_sq). Following the same general procedures, values for the skew (.14), standard error of the skew (.34), skew z-score (.41), kurtosis (.75), standard error of kurtosis (.66) and the kurtosis z-score (1.14) of the transformed scores were found to be not significantly different to those of a normal distribution. The transformed variable (flop_sq) was used in all subsequent analyses.

Normality of the distribution of scores for the factor flow, functional goal drive was investigated. Values of skew and kurtosis were calculated for the distribution of scores for this variable. To test whether the distributions skew significantly deviated from that of a normal distribution, the value for skew (-1.8) was divided by the standard error of the skew (.34). This yielded a z-score of (-5.34). A similar procedure was conducted for kurtosis where the value for kurtosis (4.46) was divided by the standard error of kurtosis (.66). This yielded a z-score of (6.76). Where z-scores did not exceed a

value of 3, scores were found to be not significantly different to those of a normal distribution. Where this was not the case, the scores for this variable were first reflected, then square root transformation was applied, and to maintain the rank order of the original raw scores where there was a negative skew, the scores were reflected to produce a new variable (flfgd_sq). Following the same general procedures, values for the skew (.42), standard error of the skew (.34), skew z-score (1.26), kurtosis (1.27), standard error of kurtosis (.66) and the kurtosis z-score (1.92) of the transformed scores were found to be not significantly different to those of a normal distribution. The transformed variable (flfgd_sq) was used in all subsequent analyses.

Normality of the distribution of scores for the factor flow, play was investigated. Values of skew and kurtosis were calculated for the distribution of scores for this variable. To test whether the distributions skew significantly deviated from that of a normal distribution, the value for skew (-1.75) was divided by the standard error of the skew (.34). This yielded a z-score of (-5.17). A similar procedure was conducted for kurtosis where the value for kurtosis (4.37) was divided by the standard error of kurtosis (.66). This yielded a z-score of (6.62). Where z-scores did not exceed a value of 3, scores were found to be not significantly different to those of a normal distribution. Where this was not the case, the scores for this variable were first reflected, then square root transformation was applied, and to maintain the rank order of the original raw scores where there was a negative skew, the scores were reflected to produce a new variable (flplay_sq). Following the same general procedures, values for the skew (.64), standard error of the skew (.34), skew z-score (1.89), kurtosis (.22), standard error of kurtosis (.66) and the kurtosis z-score (.33) of the transformed scores were found to be not significantly

different to those of a normal distribution. The transformed variable (flplay_sq) was used in all subsequent analyses.

Normality of the distribution of scores for the factor flow, full focus was investigated. Values of skew and kurtosis were calculated for the distribution of scores for this variable. To test whether the distributions skew significantly deviated from that of a normal distribution, the value for skew (-2.13) was divided by the standard error of the skew (.34). This yielded a z-score of (-6.3). A similar procedure was conducted for kurtosis where the value for kurtosis (5.25) was divided by the standard error of kurtosis (.66). This yielded a z-score of (7.95). Where z-scores did not exceed a value of 3, scores were found to be not significantly different to those of a normal distribution. Where this was not the case, the scores for this variable were first reflected, then square root transformation was applied, and to maintain the rank order of the original raw scores where there was a negative skew, the scores were reflected to produce a new variable (flff_sq). Following the same general procedures, values for the skew (.94), standard error of the skew (.34), skew z-score (2.78), kurtosis (1.72), standard error of kurtosis (.66) and the kurtosis z-score (2.59) of the transformed scores were found to be not significantly different to those of a normal distribution. The transformed variable (flff_sq) was used in all subsequent analyses.

Normality of the distribution of scores for the factor flow, self-perception was investigated. Values of skew and kurtosis were calculated for the distribution of scores for this variable. To test whether the distributions skew significantly deviated from that of a normal distribution, the value for skew (-1.8) was divided by the standard error of the skew (.34). This yielded a z-score of (-5.34). A similar procedure was conducted for

kurtosis where the value for kurtosis (4.35) was divided by the standard error of kurtosis (.66). This yielded a z-score of (6.59). Where z-scores did not exceed a value of 3, scores were found to be not significantly different to those of a normal distribution. Where this was not the case, the scores for this variable were first reflected, then square root transformation was applied, and to maintain the rank order of the original raw scores where there was a negative skew, the scores were reflected to produce a new variable (flsp_sq). Following the same general procedures, values for the skew (.43), standard error of the skew (.34), skew z-score (1.28), kurtosis (.28), standard error of kurtosis (.66) and the kurtosis z-score (.42) of the transformed scores were found to be not significantly different to those of a normal distribution. The transformed variable (flsp_sq) was used in all subsequent analyses.

Normality of the distribution of scores for the factor failure, self-perception was investigated. Values of skew and kurtosis were calculated for the distribution of scores for this variable. To test whether the distributions skew significantly deviated from that of a normal distribution, the value for skew (-1.3) was divided by the standard error of the skew (.34). This yielded a z-score of (-3.8). A similar procedure was conducted for kurtosis where the value for kurtosis (3.84) was divided by the standard error of kurtosis (.66). This yielded a z-score of (5.82). Where z-scores did not exceed a value of 3, scores were found to be not significantly different to those of a normal distribution. Where this was not the case, the scores for this variable were first reflected, then square root transformation was applied, and to maintain the rank order of the original raw scores where there was a negative skew, the scores were reflected to produce a new variable (fasp_sq). Following the same general procedures, values for the skew (.82), standard

error of the skew (.34), skew z-score (2.42), kurtosis (.16), standard error of kurtosis (.66) and the kurtosis z-score (.24) of the transformed scores were found to be not significantly different to those of a normal distribution. The transformed variable (fasp_sq) was used in all subsequent analyses.

Appendix H

Details of Items Relating to Statistical Tests

Thought Occurenc Questionnaire

Factor 1 – Thoughs of social relations and emtotions unrelated to the task - items 10-20

Factor 2 – Thoughts of escape – items 21-26 and item 28

Factor 3 – Task irrelevant worries – items 1-9

Sources of Self-Confidence Questionnaire

Mastery – items 5, 15, 23, 32, 42

Demonstration of ability – items 2, 11, 20, 29, 36, 40

Mental and physical preparation – items 3, 4, 13, 22, 31, 38

Physical self-perception – items 8, 17, 26

Support – items 1, 10, 19, 28, 35, 39

Vicarious experience – items 12, 21, 30, 37, 41

Environmental comfort – items 7, 14, 24, 33

Situational favourableness – items 6, 16, 25

Leadership – items 9, 18, 27, 34, 43

Task and Ego Orientation Questionnaire

Ego orientation – items 1, 3, 4, 6, 9, 10, 11, 13

Task oreination – items 2, 5, 7, 8, 12, 14, 15

Peak Experience Questionnaire

Clear focus – items 17, 21, 18, 9, 14, 16, 19, 11

Significance – items 37, 24, 47, 10, 40, 22, 4, 31, 23

Fun – items 27, 30

Other people – items 34, 36, 13, 38, 45

Altered states – items 35, 25, 39

Feeling – items 46, 44, 42, 43, 41

Passivity – items 32, 33, 28

Unpreparedness – items 3, 7, 20

Functional goal drive – items 29, 12, 6, 1, 2, 5

Full focus – items 12, 11 9, 23, 24, 8, 4, 5

Self in clear process – items 17, 21, 18, 9, 14, 16

Fulfillment – items 46, 44, 43, 42, 41

Spirituality – items 26, 40, 31, 39, 35, 28, 25

Play – items 2, 27, 30, 1, 7

Outer structure – items 32, 33, 29, 20