

**THE DIFFUSION AND ADOPTION OF SPORT PSYCHOLOGY  
BY ATHLETICS COACHES**

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# ABSTRACT

Since the 1980s, commonly referred to as the 'golden era' of sport psychology (Biddle 1989), there has been a consistent stream of evidence surrounding the usefulness and positive impact of sport psychology upon athletic performance (Zakrajsek *et al* 2013). However, the process and factors which impact upon the transference of such knowledge into the coaching environment has been limited. Thus, while sport psychology as an academic field is well established, its use in the applied setting is reported to be sporadic but with little understanding as to why.

This thesis examines the use of Rogers' Theory of Diffusion of Innovations within the athletics domain. Specifically, the focus is to examine the process of diffusion and adoption and its associated constructs affecting athletics coaches' decision-making process surrounding the learning about and subsequent use of sport psychology. Consequently, the aim of the study was to critically analyse and explore the diffusion process, and factors which influence the adoption of sport psychology, thus providing a synthesis of research in the form of a conceptual framework.

To achieve this, from the post-positivist standpoint, a mixed-methods multi-strand design was implemented to guide the methodological process. Phase 1 involved the undertaking of semi-structured interviews in order to establish initial insights into the understanding of coaches and the subjective reality of sport psychology in athletics coaching. Results from the representative sample of licensed athletics coaches authenticated the use of the Theory of Diffusion of Innovations as a mechanism for evaluating coaches' decision-making surrounding the use of sport psychology. Information gathered informed the development of Phase 2 which incorporated the concurrent collection of quantitative data (strand A) and qualitative data (strand B) thus providing deeper insights into the process of diffusion and the driving forces that influence the adoption decision. 160 UK licensed athlete coaches completed the quantitative survey which was divided into five sections pertaining to each stage of the Innovation-Decision Process and additional information surrounding the driving forces affecting the process. Qualitative semi-structured interviews were undertaken with 24 participants representing the varying roles within the athletic social system.

The results showed there to be two component parts to the diffusion and adoption of sport psychology. The cognitive aspect incorporated knowledge, understanding and perception development and led to a decision for or against the use of sport psychology. The behavioural aspects included implementation and confirmation of previously made decisions regarding the use of sport psychology. Each stage of the Innovation-Decision Process was found to be affected by intra and inter personal and structural barriers. Those experiences were dependent on coaches' classification as a participation or performance coach along with their level of educational background in sport. However, barriers could be overcome by facilitating factors. The study raises both theoretical and practical implications and recommendations for facilitating an improved diffusion and adoption process.

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## ABBREVIATIONS

American Association for Applied Sport Psychology	-	AASP
Applied sport psychology	-	ASP
British Association for Sport and Exercise Science	-	BASES
British Athletics	-	BA
Bournemouth University	-	BU
Continuous Professional Development	-	CPD
England Athletics	-	EA
Frequently Asked Questions	-	FAQ
Health and Care Professionals Council	-	HCPC
Human Resource Management	-	HRM
Long Term Athlete Development	-	LTAD
Leisure Constraints Model	-	LCM
Local Coach Development Programme	-	LCDP
Mental Skills Training	-	MST
Mixed Methods Design	-	MMD
Number	-	<i>n</i>
National Collegiate Athletic Association	-	NCAA
National Governing Bodies	-	NGBs
Neuro Linguistic Programming	-	NLP
No.	-	Number
Physical Education	-	P.E.
Percentage	-	%
Sports Psychology; information, knowledge, experiences and sources questionnaire	-	SPIKES
Statistical Package for the social sciences	-	SPSS
Television	-	TV
United Kingdom	-	UK
United Kingdom Athletics	-	UKA
United States	-	U.S.
United States of America	-	USA
Word of Mouth	-	WoM

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## CHAPTER 1 – INTRODUCTION

### 1.1 BACKGROUND CONTEXT

Coach education within the United Kingdom (UK) has experienced massive change since 2002 as a result of the Government creating the Sport's Strategy Coaching Task Force which, following a £28 million investment had the intention of creating a national coaching certificate (Nash and Sproule 2011). While many researchers argue such developments will professionalise coaching practices through increased coaching competence (Kao, Hsieh and Lee 2017; Nash and Sproule 2011), Piggot (2015) suggests this will only occur if high quality training (as opposed to any general form of training) is at the centre of Governmental plans. Nelson and Cushion's (2006) previous discussion of the national coaching certificate also suggested the certificate could increase standards, but their discussion focused on its ability to provide a platform for change and thus view the introduction of the certificate as an opportunity to develop a coaching workforce that is thoughtful, dynamic and imaginative, but only if coach education providers utilised the opportunity effectively.

Despite the various interpretations of the Sport's Strategy Coaching Task Force, what was widely accepted was that coaching is a core activity of sports performance and coach education is an essential component of raising standards (Nelson *et al* 2013; Piggot 2015). According to De Martin-Silva *et al* (2015), numerous influencers act upon coach learning from formal educational programmes to informal discussions with other coaches. The work of Oldridge *et al* (2016) and Piggot (2015) similarly suggest this is the result of coach education research being in its infancy which, from an academic perspective, is the result of scholars focusing on identifying, defining and categorising coaching knowledge, leaving the field of research under-theorised meaning coaching practices lack theoretical frameworks which guide practice (Nelson *et al* 2013). De Martin-Silva *et al* (2015) suggests this has caused a cognitive evolution whereby much of the research focuses on what Oldridge *et al* (2016) refers to as the construction of knowledge but with little concern as to how the acquired knowledge translates into behaviours. As a result of the over focus on knowledge construction, Piggot (2015) suggests there is a need to establish the ideal conditions for firstly, coach

learning and secondly, the opportunity to widen the number of topics under debate within the coaching field. Widening the debate could offer deeper understandings of the issues affecting coaching provision as, to date, little is known about how, why and when coaches translate theory into practice. Coaches however, are not immune to change, or purely the receivers of change, specifically Nelson *et al* (2013) in recent years have increasingly challenged the traditional technical foundations upon which coaches base their training practices. They suggest coaches, like scholars need to make greater use of the variety of strategies available to aid athletes if they are to achieve their goals.

Within this context, the current study examines the diffusion and adoption of innovative training practices by athletics coaches. Furthermore, it explores the inhibitors and facilitators to the uptake of innovations at the macro and micro levels. Such explorations will enable conceptual understanding, and thus the mapping, of antecedent factors, cognitive processes and subsequent implementation behaviours surrounding the use of sport psychology as an innovation by coaches. At an applied level, the aim is to provide strategic guidance for enhancing uptake of sport psychology within the athletics context.

Sport psychology constantly balances between integration (embedding) and collusion within coaches' technical training methods (McNab 2014). Consequently, there is an extensive but somewhat dated body of literature (e.g. Anderson *et al* 2004; DeFrancesso and Cronin 1989; Dosil 2005; Ferraro and Rush 2000; Pain and Harwood 2004; Silva *et al* 1999; Zaichkowsky 2005) which recognises that, despite its usefulness, the uptake of sport psychology remains limited in the athletic arena. Researchers (e.g. Pain and Harwood 2004; Silva *et al* 1999; Woolway and Harwood 2015) report this to be due to an expanse of barriers and obstacles which inhibit the utilisation of services by coaches, such as perceptions of sport psychology (Dunn and Holt 2003; Ferraro and Rush 2000; Johnson 2006; Orlick and Partington 1987), portrayals in the media (Greendorfer 1983; Brewer *et al* 1998) and gender issues (Addis and Mahalik 2003; Krane 1994; Mansfield, Addis and Courtenay 2005; Turkum 2005; Woolway and Harwood 2015). However, end-users, in this PhD research study athletics coaches, are not powerless nor are they passive in their choice of which - if any - elements of sport psychology they explore and utilise. Yet to date, little is known about why, how and the extent to which

the idea of sport psychology is embraced by some but rejected by others altogether. This thesis is therefore concerned with the process of diffusion and adoption of sport psychology by athletics coaches. To achieve this, barriers and facilitators, otherwise known as driving forces (Holt and Ryan 2012), which impinge or aid the widespread integration of sport psychology in athletics are explored.

## **1.2 DIFFUSION OF INNOVATIONS**

Initial investigations surrounding the process of behaviour change focused upon Prochaska and DiClemente's (1983) biopsychosocial Transtheoretical Model of Change. The model proposed that an individual's intention to change behaviour unfolds over time and in discrete stages thus making it appealing for understanding coaches' decision-making process surrounding their use of sport psychology. Moreover, the model considers intention to change as a result of specific social and biological dimensions associated with an individual. However, in relation to examining the mass uptake of sport psychology in the coaching arena, therein lays the limitation of the model in that it focuses on individuals at the expense of consideration of the social context in which the individual is operating and thus group processes. Such issues render the model ineffective in the current research domain as Stoszkowski and Collins (2016) report coaching practices to occur in ever changing socially complex and multifaceted arenas which are bound by contextual factors.

Alternatively, Rogers (1983) Theory of Diffusion of Innovations is a concept that provides a systematic framework for the exploration of the uptake of sport psychology. Within the diffusion process, Rogers (1983) makes reference to two component parts; diffusion and adoption. Ashley (2009) suggests that, combined, these conceptual elements provide understanding and broaden explanations of an individual's decision-making process. She continues to suggest that such information yields solutions to the lack of widespread adoption of an innovation through the application of diffusion and adoption principles. The intent of this research is therefore to critically analyse and evaluate the diffusion process, and the factors that influence adoption, thus providing a synthesis in the form of a conceptual framework.

According to Rogers (1983), diffusion is a process whereby innovations, defined as new ideas or concepts, are filtered into the structure and function of a social system. This is achieved via the use of communication channels over various periods of time (Haider and Kreps 2004). Moreover, it is these communication channels that act as a catalyst for behaviour change (Lovejoy, Demireva, Grayson and McNamara 2009). In relation to sport psychology, the communication channel could be an organisation such as the British Association for Sport and Exercise Science (BASES) introducing or filtering sport psychology into, for example, National Governing Bodies (NGBs), such as British Athletics (BA). Ultimately, diffusion thus deals with how an innovation is spread throughout a specific social context. Rogers (2003) classifies it as a group phenomenon which leads to an idea being adopted, rejected or postponed (Rogers 1983). To this end, in order for diffusion to be sustained, Damanpour and Schneider (2006) state it must be widely adopted.

According to Rogers (2003), adoption is an individual process involving a decision whether or not to utilise an innovation and is assessed in terms of units of adoption, and thus how many individuals make this choice. With regards to its placement in the current study, Damanpour and Schneider (2006) suggest that many adoption studies fail to fully address the reasons for either adoption or non-adoption. Furthermore, they report the need to better examine influential factors which lead to this decision. Hence, despite diffusion and adoption both being constructs within the Theory of Diffusion of Innovations, at present, research studies appear to address one or other (diffusion or adoption) rather than the intricate relationship between the two. Thus, coupled with the observation that both constructs (diffusion and adoption) are yet to be researched in the coaching context, the current study sought to explore sport psychology as a possible source of competitive advantage (Destani 2010; DeWitt 2001; Voight and Callaghan 2001). Specifically, the study will explore the diffusion of information that builds the case for adoption and the point at which the individual decides they have sufficient knowledge and competence to gain a competitive advantage from the adoption of sports psychology. It will examine the process of diffusion through a quantitative design in order to extract generalizable findings and individual adoption via qualitative narratives thus providing in depth meaning.

## **1.3 THE CONTEXTUALISATION OF COACHING**

### **1.3.1 Coach Education and Learning**

Researchers commonly agree that the education of coaches is a dynamic and complex process (Bertram, Culver and Gilbert 2017; Nelson and Cushion 2006). Nelson and Cushion (2006) along with others (Abraham *et al* 2006; Mesquita *et al* 2014; North 2010; Stoszowski and Collins 2016) state that the NGBs are a central component in this process, yet report that, in many instances, the learning process they currently provide is ad-hoc with few opportunities to mediate continued integration of knowledge into practice thus rendering them ineffective in relation to long term impact (Mesquita *et al* 2014). De Martin-Silva (2015) similarly highlights limitations of the current coach provision but argues formal NGB education courses de-contextualise coaching causing them to lack ‘real-world’ relevancy as coaches use each other as participants in one off staged coaching scenarios. More recently, Bercial *et al* (2016) unsurprisingly reported the need for a step change in the provision of training coaches in order to provide a robust evidence-based approach to what they called coach interventions. However, despite having the same aim of driving up the standard of coaching practices, unlike Nelson and Cushion (2006) who call for a framework to aid the learning process in terms of translating theory into practice, Bercial *et al* (2016) aim to improve standards by closing the gap between academic learning at institutions (universities) and vocational courses (NGB courses). Specifically, Bercial *et al* (2016) report sport coaching graduates holding advanced knowledge in comparison to vocational based coaches but also acknowledge the importance of on the job training which also allows the development of expertise. Thus, there is a need for an ‘optimal match’ between experience and academic knowledge if coaching standards are to be increased (Woolway and Harwood 2015).

### **1.3.2 The Art versus Science of Coaching**

In relation of what coach education should actually entail, the traditional view of sports coaching, according to Cassidy *et al* (2008), evolves around the notion of product outcomes and thus the technical aspects of performance. They continue to argue that

athletes have become commodities to process, package and rank aligned to the underlying belief system that if athletes have talent and train hard, performance will result. This perspective of coaching views athletes as machines and as a result Cassidy *et al* (2008) state it is one that needs challenging as they suggest it is an oversimplification of the technical elements of coaching and causes coaches to have a limited focus on what they consider to be valuable knowledge in the endeavour to be an effective coach. As an alternative perspective, Cassidy *et al* (2008) suggest coaching to be a holistic science comprising of essential components including physiology, nutrition and psychology. However, they report these elements of coaching are fragmented add-ons within current coach education which require coaches to make their own connections between theory and practice. This separation of multidisciplinary knowledge causes what they refer to as a lack of credibility due to the oversimplification of high-level tasks.

Unpicking this discussion further, recently Parish (2014) portrayed sports coaching within track and field athletics as both an art and science. Originally Griffith, in 1925, noted that the scientific approach to coaching was the systematic application of scientific knowledge. In contrast the art of coaching related to the empirical sport-specific information that goes beyond the familiar everyday expected coaching occurrences. He concluded that combined the desired result is a relatively stable and permanent improvement in performance. More recently, McNab (2014) specifically named the science as dealing with areas such as notational analysis and the physiological testing aspects of sports coaching. These he suggested are the objective, measurable and hence tangible (hard) aspects of coaching, which reduce the complexity and increase the predictability of performance. Both he and Vaughan (2016) however, suggested a purely tangible scientific approach limits human imagination and creativity and fails to explain the impact of interactions between individuals upon performance thus referring to this as the soft or art of coaching.

In terms of the art of coaching, McNab (2014) does however argue that coaches need to drop their illusions of what constitutes ‘art’ as this may lead to inaccurate applications of misguided training methods in the form of art. Specifically, he recognised that neither sport nor humans are simplistic and predictable. Therefore, he captures the intangibles of coaching practices as subjects such as sport psychology, as equally

important to that of the science but concluded the art as being suppressed in modern day coaching due to coaches need for tangible outcomes.

Another angle on the debate examines the balance between scientific underpinning and personal experience (on the job learning). Abraham *et al* (2006) argue that this debate derives from lack of a unified perspective of what the role of the coach actually entails. Specifically, they suggest coaching is a decision-making process based upon the coach's role which fundamentally is to help athletes attain their goals. Thus, coaches must ask themselves what they need to know in order to fulfil this role and therefore what type of knowledge they require to train their athletes effectively; sport specific knowledge, which they refer to as the 'ologies' or sports science knowledge (such as physiology, psychology, biology, and sociology) or on the job training. Therein lies the debate; what balance of input from each of these areas is required to be effective as a coach.

Introducing an alternative angle, the work of Oldridge *et al* (2016) indirectly discusses the art versus science debate in their discussion of the implementation of periodised training plans. They note coaching sessions should be based upon planned, scientific practices but also the pedagogical delivery style of coaches. These two vistas or perspectives reflect the art versus science debate but offer new interpretations or framing of terms. Rather than viewing coaching as a science, evidence-based objective measures, or something based on intangible subjective experiences, the art, periodised programmes allow for the widening of topics as called for by Nelson *et al* (2013) and thus incorporate both principles. Thus, physiology, nutrition and biomechanics all come to the fore at different points in the season, with the art also grounded upon a scientific evidence base but concerning the delivery style of the material at hand. The delivery can vary from individual to individual and between various communities of practice. Combined with the work of Cassidy *et al* (2008), this could be referred to as holistic coaching science which has the aim of removing the art versus science debate and its associated assumptions into something more refined. Specifically, a bio-scientific foundation which is influenced by social relationships, cultural, political and personal belief systems of those involved. To achieve this the cultural environment, technical components (the science) and the pedagogical delivery (the art) need to be considered so coaches practice is based on scientific principles but delivered in a manner which

recognises the cultural and personal sensitivities which influence coaches use of a variety of coaching practices. In this argument, sport psychology as an intervention would sit in the scientific realms as part of the periodised plan but would also provide the underpinning for enhanced scientific delivery styles. Such movements could fulfil Cassidy *et al's* (2008) call for a rebalancing between the scientific view of coaching and the need to consider athletes as a person experiencing emotions in the form of an integrated framework that better prepares coaches for the reality of coaching.

## **1.4 CONCEPTUALISING SPORT PSYCHOLOGY**

### **1.4.1 Introduction to Sport Psychology**

Sport psychology is an umbrella term for a discipline that can be subdivided into a number of separate, but related, areas of study, known as disciplines (including, social psychology, mental skills training and motor learning and control). Hence, a commonly accepted definition of sport psychology is difficult to pinpoint due to the ever continuous developments within the industry. Nonetheless, initial attempts to provide a common understanding did come from Morgan in 1972. He postulated that sport psychology concerns the study of the psychological foundations associated with physical activity. However, in relation to the current study, this definition was deemed limiting for two key reasons. Firstly it was due to its restriction or focus on physical activity as opposed to the wider sports context and secondly, its ambiguity for those who wish to interpret and apply the subject to the applied setting. Alternatively, Gill (2000) defined sport psychology more specifically as a scientific study of people's behaviour in the sport and exercise context and the practical application of such knowledge. Such a definition is more comprehensive than the earlier definition from Morgan (1972) due to its consideration of the behaviours which occur within the sport setting, thus allowing for evidenced-based underpinning. Moreover, it provides credibility for evidence-based interventions, hence validating its use for the applied sport psychologist.

In a similar vein to the latter definition from Gill (2000), Cox (2002, p.5) proposed that “sport psychology is a science in which the principles of psychology are applied in a

sport setting” thus making it the most applicable definition for the current study due to its recognition of sport psychology as a science. Further to this, he additionally acknowledged that such a definition can be easily applied to the enhancement of performance without the need for further interpretation as per previous definitions. However, he did recognise the interpersonal aspect of enhancing performance and therefore also stated that the quality of the interaction between coach and athlete contributes to the sporting experience and is therefore also deemed an important element of improving performance. Thus, ultimately those who take a holistic approach to sport psychology should consider it to be an exciting domain which is dedicated to the improvement of both athletic performance and the social-psychological aspects of human enhancement (Cox 2002). It can be noted that the diverse range of definitions does render sport psychology applicable to a vast number of sporting environments. Consequently, Weinberg and Gould (2007) have stated that in order to reflect this broadening of interests, some sport psychologists have become specialised in specific practical facets of the domain. Williams (2013) recognises seven particular facets (social psychology/motor control and learning/skill acquisition/lifestyle management/injury rehabilitation/applied sport psychology/mental skills training) that contribute in various amounts to psychological performance, management of the athletic environment and care of athlete development (Buschbacher *et al* 2009).

#### **1.4.2 Applied Sport Psychology**

One discipline specialisation is that of applied sport psychology, the area with which this thesis is concerned. The very word ‘applied’ (in relation to sport psychology) implies a certain level of application of thinking in a logical manner which goes beyond common sense (Vernacchia 1992). Hence, applied sport psychology addresses the identification and subsequent understanding of psychological theories and interventions that can be used to facilitate the improvement of performance (Williams 2006). Thus, according to Voight and Callaghan (2001), sport psychology can offer both coaches and athletes interventions for gaining a competitive edge.

An abundance of research (e.g. Anderson *et al* 2002; Brewer *et al* 1998; Dosit 2006; Humara 2001; LaRose 1988; Van Raalte *et al* 1996) evidences that during the last 30

years the field of applied sport psychology has experienced massive growth and sustained advancements in the realms of producing qualified sport psychology practitioners. This is the result of an initial injection of interest during the 1980s. It has been suggested that such developments can be attributed primarily to the acceptance of sport psychology amongst the academic community. This is due to its applied nature lending itself to translating ‘theoretical concepts into meaningful techniques’ (LaRose 1988, p151). For that reason, a key body of literature (Nideffer *et al* 1980; Orlick 1986; Schell *et al* 1984) suggests that the field has a great deal to offer the sporting world but is now somewhat outdated. Furthermore, it identifies sport psychology as a pivotal part of achieving high performance at any level, thus validating sport psychology as being able to provide meaningful contributions to the art of coaching if such findings hold true in the current day.

In more recent years the specific field of applied sport psychology has once again experienced rapid expansion which has led to an era of massive growth in the academic domain. High profile events, including the 2012 London Olympics, the 2014 Commonwealth Games in Glasgow and the forthcoming World Championships in 2017, have led the British Government, NGBs and organisations such as BASES to recognise the importance of successful sporting performances on a world stage. As such, UK Sport (2015) have reported the need for the United Kingdom (UK) to have a strong, and respected voice within international sport. Consequently, disciplines such as sport psychology have experienced new injections of interest which have led to sustained advancements in applied sport psychology during recent years (Dasil 2006; Humara 2001). Whilst the advantages of such events and subsequent linked growth are celebrated, it should not go unnoticed or mentioned however, that such sharp growth can often lead to limited infrastructure, training and resources for all those involved (i.e. coaches) in the process of using or implementing psychological techniques. Evidencing the realisation of such concerns, more recently McCarthy *et al* (2010) and Zakrajsek *et al* (2013) similarly found that despite academic acceptance, sport psychology still has some way to go before it could claim to be a widely accepted part of training practices due to what they refer to as a lack of appropriately disseminated information thus still supporting the previous literature. Consequently, the abundance

of research and therefore knowledge has not as of yet been fully transposed across to potential end-users thus still leaving the art versus science coaching debate open.

Causing further limitations to the use of sport psychology, there is also an on-going debate surrounding the potential end-users of sport psychology. Specifically, confusion has arisen in relation to who exactly the end-user of sport psychology is as to date studies (e.g. Harwood and Pain 2007; Orlick and Partington 1987; Woolway and Harwood 2015), have discussed perceptions of identified groups but without explicit acknowledgement of whether or not they are the actual end-user. Therefore, of concern is the observation that, whilst athletes (as discussed by Gould 1990) are often considered the central focus of athletic performance, more recently, researchers (McCarthy 2010; Zakrajsek *et al* 2013) have discussed the coach as the individual who is pivotal in the development of athletic prowess (Dimec and Kajtna 2009; Napier, Sproule and Horton 2008; O'Boyle 2014; Werthner and Trudel 2006). Such acknowledgement of the coaches' role has occurred as a result of the sports coaching environment emerging beyond the traditional notion of the coach merely providing technical information along with lap times (O'Boyle 2014). Consequently, further explorations of the relationship between sport psychology and coaches' use of content material is required.

Such considerations are pertinent to the UK, as although there is a specific emphasis on athlete performance, the coach is widely acknowledged as playing a vital role in the success and failure of athletes (Dimec, Kajtna 2009; Napier, Sproule and Horton 2008; O'Boyle 2014). Consequently, coaches have become not only recognised but accepted as the orchestrators of athletes' careers. This signifies a requirement for coaches to be, 1) committed facilitators to the holistic development of athletes, 2) an analyst of performance, and 3) responsible for an athlete's personal and social well-being (Erickson, Bruner, MacDonald and Cote 2008; Gordon 2009; Gould, Collins, Lauer and Chung 2007; Normand and French 2013). In this role it is suggested that it is the coach's responsibility to ensure they invest in their own education, philosophy and resources in order for them to fulfil the requirements of their athletes (Duffy *et al* 2013).

## 1.5 RATIONALE AND POSITION WITHIN THE RESEARCH

According to Daly (2014) the number of athletics coaches actively engaging in athletics coaching practices in the UK, is falling at a rate of approximately 450 per year. Daly (2014) continues to argue that failings in producing new coaches is in part a result of fundamental flaws, 1) lack of recognition for varying starting points of knowledge, 2) courses only covering novice level foundations, and 3) non specialisation despite numerous athletic disciplines. As a result, he renders the current provision of coach education not fit for purpose. Such a statement is not without support; Nelson and Cushion (2006) have previously reported similar findings albeit generalised across sports. They noted that standardised curriculums, supporting the notion of a one size fits all approach, fail to fully prepare coaches for the variety of circumstances they could potentially experience. More recently, Mesquita *et al* (2014) similarly reported that coach education programmes continue to practice rigid protocols which are divorced from the practical reality of coaching. Consequently, the current study seeks to contribute to the understanding of coach learning, specifically the sources and situations through which coaches learn and moreover the driving forces impacting upon coaches decision-making process to engage with personal development.

With this in mind, the initial research idea for the thesis was derived from two key driving factors. Firstly, the lack of current, systematic understanding and research surrounding the diffusion process of sport psychology and its adoption by coaches. Secondly, the author's own personal experience and training as a coach, sport psychologist and early career researcher. Over the last ten years the author has become ever more fascinated by the complexities of the coaching environment as recognised by Nelson and Cushion (2006) and Bartram *et al* (2017). Specifically, the content and manner through which coaches acquire sports science knowledge within coach education courses and, moreover, coaches varying perceptions and use of sports science disciplines in relation to use within their own coaching practices. Both anecdotally and empirically it has become apparent to the author that the disciplines of nutrition, physiology and biomechanics are embedded into the coaching domain on a much greater scale than sport psychology. This is a view supported by researchers Kasiulis and Garbaliuskas (2010) and specifically Zakrajsek *et al* (2013) when they stated that

unlike athletic training, the services of a sport psychologist are not yet fully integrated into the athletic setting.

The lack of substantial use of sport psychology has led to a desire, to gain an understanding of the cognitions, behaviours and attitudes towards sport psychology by coaches. Specifically, there is a need to develop a knowledge base which evidences the multidimensional factors involved in the decision-making processes related to embedding sport psychology techniques into coaching practices. Additionally, there is an interest in how sport psychologists could improve knowledge transfer from theory to practice in order to increase coaches' awareness, receptivity and implementation of sport psychology (Anderson et al 2004; Ferraro and Rush 2000; Weinberg 1989). A potential avenue to achieve such knowledge transfer is that of the Theory of Diffusion of Innovation (Rogers 1983). This theory has potential to be utilised as a facilitative vehicle for encouraging and supporting use of sport psychology (Sharp and Hodge 2013). It is thus expected that the current study will enable the domain of applied sport psychology to be better equipped to tap into the coaching environment. This could be achieved through awareness of coaches' needs and the unique contextual environment in which they make the decision to use applied sport psychology (Woolway and Harwood 2015).

Such thoughts correspond with Weinberg's (1989), and somewhat more recently Anderson *et al's* (2004), identification of the need to facilitate a progression from academic knowledge to practice. Similarly, both studies suggest that researchers need to assess theoretical frameworks which investigate the reasons for the lack of use of sport psychology. Nearly ten years on from Anderson *et al* (2004), Earle and Earle (2013) reported that it is still 'mission impossible' when selling sport psychology as a product to coaches. Moreover, to date, few studies have investigated coaches' personal use of both sport psychology services and techniques.

Whilst it is exciting to recognise that both the coaching and sport psychology domains of research are growing entities, at present there are currently only a few isolated examples of research examining coaches' adoption of sport psychology (e.g. Blinde and Tierney 1990). As a result of the low number of research studies in this particular area, the author has been unconvinced by the current research examining awareness

surrounding the decision-making process of coaches in the context of sport psychology as the majority dates back to the 1990s and predominantly in countries other than the UK. Since that time there has been a focus on legitimising interventions (Holmes and Collins 2001) and organisational psychology (2009), yet since that time the sport psychology industry has witnessed many changes including professional regulation (Woolway and Harwood 2015).

Additionally, whilst many have highlighted the contemporary issues in sport psychology, to date research has failed to critically analyse the types of barriers that restrict the adoption of sport psychology. Better information is needed in order to enhance understanding of the facilitators and constraints surrounding the decision-making process. There is a lack of systematic research exploring, or likewise offering, new ways of thinking in relation to coaches' perceptions of the sport psychology industry. Hence, the purpose of this research was to systematically contribute to multiple research fields (i.e. diffusion of innovation, sport psychology and coaching) in order to progress the embedding of sport psychology into the coaching environment.

## **1.6 AIMS AND OBJECTIVES**

Overall, through the amalgamation of sport psychology and diffusion of innovations literature within the athletics environment, the current study is specifically concerned with exploring the process of diffusion and adoption of sport psychology, as experienced by athletics coaches. While coaches' perceptions of, and attitudes towards sport psychology have been widely examined in the literature (Kasiulis and Garbaliuskas 2010; Mesquita *et al* 2010; Mesquita *et al* 2014; Rahmati *et al* 2017; Weinberg *et al* 2016), the process through which these perceptions and attitudes are formed has, to date, been neglected. Hence, at present there is no understanding of why or how perceptions and attitudes are formed in this area and the extent to which they subsequently influence the uptake of sport psychology. The aim of the research is therefore;

To critically analyse and explore the diffusion process, and factors which influence adoption of sport psychology, thus providing a synthesis of research in the form of a conceptual framework.

This will provide a deeper understanding of the dynamic processes which impact upon the diffusion and adoption of sport psychology.

Underpinned by a post-positivism paradigm, the objectives of the research are to:

1. Critically review the existing models associated with the diffusion and adoption of an innovation and their suitability to the study of sport psychology in order to establish a theoretical basis for the research.
2. Critically evaluate those variables that influence the diffusion and adoption process of sport psychology in order to map their impact upon the decision-making process of a coach.
3. Utilise a mixed methods design, to extract primary data for the interpretation of relationships between the foci of analysis.
4. To categorise and critically evaluate the driving forces which impact upon the diffusion and adoption of sport psychology in athletics.
5. Synthesise current theory by developing a conceptual framework that contributes to the intellectual framing of the diffusion and adoption of sport psychology by coaches to provide systematic guidance for the uptake of sport psychology.

Theoretically this will lead to establishing the content of the diffusion and adoption process when dealing with an intangible subject matter. It is expected that this will reveal positive adaptations to the existing process due to the synthesis of individual characteristics, barriers and facilitators as these will potentially be categorised and placed at various stages of the process. Such theoretical developments should increase explanations of the conceptual elements for managing movement through the process resulting in sustained adoption of sport psychology. Fulfilment of the aims and objectives on a professional practice level would be useful for NGBs, the English Institute for Sport, BASES, coaches and sport psychologists. It is intended that their fulfilment further establishes the field of applied sport psychology as a well renowned professional field. Furthermore, it could assist the sports coaching social systems to

better diffuse information at the correct level in order to provide greater levels of adoption.

## **1.7 STRUCTURE OF THE THESIS**

The thesis is divided into twelve chapters the first of which is this introduction. The literature review outlines the current landscape of each field of exploration. The methodology follows and is subdivided in order to firstly outline the theoretical paradigm underpinning the mixed-methods design (MMD) and the three strands of the research approach. The findings are divided into seven chapters the first of which is the qualitative exploratory phase. This chapter has two key purposes; firstly, it seeks to explore coaches' subjective reality surrounding sport psychology in coaching. Secondly, it looks to establish whether Rogers (2003) Innovation-Decision Process can be utilised as a vehicle for examining coaches' decision-making process towards the use of sport psychology. The next five chapters represent each stage of the Innovation-Decision Process (knowledge, persuasion, decision, implementation and confirmation). They consist of three sections. First, the quantitative results seek to expose generalizable patterns of response. Second, the qualitative results provide deeper meaning in the form of descriptive nuances which unearth reasons behind the outcomes of the quantitative results. Finally, the discussion integrates the quantitative and qualitative results in order to challenge and redirect thought processes thus providing scientific and practical utility. It additionally contests existing content of the diffusion and adoption process thus including consideration of theory and other existing research. Coaches' barriers and facilitators to the diffusion and adoption of sport psychology are identified and categorised in accordance to the Leisure Constraints Model from Crawford and Godbey (1991) and subsequently explored in relation to their impact upon the Innovation-Decision Process. The conclusion chapter draws theoretical insights while considering the implications and future possibilities for extending understanding.

## CHAPTER 2 - LITERATURE REVIEW

### 2.1 INTRODUCTION

It is apparent that changing attitudes and behaviours is a difficult and somewhat complex task (Holt and Ryan 2012). Explicitly, Tarde (1903) observed common behaviours in relation to the uptake of an innovation and noted that if 100 innovations were introduced to individuals all at the same time 10 would be adopted whilst 90 would be forgotten. Given the multiple strands which underpin the academic discipline of sports science, the observation by Tarde (1903) calls into question whether sport psychology is one of those innovations which is easily forgotten.

The process through which sport psychology enters the coaching environment requires examination of those factors which impinge on, or in fact maximise, transference from theory to practice, are to be rectified. Known as knowledge transfer, Martinez *et al* (2013) contend that it is important to consider how a knowledge base (in the current study, that of sport psychology) will be transmitted. They put forward that communication forms an essential component of knowledge transfer as it is this that translates knowledge that exists in a person's mind into information which is useable and can provide the user with a competitive advantage or performance outcomes (Grant and Dumay 2015; Jasimuddin 2012). Martinez *et al* (2013) concluded that, to ensure sustained performance of a newly introduced idea, the communication from one influencing person to another must be organised to allow for strategic management of the transference of knowledge (Argote *et al* 2000; Jasimuddin 2012). Thus, a provider-receiver relationship between two groups is formed for mutual benefits (Laframboise *et al* 2007; Martinez *et al* 2013). With this as the focus, Glaser (1973) discussed the complex issue of how to get individual decision makers to develop a climate of non-defensive, open-minded willingness to review common practices and become receptive to change.

In relation to the current study, knowledge transfer appears to have the potential to aid the identification of seeking the most suitable way of transposing knowledge from one person to another. More broadly, according to Prowidenza *et al* (2013), knowledge

transfer could assist the development of optimal education strategies which in the current study could increase the positive outcomes of adoption decisions. The reasons being, as a process, knowledge transfer is characterised by the creation of steps which provide guidance between the conversions of knowledge into useable information.

In order to understand the current climate of sport psychology within athletics there is a need to examine a body of knowledge that can accurately describe coach cognitions, motivations and feelings towards sport psychology. To achieve this, the literature review is divided into three broad themes. Specifically, in line with the suggestions of Wardell (2009) initially theories and theoretical frameworks will be explored as a means for establishing the conceptual elements which explain, contribute and impede the diffusion and adoption process. Therefore, the review begins with an examination of what constitutes an innovation and, furthermore, its associated properties, for example, the perceived characteristics of innovations and the adoption process of an innovation. Subsequent to the fundamental constructs which are understood to impact upon the Theory of Diffusion of Innovations (Rogers 1962), the literature review then turn its attention to the dissection of the specific process of diffusion.

To achieve this, sub-models of diffusion are examined as each model contains disparate components which Rogers (1962) propose individuals pass through when diffusing an innovation. Such understandings will provide insights into the factors leading to the adoption of sport psychology into athletics. Additionally, in order to conceptualise the barriers towards sport psychology the Leisure Constraints Model (LCM (Crawford, Jackson and Godbey 1991)) will be examined in order to ascertain not only the pertinent barriers to the adoption of sport psychology as innovation but also the extent to which any barriers impact upon the process of diffusion.

This synthesis of information from a number of theoretical domains (e.g. Diffusion of Innovation, sport psychology and the Leisure Constraints) will then be displayed in the form of a conceptual framework which can guide the collection of data. Such synthesis provides a unique opportunity to add to the existing knowledge base as such integration between models has not been previously undertaken. The concepts synonymous with these domains have been examined from a unilateral perspective. However, in the current study key conceptual elements will have primacy, in order to allow for the

modification of already existing theories and/or uncover the essence of phenomena if the diffusion process and adoption model is not suitable for the sport psychology realm. Thus, whilst the researcher possesses knowledge of the various theories involved, she remains open to the notion that incoming data might contradict existing theory (Holloway 2008). The theorising in this chapter will therefore simply be used as guidance for the methodology to follow.

## **2.2 THE NATURE OF AN INNOVATION**

### **2.2.1 Invention versus Innovation**

Kanter (1983) refers to an innovation as the process of bringing a new problem solving idea into use. However, in line with the thoughts of Francis and Bessant (2005), such a definition is insufficient due to its failure to note the subjectivity of innovations. Specifically, what constitutes an innovation to one user can be a well-established practice for another. In a similar vein, Rogers (2003) defines an innovation as a new alternative solution towards an existing problem. He further advances that an idea, practice or object that is perceived by a given user, or group, as new, can be categorised as an innovation. Added to such discussion is that, whilst there is a common understanding of what constitutes an innovation (a new solution to an existing issue), this term is not to be confused with that of an invention.

Unlike Kanter (1983), Rogers (2003) defines an invention as a process by which a new idea is discovered or created. Recently, Liviu (2014) also made the distinction between the concepts of innovation and invention, but more explicitly than Rogers (2003), by recognising them as a sequence of notions. Specifically, in his recent work, Liviu (2014) described an invention as the initial occurrence of a new idea or concept as a result of systematic, repeated research with an innovation then being concerned with the implementation of the invention.

These two notions (invention and innovation) lead to the improvement of a product, theory or service in order to achieve enhanced standards (Ashley 2009; Hanna 2001; Liviu 2014). Drawing upon both definitions, for the purpose of the current study, of

importance is the central difference between the terms and, in particular, that an innovation is expected to have a positive impact and thus is about refining and improving something that is already in existence. With regards to the subject matter at hand, as an applied science, sport psychology has been in existence for over 50 years. Thus, as a specific idea sport psychology in the current study is not being discovered or created for the first time, hence ruling out the term invention. Due to the aspect of perceived newness, for those coaches who are new to the subject or regular users of sport psychology within their coaching practice, it can, within the context of the current study, be classified as an innovation. For those coaches who have already adopted sport psychology, the current study provides an opportunity to learn how they came to this positive adoption decision. This will aid understanding of how to increase coaches' widespread use of the innovation.

### **2.2.2 Desired Outcome of an Innovation**

In line within the suggestions of Kostic (2003) the perceived success of an innovation in the current context concerns positive change as opposed to harmful change. Kostic (2003) notes this analysis and measure of change as concerning the direction of change (either positive, adaptive behaviours or negative, maladaptive behaviours). He suggests an innovation has four properties that can alter the existing practices of the potential user. Latterly, Bessant and Tidd (2011) developed the notion of a 4P's Model. Building upon the original terminologies and constructs of Kostic (2003), Bessant and Tidd (2011) consolidated the nature of the four properties that can bring about change. The initial P (product) innovation deals with changing or improving the services or products which are on offer, thus within the current study would involve ensuring coaches have awareness of and access to the many facets of sport psychology so they can offer their athletes a new dimension to their training practices. Bessant and Tidd (2011) define this new offering as leading to the second 'P'. Process innovation, is defined by Tidd, Bessant and Pavitt (2005) as changes in the way the innovation is delivered. To date in the field of sport psychology, the idea of process innovation has yet to be examined from the receiver's perspective. Position innovation, the third 'P', involves re-positioning perceptions, thus dealing with changing attitudes or alternatively the way in which the innovation is framed and communicated within its given context. It is this aspect of context which is emphasised by Tidd *et al* (2005) but to date; the existing

literature reveals no scientific evidence of the channels through which coaches' desire to receive information concerning sport psychology. The final 'P', paradigm innovation, refers to the sector as a whole and the mental models which shape the norms of the business. Thus in the current study, there is a need to better understand what role the National Governing Bodies hold in the dissemination of sport psychology material. Overall, categorising or organising the properties of an innovation allows for better measurement of change and management of innovations. With regards to sport psychology there is a need to establish whether improvements to sport psychology as a product and/or service are required and desired and how these products could be delivered more effectively.

## **2.3 DIFFUSION OF INNOVATIONS**

### **2.3.1 Elements of Diffusion**

Described by Budman *et al* (2003) as a classic work, Rogers' Theory of Diffusion of Innovations as a whole subsumes adoption within the diffusion process. However, analysis of each concept in isolation allows for the identification and conceptualisation of the contributory elements prior to their organisation into a theoretical model.

The phenomenon of adoption deals with an individual deciding to use an innovation and thus doing something different, whereas diffusion deals with the process of spreading the new idea throughout a population base. To this end, it describes how the process of adoption begins (Al-Suqri and Al-Aufi 2015; Ashley 2009; Rogers 2003). The standard definition of diffusion hence comes from Rogers (2003, p.5) 'the process in which an innovation is communicated through certain channels over time among members of a social system', (Ashley 2009; Budman *et al* 2003; Robinson 2005). He further denotes diffusion as a particular form of communication concerned with the spread of messages which deal with new ideas. Hence, it is said to be a social process characterised by acceptance over time by either a group or individual leading to eventual adoption of an innovation.

To date, nine traditional areas of diffusion research have been established (anthropology, early sociology, rural sociology, education, public health and medical sociology, communication, marketing and management, geography and general sociology). Consequently, the diffusion of innovation theory provides what Robinson (2005, p.49) refers to as ‘a generic model for the process of the adoption of an innovation’ which identifies ‘those factors that will lead to the adoption of an innovation’. In relation to this generic understanding of the diffusion process, Rogers (2003) proposes four key elements to be involved in the diffusion of an innovation. 1) Type of innovation-decision, 2) the communication channels used throughout the process of disseminating the innovation, 3) the social system in which the innovation is being examined, and, 4) the change agents who promote the diffusion of an innovation within the social system, which affect the utilisation of an innovation.

### ***2.3.1.1 Type of Innovation***

Innovations are said to incorporate hardware, which is the physical being of the innovation and the software which is considered by Rogers (2003) to be the information base. Damanpour, Walker and Avellanda (2009) distinguish these as being variations between types of innovation which can then be displayed in the taxonomy of innovations. Specifically, they depict between two typologies, 1) product and service and, 2) technical and administrative processes. Product innovations deal with tangible goods whereas services are intangible and focus on meeting the needs of clients. Additionally, process innovations seek to improve the efficiency of the processes within an organisation whether that is introducing a new technology or administrative orientated which Damanpour *et al* (2009) suggests create motivation and rewards for members of the organisation. Sport psychology is considered a service process innovation whereby according to Kolk (2013) there is no direct interface to be observed as the desire is to examine new approaches to existing practices, thus making it software dominant (Satell 2013).

### ***2.3.1.2 Communication channels***

Communication is the process through which individuals share information regarding the innovation with each other in order to reach common practices or norms of

behaviours (Ashley 2009; Berger and Iyengar 2013; Rogers 2003). The introduction of an innovation into a social system is thus concerned with the flow of information through the social system and it is this flow which determines the outcome of the innovation. The means through which information flows through a social system are referred to as communication channels of which researchers (Ashley 2009; Rogers 2003) suggest there are two recognised forms; mass media and interpersonal channels such as word of mouth. Whilst mass media is thought to be the most prompt way to diffuse information, however, interpersonal channels are more often than not, more effective as they facilitate exposure through social contact (Ashley 2009; Berger and Iyengar 2013; Rogers 2003). Thus, examination of these channels is of importance to the athletic context given the categorisation of sport psychology as a soft service process innovation. Hence, examination of whether this categorisation biases the preference for one form of communication over another is still to be established.

### **2.3.1.3 Social Systems**

A social system is comprised of a number of individuals who are connected by a need or desire to solve a problem in order to achieve a goal within a given contextual space (Ashley 2009; Montada 2014; Rogers 2003). Together they play an intricate role in the introduction of an innovation into a social system (Rogers 2003). More specifically, Metzler *et al* (2008, p.458) denote social systems as occurring on one of two levels. Firstly, the macro social system, which is referred to as being a collective group of individuals who belong to the same community or culture and thus share the need for the innovation (Ashley 2009; Metzler *et al* 2008; Montada 2014). Alternatively, the micro social system is a group of individuals who share expertise and job responsibilities, then apply them in more or less similar settings. Parsons (1970) states that combined, these form the broader social system due to commonality between the two systems of interest which, in the current study, is athletics. Specifically, BA, who licence athletics coaches, can be considered a key influencer in the macro social system due to their positioning as an authoritative body. Whereas those coaches, who undertake a similar role of training athletes and have official qualifications, evidencing a minimum required standard, can be classified as being the micro social system. Within the coaching literature base Bertram *et al* (2017) refer to such notion of context specific environments as communities of practice. Similarly to the social system

discussed in the Diffusion of Innovations Theory, the community of practice is said to comprise of individuals who share a concern or hobby and that in order to expand their knowledge interaction with each other must occur (Bertram *et al* 2017). However, while social systems seek understanding of relationships and their hierarchal influences, communities of practice are said to focus on competition and thus sporting prowess rather than knowledge interaction to enhance coach development. As a result Bertram *et al* (2017) suggest that to facilitate the growth of coach education the culture of sport needs to align its definitions with practical realities so as to allow for collaboration and fulfilment rather than contradictions and confusion. Consequently, terminologies from the Theory of Diffusion of Innovation will be adopted in the current research project to allow examination of the relationships required to foster collaboration.

#### 2.3.1.3.1 Organisation of a Social System

According to Rogers (2003) not all individuals have equal leverage (power) within the diffusion process and indeed their respective social system. Such differences, he proposed, were caused by the arrangement of individuals and their allocated roles within the system along with, according to Ashley (2009), environmental factors as these determine who information actually reaches. Consequently, the structure and organisation of the social system is thought to affect the diffusion process, along with the interrelationships which occur within the system. Such a notion was initially recognised by Parsons (1970). Previously, he argued the need for a theoretic system which conceptualised the scientific development of the system rather than displaying the applied nature of a social system. He went onto argue that specialised units or individuals aid the functioning of the social system. Rogers *et al* (2005) more recently highlighted that the structure of individuals can be an impediment or facilitator to the diffusion of the innovation. An organised structure provides stability and reduces uncertainty (Rogers 2003). Typically the arrangement of individuals is, according to Rogers (2003), hierarchal in nature and based on an individual's role and responsibility within the social system commonly referred to as the social structure.

Commonality in terminology of the roles ascribed to those within the social structure is not in dispute. However, there are a number of interpretations related to their functionality. To this end, when pressure to initiate change occurs, the influencer

responsible for the introduction of the new knowledge is referred to as a change agent (Ashley 2009; Lunenburg 2010). However, more comprehensively, Rogers (2003) suggests they introduce what they (as the expert) believe to be desirable change and slow the process of diffusion down in order to decrease the chance of undesirable consequences due to a decrease in the perception of risk (Rogers 2003). With this in mind, based on suggestions from Parsons (1970) that change agents often have limited familiarity with the social system, which Ashley (2009) explains is due to them often residing externally to the system. Due to such criteria, the sport psychologist could be identified as holding this role in the athletics social system. Furthermore, Lunenburg (2010) states, when perceived negatively, lack of familiarity can be off-set by coupling the change agent with an insider who Rogers *et al* (2005) refers to as a gate-keeper.

To facilitate the introduction of the change agent, a gate-keeper is normally involved as they enable access to the social system thus acting as intermediaries (Ashley 2009; Breuning 2013; Rogers *et al* 2005; Wyper 2014). This would potentially be (in athletics) via a Club and Coach Support Officer, but such roles are yet to be investigated within the athletics context. Once the innovation has entered the social system, according to Schleien and Miller (2010) another key influencer in the communication of the innovation is that of an opinion leader. Their attitude and opinion is well respected within the social system due to their high status level within the social system and consequently are considered to be role models.

In a similar vein, Anderson and Whall (2013) report that opinion leaders possess the interpersonal characteristics to exert influence over others but go further to explain that this influence has two functions: to improve understanding of the process and to enable innovations to become part of normal practices. However, whilst also recognising the role of the opinion leader, Holt and Ryan (2012) suggested that they can drive change, but identify the need to carefully place and execute the role of the opinion leader otherwise they can be regarded as an additional management tool which could elicit negative consequences. Despite such clear distinctions between various individuals thought to be involved in the process of diffusing an innovation into a given social system, at present there is a lack of literature examining these roles in the athletic environment thus presenting a gap in the literature base.

### ***2.3.1.4 The Time Dimension of an Innovation***

When an innovation is introduced into a new domain not everyone within the social system makes use of the idea, practice or product simultaneously, thus creating the time dimension. This time dimension represents the amount of time between when an individual potential user has first knowledge of an innovation up to the point that they make a decision to adopt, reject or postpone its use (Ashley 2009). Referred to by, Bass (1969) as a Theory of Timing, its basic premise is that the uptake of an innovation can be predicted due to what Bass (1969) called growth patterns. Further to the Theory of Timing, the time it takes to diffuse ideas through the social system was later conceptualised by Rogers (1983) as the rate of adoption (Rogers 2003).

#### **2.3.1.4.1 Rate of Adoption**

Rogers (2003) suggested the rate of adoption as relating to the speed at which various groups of individuals adopt an innovation. To this end, he puts forward the notion that individual characteristics of the potential user affects the rate at which the innovation is adopted and ultimately the number of end users. This perspective was supported by Meyer's (2004) who defined the rate of adoption specifically to be the total number of individuals (discussed as units) who have adopted the innovation. However, an initial model for the rate of adoption reviewed by Ferrence (2001, p165) was that of Tarde's (1903) Laws of Imitation. He argued that an individual's proximity to the innovation led to imitation which was said to occur through a 'trickle-down process'. Those referred to as inferiors imitate superiors which Tarde (1903) denoted as being a 'kind of conquering epidemic'. Later work by Bass (1969) referred to these as two forms of adopter classification: innovators (the first to adopt) and imitators (adopt later). Similarly to Tarde (1903), Bass (1969) suggested there were different timings of adoption associated with each group but labelled this to be as a result of their innovativeness as opposed to Tarde's (1903) trickle-down effect.

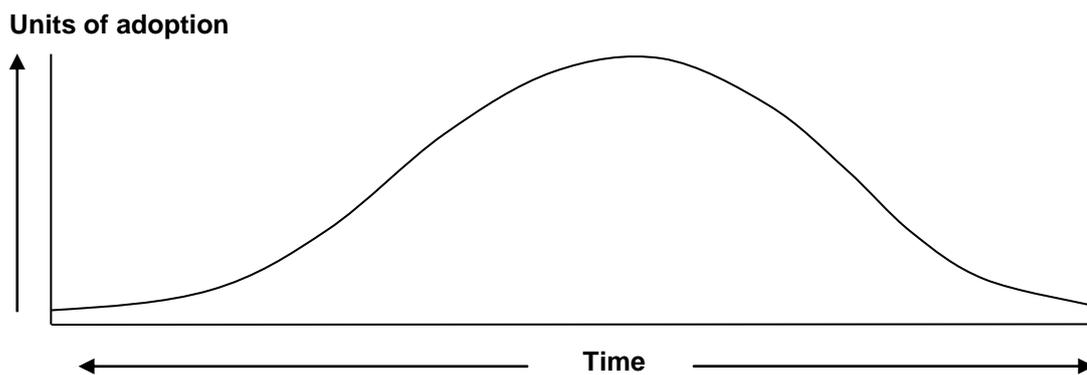
The different rates at which potential users are thought to adopt the innovation causes an S-shaped curve (Bass 1969). He believes this curve depicts the rate of adoption whereby use of an innovation increases slowly at the beginning, then rises rapidly to a point of critical mass then slows down and levels off. More recently, Schleien and

Miller (2010) also reported initial utilisation to be slow, then accelerating in an upwards trajectory before levelling off to cause an S shaped curve. However, they went on to highlight that when tracked over a period of time a Bell shape curve is produced. Likewise, after assessing learning, mathematics and communication theories, Rogers (2003) also reported that if the number of units adopted was plotted against time it would create a bell shaped curve which has become known as the adoption curve (Mann and Sahni 2012; Peterson 1973). This curve (Figure 1) is thought to depict the time difference between the take up by various users of an innovation and accounted for by their individual differences and social influences (Weenig and Midden 1991).

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**Figure 1.** Bell Curve of Adoption depicting rate of adoption adapted from Rogers (2005)

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Bass (1969) argued for the importance of stabilising the uptake of an innovation if long-range forecasting or predictability is to be achieved. Thus, the rate of adoption offers understanding of how the process of adoption occurs by, according to Frederickson *et al* (2004), allowing the placement of individuals into predictable groups of behaviour. However, within the athletics context, characteristics and conceptual elements which lead to the varying rates of adoption are as of yet unknown. Consequently, for those looking to increase the adoption of sport psychology there are no standardised programmes from which to work. Nor can the likely time scale for adoption be predicted as characteristics which could be manipulated to aid this process are unknown.

#### 2.3.1.4.2 Individual Characteristics and the Rate of Adoption

Beyond adopter categories, in response to the calls of Mann and Shani (2012) to identify the wider scope of factors that influence the adoption process, Linn et al (2014) found alternative factors which affected the rate of adoption of an innovation. Specifically, Mann and Shani's (2012) study of internet banking revealed segmenting users into different profiles according to demographic characteristics such as perception of age, gender, education, income and users occupation, aided the facilitation of adoption. This, they suggested, allowed for an understanding of users' attributes and demographic characteristics that influenced the adoption of Internet Banking in India. They concluded that client profiling assisted marketers to identify and understand customers so they could target and cater to their requirements more so than purely addressing the environment in which they operated. Such acknowledgements were also previously made by Ashley (2009) who noted characteristics of the potential adopter including socioeconomic status, norms of the social system and education to all influence the diffusion process and thus adoption. To date, there is a lack of research examining the factors which influence coaches' adoption of sport psychology. Consequently, little is known about the coach characteristics which impact upon the diffusion process which leads to adoption by individual units or at a level of critical mass.

In summary, the balance between maximising the organisation and structure of the social system in order to increase the rate of adoption has been well established in the literature base pertaining to many industries. However, coaching is not one of the recognised contexts. Thus, the modes of communication, time frame and user characteristics which allow for the prediction of adoption through a consistent process are yet to be established.

### 2.3.2 Perceived Characteristics of Innovations

Understanding the rate of adoption according to Rogers *et al* (2005) is not the only contributory factor to the diffusion and adoption of an innovation. Barnett (1953) suggested widespread adoption, thus hitting a point of critical mass within a social system is based upon two considerations, namely satisfaction and desirability. He

suggested motivation as being the simplistic driving force behind adoption in that for it to occur, satisfaction must be increased, and dissatisfaction decreased. To achieve this, the potential adopter's level of desire to change behaviour must be established as consciousness of the two constructs alone does not automatically lead to adoption. This, Rogers (2003) suggested, is because adoption is merely the decision point of use, hence suggesting Barnett's (1953) insights oversimplify the process of adoption as he fails to consider the entwining of cognitive and behavioural processes and whether the order in which these arise affects adoption and the rate at which this occurs.

In addition to the simplistic view of motivation being a driving force underpinning various rates of adoption, in the early years of innovation research, scholars also typically viewed all innovations as units of equivalency, thus users would adopt them at the same rate, in the same way. However, latterly innovation differences in terms of how individuals decide whether or not to adopt the innovation emerged as a result of what Rogers *et al* (2005) referred to as the dangers of over simplification. These innovation differences have become widely accepted as perceived characteristics of innovations that influence adoption as they help potential adopters decide if the innovation is of worth (Ashley 2009; Budman *et al* 2003; Lennon *et al* 2007; Rogers *et al* 2005). Specifically, it is thought that such characteristics may account for up to 87% of the variance in relation to how likely an innovation is to be adopted (Budman *et al* 2003). Consequently, the perceived characteristics of an innovation are said to affect the speed at which potential users decide (or not) to utilise in this instance, sport psychology, as a new solution to the existing issue.

Of concern to the study at hand is the notion that innovations comprise of various underlying properties each with their own nuances, but can nevertheless be classified in order to help explain human behaviour (Rogers *et al* 2005). Researchers (such as Ashley 2009; Budman *et al* 2003; Hameed and Counsell 2014; Rogers 2003; Lennon *et al* 2007; Pagoto *et al* 2007; Lin and Chen 2012; Lin *et al* 2007) repeatedly consider five constructs or perceived characteristics of innovation which are widely accepted and relatively undisputed as being the defining characteristics which impact upon and influence the perceived need for the innovation. Lin *et al* (2007, p813) describe them as 'attributes of innovation adoption', furthermore, Haider and Kreps (2004) put forward the notion that optimising these qualities or attributes allows an innovation to be

adopted at a faster rate than those which lack them. This was because they not only affect but also facilitate the rate at which the innovation is absorbed. Moreover, analysis of these characteristics can help establish the order of importance for the particular set of respondents (Rogers *et al* 2005).

### **2.3.2.1 *Relative Advantage***

According to Budman *et al* (2003), relative advantage is a basic cost-benefit ratio analysis whereby, a potential user evaluates whether, in comparison to existing practices the benefits of adopting a new idea outweighs the costs of such implementation, which Ashley (2009) refers to as ‘significant advantage’. Of importance is the measurement of the term ‘effective’ which leads experts in the area of study to initially determine whether or not an innovation is of use. However, by the time the innovation has filtered down to ground level, inaccurate perceptions by potential users could be formed due to the distance from the initial message and the number of, or type of communication channels they have utilised to gain awareness of the innovation. Such a problem is particularly pertinent in domains which are subjective due to their lack of definite measurability or, as noted by Lyytinen and Damsgaard (2001), have a lack of physical artefact. The coaching context is a clear example of such in distinctions due to the art versus science debate as discussed in Chapter One (section 1.2). In addition, perceptions of intangible, or soft innovations innovation have been all but omitted from the relative advantage research base due to a focus on objective, measurable outcomes of an innovation.

### **2.3.2.2 *Compatibility***

The research base (Ashley 2009; Budman *et al* 2003; Lyytinen and Damsgaard 2001; Rogers 2003; Sanson-Fisher 2004) commonly describes this construct as the extent to which an innovation aligns with the existing values, structures, past experiences and needs of potential adopters (Budman *et al* 2003). These researchers further highlight that such factors are of importance since, irrespective of how good it is, if the idea is not easily transferred into current practices, the innovation will not be accepted. Rogers (2003) suggests this is because the level of risk and uncertainty is decreased if the

innovation appears to closely match to three key variables, 1) sociocultural values and beliefs, 2) previous ideas, 3) clients need for the innovation.

In their work investigating compatibility beliefs in technology acceptance, Karahanna, Agarwal and Angst (2006) reported such classifications of variables allow for better understanding in order to predict key outcomes. Moreover, they suggested compatibility to be about congruence between the individual's belief and the new idea, but go further than the work of Rogers (2003) by outlining attitudes and perceived usefulness (the degree to which the individual believes the innovation will improve practice) to be important elements of compatibility. Thus, compatibility differs from relative advantage as the fundamental assumption surrounding compatibility is grounded within subjective personal beliefs rather than objective evaluations. Consequently, the extent to which sport psychology is compatible with coaches' existing practices is an essential factor in the introduction of an innovation.

The final aspect of compatibility refers to the extent to which the potential user believes the innovation will meet their needs (Rogers 2003). The issue however for those introducing the innovation is that potential adopters may not see the need to change behaviour (Lewin 1947). At present this variable is under studied yet thought to be an important aspect of compatibility.

### **2.3.2.3 Complexity**

The construct of complexity can be viewed from a number of perspectives (Lyytinen and Damsgaard 2001). The most traditional of which refers to the complexity of the innovation itself. Alternatively, Andriani (2001) describes complexity as referring to the tools utilised in order to better understand the innovation and help facilitate a change in attitudes and behaviours. Subsequently, this perspective of complexity could be pertinent to changing perceptions of coaching being grounded in art to a more scientifically driven form of activity. In the current study the construct of complexity refers to the extent to which the potential user believes the idea to be difficult to understand and self-apply (Ashley 2009; Budman *et al* 2003). In this context Rogers (2003) offers the notion of a complexity-simplicity continuum due to some innovations, their potential use and consequence being more visible than others. Consequently, he

postulates, complexity decreases as the innovation and its outcomes become more visible. Lyytinen and Damsgaard (2001) also recognised varying levels of complexity but alternatively argued that variations exist in the interpretative flexibility as opposed to the innovation itself. In their explanation of the term interpretative flexibility, they suggested individuals' interpretation of the innovation can vary from one context to another thus equating to flexibility. This is due to a host of factors including individual characteristics such as age and gender and furthermore, the environment in which the innovation is being used which combined changes to the user's perception of how difficult the innovation is to use. Both Rogers (2003) and Lyytinen and Damsgaard (2001) argue, however, that varying levels of complexity cause high levels of learning barriers in the process of introducing an innovation. Both however, fail to examine the extent to which the outcomes of learning barriers lead to negative attitudes and thus impact upon utilisation, subsequently leaving gaps in the knowledge base.

#### **2.3.2.4 Trialability**

Trialability, according to researchers such as Ashley (2009) and Harting *et al* (2009), refers to the potential user's ability to test the innovation. However, Davidson *et al* (2016) suggest the construct goes beyond testing and deals more with the experience of testing and how useful it is found to be. Users are said to like the idea of being able to legitimise or test the innovation before fully committing to the idea. In the current context, this would allow coaches opportunities to see how and where sport psychology could be used within their coaching practices. Such opportunities are said to ease the extent to which the innovation can be implemented (Rogers 2003). Thus, whilst complexity can act as a barrier to the adoption of an innovation, trialability could potentially act as a facilitator its introduction.

Rogers (2003) reports the facilitative value of trailability to be because trialling an innovation dispels a potential user's uncertainty due to the opportunity to change, customise or even re-invent the innovation to suit their needs. In applied terms, although not in Rogers (2003) area of focus, trialability can be interpreted as coaches having the opportunity to test if psychological tools would enhance athlete's performance. However, Rogers (2003) warns of the risks associated with reinventing innovations to suit particular requirements or circumstances. This he suggests is

because such actions at some point (which is unknown) undermine the integrity of the innovation thus fundamentally changing the central notion initially intended for the innovation causing the extent of any re-invention to be monitored.

### **2.3.2.5 Observability**

Observability in simple terms is defined by the likes of Ashley (2009) and Harting *et al* (2009) as being the degree to which the results are visible to others. Of importance to observability is whether others have normalised the innovation's use into their practice and more importantly the impact or measured outcome of its implementation. Hence, coaches' ability to see others use of sport psychology and their athletes having gained an advantage from such use. The nature or type of innovation being introduced affects its visibility. Hence, innovations which are software dominant are less observable which poses potential barriers to the innovation as there is no tangible product to evaluate. This increases the importance of being able to demonstrate its use.

In summary, it is evident that to date, while there are common understandings of the perceived attributes of innovations, little is known about the way in which, or the point at which, they influence the utilisation of an innovation (Ashley 2009; Lyytinen and Damsgaard 2001). Moreover, they suggest the need for greater understanding of how to manipulate each attribute to increase widespread adoption of innovations and specifically soft innovations, such as sport psychology.

## **2.4 THE PROCESS OF CHANGE**

### **2.4.1 Models of Diffusion and Adoption**

While demonstrating flexibility and adaptability within a broad number of varying contexts, the current study is concerned with the stages through which individual coaches pass and the processes common to these individuals. Furthermore, it seeks to examine the variables which impede and facilitate this process in order to extend current understanding. This is due an apparent gap in the knowledge surrounding the

diffusion of innovations and whether the literature base can be transposed into the coaching domain to bring about productive enhancement of athlete performance.

#### **2.4.2 Origins of the Diffusion Model**

The first published paper investigating the adoption of innovation came from Ryan and Gross in 1943 who observed farmers delaying their integration of new ideas despite evidence that the new idea was more profitable than existing practices. The study concluded the diffusion of innovations to be a subjective social process whereby new ideas are gradually permeated throughout a community (Rogers 2003). Subsequently, during the period between the 1940s and the end of the 1950s a number of independent studies appeared from various disciplines (as mentioned above, Section 2.3.1). Analysis of their findings revealed similar findings associated with the uptake of any new idea. As a result, based upon initially qualitative studies, the birth of the information-seeking process emerged along with the popularisation of term diffusion (Rogers 2003). Motivated by such similarities Rogers (1962) went on to state that, as a general process, diffusion is not bound by the type of innovation studied, who the adopters were, or by place or culture. Thus, the context in which diffusion is studied is irrelevant as Rogers himself changed his focus from rural sociology to the communication field in which he now grounds his work.

Despite conflicting origins, parallels in the conclusions, from the likes of Pagoto *et al* (2007) and Metzler *et al* (2008), report the theory of Diffusion of Innovations (Rogers 1962) as being a useful framework for translating knowledge (the research base) into useable information that can be applied in the practical setting by an end user such as a coach. Such a notion enhances the argument for utilising the theory within the current study. It could provide a vehicle for improving sport psychologists' understanding of how to embed sports psychology into the coaching domain as it can provide a path for the dissemination of information. Further, it can offer understanding of when and how to diffuse information in order to increase adoption. Weenig and Midden (1991) underpin this claim by stating that, within the literature, the theory of the diffusion of innovations is often conceptualised as a process of communication and its persuasiveness to impact upon the cognitions of the user. Moreover, it seeks to aid understanding by explaining potential influential factors (Ashley 2009; Kozma 1983;

Robinson 2005; Metzler *et al* 2008) on adoption (Patgoto *et al* 2007) and the stages through which users pass when making a decision regarding the use of an innovation (Rogers 1995). Therefore, it provides insights into how ideas, concepts or practices are adopted into everyday life (Webster *et al* 2013). Robinson (2005) depicts this as a process of enabling change. This he argues is due to its focus on changing or ‘reinventing’ the product or service to the individuals needs as opposed to Models of Change (Transtheoretical Model of Change, Health Belief Model and Theory of Planned Behaviour) which seek to change individual’s behaviour to suit the desired outcome. Robinson (2005) argues changing the innovation is more effective to sustained developments as strategies can be aimed at system-wide change rather than change on an individual level.

### **2.4.3 The Process of Diffusion**

#### ***2.4.3.1 Conceptualisation of the Development and Decision Models***

It is apparent from the previous literature that diffusion is concerned with how an individual comes to the decision to adopt an innovation. However, analysis of past diffusion studies appear to utilise Rogers (2003) Innovation-Decision Process as the underpinning framework. However, examination of Rogers (2003) work reveals two processes that depict the entire adoption process from learning of an innovations existence to regular use. Past studies of diffusion have often thus omitted what Rogers (2003) refers to as the Innovation-Development Process (a preceding model to that which includes the decisions, activities and factors which impact upon these, from the point of recognition of the innovation). The second more commonly reported stage of the process is referred to as the Innovation-Decision Process which includes five key stages and deals with the way in which an innovation is diffused through the social system (Rogers 2003).

#### ***2.4.3.2 Innovation-Development Process***

This process often starts with a trigger or what Rogers (2003) calls a recognised problem which causes the need to create a solution via scientific knowledge, applied research or serendipity (accidentally discovering a new idea). The cluster of events

which occur prior to the start of the bell-shaped curve proposed by Bass (1969) is the development stage of putting an innovation in place for the intended social system (Rogers 2003). At this stage potential users initially learn of the innovation's existence irrespective of whether they need a solution to a problem (Rogers 2003). This process is thought to be useful in terms of understanding where an innovation comes from. Furthermore, it allows for the uncovering of potential characteristics and properties of the innovation which could affect the Innovation-Development Process (Rogers 2003). To date, these have been collectively recognised as barriers within the sport psychology literature (to be discussed in section 2.6) with little consideration for what causes these barriers, when they occur and how they could be overcome. This initial process could thus prove important to the enhanced understanding of sport psychology and how coaches learn of its existence and what affects this.

#### **2.4.3.3 *Innovation-Decision Process***

Ryan and Gross (1943) were the first to conceptualise five stages (knowledge, persuasion, decision, implementation and confirmation) of the diffusion process. This was in recognition that an individual's decision to adopt an innovation is not impulsive. Rather, an individual learns of an innovation through selected communication channels, then trials the innovation before either completely adopting or rejecting the idea in some cases years later. Extending conceptual understanding of the work from Ryan and Gross (1943), Rogers (2003) proposed a somewhat more complex five stage sequential process for establishing change. The depicted stages through which an individual is said to advance when considering a new idea remain the same as those of Ryan and Gross (1943) but Rogers (2003) added description of the behaviours which occur at each stage.

Modern day scholars of diffusion have commonly recognised the process of individuals passing through stages (Ashley 2009; Lennon *et al* 2007; Montfort *et al* 2012; Pagoto *et al* 2007; Rogers 2003). All agree each stage of the model involves a number of serial choices and actions over a period of time which allows the potential user to deal with uncertainty surrounding the innovation (Rogers 2003). Hence, the Innovation-Decision Process denotes the process through which a decision maker passes when deciding whether to adopt or reject an innovation (Ashley 2009; Henderson *et al* 2012; Pagoto *et*

al 2007). However, Rogers (2003) was the initiator of the concept of a sequential process which he suggested enabled potential users to make choices based on knowledge, as opposed to instantaneous actions, subsequently causing the formalisation of stages. Montfort *et al's* (2012) contribution consolidated the models use as a framework to raise awareness of how best to improve the filtering of innovations throughout a social system. Hence, rendering it pertinent to the current study as this falls in line with the applied aim of the study.

Despite the widely agreed structure and organisation of the Innovation-Decision Process, researchers have not stopped examining and extending its understanding and use within a variety of contexts. To this end, a study from Harting *et al* (2009) utilised the Innovation-Decision Process to examine adherence among physical therapists to new procedural guidelines. Of importance to the current study was their conclusion surrounding the organisation of the process as opposed to its content. Specifically, Harting *et al* (2009) noted the process as being framed into two phases; cognitive and behavioural. The first two stages of knowledge and persuasion were combined to represent the mental processes involved in diffusion, characterised by dissemination through communication channels as previously discussed. The final three stages (decision, implementation and confirmation) were documented as being behavioural based phases which represent the adoption process characterised by facilitators (Harting *et al* 2009). Decision was placed in the behavioural aspect but the study failed to state why. They did however, continue to report that in these latter three stages positive contact experiences with the innovation facilitated the diffusion process whilst perceived emergent barriers were said to impede widespread adoption. Harting *et al's* (2009) study was of significance due to its recognition between cognitive and behavioural phases of the model which Rogers (1962) failed to consider as such differences could allow deeper insights into the diffusion and adoption of sport psychology and the driving forces behind the process.

#### **2.4.3.4 *The Knowledge Stage***

The initial stage, knowledge, deals with learning of the innovation's existence and gaining an understanding of its function (Metzler *et al* 2008; Patogo *et al* 2007; Rogers 2003). Further to this, an innovation is not merely just about discovering new

knowledge. A product or service can still be classified as an innovation if the potential user has awareness of its existence but yet to have formed a favourable or unfavourable attitude towards it (Rogers 2003). Peterson (2010) advanced that participants become aware of an innovation either by chance or due to the need to solve an issue as previously noted by Rogers (2003). Additionally, research by Lennon *et al* (2007) and Patogo *et al* (2007) has defined the need to determine the characteristics of the user so that suitable statements regarding the innovation can be systematically provided in order to allow the user the opportunity to develop adequate evidence of the innovation specific to their needs and circumstance.

Rogers' (2003) examination of the literature draws attention to inconsistencies surrounding the user at this stage as to whether they are passive or active in seeking out the required information which, he further noted, could be due to the variety of domains in which the subject has been previously investigated (education/nursing/communication). Consequently, he noted that an individual's predispositions, individual characteristics and the individual's need for change could influence what is called selective exposure (the tendency to take on board certain messages that are being communicated) and selective perception (which refers to the tendency to interpret the communication either positively or negatively). These in turn, impact upon the potential user's ability to 'see' the innovation when it is put in front of them (Rogers 2003). Leading on from these considerations, Pagoto *et al* (2007) noted that at this stage of the process misconception is often a significant barrier due to the need to integrate the potential decision maker's values and beliefs, professional judgements and an evidence base. However, they do note that such a barrier can be facilitated at this stage by increasing the availability of information and training surrounding the innovation perhaps through the use of a change agent.

#### ***2.4.3.5 The Persuasion Stage***

By this second stage the user forms an attitude towards the innovation which is either favourable or unfavourable, thus, desirable or undesirable (Metzler *et al* 2008) which Rogers (2003) refers to as the Taxonomy of Innovations. It is this attitude or belief regarding the innovation which ultimately controls further actions and decisions (Lennon *et al* 2007). Pagoto *et al* (2007, p.697) have suggested that the success of this

stage is reliant on the individual actively seeking information in order to ‘better understand the innovation and its compatibility with their available resources’. The interconnection with the perceived characteristics (Chapter 2, Section 2.3.2) of compatibility was also recognised in the work of Peterson (2010). In his study of art therapy, he also noted compatibility under the persuasion stage but went further than Pagoto *et al* (2007) when making the explicit link to the perceived attributes of innovations (as discussed earlier). Furthermore, he found that a host of factors that affected the process of diffusion were also associated with persuasion. Specifically, Peterson (2010) reported that those with previous experience of similar products were not only faster to adopt the innovation but also moved through the persuasion phase at a faster rate in comparison to those with no prior experience. Such findings could have important implications for the adoption of sport psychology by coaches and thus needs closer examination in this context.

Unlike Rogers (2003), Pagoto *et al* (2007) documented the barriers associated with this stage as being those of lack of available materials and resources as well as the disinterest of the potential user in implementing a new idea or concept. In sport psychology, this could equate to the coach having no interest in the integration of sport psychology into their practices perhaps due to lack of accessible resources. Continued exposure, through facilitating factors such as tutorials and workshops which highlight the relevance and tools which can be easily implemented into current practices, is therefore of key importance (Lennon *et al* 2007; Pagoto *et al* 2007). Thus providing insights into Rogers (2003) previous statement that this stage is psychologically demanding as it involves cognitive interpretation of messages.

#### ***2.4.3.6 The Decision Stage***

At this stage, actual participation in activities or indeed experiences, that lead to a choice or decision to accept, reject or postpone the adoption of the innovation, is said to occur (Lennon *et al* 2007; Metzler *et al* 2008). The work of Patogo *et al* (2007) takes this decision-making process further and positively distinguishes between four categories of decision or cognitive processing in relation to the possible outcomes, thus placing this stage in the cognitive not behavioural phase as discussed earlier:

1. Optional choices are, according to many researches (Anderson and Whall 2013; Holt and Ryan 2012; Rogers 2003; Schleien and Miller 2010), made by individuals independently of others who operate within the social system. They are however, influenced by the norms of the system (Rogers 2003).
2. Collective choices which are decided by group consensus (macro social systems which in the current study of athletics would be a club's committee).
3. Authority choices are made by those in power which in the study at hand would be England Athletics.
4. Contingent choices are finally made during the transition to adoption and thus in the current study could represent confirmation of a previously made decision.

In line with the work of Rogers (2003), Patogo *et al* (2007) suggested that these decisions or choices lead to three possible outcomes: acceptance (i.e. using and implementing the innovation), rejection, which can occur at any point and for a variety of reasons which were not noted within the study, and postponement whereby the individual simply puts the idea on hold. They concluded that these decisions allow for the evaluation of the possible outcomes thus providing insights into the decision-making process. Further to this, and more recently in his discussion of the Innovation-Decision Process in art therapy treatment, Peterson (2010) found that an innovation was either rejected outright or the potential adopter engaged in activities which assisted them with the adoption but once again failed to discuss what these activities were.

An alternative perspective of the decision stage concerns the construct of symbolic adoption, otherwise known as latent adoption. It is thought to be concerned with the acceptance of a concept but that such acceptance did not automatically result in behavioural outcomes (implementation). In this regard, previous studies operated under the premise that rejection was based upon negative perceptions from the previous stage (persuasion). However, according to Nelson (2012) some knowledge merely becomes embedded thus leading to lack of engagement which is commonly referred to as

obliteration. Thus, coaches not consciously deliberating over their level of conscious engagement does not necessarily equate to a negative outcome (rejection).

#### ***2.4.3.7 The Implementation Stage***

At the implementation stage the adopter acts upon their decision from the previous stage (Lennon *et al* 2007). Rogers (2003) postulates that if the innovation is put into practice then the implementation stage has occurred, causing a change in the process from a mental activity (thinking about it) to an overt behaviour or action (Metzler *et al* 2008). Rogers (2003) has indicated that logistical issues must be overcome to induce this stage and ensure the longevity of the innovation. However, he further stressed that many users will re-invent the innovation whereby they will change it to suit their own practices, particularly, when the area is complex or knowledge is limited and this in itself can lead to change (Metzler *et al* 2008; Patogo *et al* 2007). Similarly, Peterson (2010) noted that at the implementation stage adopters determined how they could make use of the innovation which interestingly in their study meant that art therapists moved on to confirm their use of the innovation, but provided no narrative as to how this occurred. Explanation could be sought through the earlier study from Pagoto *et al* (2007) who suggested that it is at this point in the process that external experts (change agents), who are well trained could be brought into the social system via gatekeepers, in order to ensure the innovation is incorporated appropriately into everyday use. Research does however, need to examine whether a qualified sport psychologist could undertake this role within the athletic setting.

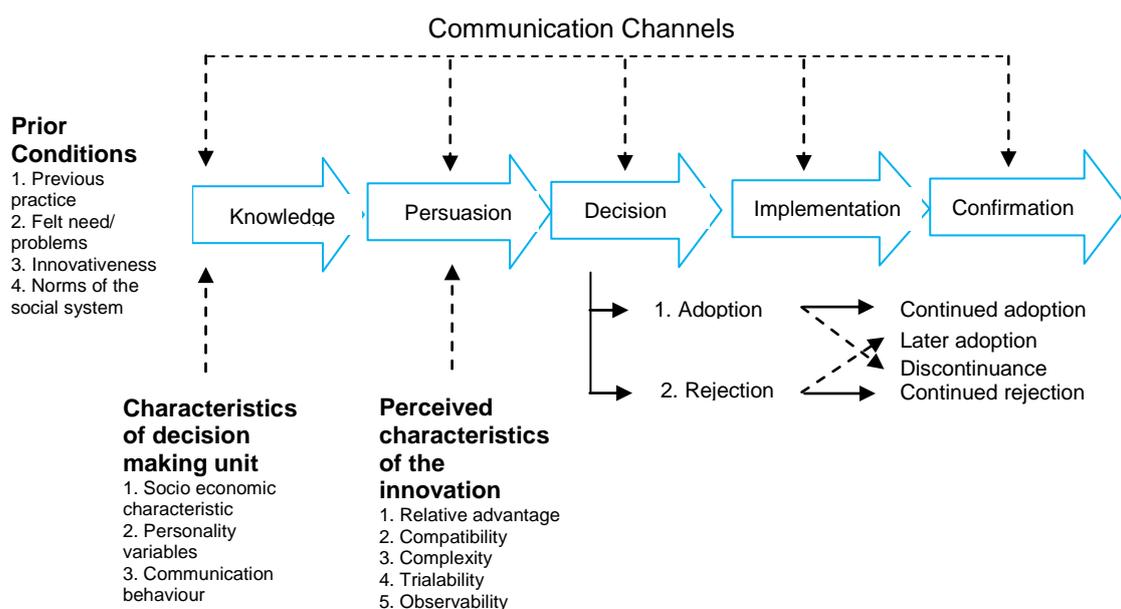
#### ***2.4.3.8 The Confirmation Stage***

At the final stage of the process users seek reinforcement of the decision that has been made through regular use and positive evaluations (Metzler *et al* 2008; Patogo *et al* 2007; Rogers 2003). Patogo *et al* (2007) established that three key points occur at this stage, 1) integration 2) assessment of the benefits and 3) promotion to others. Lennon *et al* (2007) reported confirmation as being a function of user satisfaction or dissatisfaction. Thus whilst adoption can occur equally, rejection of the innovation can be an outcome. According to Rogers (2003), the reversal of a decision made at an earlier stage occurs if conflicting messages concerning the innovation become apparent.

This is due to the individual's need to seek a state of homeostasis within their state of mind in order to stay within their comfort zone. Such reversal of behaviour is referred to as discontinuance and is often split into two distinct forms: replacement and disenchantment. Firstly, replacement deals with the rejection of the innovation so that a better idea can be taken on board. Secondly, Rogers (2003) describes disenchantment as resulting from dissatisfaction with the innovation. Reversal of a decision can thus occur if the barriers associated with this stage of the model are not addressed. Patogo *et al* (2007) reported the need to ensure change agents make resources and experts available to the setting in which they operate as user-friendly pertinent information can facilitate successful confirmation.

While the stages of the Innovation-Decision Process (as shown in Figure 2) are undisputed, Lyytinen and Damsgaard (2001) call for continued research due to a stagnation of perspectives surrounding the functionality of the model. Thus, alternative models of implementation could provide deeper insights into the translation of a theoretical model into one of applied practice which provides evidence-based processes for adoption of sport psychology.

**Figure 2.** Rogers (2003) Innovation-Decision Process



## **2.5 THE SYNTHESIS OF DIFFUSION AND SPORT PSYCHOLOGY**

### **2.5.1 Diffusion in Sport Psychology**

Diffusion of innovations research is common place within innovation, consumer behaviour and organisational behaviour literature (for example, Foxall 1988; Ridgway and Price 1994; Mullins 2008). Yet, few studies (Blinde and Tierney 1990; Ferraro and Rush 2000; Sullivan and Hodge 1991) have specifically attempted to highlight exactly how sport psychology as an innovation is diffused throughout the coaching domain. Thus the current literature base examines sport psychology in the context of practitioners but fails to go one step further and examine how information is transposed to the end user. This could be the result of first, an overemphasis within the existing sport psychology literature base on establishing a scientific evidence-base in the realms of academia. Secondly, sports scientists' failure to consider how best to market and 'sell' the advantages of their knowledge base beyond the academic domain.

Blinde and Tierney (1990) however, appear to have undertaken the only study to directly reference diffusion. In their study of 113 swim coaches, they quantitatively examined the process of how the ideas and techniques of sport psychology are filtered into elite-level coaches swimming programmes. They reported evidence that suggested many swim coaches were not being widely exposed to the ideas and concepts of sport psychology. However, unlike previous studies (Silva 1984; Gould 1990), Blinde and Tierney found that, once exposed, coaches did appear willing (receptive) to take it on board. This strongly indicates there may have been issues with the communication channels sport psychologists were using to implement ideas (Blinde and Tierney 1990). It further calls for a need to examine how coaches would like to receive information especially given that the research was undertaken 26 years ago.

The work of Martingale and Nash (2013) recently supported this view. Their work, examining UK coach perceptions surrounding the relevance and application of sports science, found that across four sports (football, rugby league, curling and judo) the transference of sports science knowledge to coaches was poor. They reported that ad-

hoc resources presented within the knowledge stage of the Innovation-Decision Process, mixed with an over use of jargon when contact was established, caused an abundance of barriers. These barriers emanated at the stage at which coaches gained knowledge regarding the subject.

Examining the diffusion of sport psychology is a relatively new area of research that has little depth in terms of quality or reliable results as only one paper directly discusses the concept of diffusion. Consequently, this study would offer the sports science domain new and original findings based upon theoretically sound concepts. At this point in time, with the ever-growing research base relating to psychological interventions, it is essential to investigate the current position of sport psychology within athletics because while some coaches are beginning to exploit the opportunity to utilise sport psychology, the literature base at present, focuses on the effectiveness of service providers (Anderson *et al* 2004), rather than what the subject can offer coaches and athletes alike. This could better inform those marketing the area of sport psychology how best to overcome such barriers (Ferraro and Rush 2000). Within the sport psychology literature, Blinde and Tierney (1990) have highlighted that there is a requirement for researchers to assess theoretical frameworks that could investigate the reasons which obstruct coach's use of sport psychology in order to overcome the current deficiencies within the literature.

## **2.6 BARRIERS TO THE DIFFUSION AND ADOPTION OF SPORT PSYCHOLOGY**

### **2.6.1 Existing Barriers towards Sport Psychology**

At present, in relation to the use and implementation of sport psychology an abundance of literature discussing barriers within the applied sport psychology setting has been identified (Anderson *et al* 2004; Blinde and Tierney 1990; Ferraro and Rush 2000; Giges, Petitpas and Vernacchia 2004; Heaney 2006; Lubker *et al* 2012; Martin *et al* 2002; Martin 2005; Pain and Harwood 2004; Pain and Harwood 2007; Woolway and Harwood 2015). However, little is known about how these barriers occur within the decision to use (adopt) sport psychology. Moreover, at present the barriers associated

with sport psychology have been examined in a segregated manner. Thus, barriers have been identified but the manner and extent to which these interact with each other have failed to be accounted for. To fully understand the adoption decision it is important to identify the barriers coaches experience if adoption of sport psychology as an innovation is to be widespread (Blinde and Tierney 1990; Pain and Harwood 2007).

### ***2.6.1.1 Attitudes towards Sport Psychology***

Petty and Cacioppo (1981) and Nadirashvilli and Nadirashvilli (2013) similarly define attitude as, an innate or learnt predisposition which is generally stable (albeit positive or negative) towards a person, object or social environment which has the ability to influence behaviours. Nadirashvilli and Nadirashvilli (2013) continue to explain that attitudes differ in terms of content and components along with the way and means in which these were formed. Thus, attitudes are concerned with knowledge and persuasion (the first and second stage of Rogers (2003) Innovation-Decision Process) and hence can affect the speed at which adoption of an innovation occurs.

Alternatively, Martin *et al* (2002) reported athletes' attitudes as a key influential factor. In a study examining male rugby players' attitudes towards sport psychology, Green *et al* (2012) more recently reported that the field of sport psychology was still facing many challenges. Explicitly, their interviews of a cross section of rugby players revealed the lack of 'buy in' to be the result of negative attitude formation. Moreover, the underlying properties contributing to such mind-sets were identified as stigma, culture and previous exposure. Echoing the previous conclusions from Anderson *et al* (2004), that if the uptake of sport psychology is to be increased sport psychologists need to better understand the attitudes and beliefs of those in decision-making positions. Green *et al* (2012) concluded that the players themselves had favourable attitudes towards consulting with a sport psychologist but felt that a significant barrier was in fact the negative attitudes of their coaches and the club's senior management's attitude towards sports psychology. Players reported that they would not engage with the subject if their coaches were not fully on board with the idea thus inadvertently highlighting the importance of the structure of the social system.

Anderson *et al* (2004) recognised coaches' negative attitudes towards sport psychology but reported this was not due to their own attitude as indicated in the work of Martin *et al* (2002) but more so due to the competitive level of their athletes. They hypothesised that those competing at higher levels of sport would have had more opportunities to engage with the subject and therefore would hold positive attitudes. However, results showed no significant differences between the attitudes of expert and novice athletes. Thus attitude formation was based upon assumptions rather than fact.

Evidently, previous research recognises attitude as a barrier to the use of sport psychology but, with little consideration of the extent to which it influences subsequent behaviour. The work of Green *et al* (2012) thus warrants examination. They introduced the notion that contributing factors vary in their strength of influential force thus playing a part in the interaction between attitudes and behaviours. Subsequently, of importance was the consideration that, as the strength of an influence changes so does a person's attitude formation, thus evidencing it is possible to adapt attitudes. This, Funk *et al* (2000), referred to as attitude strength and concerns the extent to which various attitudinal properties (stigma, culture and previous experience) are present. They went onto categorise attitude strength as being strong when the properties of attitude (stigma, culture and previous experience) have a greater impact on an individual's cognitive processes (perceptions) and social behaviour in comparison to those categorised as weak. In contrast Green *et al* (2012) reported, the strength of an individual's attitude is influenced by the structure as well as the number of underlying properties an individual possesses. They reported structure to consist of those properties which 1) independently, and at times collectively, contribute to the longevity of attitudes otherwise referred to as the persistence to last over time, 2) remain somewhat unchanged despite resistance 3) bias the nature and amount of thinking 4) guide behaviour thus making attitudes a predictor of engagement with an individual, object or issue thus making it an important concept within the current study (Petty *et al* 1995). Combined, such considerations (structure and underlying properties) are of relevance to the initial two mental stages of the Innovation-Decision Process as they influence one's receptivity to communication regarding new ideas.

Interestingly these conceptualisations of attitude formation and their recognised link with the barriers facing the field of sport psychology (Green *et al* 2012) are of use to

the current study. They aid in the identification of which underlying properties and structural relationships pertinent to coaches have contributed towards the formation of their attitudes. Subsequently, it is expected this will shed light on the cognitions and behaviours of individuals in relation to the barriers associated with sport psychology. This would as a consequence expand current knowledge on how and the extent to which barriers have been formed within athletics coaches.

### ***2.6.1.2 Perceptions of Sport Psychology***

An early study of perceptions within sport psychology conducted by Orlick and Partington (1987) revealed that there was a distinct lack of applied sport psychology in Canada where 98% of athletes called for greater availability of high quality psychological services if perceptions are to improve. This analysis concluded that Canadian athletes felt that the sport psychologists they had come into contact with had the knowledge and ability to pass on ideas that are of direct use to athletes, but more regular contact time with consultants was required. It was felt that this would minimise the divided opinions regarding sport psychology's usefulness and hence pointed to an increasing need for qualified, accessible sport psychologists.

The title sport and exercise psychologist in the UK became a protected term as a result of statutory regulation in 2009 which aimed to protect the general public against poor practice. In 2015 Woolway and Harwood examined whether the introduction of official titles does indeed impact positively upon end users perceptions of effectiveness. Results revealed that prior to educational vignettes explaining the differences between 1) protected titles, 2) training time and, 3) pre-requisite knowledge coaches reported professional title as being lower in importance than interpersonal skills and sport-specific knowledge but higher than athletic background. However, post intervention professional title became the most important practitioner attribute that affected the perception of the service provider. Such results support the call from Orlick and Partington (1987) to educate end users surrounding qualifications.

A recent study by Zakrajsek *et al* (2013) in the USA reflected the change in emphasis from athletes (the focus of Orlick and Partington's 1987 study) to coaches (the focus of Woolway and Harwood's 2015 study). They reported, more than 15 years on from

Orlick and Partington (1987) sport psychology is still yet to be fully integrated into the athletic setting despite its recognised use for performance improvement. They continue to argue that coach perceptions were an influencing factor upon uptake due to their significant role in the athlete's sporting life. Interviewing eight coaches they concluded that the psychologists training combined with their sport-specific knowledge impacted upon the coaches' perception of how useful psychology would be. From the coaches perspective this was because such factors were considered to be an important element of building trusting relationships which in turn affects how well they operate in the coaching environment. Perceptions are therefore thought to be internalised processes associated with the user's knowledge and thus the current research needs to establish the relationship between the knowledge stage of the Innovation-Decision Process and individuals personal factors that impact upon this as, according to Rogers (2003) and more recently Ashley (2009), prior exposure, socialisation, education and socioeconomic factors influence potential users knowledge in terms of depth of quality.

In the same year as a study by Zakrajsek *et al* (2013), a parallel study was being undertaken in the UK by Martingale and Nash (2013). They investigated coach perceptions of sports science as opposed to specifically discussing sport psychology and found that the 58 coaches interviewed varied in their perceptions regarding the usefulness of the sports psychology element. This was suggested to be due to it only being relevant to the elite sport setting and thus not of use to their athletes. The study also implied that coaches felt sports science in general was something that athletes would use as opposed to something that coaches embedded into their own coaching behaviours. Consequently, sport science was viewed as a "bolt on" when performances went wrong, as opposed to being an integrated aspect of training. This was said to be due to coaches' lack of understanding of the process of integrating sports science.

Utilising the Innovation-Decision Process (Rogers 2003) as a vehicle for breaking the process of change into distinct phases could overcome issues associated with sports science as discussed in the paper from Martingale and Nash (2013). Interpretations of the sports science domain could offer new tools for the application of knowledge. Specifically, the paper evidenced there was room for exploiting the perception that experts were a by-product of elite sport because evidence suggested that integration into a multi-disciplinary team was, at present, not often achieved as there was a gulf

between what coaches believed the sports scientist would do and what they actually did. Coaches did however recognise the need for the specialists as they reported that current education courses failed to cover the subject (Blind and Tierney 1990; Daley 2016; McNab 2014; Werthner and Trudel 2009).

### ***2.6.1.3 Resistance to Change***

Resistance to change has been widely discussed in the behavioural change and innovation literature (Rogers 2003; Mullins 2008). This concept evidences overlap in thought processes between the fields of enquiry pertinent to the current study. Resistance to change cannot therefore go unmentioned, particularly as much of the research surrounding the use of sport psychology discusses the reasons for resistance to sport psychology (for example, age, gender, and perceptions). Cole's (2011) meta-analysis of articles related to athletes' resistance to sport psychology identified what he referred to as a paradoxical discrepancy in use, as athlete's recognised the importance of sport psychology but, due to social stigma, athletes believe they will be labelled as not being made of the right stuff if they require psychological input resulting in resistance to use. However, fear was found to be the main driving force behind resistance, specifically fear of feeling vulnerable and analysed when speaking with sport psychologists and being labelled as mental. However, he failed to examine the facilitators for overcoming such barriers thus leaving gaps in the research. Thus, in order to increase the likelihood of eliminating or negotiating these reasons for resistance it should not go unnoticed that at present, sport psychology research fails to categorise or conceptualise reasons for resistance into meaningful groups. Such actions could allow them to be analysed in order to determine and prioritise the factors to be dealt with and at what stage of the diffusion process they occur. In support, Ferraro and Rush (2000) who used a small quantitative sample to examine athletes' reasons for resistance concluded that fear of humiliation overrides athlete's need for sport psychology. Consequently, service providers need to better understand how to create psychologically safe environments.

### ***2.6.1.4 Lack of Sport-Specific Knowledge***

Sport specific knowledge of sport psychology is a further issue commonly identified within the research base (Michel 2013; Orlick and Partington 1987; Pain and Harwood 2007; Ravizza 1988). Early work by Ravizza (1988) was amongst the first to reveal lack of sports-specific knowledge by the receiver (coaches) as a significant barrier to use. Recently, Michel (2013) suggested this was due to athletes being the ultimate user but coaches being the person responsible for hiring sport psychologists in the USA.

Providing deeper insights into the reasons as to why lack of sport-specific knowledge is an important line of investigation, in line with the work of Orlick and Partington (1987), Ravizza (1988) proposed that knowledge was essential for gaining access, trust and working effectively with coaches. Later work by Ravizza (1990) linked negative connotations and lack of knowledge together when he revealed that if psychological concepts were not fully accepted or understood they were more likely to be associated with the term psychiatry and thus ‘shrink’. More recently, Kremer and Marchant (2002) also raised lack of knowledge as a factor which impeded the successful integration of sport psychologists. Pain and Harwood’s (2007) study of the knowledge and perception of sport psychology of 56 academy directors, coaches and national coaches’ in soccer found that their lack of knowledge posed the greatest barrier to sport psychologist’s entry into the sport. This was a notion supported by Barker and Winter (2014) in their qualitative study involving 8 coaches which found that coaches shy away from subjects in which they lack knowledge. Unfortunately, this timeline of research evidences a lack of progression from the 1980s, referred to as the golden era of sport psychology (Biddle 1989), to now within the field of applied sport psychology. Of key importance is to establish whether identifying facilitators could allow this barrier to be dissolved.

#### ***2.6.1.5 Coach Awareness of Sport Psychology***

According to Vernacchia (1992, p.1) sport science is an essential part of ‘facilitating athletic performance’. Vernacchia goes on to highlight that while athletics coaches are acutely aware of this importance many coaches need to keep better pace with the growing necessity to provide coaching programmes that are based in, and grounded on, a more scientific knowledge base. In conclusion, he postulated that such actions would enhance the effectiveness of coaching practices. However, in line with the work of Blinde and Tierney (1990) who examined the awareness, receptivity and use of sport

psychology of 113 swim coaches he did recognise that there are some coaches who, at that time, were beginning to seek the services of sport science practitioners. This they suggested was in an attempt to integrate specifically applied sport psychology into training programmes (Vernacchia 1992). But no follow up studies addressing diffusion or the current day rate of adoption of sport psychology have been published.

Recently, Woolway and Harwood (2015) examined coaches' awareness of sport psychology and specifically the training of sport psychologists in comparison to other sports science roles. They found that, in comparison to sports medicine specialists, nutritionists and clinical psychologists, sport psychologists were deemed to be involved in issues that had no redirect relationship to performance. As a result those with advanced degree level education and those without were operating equally within the sport psychology domain. This supported the previous findings of Lubker *et al* (2012) who examined 206 athletes awareness of service providers training. Results showed that those with prior exposure preferred service providers with advanced degrees, while athletes' with no prior knowledge or exposure reported that they were unaware of such differences in training. The regulatory bodies and service provider's alike need to better market their services as Barker and Winter (2014) concluded that enhancing professional credibility is essential if the field of sport psychology is to experience continued growth.

#### ***2.6.1.6 Negative Connotations***

Studies of American student-athletes by Butki and Andersen (1994) and Maniar *et al* (2001) have reported similar conclusions to one another. They both suggested that a critical area of concern is that of the lack of consensus surrounding student-athletes' willingness to take sport psychology on board was due to the negative associations drawn between psychology and psychiatry. Collectively, the work of Zaichkowsky (2006), Zakrajsek and Zizzi (2007) and Maniar *et al* (2001) all emphasise that despite the word 'sport', psychology is perceived to have greater similarity to mental health professionals, such as counsellors and psychotherapists, than coaches implementing beneficial interventions. As a result, athletes would rather seek help from a friend or family member when confronted with sporting issues.

Martin *et al's* (1997) study also recognised the stigma attached to seeing a sport psychologist. Taking a slightly different perspective however, they reported that athletes feel that coaches and team mates may stigmatize them or perceive them as being 'weak' or as having a 'problem'. Likewise, in 2002, Kremer and Marchant investigated the state of sport psychology in Australian Rules football. Producing similar findings they revealed evidence to support athletes' fears that it was the belief of many coaches that only 'problem athletes' needed sport psychologists.

#### **2.6.1.7 Finance**

A further factor which has been consistently associated with resistance to or a lack of openness towards, sport psychology appears to arise from factors external to the individual, as opposed to internal perceptions, attitudes or beliefs which align with stage two of Rogers (2003) Innovation-Decision Process. In their study of 311 undergraduate students, Komiya *et al* (2000) reported two interrelated barriers of low educational levels and cost. Specifically, monetary costs of investing in sport psychology due to a current lack of education in the area. Monetary costs were also raised as a concern in the work of Gould *et al* (1992). In their study of 44 American Olympic sport psychology consultants, lack of funding was reported amongst the problems most frequently experienced. They concluded that support from programme administrators was essential if long-term systematic services were to be provided. Findings from the work of Pain and Harwood (2004) echo such barriers. Relating to the cognitive phase of Rogers (2003) Innovation-Decision Process, Pain and Harwood (2004) utilised a mixed method research design to investigate the knowledge and perceptions of applied sport psychology by coaches and academy directors within English football. Similarly to the previous studies, they found lack of finance to be the highest rated reported barrier.

#### **2.6.1.8. Individual Characteristics**

Within sport psychology, gender, age and past experiences have been consistently reported in the literature (e.g. Blind and Tierney 1990; Martin *et al* 2002; Martin 2005; Woolway and Harwood 2015). With regards to gender, research (such as Anderson *et a* 2004; Addis and Mahalik 2003; Krane 1994; Mansfield *et al* 2005; Turkum 2005)

consistently report women as being more willing to seek help than men but there are negative connotations attached to much of the research due to the focus on ‘seeking help’ as opposed to performance enhancement.

Examining multiple individual characteristics, Woolway and Harwood (2015) recently discussed race, gender and attractiveness of the service provider. They noted consultants had very little control over such characteristics which was found to limit such lines of enquiry. Consequently, they focused on those characteristics which were deemed controllable. Interpersonal skills and professional status were hence deemed to be personal characteristics within service providers control and thus predicted these to impact upon the perceived effectiveness of interventions. Results evidenced an unexpected link between the controllable and uncontrollable factors whereby those with credible titles were rated more attractive and trustworthy thus changing not only the definition of attractiveness but also the antecedent factors surrounding negative attitudes. However, the study highlighted the issue with many existing studies in that while it evidenced dynamic inter-relations, meaning the authors spoke across multiple factors of interest, they did so in an isolated manner. Thus each characteristic was examined in turn and were not compared against one another.

Of importance to note is that much of the research concerning barriers associated with sport psychology is over ten years old and furthermore is contextually based (e.g. focused on student athletes, or focused on specific countries). Thus, the sport psychology literature base evidences a bias towards understanding barriers and how they impact upon the uptake of sport psychology. Thus, work needs to be undertaken to establish whether such barriers still exist and, if so, their impact on the use of sport psychology at different stages of the diffusion process and consequently the adoption decision.

## **2.7 CONCEPTUALISING BARRIERS**

### **2.7.1 Leisure Constraints Model**

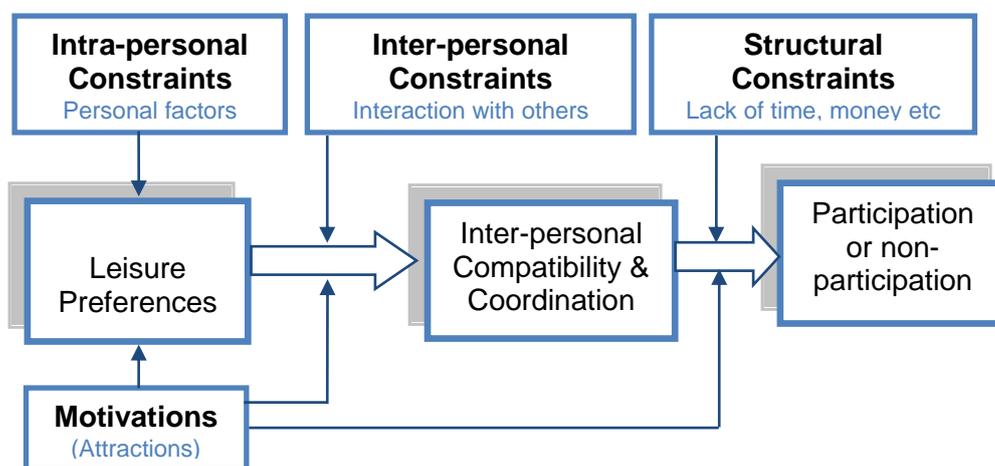
Following the identification of the existing barriers facing the field of sport psychology, the LCM could be used in a manner discussed by Jackson (2000) as a framework for barriers in order to assess their intensity and timing of impact. When synthesised with the diffusion of innovations, this will provide a theoretical thematic description of the barriers within each stage of the diffusion process (Colon-Emeric *et al* 2007) as called for previously by Blinde and Tierney (1990). This can offer a structure for the organisation and understanding of the current state of applied sport psychology in relation to the barriers or obstacles facing the field of practice. Borrowed from the wider leisure literature, as a classification system it can help establish which barriers pose the greatest constraint to the widespread use of sport psychology. Crawford *et al* (2010) suggest therein lies the strength of the model as it provides an integrated model and perspective of the barriers as opposed to addressing them in an isolated fashion.

Further to using the model for its overall structural strengths, part of the appeal of the model is its subtle use of terminology which sheds light on how to view and therefore understand the barriers being faced. Specifically, authors (Aslan 2002; Patterson 2001) discussing the LCM suggest barriers as being obstacles imposed upon an individual which are permanent, absolute and real. In contrast, constraints are limitations which can be negotiated by individuals as they are temporary, subjective and thus can be overcome. Importantly for the current study, the LCM goes beyond merely listing barriers and the subtle differences in terminology, according to Crawford *et al* (2010), allows for recognition of the antecedent factors from which the barriers and constraints originate making it possible to understand how they affect choices. This distinction between types of barrier and constraints allows for systematic understanding of when, why and how the barriers are likely to emerge, thus providing potential to facilitate the negotiation of the constraints.

Although labelled as a model (as shown in Figure 3 below), when conceptualising its components many authors use the term model interchangeably with of the word theory (Raymore 2002). The three levels or dimensions of constraint, namely, intrapersonal, interpersonal and structural have been identified. In support of its use in this study, the three dimensions of constraints presented within the model have previously been validated in the work of Raymore *et al* (1993) through the utilisation of confirmatory factor analysis. This is further supported by the work of Hawkins and Peng (1999,

p.202) who discussed the need for “testing and retesting” the elements in order to “prove its explanatory power in understanding human experiences” of barriers and constraint. Hence, the purpose of their study was to test the reproducibility of the three levels of constraints and subsequently the relationships between the constraints. The reliability and moreover robustness of the categories of constraint reported in their work may be of use to the current study as the barriers currently identified within the applied sport psychology field concerning the uptake of the subject lack systematic organisation.

**Figure 3.** Crawford, Jackson and Godbey (1991) Hierarchical Model of Leisure Constraint



Originally introduced in the 1980s by Crawford and Godbey (1987), the model outlines the factors which are assumed by the researcher, and/or perceived or experienced by individuals, to inhibit the formation of leisure preferences and/or to limit or prohibit participation and enjoyment in leisure’ (Jackson 1997). It was initially said to describe and explain the relationship between three factors 1) constraints, 2) leisure activity preferences and 3) resulting leisure engagement. Hawkins and Peng (1999) put forward that the constraints theory, in general, endeavours to explain human perceptions of experiences, but also called for legitimate definitions of key concepts in order to ensure the model remained robust in the scientific setting. In a further study Hawkins *et al* (1999, p.180) identified leisure constraints as being the reasons that are perceived or experienced as to why ‘an individual is inhibited in or prohibited from leisure activity’.

It is widely agreed (Godbey, Crawford and Shen 2010; Hawkins *et al* 1999; Hudson *et al* 2010; Raymore 2002; Samdahl and Jekubovich 1997; Schneider *et al* 2007) that extensions to the original model have occurred since its original inception in the 1980s. To this end, Hinch *et al* (2005) highlighted that, initially, the Leisure Constraints Model was recognised as a vehicle for better understanding of the barriers to leisure participation. However, Hudson *et al's* (2010) cross-cultural analysis examining motivations, constraints and constraint negotiation reported three major extensions to the original model. Namely, an increased understanding of the importance of constraints to people and their pursuit of leisure, secondly, an acceptance that constraints could in fact be negotiated. The third extension to the LCM occurred in the 1991 when the original authors, Crawford *et al* extended the model to recognise the relationships and intertwining of the constraints thus making the model hierarchal in nature. These extensions, according to Crawford *et al* (1991), allowed for an ordering of the process through which individuals negotiate their constraints from proximal (those closest to them) to distal (those far removed from them) in their importance. Combined, it was these extensions that led to the notion that constraints could actually be overcome through facilitating factors, thus allowing for actual participation (Liechty *et al* 2006). The extensions to the original model made way for new directions of research. Specifically, Raymore (2002) examined the positive facilitators to participation as well as the negative (barriers) influencers on leisure participation.

## **2.8 CATEGORISING CONSTRAINTS**

In 1987 Crawford and Godbey proposed three categories of constraint. The three categories were intra-personal constraints referred to as an individual's own beliefs and psychological characteristics (Raymore 2002). Inter-personal constraints are interactions between groups which influence the formation of preferences thus; interrelationships form the foundation of this category (Raymore 2002). Structural constraints are external, physical and social organisations that enhance or promote participation (Raymore 2002).

It was concluded that utilising the three tiered categorisation of constraints allowed for the reduction of barriers in terms of translating them into constraints and then reducing and eliminating them. Specifically, from their study of 178 students, which investigated constraints associated with involvement in adventure activities, they concluded that, individuals overcame intra-personal constraints only to be confronted by inter-personal and structural constraints. They also concluded that those constraints closest to the individual were easier to negotiate in terms of finding a way to get over them. Research by Hudson *et al* (2010) provided an explanation for this easier negotiation of intra-personal constraints by stating that whilst the three dimensions are hierarchal in nature, the decisions to engage in a particular activity are indeed a number of discrete acts.

Crawford and Godbey (1987) stated that these intra-personal constraints are influencers rather than determinants of participation and are thus not absolute barriers but more potential factors that deter or promote engagement in leisure activities (Godbey, Crawford and Shen 2010). Hudson *et al* (2010) similarly concluded the negotiation of constraints was a process which occurred at each level of constraint. Negotiation (looking for ways to overcome limitations) takes the form of the individual evaluating their experience of constraint and comparing the answer against the amount of motivation they had to engage in the activity. The level of success or failure they experienced whilst negotiating the previous constraint was found to influence their attitude formation. If the process was favourable the individual would decide to continue to negotiate the next level of constraints.

There is a building body of literature supporting the notion that the negotiation of constraints is possible by adapting to, or merely accepting, the present conditions in which the individual finds him or herself (Hudson *et al* 2010). Whether that be overcoming problematic situations, avoiding constraints or coping with constraint. Such suggestions fall in line with the previous work of Little (2007) who suggested that constraint negotiation can occur when individuals can see a resolution.

Despite the possible negotiation of constraints, Raymore (2002) suggests that many individuals will still fail to participate in leisure activities despite an absence of constraints. According to Jackson (2000), this is due to an individual's freedom of choice which occurs at the intra-personal stage. In support, Samdahl and Jekubovich's

(1997) qualitative study of 88 adults reported the concept of choice as being one of two (enjoyment, being the other) key factors that influences participation versus non-participation in leisure activities. Thus, choice and the factors influencing this is what makes it appealing as a vehicle for developing an understanding of the issues within the applied sport psychology field in terms of explaining participation and non-participation in a particular activity. This offers new insights into the reasons for accepting, rejecting or postponing the adoption of an innovation thus transferring to the decision stage of the Innovation-Decision Process.

Consequently, the sequential flow or hierarchal nature of constraints will be examined within the coaching context as it has been found that participation is not solely reliant on the absence of constraints but also on whether or not individuals can negotiate their way successfully through those that exist. This will notably affect the individual's desire to change their current behaviour (Lewin (1947). These are important propositions for the current research when trying to understand coaches' decision-making process as to whether or not to adopt and integrate sport psychology. Thus, the diverse range of factors which prevent individuals from engaging in activities in relation to the Leisure Constraints Model have been well tested in a variety of fields from leisure and recreation to travel (Kimm 2009) but to date not in the field of sport psychology.

### **2.8.1 Intra-personal Constraints**

Intra-personal constraints are acknowledged as the first level of constraint (Raymore *et al* 1994). Researchers (Crawford and Godbey 1987; Walker *et al* 2007) suggest they deal with the individual's preferences which are thought to emerge from psychological attributes and qualities. They include, personal needs (whether or not the coach feels they require training in the area of sport psychology), prior socialisation (have they previously come across the subject area directly or indirectly?) and perceived group attitudes (is sport psychology an accepted norm within the coaches' social system?). With regards to Rogers (2003) Innovation-Decision Process these constraints map across to the prior conditions that predispose individuals to engage with the diffusion process thus affecting initial decision-making choices.

Walker *et al* (2007) stated that to date, few studies had examined the specific personal factors that affect the development of likes and dislikes. This has led to the exclusion of individual psychological factors within many psycho-social models yet these can influence actual behaviours (Walker *et al* 2007). Schnieder and Wilhelm Stanis (2007) argued against this point when they stated that these constraints can be overcome through synthesizing ‘the best available evidence’ (Colon-Emeric *et al* 2007, p1404).

Extending knowledge of constraints, and the identification of factors leading to intra-personal constraints, researchers have placed these intra-personal barriers on a continuum as they are considered the underpinning or antecedent factors affecting initial decisions (Hawkins *et al* 1999; MacDonald and Murphy 2008). This they argued was to represent the typology of decision-making and stimulate choice. The results of MacDonald and Murphy’s (2008) study revealed antecedent factors led people to form opinions, and hence beliefs, that certain activities are, for example, interesting or boring, appropriate or inappropriate. It is these they suggest, that determine whether activities are barriers or constraints, thus linking to the notion of attitudinal strength (as discussed in Chapter 2, section 2.6.1.2).

Widely accepted examples of intra-personal constraints are recognised as being, gender differences, personality, expectations, stress, perceived skill levels or belief in levels of competence, and prior socialisation (Albayrak *et al* 2007; MacDonald and Murphy 2008). Albayrak *et al* (2007) suggested that prior socialisation often contributed towards participation even if constraints are present. Furthermore, they found a significant difference between those partaking in rafting activities and those who had not in relation to previous experience. In a similar vein, in their assessment of the LCM, Godbey *et al* (2010) suggested that individuals are constrained by their own evaluations of two factors, appropriateness and availability. Therefore, prior socialisation could be said to influence the individual’s evaluations.

In contrast, a study by Hudson *et al* (2010) reported culture to be a stronger predictor of engagement in down-hill skiing than that of prior socialisation. Moreover, their findings supported the three tiered approach to constraints when they found that individuals initially overcame intra-personal constraints before confronting that of inter-personal and structural constraints. How they negotiated constraints did however vary. They

reported some participants utilised inter-personal relationships to gain and access, information and knowledge. Others were found to seek out ‘comfortable learning environments’ along with ‘finding friends with whom they could participate’, thus evidencing the intertwining of constraints and hierarchal levels (Hudson *et al* 2010, p.81).

### **2.8.2 Inter-personal Constraints**

In contrast to the internalisation of the intra-personal constraints, inter-personal constraints are thought by White (2008) to be social factors which form as a result of external interactions. Thus, it is widely agreed, they are related to the barriers which emerge as a result of relationships, interactions and animosities amongst or in between individuals (Hawkins *et al* 1999; Liechty *et al* 2006; MacDonald and Murphy 2008; Parker 2007; White 2008). Therefore, finding someone, whether it be friends, family or strangers, to undertake the activity with you directly (whereby, they partake in exactly the same activity), or indirectly (whereby they support participation), affects negotiation of constraints at this level (Hawkins *et al* 1999; Raymore *et al* 1993; MacDonald and Murphy 2008).

Hawkins *et al* (1999, p.182) reported inter-personal constraints are “relationship driven”. Consequently, the role of others and the extent to which these others can exert influence is a key consideration thus could be consequential at the decision stage of Rogers (2003) Innovation-Decision Process as a result of those barriers at the persuasion stage and whether or not they were negotiated. Hence, at this stage there is an issue of control or freedom to decide upon leisure activities as this is being influenced more by the opinion leader’s perception of the activity. Specifically, MacDonald and Murphy (2008) suggested that this influencing factor of choice may be affected by a spouse or indeed not having anyone to participate with. In the sporting context may concern whether others in authority influence the level of choice.

### **2.8.3 Structural Constraints**

The most commonly identified form of constraint, according to Jackson and Scott (1999), are those which are structural in nature as they often constitute opposites in that

a facility either exists or does not exist (Raymore 2002). Thus, a coach might wish to train on a track but if one does not exist in their area they cannot train on the track. This in turn, causes secondary issues or barriers which, within the current example, would be travelling to an athletics track. Hence, structural constraints are those which interfere with a person's preferences and actual participation: for example lack of time, income, cost and inadequate facilities (Albayrak *et al* 2007; Hinch *et al* 2005; Schnieder *et al* 2007).

Additionally, other variables that were identified as being influential were demographic factors such as age and whether or not leisure participation is a normalised part of the families' weekly activity. Godbey *et al* (2010) referred to this in and their assessment of the current status of the hierarchal leisure theory as being part of the culture. Specifically, they found that culture (otherwise referred to as the contextual environment), moulds an individual's constraints due to humans being highly social. Humans typically form social groups, commonly referred to as 'social systems' within the Diffusion of Innovations (Rogers 2003) thus aligning the models. These have laws, rules and norms of behaviours and thus affect the development of the group itself due to the emergence of a group culture.

To negotiate structural constraints, these norms require consideration as the strength of the norm varies depending on whether the cultural norm is a requirement. For example, going to church on Sunday, which they categorise as being either 'constraint imposed' or a 'voluntarily internalised cultural norm' (Godbey *et al* 2010, p.122). Such considerations will need to be investigated in the athletics culture as athletics club committee members could impose sport psychology upon the coaches whilst others have the freedom of choice to voluntarily integrate it into their practices. This element of an externally imposed constraint led Albayrak *et al* (2007) to suggest that structural constraints could be a major deterrent for actual participation. To this end, Kimm (2009) goes on to note that if structural constraints are present they are the most difficult to overcome due to their antecedent cause being out of the individual's direct control.

In summary, the LCM comprises of three levels of hierarchy relating to firstly an individual's internal barriers. Secondly, interpersonal constraints which can be referred to as external barriers as experienced by individuals. Finally, structural constraints that occur as a result of the social system in which the individual operates and thus are also considered to be external. Due to the model's recognition of the barriers emanating from various sources, it has the potential to add to the existing literature about sport psychology as it could provide a systematic framework for the categorisation of the barriers facing the field of sport psychology in terms of uptake. In addition, critics of the leisure constraints field disagree with the categorisation of factors affecting an individual choice of leisure. However, Jackson (2000) argues that this categorisation approach has driven the field forward as it has allowed the development of insights which, if were to be replicated in the understanding of the influences on the uptake of sport psychology, could yield similar results and hence developments.

Accordingly, there is a need to establish what the current barriers facing the coaching field in relation to the adoption of sports psychology are. Furthermore, exploration of the antecedents to the barriers could allow for better understanding of their impact on coaches.

## **2.9 SYNTHESIS OF MATERIAL; CONCEPTUAL FRAMEWORKS**

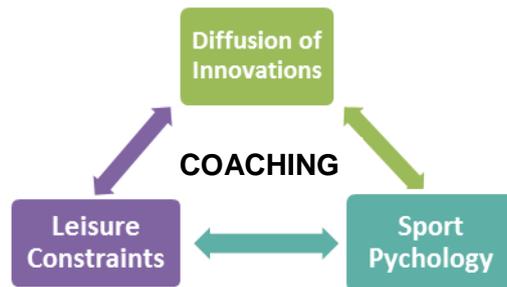
In order to make an investigation meaningful and worthwhile, concepts and theoretical frameworks can provide a means for clarification of information (Wardell 2009). Furthermore, Hinch *et al* (2005) claims that adapting theories which have been well established and utilised in alternative realms, helps drive fields of practice forward in terms of uptake and use of innovations. This they claim is because they can provide useful insights in order to gain valuable information as to why in this case athletics coaches behave in particular ways with regard to their exposure, receptivity and implementation of sport psychology. Consequently, the synthesis of information from a number of theoretical domains (diffusion, coaching, sport psychology leisure constraint and knowledge transfer, Figure 4) provides a unique opportunity to add to the current

knowledge base as previously the concepts within these areas have been investigated independently from one another.

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**Figure 4.** Synthesis of theoretical subjects

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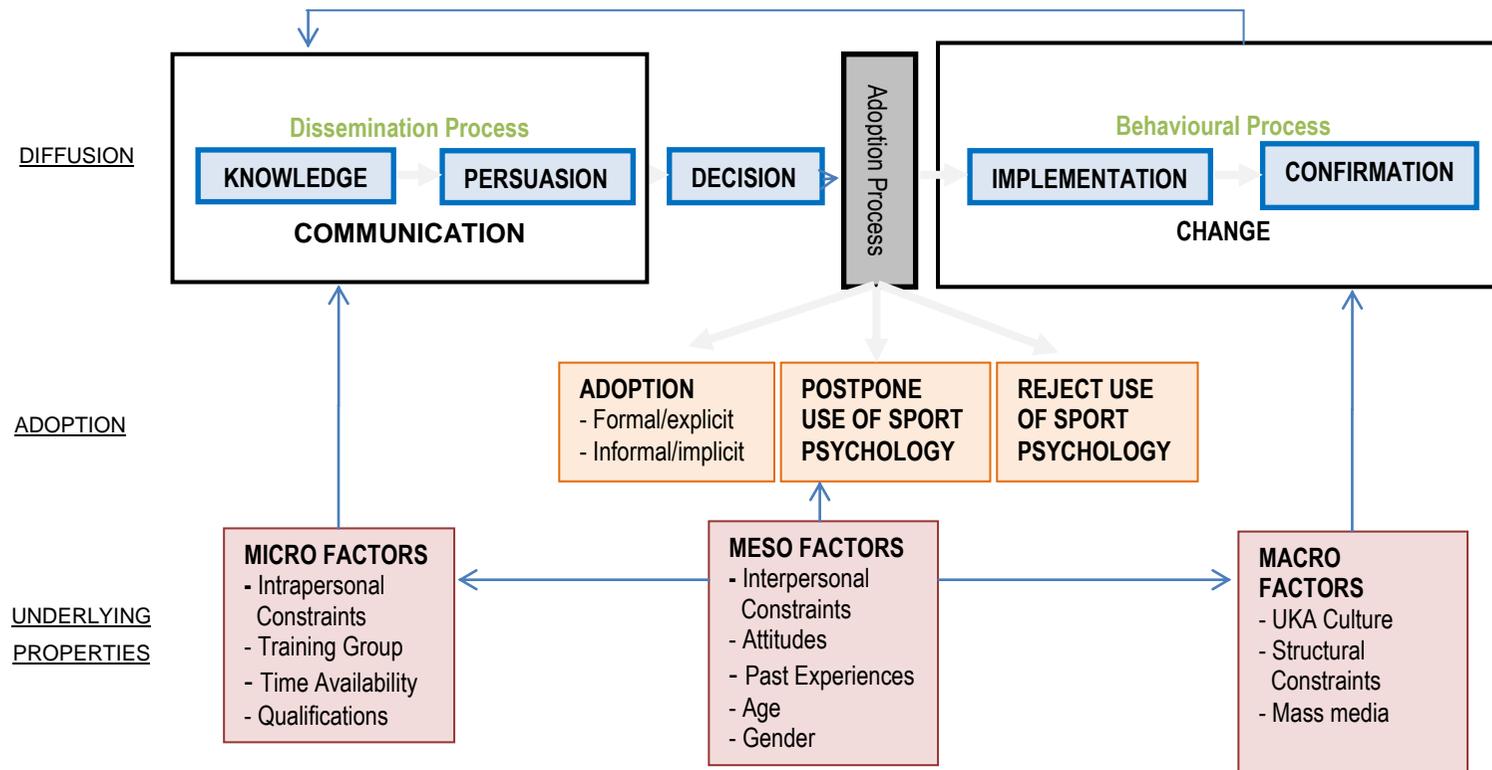


One such example is the application of the diffusion and adoption concepts to sport psychology which to date has not been done. Thus, applying diffusion of innovations to sport psychology is the overall contribution to literature but to do this effectively requires a greater synthesis of other areas such as knowledge transfer, management change and leisure constraints which allows also for a number of smaller contributions to knowledge. Holistically, this will allow the industry to operationalise the diffusion and adoption process and utilise it across the field of sport science. The theoretical framework below (Figure 5) demonstrates how one could view the influences and relationships between theoretical domains thus pulling together contributing theory in a way that has not been done before.

Many similarities and indeed overlaps between the models can be drawn, both conceptually and contextually. Consequently, in order to ascertain an appropriate framework for examining, the process of diffusion and adoption of sport psychology, elements of each model require investigation. Whilst the Innovation-Decision Process serves to provide a structure for the diffusion process and adoption of new ideas, it also explicitly acknowledges the importance of communication channels and implicitly the

structure of the social system hence introducing the concepts of change, and motivation.

**Figure 5.** Theoretical Framework for the guidance of data collection



Rogers (2003) Innovation-Decision Process will thus be utilised as the theoretical basis of the current study as it allows for the integration of a number of theoretical constructs from other models. This offers opportunities to gain deeper understanding of the dynamic processes and determinants which might impact upon the process of diffusion and adoption of sport psychology. As a result, in line with the rationale from researchers (such as Lin *et al* 2007; Meyer 2004) the current study will utilise the Diffusion of Innovations Theory to gain better insights of coaches process of diffusion in order to be able to enhance future developments of sport psychology within the athletics coaching domain.

## 2.10 CHAPTER CONCLUSION

The current study is specifically concerned with the exploration of the diffusion of sport psychology, as experienced by athletics coaches: the aim being to increase understanding of the factors influencing the diffusion process, and adoption of sport psychology. Thus, while coaches' perceptions of, and attitudes towards sport psychology have been widely examined, the manner through which these perceptions and attitudes are formed has, to date, been neglected. Hence, at present there is no understanding of why or how perceptions and attitudes are formed in this area and the extent to which they influence the uptake of sport psychology. The study therefore aims to explore the process of diffusion of sport psychology and its adoption by athletics coaches.

This chapter has reviewed the literature base surrounding The Diffusion of Innovations in relation to factors which could guide efforts to increase the adoption of sport psychology. Within the field of applied sport psychology it is evident that current research (Gould *et al* 1992; Maniar *et al* 2001; Pain and Harwood 2004; Zaichkowsky 2006) merely reports the various barriers to uptake. No studies have been identified as being concerned with attempting to examine and categorise the process of why or specifically how the obstacles and barriers occur. Therefore, the methodology of the current study will look to seek insights toward the understanding of the issues facing the sport psychology domain. There is no doubt that understanding of coaches Innovation-Decision Process and the barriers or facilitators associated within this is needed.

The synthesis of information from a number of theoretical domains (e.g. diffusion, leisure, constraint and coaching learning), provides a unique opportunity to add to the current

knowledge base as previously the concepts, specifically within these areas, have been investigated from a linear perspective. Thus, it appears that many studies examine diffusion or adoption rather than the interaction between the two concepts which will thus be imperative within the methodology of the current study. Examination of the literature revealed that across research domains the application of the diffusion of innovation concepts (including adoption) to the uptake of sport psychology has not been undertaken. Thus, applying diffusion to sport psychology is the overall contribution to literature but to do this effectively requires a greater synthesis of other areas such as knowledge transfer which allows also for a number of smaller contributions to knowledge. Holistically, this will allow the industry to operationalise the diffusion and adoption process and utilise it across the field of sport science.

In order to meet the aims of the study, the stages of the Innovation-Decision Process will thus be the central body for the remainder of the investigation. It is important to explore, whether athletics coaches have specific barriers within a particular stage of the process so that facilitative interventions for increasing the Diffusion of Innovations can be put in place.

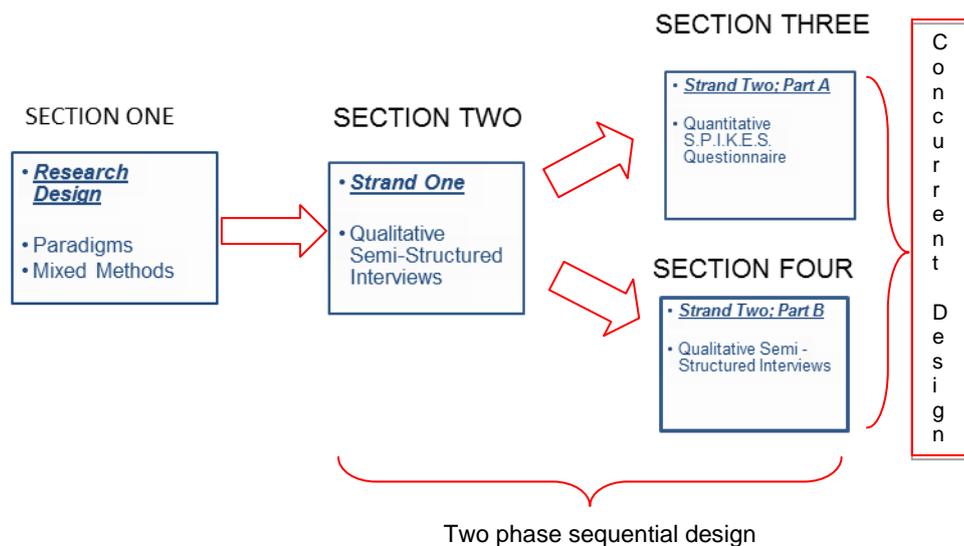


## CHAPTER 3 - METHODOLOGY

### 3.1 INTRODUCTION

This chapter details the chosen research design adopted to fulfil the objectives of the research. The chapter consists of four main sections (as depicted in Figure 6 below). The first section details the underpinning methodological stance of the research study, specifically discussing the overarching research design and explanation of the multi-strand, mixed method design. The subsequent sections outline each phase of the mixed method design. Specifically, section two incorporates the sequential design which was initially (phase 1) qualitative exploratory semi-structured interviews designed to inform phase two the concurrent mixed method design. Thus, sections three and four of the methodology address concurrent design (phase 2) and entail two strands which consisted of a quantitative survey of coaches' diffusion of sport psychology (section three) and a qualitative semi-structured interviews addressing coaches who hold different roles within the social system adoption of sport psychology (section four).

**Figure 6.** Structure of the methodology chapter 3



## 3.2 RESEARCH DESIGN

Denzin and Lincoln (2000) suggest research designs encompass four key characteristics; axiology (the role and place of values and ethical behaviours within the research, Mertens 2015; Ponterotto 2005), ontology (the nature of reality, Mertens 2015), epistemology (nature of knowledge, Mertens 2015) and methodology (the systematic approach to research, Mertens 2015). Alternatively, Guba (1990) reports only three characteristics yet attaches similar meaning to each; ontology (deals with our nature of reality or what meaning one gives to the world, whether it be objective or subjective, to be discussed in more depth later). Epistemology, referring to knowledge and ones relationship with such knowledge (are we within it or external to it). Lastly, methodology (concerned with establishing the best means, through which, to gain knowledge). In a similar vein to Denzin and Lincoln (2000), Crotty (1998) also described four hierarchal levels of thinking in relation to the research design, 1) the consideration of knowledge and what knowledge is possible, (epistemology), 2) the underpinning theoretical perspective which informs the philosophical stance or world view to be taken by the researcher, (ontology), 3) methodology dealing with linking the selected method and desired outcomes, 4) methods, which relate to the techniques selected to collect the data (Feast and Melles 2010). Alternatively, in line with Guba (1990), Taber (2012) recently suggested that research designs commonly comprise of just three parts 1) philosophical world views, 2) research strategies and 3) methods. Acknowledgement and deliberation of such discrepancies between lines of thought are of importance, as highlighted by the work of Taber (2012) which suggests, there is a need for coherence between framing the research question and the research to follow otherwise the procedures within the research design can lack direction.

Despite these important considerations, unlike the work of Guba (1990) who denoted three stages, within the work of Taber (2012) there was an apparent failure to consider how knowledge is acquired and the value of such knowledge. Crotty's (1998) perspective however, evidences the addition of such an initial first step in the development of a research design. Furthermore, he proposed the notion that meaning is not discovered but rather constructed through, the discovery of, firstly, knowledge and secondly, one's view of reality. Combined, Crotty (1998) denotes these constructs to ultimately underpin the

theoretical perspective which is where Taber's (2012) work begins. Thus, the current research project utilised Crotty's (1998) organising framework as it offered greater clarity than that of Denzin and Lincoln (2000), Guba (1990) and Taber (2012) for navigating a tightly structured and logical flow in the construction and overall process of the research design. Further to this, Crotty's (1998) perspective of the underlying philosophical stance of the researcher, and the establishment of instruments to be utilised in the fulfilment of the research objectives, additionally offers a pragmatic framework for the methodology.

### **3.2.2 The Theory of Knowledge and Existence**

With considerations from above in mind, both Crotty (1998) and Guba's (1990) initial point of consideration was that of the epistemology and ontology of the research design. Firstly, in relation to the epistemology, literature commonly recognises two competing perspectives surrounding the acquirement of knowledge. The initial perspective (positivist, to be discussed in section 3.3.2) implies that the researcher and participants within a study remain independent of each other and thus do not influence one another (Guba 1990; Mertens 2015). However, alternative researchers (post positivists) reject this belief and highlight a new belief system that suggests the researcher's prior background knowledge strongly influences what is observed within a study (Mertens 2015). Therefore standardised protocols are required in order to remove bias from a study (Mertens 2015).

The second construct labelled as ontology has previously been discussed by Morgan and Smircich (1980) who referred to it as the 'ontology of reality' whereby researchers at one end of a continuum (positivists) see the world as concrete; hence individuals are removed from human involvement in their material (the initial belief system discussed above). Within this viewpoint measures are taken in relation to causal relationships in order to explain the world through universal laws which govern behaviour. Variables are isolated and measured in an objective manner (Andrews *et al* 2006). Alternatively, the other end of the continuum (post positivists) denotes subjectivists and their set of assumptions which assume individuals create their own subjective reality and consequently address issues from a number of varying perspectives (Lunderg and Young 2005).

Due to these varying perspectives, to ensure the subsequent selected methodology is appropriate, and moreover consistent with the epistemological stance, ontological stance and the subsequent methods, Taber (2012) stated the importance of locating one's self within the research. Firstly, this is said to allow the researcher the opportunity to systematically study a particular research question in a valid manner. This was achieved in the current research project through the implementation of Crotty's (1998) four key characteristics which form what he describes as a layering of the research process whereby each layer or characteristic informs the next. Secondly, accentuating one's position in the research allows the reader to understand how to make sense of the knowledge acquired.

With regards to the current research project to better understand the coach's world of sport psychology the researcher utilised a broad methodological design to examine the processes and issues surrounding the subject matter at hand. As a result, the current work sits in line with the ontological view of inter-subjectivity whereby the researcher is aware of the varying realities of the coaches but like purists is also concerned with not only the actual state of reality but additionally the coaches understanding of their reality (Figure 7).

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**Figure 7.** The ontological continuum of reality

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This perception of the author's ontological stance recognises that coupling the polar opposites enhances the axiology of the research design but in turn influences their epistemological positioning (as mentioned above) in that within the current research project the author sought to establish a common understanding of knowledge.

Establishing a broad ontological and epistemological approach to the current research project allowed for an understanding of the inherent assumptions within the project (stated in section 3.3.1 below) and the decisions made thus leading to an appropriate design which was that of mixed methods (Gratton and Jones 2010).

### **3.3 CHOICE OF PARADIGM**

#### **3.3.1 Paradigm Wars**

Traditionally science based studies have been dominated by three labels which must be examined if an appropriate framing for the methodology is to be found. Each philosophy entails the beliefs underpinning how research data should be gathered (Krauss 2005). Depending on the methods adopted, the positivist philosophy uses a range of analyses which align to quantitative techniques. However, Remenyi and Williams (1996) state that debate exists over the use of the positivist philosophy in the social sciences due to its removal of the researcher from the study, given that the social sciences are characterised by interactions.

This give rise to alternative perspectives one of which was that of the interpretivist philosophy which Krauss (1996) suggests is steeped in personal meaning. In the 1970s there was a rise in qualitative methods which not only challenged the issue of what type of data was collected, but more importantly caused a shift in how people viewed, and thus made use of, research outputs (Plano Clark and Cresswell 2008). Additionally, according to Ryan (2008), the rise of the interpretivist approach, marked an important shift from positivism to post-positivism which also occurred in the mid twentieth century as a result of what Dwivedi *et al* (2009) called the positivist crisis. Importantly, while the terms hold similar names, the core notions attached to each fundamentally differ. Thus, while positivists suggest research should follow procedures in order to assure observations are verifiable, accurate and consistent, Denzin and Lincoln (2001) contend that post-positivists rely on the use of multiple methods due to the world not being concrete.

With the current research study in mind, it was apparent that the positivist approach had an important role in the establishment of influencing variables, patterns and relationships

(Gratton and Jones 2010). However, quantitative methods could not answer all questions surrounding the diffusion and adoption of sport psychology. It could provide generalisations regarding, for example, insights into the overall landscape of coach profiles, the type of psychology they use and want, along with the barriers they face. However, this left gaps in knowledge relating to explanations, such as why coaching profiles differ, or whether coaches want to use other types of sport psychology but do not know how. Thus, interpretivist research allowed the researcher to understand the cognitions causing barriers and what strategies could reduce their impact through examination of facilitating factors. This left opportunities for constructivists to investigate meaning and multiple realities (Creswell and Plano Clark 2007).

Consequently, the research must be explicit and clearly outlined to avoid confusion as according Creswell and Plano Clark (2007) this approach, absorbs the ‘boxology’ mentality of the paradigm wars. Furthermore, they suggest that research often swings back and forth between deductive and inductive works which is commonly seen within sequential research designs. However, this can be problematic in terms of reporting clearly and establishing a logical process. This represents a movement away from a single unifying perspective and more towards the use of many diverse theories as per the research at hand. Likewise, it aligns with the researchers positioning within the study as it believes it is better to start with pre-theoretical knowledge and self-understandings. Identifying the specific features of theories, methods and norms allows for the employment of a variety of methods and styles of explanation. Consequently, due to not seeking one single truth but rather the generation of new knowledge, the philosophical stance taken in the current research project resides in post-positivism and its most common form, critical realism.

As the pioneer of the post-positivism approach, Bhaskar (1975, 1986) was the original scholar to recognise the value of combining the philosophy of science with that of social science, thus acknowledging the concrete, objective world but also the social world individuals construct. Thus, ontologically the central argument of critical realism is grounded in the belief that whilst reality exists, it is accepted that it is based on immediate experiences making it complex and deep (Noor 2008). Consequently, the world is viewed in terms of layers and what occurs in the concrete reality is in fact, the result of underlying

processes. Thus, according to Bhaskar (1975), these layers are consolidated into a social reality which comprise of the individual and their environment. Therein lays the strength of this philosophical approach in terms of its objective to reach a deeper understanding of the structures in which individuals operate. Such assertions are supported by researchers who commonly acknowledge that rather than gathering facts and measuring the occurrence of given patterns; emphasis is placed equally upon appreciating the varying constructions and meanings individuals place on their experiences (Groff 2004; Henderson 2011; Noor 2008; Ryan 2008). Gratton and Jones (2010) suggest this shows openness to various methodological approaches including quantitative and qualitative methods. Glicken (2003) previously reported this as allowing creativity due to the recognition of multiple perspectives as opposed to a single reality.

Adam (2014) reports that post-positivism avoids the limitations associated with one-sided interpretations of data, thus allowing for multiple methods. Hence, while single research tools do yield pertinent insights they can, according to Adam (2014), fail to allow for theoretical elaboration which is required in the current research study due to the synthesis literature from various scholarly domains. Specifically, sport psychology which is dominated by dated material, the Theory of Diffusion of Innovations, which has been established in nine traditional domains but sport not being one and finally, the leisure constraints model which again has to date, not been used as a classification tool in the sports psychology domain. Against the backdrop of enhancing understanding of coach learning, post-positivism appears to be a suitable paradigm for use due to the current research studies reliance on multiple sources of data (questionnaires and semi-structured interviews) which focus on the same foci of analysis for the establishment of associations, interpretations and subsequent meaning. This Adam (2014) suggests provides a greater comprehensive explanation of the constructs at play, while Fischer (1998) previously reported this to offer broader interpretive frameworks than positivist and interpretivist paradigms.

The post-positivism approach meets the needs of circumstances where insights, discoveries and interpretations, as well as hypothesis testing, are required thus making it appropriate for the current research study. However, Ryan (2008) highlights that caution

needs to be taken in relation to the broad characteristics of the post-positivist approach as there are various modes of testing which qualify as research. Moreover, Adam (2014) suggests that researcher's position needs to be centrally articulated as while scientific frameworks cannot be dismissed, post-positivists argue they need to be flexible to aid the understanding of human complexity. Thus, you must understand your own position in the world to better understand the assumptions you bring to the research. In line with the suggestions from Ryan (2008), the current author assumes a learning role as opposed to that of testing. Thus, while tests are undertaken, the author's position is among the participants, learning with them instead of conducting research on them.

In light of the above considerations, the ontological and epistemological assumptions associated with this thesis are as follows;

1. Coaches operate in an inter-subjective world due to the art-science debate causing coaches to note numbers and narratives. Hence whilst coaches have the opportunity to access the published scientific literature base, additionally, due to working with people, the athlete-centred approach endorsed by the NGB requires coaches to ask questions of the athlete and train them according to the reality of their coaching environment thus making coaching as much of an art as it is a science.
2. A quantitative approach to studying the diffusion sport psychology restricts explanatory outcomes (as discussed in section 3.3.1).
3. A qualitative approach to the study of adoption of sport psychology fails to make generalisations applicable to the social system as a whole (as discussed in section 3.3.1).

## **3.4 MIXED METHODS**

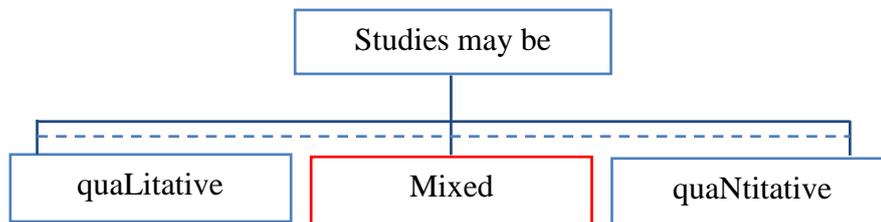
### **3.4.1 Mixed method design (MMD)**

Hall (2012) suggests MMDs complement the two traditional movements of quantitative and qualitative designs. Thus, mixed methods research is considered to offer a middle path between the quantitative and qualitative methods which Taber (2012) refers to as the L...M...N model (Figure 8).

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**Figure 8.** L...M...N; Mixed methods mooted as a mid-point on a continuum of education research (Taber 2012)

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This concept of combining qualitative and quantitative research within the same study is referred to as mixed methods research. Tashakkori and Cresswell (2007) define it as research that collects analyses and integrates findings in order to draw inferences from the utilisation of both quantitative and qualitative methods within the same study. Mixed methods research is not a new approach. It emerged in the literature base during the 1960s and since that time has increased not only in significance but also in design whereby mixed methods designs now go beyond merely triangulating qualitative and quantitative results (Lopez-Fernandez 2011).

### 3.4.2 Advantages of Mixed Method Designs

Many agree that mixed methods inquiry research requires an association between the philosophical assumptions of both qualitative and quantitative approaches (Taber 2012). Thus, the qualitative and quantitative approaches are counterparts due to the combination of different types of research question and differences between their underlying beliefs (Hall 2012). Lopez-Fernandez (2011) has proposed four rationales for the undertaking mixed methods research.

Firstly, participant enrichment whereby, as the key agent in the research, the participants' characteristics are identified thus allowing the researcher to gain an understanding of their world, or from an inter-subjective perspective allows the author to gain an understanding of the participant's reality. In the current study participant enrichment was achieved in two ways. Firstly, in strand one where participants were screened to ensure all types of athletics coaches were identified and interviewed to gain a broad perspective of possible results.

This was of importance in order to feed into strand B (part A) where deeper insights into key areas of interest according to specific demographic characteristics were established. Thus, enrichment in strand B was through the development of a coach's profile within the initial section of the questionnaire and was generated specifically to meet the needs of the current study. Characteristics such as years of experience in coaching, educational background and the county in which they operate amongst other demographic information which could have shaped, moulded and influenced their reality of the world was collated. The second proposal from Lopez–Fernandez (2011) is that of instrument fidelity which relates to the adequacy of the instrument that is being utilised. This in the current study was that of the questionnaire and whether or not it measured what was intended. Due to the lack of an existing questionnaire which evaluates process of diffusion and adoption decisions, along with the driving forces behind these, instrument fidelity was an important consideration to the current study.

The third rationale, according to Lopez-Fernandez (2011), considers the notion of treatment integrity and whether the treatment (which in the current study was the Innovation-Decision Process) was used as originally intended. This was of importance to the current study due to the possible refinement of the diffusion process and subsequent adoption of the innovation and its associated variables within the athletics context. The final rationale of significant enhancement looked to expand the interpretation in order to enhance the significant findings. Hence, utilising a mixed methods design extends knowledge as this form of inquiry has not been utilised in the diffusion of sport psychology.

Similar considerations of how the utilisation of a mixed method design extends literature have been examined by Little (2007) and previously Mannell and Iwsaski (2005), who similarly reported that methodologies which include both qualitative and quantitative modes of inquiry allow for extensions of understanding due to what they called modelling, measurement and the identification of causal-relationships particularly when studying diverse communities. For example, interpretations for the current study, coaches own demographics can vary, each athlete under their care varies and there are over ten disciplines within the all-encompassing term of athletics thus evidencing it as a diverse community. Further to this, the mixture of questionnaires and interviews allowed for the aspect of modelling through the display of diagrammatic trees (to be discussed in section

3.7.5) and measure of associations through the analysis of dependent and independent variables (introduced fully in Chapter 3, section 3.6.5.1).

Thus in its most basic form, mixed methods research utilises the strengths of qualitative and quantitative research and merges them together for what Lopez-Fernandez (2011) calls fruitful results as the method enriches and improves understanding of the phenomena being studied. Lopez-Fernandez (2011) further suggests that such a combination allows for the fostering of new ideas and answers which would not be reached through a single method and considers mixed methods to be a third methodological movement.

### **3.4.3 Limitations of MMDs**

Burrell and Morgan (1979) who despite the recognised advantages of the mixed method designs, report MMDs to be inherently complex due firstly to the numerous amount of varying design types available, making them often difficult to report. Secondly, due to the number of factors involved in the construction and conduct of a research study (Tashakkori and Teddlie 2010). To account for this in the current study, the quantitative and qualitative data are reported independently with each having a clearly defined role and intended outcomes within the results. Additionally, the amalgamation of fundamentally differing or polarised philosophical underpinnings (as per the contrasting positivist and subjectivist results), choices relating to sampling and when to integrate data along with having a clear purpose for conducting mixed methods research all pose interesting questions which require articulate considerations (Bartholomew and Brown 2012). In the current programme of study, such amalgamation of data sets occurs at the discussion stage. Furthermore, whilst mixed methods designs can allow for exploration and verification of little known constructs, thus allowing for the integration of both breadth and depth of a subject, failure to achieve these undermines the understanding and corroboration of findings (Bartholomew and Brown 2012; Tashakkori and Teddlie 2010).

To holistically negate such issues associated with the implementation of a mixed method design, Tashakkori and Teddlie (2010) emphasise the need for a current map (as previously displayed in Figure 6 above) which provides not only a systematic structured design but additionally a clear theoretical lens for the reader which denotes a coherent framing of the research project.

### 3.4.4 Types of MMD

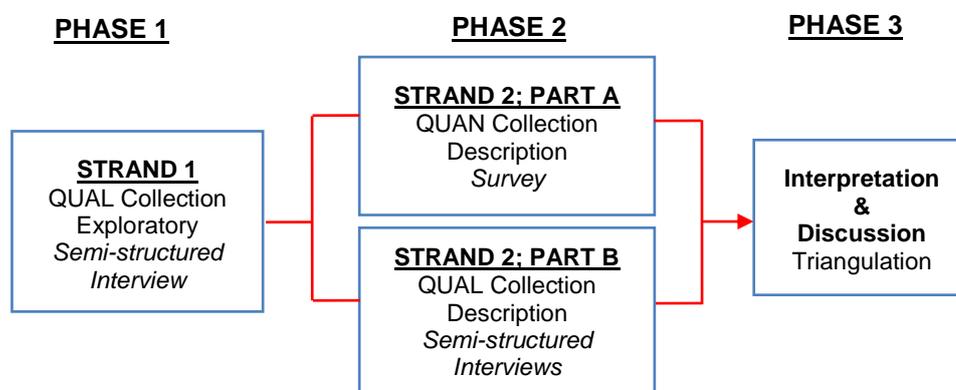
Design choice within mixed methods research is thought to be of foremost concern as it is this which serves to guide the methodological process (Bartholomew and Brown 2012). In line with the work of Teddlie and Tashakkori (2006) such concerns led the researcher to initially examine the methods-strand typology in order to establish clarity on the technical perspective of the methodological components of the research. Burrell and Morgan (1979) refer to each element of the design choice as strands, consequently this research has a multi-strand design containing three phases was predetermined prior to the undertaking of the data collection (Figure 9 below).

In addition to the design choice, consideration of the four key MMD principles (triangulation, embedded, explanatory and exploratory) as discussed by Creswell and Plano Clark (2007) was undertaken, with each design's related procedures, common variants, strengths and weaknesses examined. The current programme of research was initially exploratory in nature. Specifically, it had a sequential design incorporating three phases, which was implemented in order to allow the researcher to seek, confirm and verify constructs whilst exploring and generating theoretical frameworks at the same time (Teddlie and Tashakkori 2006).

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**Figure 9.** Multi-strand three phase design: Propositions development Model (equal emphasis) as adapted from Creswell and Plano Clark (2007)

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Bartholomew and Brown (2012) have reported that with such an approach, phase one must inform the subsequent data collection. They noted the emergence of two types of sequential

design namely explanatory and exploratory which were considered for stage one of the current design. Due to the explanatory approach seeking understanding of the causal-relationships its explanations will not be elaborated upon as associations, as opposed to relationships, were examined in phase two of the current study. The exploratory approach however enabled the researcher to explore pertinent constructs to gain deeper understanding of the literature. Thus, is particularly pertinent when key variables are not well defined. With regards to the current research study, while Rogers (2003) Innovation-Decision Process is well established, how it is operationalised in the coaching social system when dealing with soft innovations was yet to be established.

Bartholomew and Brown (2012) suggest exploratory mixed methods designs typically see a qualitative approach preceding that of the quantitative phase which allows for the development of an understanding of the research context to then enable the development of a culturally sensitive instrument. Both (deeper understanding and instrument design) were clear rationales for phase one (to be discussed in section 3.5) in the current study due to there being no instrument or measure available from the literature due to of the required synthesis of various theories (as seen in Chapter 2, section 2.9). Furthermore, key variables which impact upon the process of diffusion were not evident within the sport psychology literature as many constructs relating to, for example, coaches' perceptions of the subject had been raised but little understanding of coaches' characteristics leading to such perceptions had been documented. Therefore, the purpose of the first phase was that of establishing an understanding of sport psychology in the coaching domain. From this a culturally appropriate measure grouping the conceptual elements associated with the Theory of Diffusion of Innovations along with, considerations of the contextual sensitivities of the athletic social system, was designed for phase two of the study.

With consideration to phase two, in line with the definition of mixed methods research from Burrell and Morgan (1979), being considered mixed methods research as opposed to a mixed method study (whereby the strands of inquiry are kept separate) both quantitative and qualitative strands of inquiry must be evidenced as component parts. Therefore within the second phase of the sequential design the concept of a convergence model was utilised. This has been considered by Burrell and Morgan (1979) to be a method of data collection which allows the current study to gather two forms of research data on the same topic concurrently. Thus, intertwining knowledge from phase one into qualitative and

quantitative strands of phase two provided deeper insights into the process of diffusion and the driving forces influencing the adoption decision.

Further to articulation of the number of strands included in the research, Burrell and Morgan (1979) also discussed the need to depict which strand (i.e. the qualitative or quantitative) has priority in relation to which one is given the greatest emphasis or weighting in the research study. However, within the second phase of the current study emphasis was placed equally on each strand due to the current lack of guidance from the existing literature surrounding the diffusion process and adoption of sport psychology. This form of methodological design is classified as a taxonomy development model whereby the phase two quantitative strand is conducted to identify the conceptual elements that contribute to and explain the diffusion of sport psychology, while the qualitative phase seeks to explore the driving forces that influence the adoption decision of the coach.

The nature of MMDs requires consideration of what Burrell and Morgan (1979) refer to as the timing or pacing and implementation of the data collection. Phase three of the current study therefore concerns the discussion and interpretation of the results and thus a merging of the data sets. It is this stage that allows for deeper exploration, comparison and validation of the research data in order to produce a valid, well-substantiated output on a single subject (Cresswell and Plano Clark 2007). This overall phasing of the data collection, analysis and interpretation/discussion (including triangulation) allowed for the production of a more comprehensive understanding of the current problem. According to Creswell and Plano (2007) this form of mixed method approach provides a more complete picture of the research question. This is due to the quantitative data noting generalisations along with the qualitative data noting in-depth knowledge of the participants' perspective.

## **3.5 PHASE ONE**

### **3.5.1 The Qualitative Exploration**

The initial stage of the sequential design was exploratory in nature due to the Innovation-Decision Process never having been applied to the coaching setting. Thus to date, the literature offered coaches, organisations and sport psychologists alike no explanatory

framework to explain how the processes of diffusion and adoption occur nor what the barriers and facilitators associated with these were. Consequently, a single mode qualitative approach in phase one was designed to explore and unearth the factors related to coaches' attitudes, perceptions and understanding of sport psychology through the use of semi-structured interviews. The initial collection of qualitative data allowed for contextual sensitivities related to the coaching environment to be reflected in the later examination of the process (Gratton and Jones 2010; Venkatesh *et al* 2013). The purpose of phase one was thus three fold, 1) to gain an understanding of coaches' interpretation of the term sport psychology, 2) to identify elements of the literature base in order to establish which academic literature could provide explanation of the diffusion process in athletics hence warranting deeper exploration, and 3) to identify factors emerging from the participants which influence coaches' adoption of sport psychology. Generically, phase one thus sought to establish patterns in coaches' subjective reality so that the triangulation of these results could be utilised to test the proposed theoretical framework in phase two.

### **3.5.2 Inductive Approach**

Whilst deductive research originates from theory and develops into generalisable statements, the inductive approach begins with broad questions which constantly change and adapt as new data emerges (Andrews *et al* 2006). Therefore, its epistemological origins differ to that of its deductive counterpart as, reality is subjective and varies depending on the nature of one's social interactions and subsequent interpretations (Andrews *et al* 2006) thus suiting phase one of the current study. This does however open up qualitative research to scepticism which subsequently calls for careful consideration of the research design if internal validity is to be assured thus increasing the trustworthiness of any subsequent inferences (Andrews *et al* 2006). Thus, whilst generalisations applicable to a range of circumstances may not be possible, in depth explanations of complex cognitive relationships in particular settings can be achieved (Andrews *et al* 2006). In the current study, the qualitative data of phase one initially explored broad concepts and questions, the results could then be tested during the deductive strand of phase two (Andrews *et al* 2006).

It is evident that qualitative based research collects and summarises the verbalised word in order to breakdown the complexities of the subject at hand (Andrews *et al* 2006; Taber 2012). Whilst many embrace these nuances of qualitative research, Andrew *et al* (2006)

state that many scholars fail to accept this approach due to its lack of mechanical rigour. Qualitative data places the observer in the participant's world and it is this visibility which transforms the research into a naturalistic approach which turns the world into a series of representations and interpretations hence providing rich data (Denzin and Lincoln 2000). This does however; require detailed planning of methodologies which are based on clear paradigmatic stances due to its reliance on words instead of numbers (Andrews *et al* 2006).

### **3.5.3 Data collection**

#### **3.5.3.1 *Semi-Structured Interviews***

Interviews were utilised within phase one to establish the key factors that affected coaches' diffusion process and adoption of sport psychology. Gratton and Jones (2010) recognise five interview types (semi-structured, unstructured, structured, narrative, focus groups), but for the purpose of the current study semi-structured interviews were conducted based around a carefully selected set of questions/themes but without restricting the flow of the participant, if they raised relevant and interesting points, pertinent to the current study.

#### **3.5.3.2 *Interview Script Development***

Based on previous literature from the inductive education, marketing and nursing fields which had previously explored diffusion and adoption an interview script was developed. The script (appendix 1) was divided into two main sections namely the main body of open and closed questions and the second was a coaching profile which contained demographic, characteristics and features of the coaches. Specifically, Section One initially dealt with the exploration of sport psychology in terms of coach awareness and understanding of the subject in the athletic coaching domain. Of particular interest was the coaches' idea of what constituted sport psychology within their coaching landscape. Due to the on-going debate between the art and science of coaching (Chapter 1, section 1.3.2) and discrepancies in thoughts regarding where sport psychology sits within that debate, open ended exploratory questions such as 'what does the term sport psychology mean to you?' were utilised.

In order to give the interview flow, the next set of questions broadly related to the process of diffusion 'can you tell me about how you source sport psychology information'. The

interview schedule then focused on participants adoption of sport psychology and covered questions such as ‘can you tell me about the triggers which cause you to use sport psychology’ in order to understand the individuals experience. ‘Can you tell me about any barriers associated with your use of sport psychology?’ is an example of a question for the barriers and facilitators section which aimed to gain an understanding of the current literature base and how it related to the current study. In line with the thoughts of Gratton and Jones (2004, p.141), the grouping of questions into broad themes in an open style was designed to allow participants to ‘talk about their experiences in their own words, and allow them to elaborate on any areas of particular interest’ thus fitting the exploratory nature of this phase of the research.

### **3.5.3.3 *Participants and Recruitment***

Participants were 11 ( $n=7$  females and  $n=4$  males) licensed athletics coaches registered with their respective home country, covering all athletics disciplines (sprints  $n=2$ , hurdles  $n=1$ , endurance (including road)  $n=5$ , throws  $n=1$ , jumps  $n=1$ , multi-events) and both types of coaches (performance  $n=6$  and participation  $n=4$ ) were represented. Coaches’ years of experience ranged from less than one to over 50 years. Participants were found to be representative of the overall athletic population when compared to England Athletics coaching statistics made available by the head of the National Coaching Programme.

A point of saturation was reached as discussed by Fusch and Ness (2015) who suggested it has been met when, there is enough data to replicate the process and new codes are no longer viable. Additionally, participant characteristics closely matched those found within the overall athletic coach population due to the use of a sampling frame (to be discussed in the following section) which offered the opportunity to gain a range of diverse opinions which according to Mason (2010) ensures robust findings. Due to the range of athletics disciplines, all levels of coaching qualifications and demographic variables were sampled. This included educational background as described by Blind and Tierney (1990) as affecting coaches’ levels of diffusion. Moreover, in line with the suggestions of Marshall (1996) a judgement sampling technique was utilised for the selection of participants. As a framework, Marshall (1996) suggests this method allowed for a rigid sampling frame based upon three factors, 1) the possible contributing factors from the selected individual based on their demographic and individual characteristics, 2) the authors’ theoretical and applied

knowledge base of the research area and 3) evidence from previous literature sources. This approach has been referred to by Kalkan *et al* (2014) as purposive sampling. Within the current study there was an element of judgement in the sampling which allowed for the selection of a productive population base due to its intellectual foundations as opposed to a merely stratified demographic category where not all sections of the population could be represented. Thus, dividing the sample into a number of strata avoided bias in the sample and ensured an array of coaches opinions were sought at the exploratory phase. However, to be eligible for inclusion each coach had to cover at least two of these factors in order to be considered for inclusion.

#### **3.5.3.4 Pilot Study**

In line with the recommendations from Thomas *et al* (2005), the interviewer ensured the correct vocabulary level was achieved through the use of a pilot study. This served to increase the reliability with the aim of ensuring consistent results and validity as standardised interpretation of questions could be established thus ensuring the results are truly representable (Gratton and Jones 2004). As a result of the pilot the ordering of the two sections was changed so that the coaching profile was undertaken first. Whilst Synodinos (2003) suggests personal information should go last, so that a relationship can be built prior to asking sensitive information, it was discovered that asking coaches factual information relating to their coaching was a better ‘icebreaker’ and settled the participants nerves prior to answering the questions which required a little more thought and sensitivity.

#### **3.5.3.5 Procedure**

After gaining ethical approval from the Bournemouth University Research Ethic Committee, participants who fulfilled two or more of the criteria (section 3.5.3.3) were approached to take part in the interview process via telephone invitation or email. After explaining the nature of the research to the participant, including the purpose, requirements and intended use of the data (Wilding *et al* 2012), they were sent a participant information pack (appendix 2). The pack included a participant information sheet explaining the process of the interview (e.g. a breakdown of the categories of questions to be asked), a consent form and general information relating to whom the study’s supervisors were and up to which point in time they could withdraw from the research. Participants selected the

interview's location to ensure they felt comfortable and thus more likely to answer the questions freely (Synodinos 2003). The interviews on average lasted between one and three hours and were recorded, with permission, on a Dictaphone. The interviewer who was trained in qualitative data collection performed all of the interviews in order to ensure internal validity (Wilding *et al* 2012). Whilst the interview script was utilised to structure the interview, probes such as can you tell me a little more about [participants comment], were utilised to gain further insights into areas of interest. Furthermore clarification (such as, could you give me an example of [participants comment]) and elaboration (such as can you tell me a little more about) were asked in order to elicit greater depth of participant responses (Wilding *et al* 2012).

#### **3.5.3.6 Data Analysis**

Recordings of the interviews were transcribed verbatim into word processing files which subsequently allowed the qualitative data to be analysed using inductive content analysis. In order to allow findings to emerge, initially the raw data was prepared for analysis, a process which included data familiarisation and a speculative analysis stage. As recommended by Creswell and Plano Clark (2007), Thomas *et al* (2005), and Wilding *et al* (2012) the transcripts were read several times. During these stages as reported by Creswell and Plano Clark (2007), a preliminary understanding of the written data was gained through the exploration of the interview transcripts. Following the initial stages of analysis, data reduction occurred to allow the information to be organised into codes and irrelevant data discarded. This coding process ensured the data accurately and explicitly reflected what was being researched.

Subsequently, as per the suggestions of Creswell and Plano Clark (2007) and Gratton and Jones (2004), broad trends were analysed, and emerging codes were themed from general to specific dimensions, so that the data set could be divided into smaller units. This process allowed for the identification of factors which influence the diffusion and adoption of sport psychology and the relationships between these factors, so that in the next stage, which involved displaying the data in diagrammatic form, conclusions and verifications could be made in an analytical manner (Thomas *et al* 2005). Furthermore, counting (categorising data and measuring frequency) was utilised in the early stages which progressed onto patterning in order to develop a picture of the reoccurring themes. At this stage it was

important to discover whether Rogers (2003) Innovation-Decision Process was an appropriate vehicle for further exploration of coaches' use of sport psychology in athletics. Consequently, initially existing concepts were identified followed by new concepts, and whether they contradict or supplement the model. Clustering of the emerging themes enabled the key differentiating characteristics to be grouped so that it could be established whether or not given characteristics (type of coach and educational background) indicated towards certain perceptions, attitudes or behaviours. Relationships between these characteristics were then examined to identify if chains or links existed. Overall, the analysis sought to find the explanations of the general propositions that accounted for the particular findings in the study.

### **3.6 PHASE TWO – STRAND A**

#### **3.6.1 Deductive approach**

The second stage of the sequential design was divided into two strands which were undertaken concurrently. Phase Two; Strand A, adopted a quantitative approach, the design of which is reported below.

According to Gratton and Jones (2010) deductive research is typically associated with positivist, quantitative forms of research which seek to gain objective knowledge that is free from bias due to the logical, systematic and controlled manner in which data is collected (Andrews *et al* 2005; Moran, Matthews and Kirby 2011). Consequently, positivist studies are said to start with a theory which attempts to explain aspects of social lives with validity and generational certainty (Andrews *et al* 2005; Clark-Carter 2001). Furthermore, the deductive approach seeks to assert statistically significant associations between variables which can form the basis of theoretical statements. Hence, the utilisation of a deductive approach in the current study can assist in establishing a generalised understanding of coaches' diffusion of sport psychology in athletics which fits the objective aspects of the current study.

Traditionally quantitative research has been associated with descriptive, experimental, correlation based research (Taber 2012). Therefore the aim of the quantitative strand of the current study was firstly, to quantify the antecedents of the diffusion process and adoption

and secondly, to test a series of hypotheses relating to coaches' perceptions, attitudes and behaviours in relation to sport psychology. Of importance at this stage was the initial descriptive statistics which would allow for the organisation of information during the later analysis (Gratton and Jones 2004). The quantitative data allowed for the establishment of key independent variables which included the characteristics identified by Mann and Sahin (2012), for example type of coach, educational background. Inferential statistics then allowed for exploration of the relationships between independent and dependent variables (Gratton and Jones 2004). This quantitative strand therefore focused on the numerical testing and analysis (Gratton and Jones 2004) of the data relating to perceptions and attitudes towards sports psychology.

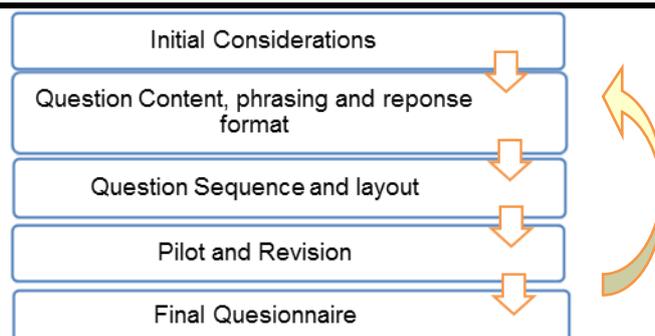
### 3.6.2 Quantitative Data - Questionnaire

In order to meet the objectives of the study, the tool utilised for the collection and recording of quantitative data was a questionnaire. Specifically, a postal and email self-completion based questionnaire was developed and used. The design of the questionnaire was informed by the synthesis of the findings of Phase One, previous literature examined in Chapter Two and finally, Blinde and Tierney's (1990) questionnaire of elite level swimming coaches. The latter was consulted due to its original development to assess whether coaches utilise each stage of the diffusion process and to what extent.

#### 3.6.2.1 Questionnaire Design

To ensure relevant and useful information was gathered, careful consideration was given to the design of the questionnaire. As a result, the final instrument was planned and developed in a number of stages (outlined in section 3.6.2.3 below) in order to ensure the study's aims were met and possible bias avoided (Kirklees 2014; Oppenheim 1996, Figure 10).

**Figure 10.** Process of questionnaire design adapted from Kirklees 2014



### 3.6.2.2 *Initial Considerations*

According to Oppenheim (1996), designing a survey questionnaire from which inferences can be drawn is a complex and arduous process. Oppenheim (1996) went on to state that the central driving force behind questionnaire design depends upon the intended use of the results and whether there is a requirement for them to be generalisable to the selected population as a whole (sports science in the current programme of research) or draw inferences for the specific population (athletics coaches in the current programme of research).

### 3.6.2.3 *Questionnaire Sequence and Layout*

Once the questions had been developed sequence and layout was considered so that questions could be clustered to aid the progression of the respondent moving through the questionnaire. Initially based on the literature review and the questions which had met the two criteria mentioned above it was envisaged that the following sections would be included:

1. Features and characteristics of the coaches, based on information established in Phase One.
2. Exposure to the field of sport psychology, which dealt with understanding how and why awareness of sport psychology occurred.
3. Receptivity, based on previous studies within sport psychology literature. However, much of the research dates to the 1980s. Hence, there was a need to establish if the situation has changed.
4. Implementation of psychological skills and techniques, to establish what coaches use and how providing desired information could increase the diffusion process and thus adoption.
5. Exploration of the similarities and difference between individual units of adoption.

This original layout of sections was predominantly based upon an instrument previously developed by Blinde and Tierney (1990). Their 61 item questionnaire was split into six distinct sections which due to their work on diffusion by coaches in swimming was deemed appropriate as the foundations for the current instrument. A point of consideration was, however, that Blinde and Tierney's (1990) research was based upon Roberts-Gray's (1985) three stage systems model of implementation which is just one stage of Rogers (1983) Innovation-Decision Process which was considered in its entirety (five stages) within the current research studies literature review. Blinde and Tierney's (1990) instrument was thus adjusted according to firstly, the data collated in phase one and secondly, the multipart model from Rogers (1983). Consequently, the triangulation of the literature (Chapter 2), primary qualitative data from Phase 1 and Blinde and Tierney's (1990) instrument led to the development of the Sport Psychology; Information, Knowledge, Experiences and Sources (SPIKES) Questionnaire (Appendix 3).

Owing to the previously established questionnaire, the concept of five sections was maintained, but the content altered from that of Blinde and Tierney's (1990) instrument, and appeared in the following order:

1. The Coach Profile was designed to establish demographic variables as discussed by Mann and Sahin (2012) in the literature review. The results from this section allowed for the establishment of users characteristics which were thought to influence individual's decision-making process. Within sport psychology the role and contributing variance of such characteristics were yet to be established.
2. Experience of sport psychology in order to gain an overall representation of how coaches have encountered sport psychology and what factors have influenced their perception of the subject was determined as being Section two.
3. The role and delivery of sport psychology section sought to identify coaches' perceptions of the role of sport psychology within their coaching practices.
4. Use of training tools was an important section as it established coaches' current use of mental tools in training and competition in order to better understand which aspects of sport psychology coaches were utilising and to what extent.

5. The barriers and opportunities surrounding coaches' use of sport psychology relates to the Leisure Constraint Model and allows for the classification of barriers in order to identify at what stage various barriers arise. Additionally, those factors which aid coaches use of sport psychology will be identified.

Once questions had been placed into relevant sections, in line with the recommendations of Gratton and Jones (2010), the planned sequence of questions was reconsidered in order to increase not only the flow of the section but moreover likelihood of coaches completing the instrument. Thus, a funnelling process, whereby those questions which required more in depth consideration beyond the yes, no don't know answers, were placed later on in the questionnaire as Synodinos (2003) states placing them earlier could put respondents off. Furthermore, language derived from the qualitative interviews was additionally utilised within the wording of the questions. This was to enhance familiarity for respondents as opposed to that of terminology from the Innovation-Decision Process.

Finally, in relation to the layout, sections were made distinctive by not only containing a heading but additionally a brief synopsis of the section to follow so that coaches knew what type of information to expect in each section. Consistency in the formatting of the questions was maintained to decrease the amount of time it would take respondents to complete each question.

#### **3.6.2.4 Question Content, Phrasing and Response Format**

One of the initial considerations concerning its design was the type and nature of information which needed to be gathered in order to meet the objectives of the research study (Gratton and Jones 2010; Oppenheim 1996).

Proposed lists of questions such as, 'on average how many times per week do you implement sport psychology into your coaching?' were developed and each question was then examined in relation to two inclusion criteria, 1) does it add value in relation to meeting the project's objectives and 2) is the question wasting case material in that it fails to reflect either, a) an element of the theoretical framework (Figure 5, Chapter 2, section 2.9) or, b) the results of Phase One. This process identified that the coaches' profile needed

to be elaborated upon, and ultimately take a new direction in relation to gaining deeper information concerning their demographic athletic history (i.e. on average how many hours per week are you involved in athletics?).

Three questions were removed from section; including ‘are there any other issues surrounding your use and perception of sport psychology and a sport psychology consultant?’ as firstly this was deemed not to meet the current research’s objectives and secondly, because it asked more than one question at a time. Furthermore, due to the open ended nature of the question, any responses would have been wasted case material as the information could have been elicited more effectively from the qualitative participants in Strand B. Three further questions asking coaches their opinion regarding visibility in the media were omitted. This was because these questions were determined to be wasted case material as they biased coaches thought process towards media coverage at the expense of other sources of information. Thus, these questions were absorbed into the exposure section as supposed to stand alone questions.

Five questions were adapted so that they were phrased to better reflect the language commonly used by coaches within Phase One of the research strands. Specifically ‘do you feel the techniques of sport psychology are educationally sound?’ was changed to ‘sport psychology is too subjective’.

In relation to the style and jargon within the coaches profile section the coaches stated ‘affiliation/membership’ and ‘company/organisation’ made the question over complicated and so affiliation and company were removed. In the ‘experience of sport psychology’ section the question ‘give your best guess as to how much time there was between your initial experience and you intentionally searching for further information about the subject’ was removed. The coaches felt that it was long winded and best guess style questions made answers subjective, consequently, these were deleted. Deleting this question ensured this strand of the study aligned with the diffusion process whilst the qualitative section was deemed able to address the adoption of sport psychology. In relation to the section on the barriers and opportunities to sport psychology the first question relating to coaches knowledge and understanding of the subject were separated. This was a result of coaches in phase one deeming these to be separate but related terms. Lastly, the open ended questions

were removed as coaches deemed they took too long to answer and they failed to complete the section.

As recommended by Gratton and Jones (2010), once the content had been determined the response format was assessed to ensure each question could be analysed in a meaningful manner. Thus, in relation to the intended statistical analysis to be undertaken (Oppenheim 1996), the instrument initially contained eleven pre-coded closed questions for example, ‘is there a place for sport psychology in athletics? yes, no, don’t know’. However, due to the research study being exploratory in nature it was not plausible to anticipate all answers which led to seven open ended questions which included, ‘in your opinion, what is one key benefit of sport psychology in elite (high performance) athletics?’. Twenty one of the fifty five questions involved a combination of closed and open questions so that numerical data to build an understanding of the population base could be achieved. In addition participants were provided with an opportunity to elaborate upon their response if they desired when making decisions relating to their own practices. For example, ‘are there any other people with whom you must consult with first, yes or no followed by, if yes what is the role of this person?’.

Furthermore, as a number of concepts deriving from various academic fields (diffusion, leisure and sport as per the literature review, Chapter 2) were being examined a number of scales were employed to gain an understanding of coaches’ attitudes to given constructs relating to their receptivity towards sport psychology (Gratton and Jones 2010). Fifteen questions were clustered together so as to gain an picture of coaches’ receptivity which included ‘sport psychology takes time away from other more important areas of training’. Ten five-point likert scale based questions which were grouped in order to establish not only the extent to which coaches implement sport psychology but moreover, how often. For example, ‘how often do you utilise the techniques identified below with your athletes, every session, weekly, monthly, once a season, never’. Additionally, semantic differentials were utilised for thirteen items as participants attitudes towards sport psychology without forcing them into extremes was required to understand the factors relating to adoption of sport psychology. Due to the nature of sport psychology, in that it is comprised of a number of sub-disciplines, two ranking items were included in order to establish firstly, how coaches merit sport psychology in comparison to other sports science disciplines whilst secondly, it was used to gain an understanding of how coaches would like to receive

information pertaining to sport psychology and how it could be diffused in to their social system. Finally, seven items were list based items so that coaches could provide several responses to one question as one definitive answer did not emerge in Phase One but more so clusters of responses. These questions related to the factors which would increase the diffusion of sport psychology.

#### **3.6.2.5 *Pre-Test (pilot)***

As suggested by Oppenheim (1996), testing of the developed questionnaire in the field was performed to determine if refinement of the tool was required. Twenty two athletic coaches representing coach characteristics (as discussed previously in relation to judgement sampling, Chapter 3, section 3.5.3.3) were purposefully selected. To effectively test the questionnaire, assistant coaches and BA licensed coaches along with cross country, road running and all track and field disciplines were asked to complete the questionnaire. The ages of the coaches varied from 20 to 72, and were drawn from five different Southern based clubs. As well as completing the questionnaire, the coaches were requested to provide feedback on the structure and flow, style of questions, and any jargon used (Blinde and Tierney 1990; Oppenheim 1996). The results from the pilot revealed that the coaches found the factual section relating to their use of training tools the easiest to complete. Consequently, the coaches' profile remained first but section two became the 'use of training tools' instead of their experience of sport psychology. As a result of this amendment, an additional routing statement was added so as not to waste coaches' time on questions that were not applicable to them.

#### **3.6.2.6 *Participants***

160 athletics coaches, who were classified as currently active participated in the study. Some coaches did not complete every element of the coach profile resulting in occasional missing data regarding the demographic variables. However, three aspects of coach information were gathered. Firstly, demographic information of coach was collated in order to show coach characteristics, which according to the literature from Chapter 2, were predicted to influence coaches' adoption decision for the utilisation of sport psychology. Additionally, such information allows for repeatability of the study. The second set of data collated referred to the cultural sensitivities of the coaches and thus those contextual factors

which may influence the diffusion process. Results showed that a sport based educational background was low across the data set despite all four home countries, and 39 counties including the Isle of Man, Channel Islands and Isle of Wight being included. Finally, athlete characteristics were sought to determine whether the type of athlete coached acts as a driving force behind the cognitions and behaviours of the coach as identified in the literature review.

### **3.6.3 Sampling Method**

This strand of the study used a multi-stage random sampling approach as every third athletics club was selected. Application of this strategy ensured each unit (coach) within the accessible population had an equal chance of being selected for inclusion within the current research study (Teddlie and Tashakkori 2009). Unlike the previous phase which included judgment sampling, the sampling technique ensured selection of participants occurred independently of one another which increased the generalisability of the results (Teddlie and Tashakkori 2009).

### **3.6.4 Procedure**

Participants were selected via the BA club search engine which alphabetically lists all registered athletic clubs in the UK and thus is a reliable source. From this, as mentioned above, every third club was selected. However, from this point forwards one of two procedural processes was followed depending upon what information was available on the search engine. Specifically, a postal or email self-completion questionnaire was sent out to the club contact (typically the club secretary or chairman) or where coach information was provided, every third coach was contacted in order to increase accessibility to participants who were geographically dispersed as suggested in the work of Gratton and Jones (2004). Triathlon clubs were found to be included in the search engine but were omitted from the current study as triathlon coaches do not require a BA licence and include two other disciplines (swimming and cycling) which were not the focus of the current study. In these instances the club immediately below was included on the mailing list.

The participants selected for inclusion in the study were given one month to complete the questionnaire and return it via email or post to the researcher. Following this date, a follow

up email was sent to participants and after this point the contact details used were marked red within the spread-sheet to show a non-response. Thirteen coaches responded to inform the author that they were not able to assist with the completion of the questionnaire. Of these, three were no longer coaching, four respondents reported that whilst they were on the search engine they were social clubs and therefore had no BA licensed coaches and one coach felt it was not appropriate to his club. He did however provide an explanation as to why and furthermore, agreed to engage in correspondence which could be used within the qualitative data set.

All participants selected were briefed via, firstly, a covering letter setting out who the researcher was, the purpose of the study and the intended impact of the research study. Participants were given contact details for questions or complaints. In addition, a participant information sheet which informed the coach that the information provided would remain anonymous and confidential, that there were no right or wrong answers, and that they could withdraw at any time up until the final write up stage (questionnaires were coded by number so the participant could inform the researcher of their relevant number in order to withdraw) was included. They were additionally informed of how long the questionnaire on average took to complete (20 minutes). Based on feedback by coaches during the pilot study (section 3.6.2.5), careful consideration was given to the timing of the questionnaire's distribution to avoid key competitive times in the season (early May and the end of July).

### **3.6.5 Data Analysis**

The quantitative data collected was analysed using the SPSS statistical package and specifically through the use of two types of analysis. Initially, descriptive statistics were produced to ascertain current levels of exposure, receptivity and implementation and additionally those factors which inhibit or facilitate the diffusion process and adoption of sport psychology. Based on the suggestions of Creswell and Plano Clark (2007), to ensure key evaluations of the items are shown, descriptive statistics including means, standard deviations and frequencies (number of responses and percentages) were analysed through the use of SPSS and presented in tabular format order to describe the data due to a lack of existing coverage within the literature (Pain and Harwood 2004). Such analysis was undertaken in line with the suggestions of Vaughan (2003) and thus data from the coach

profile was summarised in tabular format but no inferences were made at this stage. These, Vaughan (2003) suggests, are of importance to state as they show the parameters or boundaries of the research and thus relate to the trustworthiness of the data (discussed in Chapter 3, section 3.8.5).

Inferential analysis was subsequently conducted in order to assess whether the results infer something about the larger population base as suggested by Chowdhury *et al* (2011). To achieve this hypothesis testing about associations within the data were undertaken. These hypotheses were tested using Chi-Square Tests for Independence when dealing with categorical data and Mann-Whitney U tests where data was ordinal or scale in its composition. The 95% confidence rate was utilised therefore significance is evaluated at the .05 level.

### **3.6.5.1 *Explanation of the two categories of independent variables used for analysis***

Ashley (2009) reports that individual characteristics are associated with the processes of diffusion and adoption (Chapter 2, section 2.3.1.4.1) and likewise previous literature (such as Blinde and Tierney 1990) within the sport psychology domain, suggests that they affect the barriers which ultimately impinge upon the use of sport psychology (as highlighted in Chapter 2 section 2.6). Moreover, due to differences in circumstance between the potential adopters, Rogers (2003) reports that not all innovations are necessarily suitable for everyone nor are they desired by every potential user. Therefore, disparity between adoption by individual users and diffusion across a social system could differ. As a result, there is a need to examine the characteristics of the potential user in order to gain a deeper understanding of what, if any, influence they have in the diffusion process and adoption decision of the coach.

Individual characteristics were divided into two categories as a result of two factors, 1) the literature base (Blinde and Tierney 1990; Kozma 1983; Rogers 2003; Woolway and Harwood 2015) and 2) the results of Phase One (the qualitative analysis, Chapter 3, section 3.7). Specifically, the literature suggested associations between individual characteristics and adoption of innovation behaviours. These were explored in phase one and were narrowed down to two independent variables. Namely, coach characteristics and educational background (yes/ no), as shown below in Table 3.1. Components of these

categories were used to examine their association with the questionnaire items within each section (knowledge, persuasion, decision, implementation, confirmation and barriers and facilitators) as to date the literature lacks clarification of which factors are at play. Importantly, this lack of clarification may limit understanding of how to enhance the diffusion process and adoption of sport psychology within athletics and thus needs to be addressed.

**Table 3.1.** Categorisation of independent variables and the associated characteristics

Category for Individual characteristics	Associated Characteristics	Evidence Base
<b>Coaching characteristics</b> ( <i>narrative of the coaches' identity from coaching related experiences</i> )	Type of Coach ( <i>participation/performance coach</i> )	Albayrak et al (2007) Phase One Results Kozma (1983)
<b>Educational Background</b> ( <i>Factors relating to vocational background</i> )	Sport based education ( <i>yes or no</i> )	Mann and Sahin (2012) Roberts-Gray (1985) Woolway and Harwood (2015)

Firstly, coaching characteristics relate to the particular contextual information surrounding the coach. For example, the type of coach they are recognised as being, participation (being focused on mass involvement and for health benefits) or performance (predominant focus on competitive outcomes), came through in phase one (Chapter 4) as a key factor that might influence coaches' perception of sport psychology and therefore, warranted investigation in this second stage of the study.

Secondly, Blinde and Tierney (1990) recommended educational qualifications to be an area of investment for future research. Accordingly, it has been included in the current study due to this being the only other paper to specifically examine the diffusion of sport psychology. Moreover, in swimming which is a multi-disciplinary individual sport thus mirroring athletics, educational background relates to the sports based education that the coaches have previously experienced which according to Cote and Gilbert (2009) contributes to expert coaching. Consequently, the hypothesis is that those with an educational background in sport are likely to be statistically associated with positive attitudes towards, and having implemented, sports psychology within their coaching activities.

## **3.7 PHASE TWO - STRAND B**

### **3.7.1 Introduction**

The final component of the concurrent design of Phase Two, Strand B, adopted a qualitative approach that aimed to gain a deeper understanding of the dynamic processes that impact upon the adoption of sport psychology.

### **3.7.2 Semi-Structured Interviews**

Semi-structured interviews were utilised in Strand B of the research design. In order to allow the data to take primacy, the interview script (Appendix 4) identified five key themes based upon the sections of the questionnaire. Specifically, coaches were asked to provide an overview of their coaching background in order to ascertain their position within the coaching structure and thus whether they were a change agent or opinion leader along with other individual characteristics. Additionally, coaches were asked about their knowledge, experience, and the barriers to sport psychology and whether they envisaged future opportunities for sport psychology in athletics.

### **3.7.3 Participants**

In relation to coaches' demographical information, their position within the social system was deemed important in relation to the extent of inference quality (Chowdhury *et al* 2011). Thus, it was imperative that participants were a representative spread of coaches from around the macro social system.

#### **3.7.3.1 Participant Recruitment**

Due to the final phase of the data collection being qualitatively focused, a non-probability sampling method was implemented as suggested by Gratton and Jones (2004). Specifically, as per phase one (Chapter 3, section 3.5), purposive sampling was utilised as participants were intentionally selected through judgment sampling based upon, firstly, the lead authors' expert knowledge of the phenomenon being studied (Health and Care Professionals Council (HPCP) Registered Sport and Exercise Psychologist), secondly, the literature base in chapter two of the current study (studies from Blinde and Tierney who recommended criteria for future studies, i.e. education), and thirdly the information

provided in the public domain on the BA search engine in relation to coach demographics (how athletics coaching is divided between type of coach orientations and coaching disciplines). Consequently, in the same way as Phase One, to be included in Part B of the design; coaches were required to represent two or more of the key criteria being explored, namely, gender, level coaching qualification, coaching discipline, or position within the operational structure of athletics (Creswell and Plano Clark 2007). This information was sought from the BA search engine which lists this information. This form of maximal variation sampling ensured that the participants had key differences, to gain a more in depth insight into the constructs being explored (Creswell and Plano Clark 2007). The sample size was not predetermined prior to the collection of data but was saturation based whereby the collection of any further data would not provide any new information (Gratton and Jones 2004).

#### **3.7.4 Procedure**

Coaches who met two or more of the aforementioned criteria were contacted either via telephone or email (depending on what was detailed). Participants were informed of the purpose of the study, and upon agreement to take part in the study, were sent an information pack which included a participant information sheet explaining the process of the interview (e.g. an overview of the categories of questions to be asked), a consent form and general information relating to who the author's supervisors were and up to which point in time they could withdraw from the research.

Participants selected the location of their interview so they not only felt comfortable but also that it was convenient to them (Synodinos 2003). On average, interviews lasted 73 minutes and were recorded, with permission, on a Dictaphone. Due to the author's background training in qualitative data collection, to ensure internal validity they undertook every interview (Wilding *et al* 2012). Whilst the interview script was utilised to structure the interview, probes such as 'can you give me any examples of the type of contact you have had with sport psychology?' were also utilised to gain further insights into the coaches own experiences of sport psychology. Furthermore, elaboration probes such as 'can you think of an example for when you would have liked to use sport psychology but something stopped you?' were asked in order to elicit greater depth of participant responses (Wilding *et al* 2012).

### 3.7.5 Data Analysis

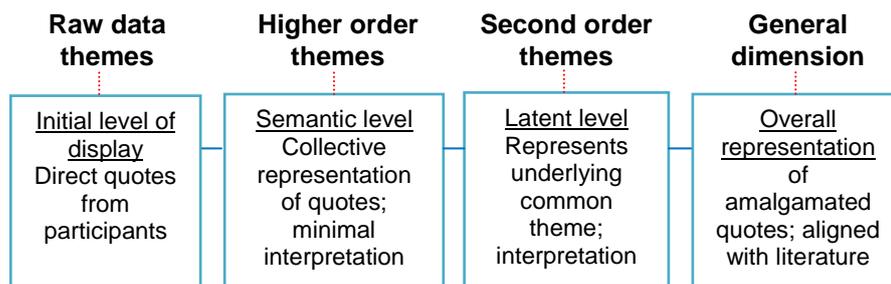
The qualitative data was analysed using both inductive and deductive content analysis. Initially the recordings were transcribed into word processing files allowing for data familiarisation (Creswell and Plano Clark 2007). Irrelevant data was discarded in order to reduce the overall volume which allowed information to be organised into more meaningful codes. During these stages a preliminary understanding of the data base was gained through the exploration of information (Creswell and Plano Clark 2007). Raw data themes were clustered together based upon constructs from the literature review (deductive analysis), whilst the emergence of new information were analysed through inductive analysis in order to gain further insights into coaches' reality and subjective reality of sport psychology, diffusion and adoption could be established alongside the exploration of the relationships between existing constructs. In content terms this included a coding process to reflect accurately and explicitly what was being researched, from raw data themes through to general dimensions (Gratton and Jones 2004). Each code thus represented a theme so that the data set could be divided into small units until the dimensions occurred (Creswell and Plano Clark 2007).

Specifically, data derived from the interviews were collated and subjected to frequency analysis. This was to ascertain the commonality versus uniqueness between participants quotes (Mellalieu *et al* 2009). Following this process, in line with the suggestion from Gratton and Jones (2010), thematic analysis was utilised in order to display the established levels of patterned response. Within this (explained in Figure 11), deductive analysis was initially implemented whereby the Theory of Diffusion and Leisure Constraints models within the sport psychology arena were utilised as the underpinning frameworks.

Raw data themes represented direct quotes from participants and specifically related to the subject at hand. This volume of data was, as recommended by (Gratton and Jones 2010), reduced into smaller meaningful categories which occurred on two different levels. The first was the semantic higher order themes (as shown in Figure 11), that show the explicit meaning of quotes with minimal interpretation thus representing the collective surface level responses. In contrast, when participant quotes were fragmented or information arose but failed to fall in line with existing knowledge, inductive analysis as referred to by Gratton

and Jones (2010) was used. The next level of display was referred to as the latent second order themes (as shown in Figure 11, below), which represent the interpretive level where underlying interpretations of meaning are made. This involved the amalgamation of quotes according to their underlying patterns, ideas and assumptions coupled with their alignment with previous research.

**Figure 11.** Explanation of the thematic analysis



The final level of display evidences the general dimensions which were formed through the application of deductive content analysis.

Further to this, based on the recommendations from Teddlie and Tashakkori (2009), to ensure interpreter reliability two researchers (in addition to the lead author) trained in both quantitative and qualitative research methods were utilised to make judgement validations in relation to the consistency between the general dimensions generated and agreement of these within the semi-structured interview data. From this conclusions and verifications were made in an analytical manner by counting and measuring frequency in order to establish patterning, trustworthiness and develop a picture of the reoccurring themes. Overall, the analysis sought to find the general propositions that matched the particular findings in the study.

## 3.8 ETHICAL CONSIDERATIONS

### 3.8.1 Lifecycle of the Data

Clark-Carter (2001) suggested that irrespective of the research methods selected, given principles should govern the manner in which the research is conducted from its planning

through to future use of the data in relation to possible publication which Talburt *et al* (2014) refers to as the lifecycle of the data. Initially, through the Bournemouth University Ethics Committee, approval was sought for the undertaking of the current study; this according to Shaughnessy, Zechmeister and Zechmeister (2009) ensures the integrity of the methodological process (due to external reviews) was maintained in a responsible manner. Furthermore, Plowright (2011) suggests seeking ethical approval allows the researcher to consider the context of their ethical decisions and considerations which help to ensure not only the participant well-being, but additionally that the research meets the required standards laid out by the organisation (in this case, Bournemouth University) to ensure the advancement of scientific knowledge.

### **3.8.2 Ethical Obligations**

The ethical obligation of consideration in the current study was that of conduct in relation to the researcher's level of competence in research techniques (Clark-Carter 2001). The author of the current study was trained in qualitative research and therefore undertook all of the interviews so that any inherent risks within the study could be clearly articulated (Teddlie and Tashakkori 2009). The BU ethics committee deemed the study to be of minimal risk.

### **3.8.3 Informed Consent**

So that those individuals approached to be in the study could be included in the data, a participant agreement was required (appendix 2). This included ensuring participants' had awareness of the voluntary nature of the study, they had a clear understanding of the purpose of the study and its intended use was made clear.

### **3.8.5 Evaluation of the Data**

According to Nkwake (2015) the goal of post-positivist research is to generate new knowledge from which individuals can learn and subsequently base decisions upon. Moreover, to achieve this, the post-positivist paradigm requires the researcher to clearly outline initial bias meaning; the authors position in the research along with the assumptions associated with the research have been previously identified (sections 1.5 and

3.3.1). These assumptions drive the researcher's perspective on reality and therefore act as a precondition to the validity and reliability of the study and as such should not be taken for granted. Consequently, in addition to the statement of assumptions, to ensure validity and reliability and thus minimise the bias brought about from the post-positivist paradigm and maximise depth of understanding (Koul 2008), their impact upon the findings and interpretations are considered. This involved the production of a robust set of criteria in order to evaluate the research which ensures transparency and quality standards of the research design. Therefore, the six principles or standards by which the research will be evaluated are outlined below.

#### 3.8.5.1 Trustworthiness

Of importance was the need to employ measures which ensure against overstressing claims (sections 3.5.3.2 (Phase 1), 3.6.2.1 (Phase 2, Strand A), and 3.7.2 (Phase 2, Strand B)), additionally, Teddlie and Tashakkori (2009) discuss the need to capture interpretations of the data accurately and without distortion. Such actions increase the trustworthiness of the data. Morrow (2005) states trustworthiness is comprised of four components (credibility, transferability, reliability and integrity) which affect the goodness of the data and thus whether the results can be trusted. Further, she suggests these are of concern as qualitative and quantitative data lead to differing forms of knowledge and claims that can be made about such knowledge. The notion of trustworthiness was also discussed by Lincoln and Guba (1985), they suggested it to be essential if the end reader is to 'pay attention' to the research findings. They also note that in relation to quantitative data trustworthiness is labelled validity (sections 3.5.3.4, 3.5.3.5 and, 3.7.4) and thus is also essential to the current study due to its mixed methods design.

#### 3.8.5.2 Reliability

Referred to as dependability by Morrow (2005) and reliability by Shenton (2004), this is an important consideration within research as it concerns the ability of other researchers to replicate the research to establish whether the same results would be found again. Thus, it concerns the manner in which both qualitative and quantitative research is conducted. To demonstrate reliability within the current research study the procedures for each strand of the research was detailed (section 3.5.3.4) as this ensures appropriate research practices have been adhered to.

Additionally, in line with the recommendations from Dudovskiy's (2017) for guarding against over stretching claims or reliability, four underlying principles were dominant in the evaluation of the research. 1) Representativeness of the sample: this was given close consideration to ensure various types of coaches were represented, 2) Time scales: data was collected over a full season to allow various training phases to be included 3) Choice within answer sets: to ensure coaches were not pressured into categories of response and, 4) Suitable methodological design: this allowed for depth and breadth due to the exploratory nature of the study.

#### 3.8.5.3 Credibility

Credibility or internal validity is about ensuring the research measures what was intended (Morrow 2005; Shenton 2004). Internal validity is thought to be achieved by prolonged engagement with participants as this leads to thick descriptions, specific to the context at hand and was achieved in the current study by interviews lasting more than 45mins. With regards to MMD credibility can, according to Morrow (2005) be achieved through triangulation of data at the analysis phase which in the current research project will occur under the discussion heading.

#### 3.8.5.4 Transferability and Generalisability

Due to the nature of the MMD, transferability (qualitative data), generalisability or external validity (quantitative data) was a key concern and thus external validity was an essential construct to be addressed if the results were to have impact beyond the participants of the study. Teddlie and Tashakkori (2009) state inference transferability as being specifically associated with MMD's, and deals with the extent to which qualitative results can be applied to the wide setting or as Shenton (2004) and Morrow (2005) suggests the extent to which findings can be applied to other settings or population groups. Both authors go on to suggest that providing details of the contextual sensitivities of the study allows for comparisons between settings thus allowing the end user of the data to decide if transferability can occur. Denscombe (2014) refers to this as the process of receiver context as it is left to their knowledge, understanding and interpretation of the typicality's between the contexts. However, Cole and Gardner (1979) highlight the need to set the boundaries of the study in order for this process to occur effectively. Within the current study this was addressed through the use of a number of mechanisms. Firstly, that

of judgement sampling which maximised the participant information, thus meaning data can be transferred to coaches with similar backgrounds.

#### 3.8.5.5 Integrity

Finally, confirmability deals with the integrity of the data and therefore the extent to which others can corroborate findings (Morrow 2005). Checking and rechecking data is essential if integrity is to be achieved. Therefore, during the judgement validations, one of the researchers played ‘devil’s advocate’ to allow the author to make full considerations of interpretations. This ensured corroboration by other trained researchers.

#### 3.8.5.6 Summary

In summary consideration of the various terminologies addressed the debates surrounding the use of quantitative and qualitative methods of data collection. Thus, utilising a mixed methods design allowed for both inferences and generalisations to be made. However, clear distinctions between each form of data interpretation needs to be articulated in order to avoid what Morrow (2005) refers to as making claims beyond the scope of the data. Therefore, in order to ensure claims of extensions to the knowledge base are not limited by the assumptions embedded within the methodological design and in turn the impact or negatively influence subsequent interpretations of the data (Price *et al* 2004).

### **3.10 CONCLUSION**

The methodology chapter was divided onto four main sections in order to give an articulate and transparent account of how the current study was undertaken. The research approach evidenced that from a post-positivist perspective a mixed method design would overcome the short comings of the existing literature. To meet the aims and objectives of the study three phases were performed in order to provide data that is representative of the population base being examined along with meaning behind the findings. The initial phase explored the key constructs thought to be associated with diffusion and adoption of sport psychology by coaches that fed into the design of phase two which was a concurrent two strand design. The data sets were merged at the discussion and analysis phase in order to provide a cohesive picture of events.

## CHAPTER 4 – PHASE ONE RESULTS

### 4.1 INTRODUCTION

Due to the exploratory nature of the study, and to provide in depth analysis, semi-structured interviews (Chapter 3, section 3.5.3.1) were used in order to in places where there were linkages between content, give meaning to the coaches' responses in order to explore the adoption of sport psychology.

The three aims of this chapter were to firstly, to establish coaches' overall awareness and understanding of sport psychology in the athletics coaching landscape. Secondly, to establish whether the Innovation-Decision Process and the Leisure Constraints Model could be used as the underlying frameworks for exploring coaches' decision making processes. Thirdly, due to the dated literature surrounding the barriers to sport psychology there was a need to unearth key factors affecting coaches' diffusion and adoption of sport psychology. Combined, these aims additionally highlight factors which could facilitate the successful negotiation of issues.

### 4.2 RESULTS OF PHASE ONE

#### 4.2.1 Subjective Reality; Coaches' meaning of Sport Psychology

In relation to discovering coaches' subjective reality of sport psychology, Phase One results revealed a lack of a clear and common understanding of sport psychology, its role and purpose in the coaching domain. This was evidenced through a range of quotes such as that from Talia who stated:

*'Sport psychology is about preparing yourself mentally for competitions, it's not just about being in the best shape of your life'.*

This quote appears to take the perspective of the athlete and alludes to the body and mind connection whereby physical prowess is not enough for athletic performance. Whereas, Stephanie discussed sport psychology in terms of what it is not and then what it can do:

*'It's not common sense, it's getting the most out of our fight or flight response'.*

In a similar vein, but through the use of more layman's terms, Alexa discussed the meaning behind the subject:

*'It means using one's mind to overcome obstacles.'*

Such broad understandings relating to who sport psychology is for, what it is about, and what it can do, leads to misconceptions in the form of barriers which impact upon its use. Such findings fall in line with the previous work of Barker and Winter (2014) and Wilson *et al* (2009) who similarly found athletic directors were confused about sport psychology. Thus in comparison to previous studies from the 1990s (Blinde and Tierney) which reported coaches to have a lack of awareness of sport psychology, participants in the current research study evidenced knowledge of its existence but a lack of understanding around what exactly it is and who it is for.

#### **4.2.2 Knowledge, Understanding and Awareness**

Participant quotes such as that from Stephanie, *'we [coaches'] do not have enough knowledge of sport psychology, it's a black art that's part of the overall practice'* provide further evidence of a developmental step change from lack of awareness towards knowledge. However, further quotes reveal more work needs to be undertaken at an academic level of this stage. Specifically, interpretation of the quotes reveals knowledge to be only one aspect of the initial stage of Rogers (2003) Innovation-Decision Process, as demonstrated in the quote from Alexa who shows knowledge but no understanding of how to utilise the information:

*'we know about it but it's not fully understood'*

Such developments add to current understandings of knowledge as a construct, results show knowledge appears to be the umbrella term which has a number of component parts, awareness which precedes it and understanding as a result of it. Such interpretations support the findings from Pain and Harwood (2004) in their study of

soccer coaches who also reported awareness of the subject but a lack of understanding around what to do with it. While such steps forward are positive, examination of the latent meaning underlying the content of the quotes combined with earlier research evidences a separation between the terminologies of knowledge and understanding. Thus knowledge exists but in varying forms and without understanding. Thus, awareness concerns knowing of the subject, knowledge implies the potential user is able to verbalise constructs associated with the subject but do not know what to do with these in terms of athletic enhancement, understanding.

Furthermore, a quote from Timothy unintentionally provides an insight into why such divides between coaches' knowledge and understanding of sport psychology may occur. He notes differing use of language in that in his coaching environment mental preparation is used. This, he implies, has positive connotations as Timothy suggests if this term was to be put in front of coaches they would be more likely to take the subject on board as it suggests a link to performance as opposed to mental health:

*'The term sport psychology is an issue within itself, we call it mental preparation. If you exchanged the word sport psychology with mental preparation you'd get a lot more coaches' onside. The word puts people on guard because it's something beyond the unknown'.*

Timothy thus reports the term (sport psychology) its self as being a barrier which inhibits use as it sits outside the language known to the user. This suggests a fundamental difference between terminologies utilised in the coaching environment compared to that of the academic. Stephanie extends and supports the interpretation that within the coaching domain the term psychology has negative attachments which falls line with the work of Woolway and Harwood (2015) who suggest much of the current research focuses on the fact that athletes are stigmatised with general mental health issues if they require assistance in the area of sport psychology. Like Woolway and Harwood (2015) Stephanie further noted the term leads to barriers due to a lack of familiarity and like Timothy holds the view that these need to be overcome:

*'Busting of myths and mysteries around sport psychology and that it's not to be feared is needed.'*

The quotes from Timothy and Stephanie include the words unknown and fear respectively thus providing an antecedent cause to why the barrier has arisen. This supports the analysis from Cole (2011) and his recognition of the reasons for resistance but in this case by coaches rather than athletes thus highlighting cross overs in underlying antecedents for both athletes and coaches alike. Hence, inadvertently it could be suggested that increasing the familiarity of the subject and making it part of coaches everyday vocabulary would ease barrier and potentially change perceptions.

### **4.2.3 Persuasion, Perceptions and Opinions**

It appears that the barriers lead to negative perceptions thus limiting positive persuasion (the second phase of Rogers (2003) Innovation-Decision Process). Barriers appear to relate to misconceptions in coaches opinions which are divided between those which concern the athletes being coached, as shown in the quote from Willow '*your athletes need to be at a certain level*', and coaches stage of development as evidenced by May:

‘coaches don’t need it before they specialise, I think they’ve got to work at their craft first’.

By way of explanation, the quote from Theo appears to explain that such perceptions are a hangover from lack of appropriate knowledge and awareness, thus evidencing a progressive link between coaches’ knowledge and perceptions. Furthermore, the persuasive factor appears to be the role of the NGB as he states:

‘I’ve not heard anything about it from the governing body, that’s why British Athletics needs to educate clubs of the benefits’.

Hence, these issues provided insights into potential reasons for lack of adoption by coaches’ thus providing valuable information specific to coaches’ athletic environment.

### **4.2.4 Implementation, Use and the Adoption of Sport Psychology**

In relation to the adoption of sport psychology, a number of the coaches suggested that the coach’s own intrapersonal issues as being a major barrier. Talia put forward the argument that:

*'Some coaches are not good at understanding sport psychology due to their old school attitude.'*

Interestingly, this was a term also used by Oz when he stated:

*'Some coaches' old school attitude is preventing its (sport psychology) use.'*

Thus, participants evidence a link between attitude and implementation but, of interest, in relation as to why they felt other coaches failed to use sport psychology, old school attitudes:

*'I studied it (sport psychology) at uni...I think sport psychology is an important part of coaching but I think some coaches won't have an understanding of it, like the old school style coaches'.*

As demonstrated in the quote by Helena, barriers which have not been addressed at the persuasion stage appear to affect subsequent implementation. Moreover, analysis of the latent explanation indicates towards a lack of academic education contributes to the formation of this attitude. This contributing factor was raised within the work of Blinde and Tierney (1990) who in their recommendations for future suggested educational background required closer examination.

Additionally the perception of others is not an isolated occurrence. Hollie, who similarly Helena had an educational background in sport psychology, also reported perceptions that old school coaches would not use the subject:

*'Old school people don't understand the concept so they don't use it, it's associated with a problem, they wait for the problem then fix it rather than prevent it'.*

It therefore appears that the perception of lack of implementation at the intra and inter personal level stems from differences between academic and vocational education as previously discussed by researchers (Barker and Winter 2014; Rynne and Mallett 2012;

Woolway and Harwood 2015). Thus, the perception that experience leads to fixed attitudes and academic learning leads to implementation due to understanding the subject.

#### 4.2.5 Confirmation of Previous Decisions

Confirmation at this stage was discussed in relation to whether coaches' use would be strengthened if figures of power, in this instance perceived role models, endorsed it use. Stephanie in particular suggested:

*'it (sport psychology) needs stronger advocates, role models'*

Few quotes were elicited at this stage of the process as coaches seemed more concerned with the initial stages as these influenced later use. However, coaches recognised the notion of moving through stage and that this takes time due to resistance:

*'It takes time for resistance to change'*

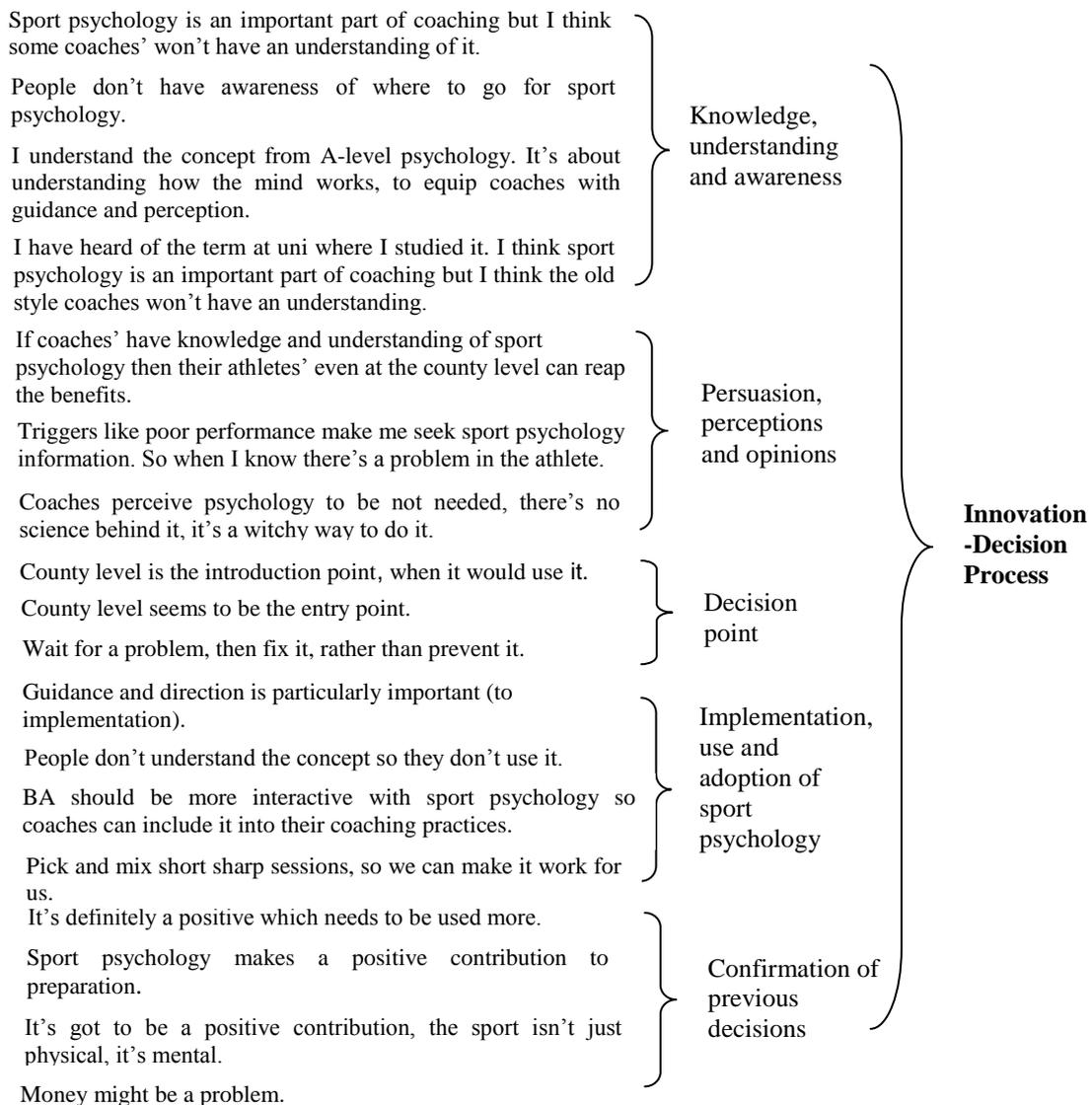
Thus implying that it is possible to make such changes.

Interpretations of participant quotes evidences support for the use of Rogers' (2003) Innovation-Decision Process as a guiding vehicle for, the examination of the diffusion and adoption of sport psychology by athletics coaches. Participant quotes articulately fell into five distinct categories representing the decision-making process (as displayed in Figure 12) denoted by Rogers (2003). Additionally, coaches also raised barriers which impact upon their use of sport psychology but with no specific articulation or organisation thus only those with an educational background evidenced consideration of how to overcome barriers. Consequently, participants quotes evidenced a need to organise barriers to enhance understanding of how, why and when they occur which in turn could ease their facilitation.

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**Figure 12. Results for Phase one**


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#### 4.2.6 Macro, Organisational and Structural Influences

Further to these intra and inter personal barriers affecting progression through the Innovation-Decision Process, a number of coaches' additionally discussed issues pertinent to the diffusion process at the macro level or, in relation to Crawford *et als* (1991) LCM, structural barriers. Specifically, social systems and the organisational or

directional flow of information were raised as issues with regards to a top down approach. Such issues support the recent work from Daley (2014) who's meta-analysis of athletics coaching provision led to his conclusion that current coach education provision was not fit for purpose. The quote by Oz opens this argument that formal diffusion from the top down was not apparent within the athletics domain:

*'There is no exposure through the system but educational courses made me receptive.'*

This point of view was also noted by Hollie:

*'From British Athletics as a structure it's not cascaded down to the grassroots level where I coach.'*

Sophia suggested that this issue was the result of the system (British Athletics) 'lacking in syllabus' whereby to her knowledge they provided no coach education in the area of sport psychology.

### **4.3 CONCLUSION FOR RESULTS; PHASE ONE**

Overall, the coaches' quotes enabled the discovery of their realities of sport psychology within their coaching practices. Specifically, the manner in which coaches discussed their experiences of sport psychology falls in line with the stages of Rogers' (2003) Innovation-Decision Process. Interconnections and overlap between the stages were discovered, thus evidencing that stages could not be considered in isolation. Consequently, it was evident that the boundaries of each stage need to be established along with the specific content which contributes to the make-up of each stage. Cognitions, emotional responses and behaviours which influence coaches' adoption decision regarding sport psychology need to be addressed. In addition to the new findings above, a number of themes emerged which fell in line with the stages of Rogers's (2003) Innovation-Decision Process. This authenticated the use of the process as the underlying mechanism to examine coaches' process of diffusion and adoption. However, it additionally showed nuances specific to the coaching environment, such as the need to dispel myths surrounding the subject which caused contextual sensitivities. Thus, while the basic premise of the process remains intact, it appears there are factors

specific to the coaching domain which need to be examined in closer detail as evidenced in Figure 9.

In summary, exploring athletics coaches awareness, perceptions, and barriers towards sport psychology evidences support for the use of Rogers (2003) Innovation-Decision Process and specifically, its use as a framework for mapping coaches' decision-making process. Likewise, in order to give structure and unearth antecedent causes to barriers affecting the process of diffusion Crawford *et al's* (1991) LCM could provide insights into when various categories of constraint arise and the extent to which they are embedded attitudes and why.

## **CHAPTER 5 – KNOWLEDGE; AWARENESS, EXPOSURE AND UNDERSTANDING**

### **5.1 ORGANISATION OF THE CHAPTER**

Prior to introducing the findings, this introduction explains the organisation of the chapter which examines the first stage of Rogers (2003) Innovation-Decision Process, knowledge. The chapter is divided into three sections which represent the concurrent design of the study that includes two complementary approaches to one study. Thus the first section titled strand A represents the quantitative results while strand B deals with the qualitative results and section 3 is the associated discussion. In this final section the results are drawn together to gain deeper understandings of how knowledge is gained, understood and operationalized in the coaching context.

#### **5.1.1 Hypothesis Testing**

As discussed in Chapter 3 (section 3.6.2.6), the sample consisted of 160 respondents (for a breakdown of participant demographics see appendix 5) which, within the results section, were analysed according to two categories of individual factors: the characteristic of the coach (the type of coach, representing the applied context in which the research is operating within) and the educational background of the coach (sport based education qualification, representing the academic context of the current research study (Blinde and Tierney 1990; Woolway and Harwood 2015)). Combined, these characteristics provide a deeper understanding of the coaches' qualification-based learning (Duffy *et al* 2013) and whether such underpinnings impacted on the coaches' Innovation-Decision Process and its subsequent content. It was hypothesised that significantly different responses would emerge based on these individual characteristics. Performance coaches were expected to evidence associations which better equipped them and their athletes for the competitive environment. Thus they were expected to be more focused on interventions which could be used to enhance the athlete's performance. Secondly, it was hypothesised that those with an educational background in sport would have developed enhanced search strategies, compared to those with no

such educational background, due to the emphasis on study skills in the management of their personal learning (McMillan and Weyers 2006).

Inferential analysis was conducted in order to test for differences within the data. Specifically, Chi-Square Tests for Independence were undertaken in relation to categorical data and Mann-Whitney U tests for ordinal and scale data. Total percentages varied by 1 or 2% points between some tables due to some respondents not completing all questions. The 95% confidence rate was utilised and therefore statistical significance in terms of differences/associations was evaluated at the .05 level.

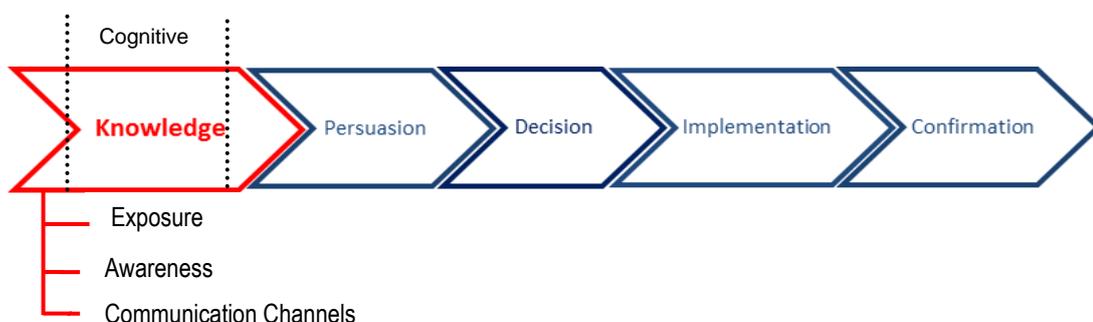
## **5.2 STRAND A, QUANTITATIVE RESULTS: KNOWLEDGE, EXPOSURE AND AWARENESS OF SPORT PSYCHOLOGY**

### **5.2.1 Stage One, Innovation-Decision Process; Seeking Knowledge**

The first stage of the Innovation-Decision Process is knowledge. Thus, as per the work of Rogers (2003), this section initially concerned coaches' exposure and awareness to sport psychology. Specifically, how and when this exposure occurred, along with the nature of the potential user's awareness of an innovation. To date, such considerations have received little attention within the diffusion and adoption of sport psychology. Yet, Diffusion of Innovation literature has deemed exposure to be an important stage within the Innovation-Decision Process because, whilst access to knowledge may be available, a lack of interaction with such knowledge can hinder understanding of the innovations (sport psychology) function and thus its diffusion and adoption. This issue is further exacerbated if the source of the knowledge is disputable due to lack of validation (i.e. unmediated sources of information). Hence, this initial stage of the Innovation-Decision Process is a vital aspect of the diffusion and adoption of sport psychology as a lack of knowledge can lead to inadequate deployment of the innovation. This can lead to a concern about risk with regards to the decision to adopt the innovation (Nemutanzhela and Iyamu 2011).

As displayed in Figure 13, the aim of this section therefore is to examine the initial stage of Rogers' (2003) Innovation-Decision Process in relation to both content and process. Thus, contributing elements to coaches overall knowledge base are examined through assessing respondents' exposure and subsequent awareness of sport psychology along with the mechanisms through which the knowledge was gained in relation to the types of communication channels which are to be examined. Its purpose is to provide an understanding of those factors which shaped coaches' knowledge, such as access points to sport psychology and how these could affect the diffusion and adoption of sport psychology.

**Figure 13.** Innovation-Decision Process depicting the Knowledge stage and its associated variables



A set of research questions pertinent to the knowledge stage of the Innovation-Decision Process was designed to synthesise multiple concepts relating to the role of knowledge in the diffusion and adoption of sport psychology and are reported below:

1. When was a coaches' initial point of contact with sport psychology?
2. Do the individual characteristics of the coach impact upon their awareness of sport psychology?
3. What channels of communication do coaches' use to access sport psychology information?

From the research questions a series of null hypotheses were generated to examine the effect of independent variables (the type of coach and the educational experience of the coach) and are displayed in the following sections. Data are reported from the point of

initial exposure through to understanding the social system, thus examining in turn each conceptual element that may contribute to coaches' formation of knowledge. For each conceptual element, tables are displayed in order of foci of analysis; type of coach, and educational background to ascertain if these characteristics account for any similarities or differences in responses.

## **5.3 INITIAL EXPOSURE AND DISCOVERY BEHAVIOURS**

### **5.3.1 Gaining Knowledge**

Within the diffusion of innovations literature, Rogers (2003) has depicted two models, namely the Innovation-Development Process and the Innovation-Decision Process. The first process (Innovation-Development) according to Rogers (2003) deals with exposure. However, published articles (i.e. Lennon 2007; Patogo *et al* 2007; Sahin 2006) appear to make the assumption that the initial exposure actually occurs at the knowledge stage of the Innovation-Decision Process thus dismissing the notion that exposure could occur long before knowledge is actually required. To establish the timing of this initial exposure and whether it is in line with the assumptions from Bass (1969) that timing influences subsequent adoption, two foci of analyses were examined against the independent variables of type of coach and educational background: 1) Initial exposure (whether coaches had heard of sport psychology before or after they became a coach) and 2) discovery behaviours (whether coaches came across sport psychology accidentally or intentionally).

### **5.3.2 Initial Exposure**

The data revealed that overall 65.5% of coaches had heard about sports psychology before they became a coach and 33.2% after (leaving 1.3% of respondents having never heard of sport psychology). From this analysis it is clear that coaches were commonly exposed to sport psychology prior to entering the athletics context.

To establish whether coaches' individual characteristics accounted for variations in the distribution of results, two research hypotheses were tested. Firstly, differences between

timing of the coaches' first encounter with sports psychology were hypothesised based on the two independent variables of type of coach and educational background. Secondly, differences were hypothesised with regards to coaches' discovery behaviours, again in relation to the two independent variables. To test these research hypotheses the Chi-square Test for Independence was used.

**Table 5.1:** Initial exposure to sport psychology

When first heard of sport psychology	Type of coach					
	Participation		Performance		Total	
	No.	%	No.	%	No.	%
Before becoming a coach	30	73.2	75	65.8	105	67.7
After becoming a coach	11	26.8	39	34.2	50	32.3
Total	41	100.0	114	100.0	155	100.0
Test statistics – Chi Sq	Value:		df:		p:	
– continuity correction	.452		1		.501	

Table 5.1a reveals that the null hypothesis, assuming no association between the different types of coach (participation and performance) and the initial exposure to sports psychology) was accepted. There was no association between whether coaches were participation or performance orientated and their initial exposure with sport psychology ( $p=.501$ ).

In contrast, the analysis of the coaches' educational background presented in Table 5.1b, reveals the rejection of the null hypothesis ( $p=.037$ ) although the effect size was weak ( $r=.184$ ). Therefore, those with a sport based education qualification were more likely to have heard of sport psychology prior to becoming a coach than their counterparts who did not have a sport based educational background. Thus, an educational background in sport appeared to be associated with the coaches' point of initial contact with sport psychology. This may occur due to those with an educational background in sport studying the subject at some point during their formal studies, then entering the athletics context post completion.

**Table 5.1b:** Educational background and initial exposure

When first heard of sport psychology			Sport based education					
			Yes		No		Total	
			No.	%	No.	%	No.	%
Before becoming a coach	a		38	80.9	66	62.3	104	68.0
After becoming a coach			9	19.1	40	37.7	49	32.0
Total			47	100.0	106	100.0	153	100.0
Test statistics – Chi Sq – continuity correction			Value:	df:	p:		Phi:	
			4.349	1	<b>.037</b>		-.184	

Inferential analysis of the coaches' discovery behaviours, presented in Tables 5.2a and 5.2b, resulted in the rejection of the null hypotheses. Firstly, there was a statistically significant difference between the seeking behaviours of participation and performance orientated coaches' ( $p=.001$ ) with a medium effect size ( $r=.270$ ). Specifically, participation coaches were more likely than performance coaches to have come across sport psychology accidentally. Given the earlier finding that the majority of coaches came across sport psychology prior to entering the coaching domain such lack of influence (from the variable type of coach), was not surprising. The reason being, England Athletics (2016) provides a descriptive for each of their courses and articulate to whom they are targeting and thus it is only once coaches enrol onto one of the Home Countries coach education pathways that they are required to officially distinguish themselves as either a participation or performance coach.

With regards to Table 5.2b, coaches' educational background was the only analysis that failed to reject the null hypothesis ( $p=.437$ ) as no significant differences were revealed between the sub-groups. Hence, there was no significant association between coaches with or without sports education and whether they intentionally or accidentally found sport psychology.

**Table 5.2:** Initial discovery behaviours**Table 5.2a:** Characteristics of the coach and initial discovery behaviours

Initial experience of sport psychology intentional or accidental	Type of coach					
	Participation		Performance		Total	
	No.	%	No.	%	No.	%
Intentional	13	31.7	73	62.4	86	54.4
Accidental	28	68.3	44	37.6	72	45.6
Total	41	100.0	117	100.0	158	100.0
Test statistics – Chi Sq – continuity correction	Value:		df:		p:	
	10.322		1		<b>.001</b>	Phi: -270

**Table 5.2b:** Educational background and discovery behaviours

Initial experience of sport psychology intentional or accidental	Sport based education					
	Yes		No		Total	
	No.	%	No.	%	No.	%
Intentional	55	51.9	30	60.0	85	54.5
Accidental	51	48.1	20	40.0	71	45.5
Total	106	100.0	50	100.0	156	100.0
Test statistics – Chi Sq	Value:		df:		p:	
– continuity correction	.604		1		.437	

## 5.4 TRIGGER FOR KNOWLEDGE

### 5.4.1 Needs versus Individual Differences

Rogers' (2003) work proposes the notion of a trigger or need (as opposed to that of individual differences discussed above), as being a determinant of the instigation of the Innovation-Decision Process, thus implying coaches would seek knowledge and understanding when there was a requirement (a problem which required a solution), rather than for general purposes. Moreover, Rogers (2003) stated triggers are a cluster of events that occur within the social system and that problems associated with these

triggers can be addressed via the elicitation of a scientific evidence base in applied practice.

#### 5.4.1.1 *Categorisation of Trigger for Knowledge*

The current reasons why coaches sought knowledge of sport psychology were examined in order to shed light on alternative contributing factors such as prior conditions (Rogers 2003) to the initiation of discovery behaviours. Based on Rogers (2003) reporting clusters of events as triggering a need to adopt an innovation, coaches were asked to provide their predominant trigger for seeking information (as opposed to selecting a predetermined response) which was then grouped through the use of inductive analysis to discover key categories of events. The descriptive statistics revealed the emergence of four categories of response pertaining to triggers for seeking knowledge. Table 5.3 displays the frequency of cases.

**Table 5.3:** Triggers for seeking knowledge (frequencies)

Type of trigger	Responses	
	Frequency (number)	Percentage (%)
Athlete behaviour	47	29.4
Continuous professional development	23	14.4
Interactions with others	23	14.4
Never had a trigger to seek information	67	41.8
Total	160	100.0

Table 5.3 reveals athlete behaviour as the main trigger for seeking knowledge about sport psychology but accounted for just over one quarter of reported answers, with improving performance and creating the best type of environment for athletes to operate in contributing to this category. Continuous professional development (CPD) was mainly a result of work requirements and not specifically triggered by an event within the athletic context. The interactions with others was notably characterised by word of mouth communication and specifically talking to other coaches. However, 40% of respondents reported no specific trigger for seeking sport psychology.

Further analysis on the three categories of trigger was performed to establish if coaches' were seeking any particular type of knowledge. It was hypothesised that performance coaches would reveal significant differences to that of participation coaches in relation to the four categories of seeking behaviours due to the competitive orientation of their coaching practices. The results violated the assumptions of the Chi-square Test for Independence, as 37.5% of cells had an expected count of less than 5 and therefore results are not displayed as inferences could not be made.

## **5.5 EXPOSURE TO SUB-DISCIPLINES OF SPORT PSYCHOLOGY**

### **5.5.1 Coaches Breadth of Knowledge**

Much of the previous literature examining perceptions of (Dunn and Holt 2003; Johnson 2006; Zakrajsek *et al* 2013), and resistance to, use of sport psychology (Ferraro and Rush 2000), failed to detail its sub-disciplines and rather reported on sport psychology as a whole. In a similar vein, Portenga *et al* (2010) reported that most definitions of sport psychology were too broad and focused on what can be researched as opposed to what can be done with the information. Moreover, such shortcomings in the literature limit the understanding of whether some areas of sport psychology may be adopted more readily than others. Therefore, conclusions of previous studies surrounding the uptake of sport psychology could be misleading (Portenga *et al* 2010). As a consequence, in order to ascertain the extent of the diffusion and adoption of sport psychology, seven academically recognised sub-disciplines of sport psychology (social psychology, motor control and learning, skill acquisition, lifestyle management, injury rehabilitation, applied sport psychology (ASP) and mental skills training (MST)) were examined.

Chi-square Tests for Independence were utilised to establish the breadth of the coaches' knowledge base regarding each of the sub-disciplines. As with the other sections, two foci of analysis (coach characteristics and educational background) were used. The

research hypothesis was that coaches' individual characteristics would influence their levels of awareness of the sub-disciplines of sport psychology. It was expected that performance coaches would have greater awareness of sport psychology than participation coaches due to the performance aspects of competition requiring greater specialisation. It was also expected that coaches with an academic background in sport would be significantly different to those without a sports based education as a result of what Blinde and Tierney (1990) have referred to as increased opportunities to be exposed to the subject due to the curriculum being predetermined by experts in their relevant fields. Table 5.4 displays each of the seven recognised sub-disciplines of sport psychology. Level of awareness is shown as a percentage of the total respondents who reported they had heard of the given area of sport psychology. Further to this, both independent variables (type of coach and educational background) are displayed and whether there was a significant association between participation and performance coaches and those with and without an educational background respectively. Where a significant association was found the *r.* value is displayed to show the strength of the association (full Chi-Square Test for Independence can be found in appendix 6).

For all seven identified sub-disciplines of sport psychology (Table 5.4) coaches' awareness of the sub-disciplines of sport psychology was over 57%, with the most well-known being that of injury rehabilitation (73.1%) and the least known facet being that of social psychology (57.5%), which also had the lowest number of total respondents. With the exception of MST significant differences were found in one coach characteristic rather than both. Thus differences were commonly found between those with an educational background and those without but no differences were commonly found between types of coach. Therefore, overall it appears educational background affects levels of exposure in terms of breadth of knowledge.

**Table 5.4.** Significant levels for exposure to the sub-disciplines of sport psychology

Discipline	Type of Coach			Educational Background		
	Level of awareness (%)	Sig.	r.	Level of awareness (%)	Sig.	r.
Social psychology	58.6	.745	-	58.6	<b>.000</b>	-
Motor control & learning	59.9	.180	-	60.0	<b>.012</b>	-.215
Skill acquisition	71.3	.168	-	71.6	<b>.038</b>	.182
Lifestyle management	62.4	.117	-	62.6	<b>.015</b>	-.210
Injury rehabilitation	74.5	.934	-	74.2	<b>.015</b>	.211
Applied sport psychology	68.2	<b>.047</b>	-.174	68.4	.267	-
Mental skills training	61.1	<b>.002</b>	-.256	75.5	<b>.028</b>	.198

The Chi-square Test of Independence (appendix 6) showed, as presented in Table 5.4, the foci of analysis, type of coach (participation and performance) revealed of the seven disciplines of sport psychology examined, five evidenced no significant associations. Therefore, the null hypothesis was not rejected as being participation or performance orientated did not appear to account for differences in exposure. Whilst no inferences can be made, in consideration of the distribution of responses in each of these cases the majority of coaches had heard of the disciplines. This was an encouraging finding as it indicates that exposure is occurring across both categories of coach. There was however, an upper limit to coaches' level of exposure as exposure was never greater than 75% of respondents thus implying there is an opportunity to further increase exposure amongst coaches.

In contrast ASP and MST revealed an opposing result. The descriptive statistics for levels of awareness were mid ranging at 60% and 61.1% respectively. Moreover, the Chi-square Test for Independence (appendix 6) revealed an association between the type of coach and awareness of the two sub-disciplines. Specifically, the null hypothesis was rejected as performance coaches were more likely to have heard of ASP and MST than participation coaches, although the effect size for ASP was weak ( $r=.174$ ) and medium for MST ( $r=.256$ ).

There were significant differences in six of the seven sub-disciplines and thus the null hypothesis was rejected in relation to the second foci of analysis, coaches' educational

background (Table 5.4). Consequently, with the exception of ASP, coaches with an educational background in sport were more likely to have awareness of the sub-disciplines than those without such backgrounds. This extends current insight regarding the factors which influence coaches' knowledge base as those with an educational background in sport were more likely to have heard of social psychology than coaches with no sports based education. Such a result is of importance not only due to the strong effect size ( $r=.317$ ) but additionally due to the results indicating that formal or advanced education increases the opportunity to be exposed to the sub-disciplines of sport psychology. Yet, the number of coaches with a sports based education profile is lower than those without. Thus, consideration of how to increase exposure for the two thirds of respondents with no access to academic courses and therefore perhaps academic resources is required as this led to less than half of the coaches knowing about the each of the sub-disciplines of sport psychology.

### **5.5.2 Overall Conclusion on Types of Sports Psychology**

In summary, when considering coaches' awareness of sport psychology sub-disciplines, educational background was associated with exposure to the sub-disciplines of sport psychology. Six of the seven possible sub-disciplines showed a differentiation between coaches with and those without a sport based education qualification. However, it must be noted that the number of coaches with a sports based educational background was low. This was possibly due to the predominantly voluntary nature of coaching within athletics (Chapter 11, section 11.8) and thus those with educational qualifications are not likely to make a career from the sport. The two factors which did evidence differentiation between coaches' awareness related to those disciplines which were considered to be specific to the performance environment and thus the context of competitive sport (ASP and MST) which might explain participation coaches' levels of awareness.

## **5.6 COMMUNICATION CHANNELS**

### **5.6.1 The Flow of Knowledge**

The Innovation-Decision Process details knowledge as being related to not only the point at which exposure occurs, and what they are exposed to, but additionally through

what means knowledge is gained. Rogers (2003) refers to this means through which knowledge is gained as communication channels and it is these which allow the flow of knowledge into and around the social system. As discussed in Chapter 2 (section 2.3.1.2), coaches could gain knowledge via two types of channel, mass media and word of mouth (WoM). Further, Rogers (2003) suggested that the knowledge stage of the Innovation-Decision Process was often characterised by a lack of knowledge. Contrary to this, section 5.5.1 (Chapter 5) evidenced that coaches were gaining knowledge regarding sport psychology, but that there was a lack of consistency between coaches' in relation to knowledge of the sub-disciplines of sport psychology. This raises questions surrounding access to appropriate forms of communication channels, as some facets are being accessed more readily than others (i.e. social psychology with 58.6% of coaches' being aware of the subject as compared to 74.2% of the same sample having awareness of injury rehabilitation).

#### **5.6.1.1 *Type of Communication Channel***

Table 5.5 (below) displays the categorisation of each type of communication channel used to diffuse sport psychology knowledge into the athletics social system. In line with the work of Rogers (1985), two categories of communication channels (media and WoM) were included. Further to this, to allow for deeper insights into the most useful types of communication channels utilised for the diffusion of sport psychology into athletics, Werthner and Trudel's (2009) categorisation of communication sources were also used. Thus, general media, specific media, general WoM, specific WoM and none (meaning no form of communication channel was seen as useful to gain knowledge of sport psychology) were used as the final forms of communication channels in this study.

Coaches were able to note more than one source they found useful to gain information regarding sport psychology. With this in mind, Table 5.5 displays the results in a hierarchal order in relation to total number of responses (coaches could provide multiple responses) along with percentage of answers and indicates that of the 588 total responses general media was the most useful type of communication channel.

**Table 5.5.** Usefulness of communication channels (frequencies)

Source of information	Measure		Responses	
	Type of communication channel	Frequency (n)	Percentage (%)	
Internet	General media	97	16.5	
Other Coaches	General WoM	81	13.8	
Books/Magazines	General media	80	13.5	
Athletes	General WoM	68	11.6	
Sport Psychologist	Specialised WoM	61	10.4	
Courses/Workshops	Specialised WoM	61	10.4	
Journals	Specialised media	53	9.0	
DVDs/Videos	General media	29	4.9	
TV/Radio	General media	28	4.8	
Organisations	Specialised media	9	1.5	
	None	21	3.6	
<i>n</i> =10	<i>n</i> =5	<i>n</i> =588	100.0	

Combined, media sources were more commonly sourced than word of mouth. Nonetheless, these distinctions between types of communication were not striking as coaches reported word of mouth as being useful 271 times and mass media 296. Individually, paper based sources (books and journals) were most commonly reported as being useful. The internet ( $n=97$ , 16.4%) was revealed as the most useful communication channel. Organisations (i.e. England Athletics, BASES and BA) were reported by coaches as the least useful method for gaining sport psychology related information ( $n=9$ , 1.5%). Such findings indicate that coaches do take advantage of a range of opportunities to access information which could have implications later in relation to the development of attitudes.

The top ranking responses were then subjected to Chi-Square Tests for Independence in order to establish whether coaches' most useful method of communication is dependent upon their individual characteristics. Hence, the analysis is with the respondents as the base rather than the answers. Results of the Chi-Square Tests for Independence and books/magazines violated the tests assumptions as 59.1% of cells had a count of less than 5 (minimum count was .35).

The results in Tables 5.6a and 5.6b reveal no significant differences in the usefulness of the internet as an access point to information, neither by type of coach nor educational

background. This highlights the importance of the internet as an inclusive communication channel for all types of coaches due to the instantaneous access it offers.

**Table 5.6:** Source of Information

<b>Table 5.6a:</b> Characteristic of the coach and useful source of information						
Internet	Type of coach					
	Participation		Performance		Total	
	No.	%	No.	%	No	%
Yes	21	50	76	64.4	97	60.6
No	21	50	42	35.6	63	39.4
Total	42	100.0	118	100.0	160	100.0
Test statistics – Chi Sq		Value:	df:	p:		
- continuity correction		.145	2	.101		

**Table 5.6b:** Educational background and useful source of information

Internet	Sport education					
	Yes		No		Total	
	No.	%	No.	%	No.	%
Yes	28	54.9	68	62.6	96	60.8
No	23	45.1	39	36.4	62	39.2
Total	51	100.0	107	100.0	158	100.0
Test statistics – Chi Sq –		Value:	df:	p:		
continuity correction		.751	1	.386		

### 5.6.2 Mediated versus Unmediated Sources of Knowledge

Within the coaching literature Werthner and Trudel (2009) and Erickson *et al* (2008) further referred to two formats through which information can be received. Firstly, mediated (whereby an ‘expert’ in the related field directs the information which ensures its legitimacy) and secondly, unmediated (whereby the learner, as opposed to an expert, decides what is important to them). Thus it was important to establish what format coaches were currently using as mediated sources according to Buntrock and Chute (2002), respondents are more likely to use unmediated due to ease of access but mediated sources are more effective due to the specialist knowledge.

**Table 5.7.** Mediated versus Unmediated Sources of Knowledge (frequencies)

Source of Knowledge	Responses	
	Frequency (No.)	Percentage (%)
Mediated	49	30.6
Unmediated	90	64.7
Total	139	100.0

Although 21 respondents failed to answer the question, the findings presented in Table 5.7 show that over two thirds of the respondents who answered the question predominantly preferred to gain their knowledge from unmediated sources and thus sources which had not been validated by experts. Thus, whilst it was evident that coaches did have awareness of sport psychology, the quality of the information could not always be assured. This could therefore leave the subject open to misinterpretations, misconceptions and incorrect learning.

Chi-Square Tests for Independence were performed to establish whether coach characteristics (type of coach and educational background) accounted for any of the variance in coaches' use of mediated and unmediated sources of information. Table 5.8a and 5.8b revealed no significant differences between the independent variables of type of coach ( $p=.494$ ) and sport based education ( $p=.731$ ) respectively and the use of facilitated sources of knowledge.

**Table 5.8:** Facilitation of Information**Table 5.8a:** Characteristic of the coach and facilitated source of knowledge

Was the source of mediated or unmediated	Type of coach					
	Yes		No		Total	
	No.	%	No.	%	No.	%
Mediated	9	28.1	40	36.7	49	38.4
Unmediated	23	71.9	69	63.3	92	65.2
Total	32	100.0	109	100.0	141	100.0
Test statistics – Chi Sq – continuity correction	Value:	df:	p:			
	.468	1	.494			

The null hypotheses were not rejected, indicating no differences in the sources of information participation and performance coaches use to gain knowledge of sport psychology. Nor were there differences between those with and without an educational background, therefore indicating that when seeking knowledge those with an educational background in sport do not have difference search strategy methods in terms of deciphering between mediated and unmediated forms of information.

**Table 5.8b:** Educational background and facilitated source of knowledge

Was the source of mediated or unmediated	Sport education				Total	
	Yes		No			
	No.	%	No.	%	No.	%
Mediated	4	31.8	35	36.5	49	35.0
Unmediated	30	68.2	61	63.5	91	65.0
Total	96	100.0	44	100.0	140	100.0

Test statistics –	Value:	df:	p:
Chi Sq – continuity correction	.118	1	.731

## 5.7 SUMMARY OF QUANTITATIVE RESULTS; KNOWLEDGE

With respect to knowledge (the first stage of the Innovation-Decision Process), coaches do appear to be gaining awareness of the existence of sport psychology. But, what was apparent within the results was the recognition that for the majority of coaches their initial contact occurred outside of the athletic social system. Hence, coach related variables (type of coach) had minimal impact upon coaches' initial exposure to sport psychology. Yet, once coaches entered the athletic environment athletes' behaviour appeared to be the primary trigger for seeking knowledge. Finally, having evidenced awareness of the overall subject, results evidenced that knowledge of the various disciplines within the subject varied according to coaches background, whether that be holding an advanced educational qualification or personal experience. Thus overall, coaches' knowledge base varied greatly depending on their prior socialisation.

## **5.8 STRAND B, QUALITATIVE RESULTS: SOURCES OF KNOWLEDGE**

Qualitative results (in each of the chapters 5 to 9 and 11) were based upon 24 semi-structured interviews (Appendix 7). Coaches' individual characteristics including gender, age, discipline coached, type of coach and educational background were initially reviewed (as discussed in section 2.6.1.8) in order to ensure a representative sample had been reached.

### **5.8.1 Knowledge Acquisition**

A number of conceptual elements were associated with sources of knowledge. Specifically, the level of knowledge the coach held, along with the mechanisms through which this knowledge has been acquired. To this end, Braguinsky (2014) suggested that much knowledge is encapsulated through the accumulation of past knowledge, otherwise referred to as industry-specific knowledge that is learnt on industry specific educational programmes. Similarly discussing industry-specific knowledge, researchers (Cushion *et al* 2010; Gonzalea-Rivera *et al* 2017; Rynne and Mallett 2012) otherwise refers to sources of knowledge acquisition as the means through which coaches learn their craft. They suggest that the antecedents of such knowledge are embedded within coaches' past experience and in addition, within peer interaction (discussions with other coaches). Such presumptions fall in line with the constructs associated with the Diffusion of Innovation literature and specifically, the knowledge stage of the Innovation-Decision Process.

Specifically, within the coaching literature, in line with Werthner and Trudel (2009), Cushion *et al* (2010), simply refer to primary and secondary sources of information as a form of knowledge acquisition. They conclude that there is a lack of insight surrounding the social dimension of seeking knowledge. Turning to the business setting, unlike the current coaching literature, within his own industry, Rogers (2003) distinguishes between the various forms of communication channels including WoM as discussed in sections 5.6.1.1. Given this mixture of possible forms of acquisition it is not surprising

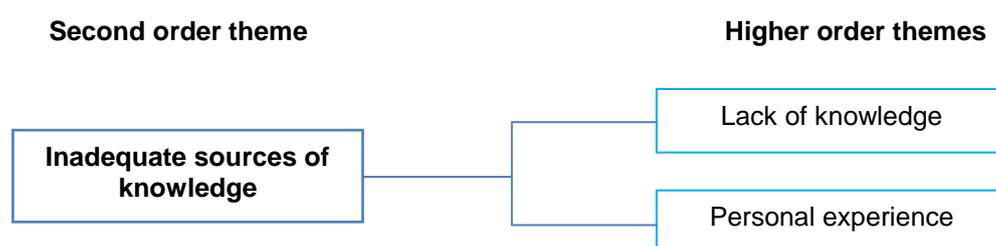
that more recently Stoszowski and Collins (2015) have suggested a need for more informed literature surrounding coaches' opinion of which sources of information are more or less useful so that enhanced learning environments can be provided by change agents.

As shown in Appendix 7, the general dimension of 'sources of knowledge' was underpinned by three conceptual elements (and further refined within the text) which occurred on an increasing scale from inadequate sources of knowledge which was characterised by a lack of knowledge, to unmediated sources, whereby coaches accessed information but failed to check the credibility/reliability of the sources to finally that which was supported by expert input and therefore mediated sources of knowledge. The sub-themes (inadequate sources of knowledge, unmediated sources of knowledge and mediated sources of knowledge) were further driven by nine higher order themes which gave order and meaning to the mass of information generated from the 139 raw data themes associated with sources of knowledge (Figures 14 to 16).

## 5.9 INADEQUATE SOURCES OF KNOWLEDGE

Wood (2009) reported inadequate knowledge of a subject area to have implications for the successful process of diffusion and adoption and thus its emergence as a second order theme warranted deeper investigation. Inadequate sources of knowledge evidenced two antecedents which were characterised by firstly, coaches' lack of knowledge, whereby whilst coaches had heard of the subject of sport psychology, their knowledge and subsequent understanding of how it related to coaching was remiss, and secondly, coaches evidencing the discovery of sport psychology through the generation of personal experiences as shown in Figure 14 below.

**Figure 14.** Antecedent themes for inadequate sources of knowledge



### 5.9.1 Lack of Knowledge

The initial higher order theme to occur was that of lack of knowledge, which arose throughout the narratives of certain types of coaches. Specifically, this theme was typified by coaches' who following exposure to the subject, deemed themselves to actually have sparse knowledge and understanding of the subject. To this end, commonalities occurred in relation to the background of the respondents in this higher order theme of inadequate sources of knowledge. Specifically, those with no educational background in sport are participation coaches and although males reported lack of knowledge it was dominated by female coaches as evidenced by Ariella:

*I realise how very little I know about it (sport psychology) although it's valuable whatever level an athlete is at.*

Kali, who was also a female, participation coach, further evidenced lack of knowledge regarding sport psychology but noted the current point in her coaching career as the underlying influencing factor to her lack of knowledge thus extending the insights of Ariella:

*I'm pretty new to coaching with a fair non pro-knowledge of psychology from theory or practice.*

A similar perspective of lack of knowledge was also reported by Amy. With the same individual characteristics (female participation coach with no educational background in sport) as Ariella and Kali, Amy also described being influenced by the fact that she was in the early stages of coaching but went further by explaining why being at an early stage of her coaching shaped her knowledge of the subject:

*Not really massive on sport psychology because I coach at a lower level so probably quite low understanding ... I think at the moment I'm more interested in developing my knowledge about skills but that's just because of the level that I'm coaching now.*

Such explanations provided insights into the knowledge of sport psychology specifically at the early stages of coaches' careers. Analysis of the quotes and the

coaches underlying characteristics evidenced that respondents who were categorised as participation coaches, with no sport based education qualification, appeared to engage with the initial stage of the process of diffusion (knowledge) but progression to the later stage of adoption (implementation) was stunted by a lack of engagement with sport psychology as captured by the male coach Max when he said:

*I don't really know much about sport psychology.*

Consequently, knowledge appears to be limited for coaches with certain individual characteristics.

### **5.9.2 Personal Experience**

The second sub-theme associated with inadequate sources of knowledge emerged from coaches who also reported to have no educational background in sport but whom, unlike those with a lack of knowledge, had gained their knowledge via personal experience of sport psychology. Hence, it was unmediated and when looking at the latent meaning behind the quotes this personal experience had left them feeling as if there were gaps in their knowledge and thus inadequate. Thus, analysis of the data from the second sub-theme evidenced, despite exposure to the subject of sport psychology, that the absence of evidence-based learning led personal experiences to also emerge as a limiting factor to coaches' industry-based knowledge of the subject. Evidencing personal experience as an anecdotal source of knowledge Charlie, a participation coach, reported:

*I had my own take on psychology back then, throughout my football days, but I don't really know much about sport psychology as is.*

Charlie suggested that being a competitive sportsperson led to awareness of sport psychology but because it was his own version of the subject which, upon reflection, had led to a level of inadequate knowledge of the subject *per se*. Ollie similarly reported personal experience as the antecedent source but highlighted the relationship between using sport psychology as an athlete (himself) and then also as a coach thus showing personal experience of two different levels but both resulting in inadequate knowledge:

*We experience it directly with our racing and then training (as a coach).*

Freddie (a performance coach) shared a similar historical perspective to that of Charlie, in that his knowledge was the result of the accumulation of past experience but was similar to Ollie in that it was derived from his personal coaching experience as opposed to personal competitive experience or mediated sources.

*I think probably lifetime experience...I haven't read a lot of psychology, my coaching is based on my experience and my coaching with other coaches' and my feedback.*

Such quotes highlighted that with regards to a coach's personal experiences, unlike the sub-theme of lack of knowledge which was dominated by female participation coaches, both performance and participation coaches evidenced personal experience of sport psychology all of whom were male. In addition, coaches appear to attach a timeline to this experience rather than a one off event or recent experience, thus the word experience for these coaches specifically related to something that had been built up over time and thus an inadvertent consequence as opposed to something they set out to gain as encapsulated by the quote from Ian:

*I'm 55 now and I've been involved in sport for the best part of 45 years, you can kind of pick up elements of it not necessarily the refined bits but the basics, trying to suppress negativity, enhance positivity.*

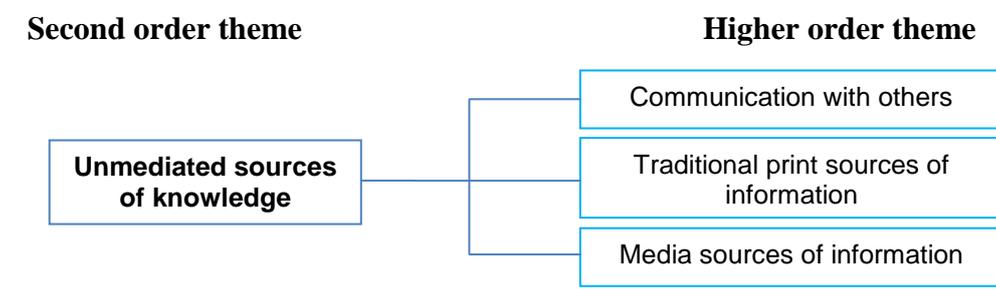
Such conceptual awareness provided new insights surrounding the nature of coaches' knowledge and the mechanisms through which they gained such knowledge.

## **5.10 UNMEDIATED SOURCES OF KNOWLEDGE**

Unmediated sources of knowledge were portrayed by Werthner and Trudel (2009) as a type of learning situation which lacks teacher or instructor involvement, thus according to Mesquita *et al* (2014) is a form of self-directed learning. As a result, the learner chooses what knowledge to search for and subsequently utilise. Coaches reported gaining knowledge of sport psychology via a range communication channels beyond that of solely personal experiences. Consequently, in contrast to inadequate sources of

knowledge which appeared to be exempt of seeking behaviours, this second order theme was underpinned by discovery behaviours, where individuals were purposefully seeking knowledge, (hence mirroring the findings in Chapter 5, section 5.3.2 above). Communication with other coaches, traditional print sources of information, and media sources of information formed the second order theme of unmediated sources of knowledge as depicted in Figure 15.

**Figure 15.** Antecedent themes for unmediated sources of knowledge



### 5.10.1 Communication with Others

As evidenced in the quantitative analysis (section 5.6.1.1), some participants encountered sport psychology through peer observation and vicarious experiences. Thus, communication with others through both WoM and non-verbal forms of communication (i.e. observation), were raised as areas of discussion amongst respondents, as evidenced by Kali who also stated the outcome of such communication:

*I'm seeing a lot of embedded psychology there of a kind when I'm working with experienced coaches' a lot of what I'm doing is learning.*

Similarly, Richard also highlighted word of mouth as a communication channel but was articulate with regards to the specificity of the interaction being amongst members of his club:

*Discussing it (sport psychology) with our fellow club members.*

However, Steve, a Performance and Coaching Officer, reported WoM to be associated with 'awful barriers' which he had to break down in order to facilitate clubs

collaborating with regards to sharing knowledge (some of which he reported to be sport psychology specific and secondly based on his Masters in Human Resource Management (HRM) he reported he considered communication in itself to be a discipline within the banner of sport psychology) and thus best practice:

*The other thing I've done is to break down the barriers between clubs. It was awful when I came into post. I had an awful lot of work to make sure clubs worked better together collaboratively.*

However, Bernie disputes the point from Steve regarding the collaboration between club coaches:

*I've got to know good quality throwers, good quality coaches; I've talked to them, discussed it (sport psychology) with them and learnt in that way.*

Through the use of probes Bernie revealed that these good quality athletes and coaches were not from his own club therefore evidencing that collaboration does occur in various locations around the UK but, further probes could not elicit why or how he had managed to form such bonds.

Using similar probes, due to also stating they learn through talking to others, Devon, a head coach like Bernie and additionally also a performance coach, he simply stated:

*Really just generally talking to people.*

Overall, when analysing communication with others a speculative structure arose. In the first instance, it appears coaches learnt from observing other coaches. Such learning then moved to more direct discussions with club members thus widening the scope of learning and discussions. Of concern however, was that this final transition to greater learning opportunities through others, also posed the largest number of difficulties as it involved communication between separate athletic clubs. Thus, as the size of the social system involved increased the greater the difficulty in communication and thus the harder it would be to share sport psychology based information.

### 5.10.2 Traditional Print Sources of Information

Following the discussion pertaining to human interaction, analysis of the data developed to alternative forms of communication. In their work investigating the diffusion of sport psychology by swimming coaches, Blinde and Tierney (1990) discussed key communication channels as being books, journals and magazines. However, data from phase one results (Chapter 4, section 4.6) in the current study gave rise to a wider expanse of channels (as highlighted in Chapter 5, section 5.6.1.1). Consequently, traditional print sources of information (as shown in Figure 13) emerged as the first non-verbal type of communication channel. As per the initial point of exposure section above (Chapter 5, section 5.3.2), using traditional print sources as a means of communication often occurred prior to coaches entering the athletic arena. This often meant knowledge was dormant for a period of time thus slowing the rate of adoption. In relation to the source a commonly utilised traditional print was that of ‘self-help’ style books such of that mentioned by Devon:

*I need to finish that NLP book and get back The Chimp Paradox because I think they're useful and certainly the idea of exercising a chimp and then putting it back in a box is very useful.*

Such a reliance on books and specifically the modern ‘self-help’ types was also depicted by Phil:

*I'm part way through reading a book, NLP for dummies and I'm part way through the one about the chimp.*

While mentioning the same book Max detailed the role of an alternative form of visibility (one of the five perceived characteristics of an innovation discussed in Chapter 2, section 2.3.2). Specifically, rather than seeing the subject he had heard of the book which highlights the notion of needing underlying awareness in order to engage with the medium. Further to this, Max also noted a separation between knowledge and understanding and the fact that you can gain knowledge but not truly understand it until you interact with knowledge in a specific way, which in his case was when in was in the context and social system in which the knowledge was intended, as emphasised in the second part of the narrative from Max:

*I came across a book in Waterstones one day, I'd heard a lot about it, The Chimp Paradox by Dr Steve Peters and I knew he'd worked quite a lot with Great British athletes and various other athletes in other sports. So, I got the book and read the book and it's very enlightening and quite interesting about how the mind works and all the rest of it. I didn't do much with it at the time but I read a lot about it and I understood and recognised things but at this stage I wasn't in an athletic role or I wasn't in an athletic club.*

Similarly noting reading about sport psychology initially (as opposed to using it straight away) Richard simply reported:

*We read about it (sport psychology) in journals.*

However, this simple statement reveals a change in the specific source of knowledge. Richard's quote directly mentions academic sources rather than one written for the general population. This was a source noted by Lewis who was an experienced opinion leader who had an educational background in sport, but had gained this after entering the athletics context.

*Documents that are published come my way so it's not just books that you can buy off the shelf, its papers that people have published.*

When considering the underlying coach characteristics that may account for the differences in use of the various mediums, while all but one coach had no educational background in sport one commonality between Phil and Max was that they were early career coaches who dealt with junior athletes. However, Phil, Richard and Lewis were all opinion leaders. The difference however, was that Richard and Lewis had a greater number of years of experience than the other coaches. Thus, there appears to be a combination of characteristics at play.

### **5.10.3 Media Sources of Information**

Extending the previous work of Blinde and Tierney (1990), George illustrated a move beyond that of traditional print sources into media sources (that which according to Driscoll and Brizee (2015) is gained from broadcasts and the internet, electronics) when he stated:

*People are learning differently now so clearly handouts are old hat now, everything's on iPhones, iPads, and so on. I'm just exploring an app at the moment.*

Like George, Bill and Steve are performance coaches with an educational background in sport and both stated a move beyond traditional print sources to gain knowledge and similarly mentioned a variety of sources through which he gained information:

*I Google stuff, Athletics Weekly.*

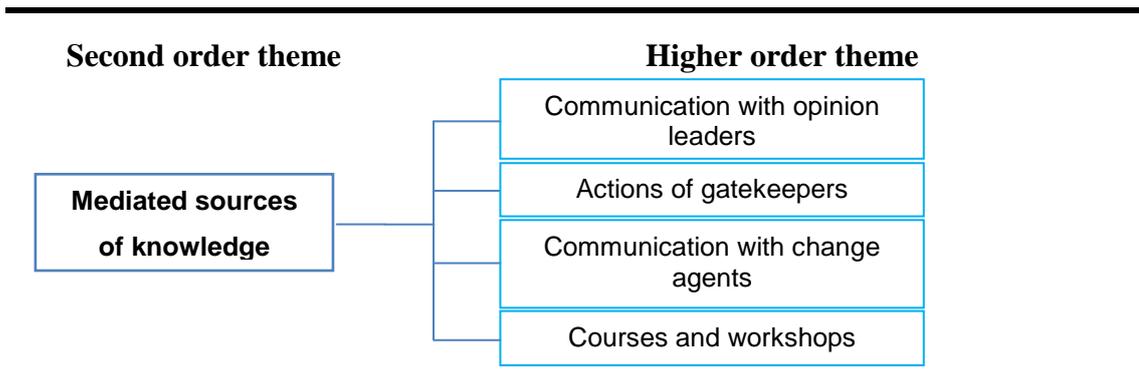
*Really through sport magazines, TV, stuff like that really.*

Of interest was the difference between the coaches individual characteristics, as Max was a participation coach with no sport educational background compared to George who was a performance coach with a sport based degree and used the subject in a formal way. However, Richard, who simply stated '*we read about it (sport psychology) on websites*' was, like George, a performance orientated coach with a sports based educational background.

Overall, analysis of the quotes indicated that coaches' use of traditional print sources versus media sources was dependent on factors such as the usefulness of the information coaches came across, rather than their defining individual characteristics. Additionally, the amalgamation of the themes reveals that coaches often use a variety of sources to gain information, therefore highlights a need to ensure a variety of access points are made available to coaches.

## **5.11 MEDIATED SOURCES OF KNOWLEDGE**

The final second order theme associated with sources of knowledge was that of mediated sources of knowledge (Figure 16). Werthner and Trudel (2009) articulate mediated knowledge to be information which is imparted to an audience as a result of a decision made by another person.

**Figure 16.** Antecedents of mediated sources of knowledge

This theme thus related to the use of a third party for accessing and communicating information. Four antecedent groups emerged, three related to specific individuals involved in the spread of messages, with the fourth relating to a mechanism through which coaches' receive information.

### 5.11.1 Communication with Opinion Leaders

According to Anderson and Whall (2013) opinion leaders are those who exert influence over others by aiding understanding and enabling the innovation to become part of normal practices. Unsurprisingly, under the dimension of sources of knowledge, communication with opinion leaders arose as a higher order theme. Specifically, participants within the current study highlighted opinion leaders to be various people who were related to the immediate social system within which they were operating and were known personally to the coach, as articulated by Marty:

*One of the athlete's mothers is a sport scientist who studied at Loughborough so I tend to use her as a sounding board and can spend a lot of time face to face and on the phone talking about athletes and various other items related to my coaching style and practices. For advice I speak to a friend who ran at two Olympics in the 1000m finals and also won a Chicago Marathon and who is now a sport development officer in my area.*

Marty clearly defined the roles of his two opinion leaders based upon firstly, his relationship with the individual and, secondly, respect with regards to the individual's educational background whether it be academic or vocational. Thus, Marty's

explanation epitomised the accessing of third party information and the use of informal mentor roles. Contrastingly, Devon evidenced the relationship of communication through the use of prescribed mentor roles as a result of being on a professional development programme. The relationship appeared more formal and has a focus on personal growth as opposed to guidance:

*The national coach mentors are key to my personal development and the information she's passed to me through that programme is my main source. I've certainly done a couple of sessions on the LCDP dedicated to that (sport psychology).*

Thus, the role of the opinion leader was defined by the receiver of the information and characterised by both formal and informal interactions. Of interest however, was the language coaches used to define those in the role of mentors as depicted by Steve:

*I'm on the LCDP and I think it's absolutely brilliant, I happen to have a very good mentor myself which I will tell you, he's based at BA.*

Unlike the previous quotes, here, the word mentor was clearly articulated by Steve, further to this, similarly to those prior, the element of respect was present in Steve's mention of his mentor's role which in this case was at BA.

Looking at the role from the alternative angle, as an opinion leader Lewis discussed his willingness to take on board the informal mentor role as mentioned by Marty above, thus indicating towards a mutual acceptance as they are not referring to each other, hence this type of relationship is not happening in a one off isolated fashion:

*It was all about sharing information and X came up to me, there was a I guy from XX and he wanted to ask me a few questions on sport psychology and how I had found it and what I had done.*

As a female coach, Christina also discussed her openness to information sharing but gave insights as to why she thought she could be helpful to others:

*I'm proactive and very very open about working with other people, I mean I'm in a very nice position where lots of people come to me and seek for advice.*

Such quotes confirm opinion leaders (as discussed in Chapter 2, section 2.3.1.3.1) to be those who are already operating within the social system, moreover the coach narratives provide new insights into the potential nature of coaches' interactions, and their roles within the social system from both the receiver and providers perspective, which to date had not been comprehensively achieved. However, examination of the coach characteristics reveal discussion occurred between performance coaches as opposed to participation coaches. This could be down to firstly the competitive nature of their involvement in sport meaning they are looking to gain a competitive advantage and therefore have different underlying driving factors. Secondly, it could be due to performance coaches having different confidence levels.

### 5.11.2 Actions of Gatekeepers

As the second higher order theme gatekeepers, who Rogers (2003) describes as individuals who persuade individuals to listen to change agents, were commonly referred to by respondents in the current study as being the club and coach development officers, as reported by Steve:

*We have a LCDP where [club and coach development officer's name] runs a weekly or fortnightly seminar...we bus experts in rather than bussing coaches' out. I think this in terms of convenience, all of our coaches' volunteer...so if you can bus somebody good in with good requisite knowledge for instance, the club can for an hour and a half one evening, get a lot of people up skilled rather than spending a lot of money sending people on expensive courses at remote locations. So I think it's about efficiency and good management, so yeah I think the LCDP which [name] runs is very good.*

Steve's narrative highlighted the role of the club and coach development officer, and described them as the individual driving up standards through the provision of expertise at pertinent points in time and location. In a similar vein, but from the perspective of the individual being bought into the social system, Beau noted she was invited by a club and coach development officer to go to a group of coaches as opposed to them travelling to her. From her perspective she always felt that this approach to up-skilling coaches will make a difference:

*Working with [name of club and coach development officer] to get small pockets of coaches will make the difference.*

When probed about the difference, Beau explained that when gatekeepers get one expert to travel you can get small pockets of coaches together who can then make a difference to their social system en mass, rather than sporadic information to one isolated coach who travelled to a workshop independently. This was a view supported by Amy, a gatekeeper, who suggested making the expert travel to the coaches overcomes the issue of working in rural areas.

As the recipient of the gatekeeper's (club and coach support officers) actions, both Max and Ian (who operate in different micro social systems) respectively, discussed their club and coach development officers in relation to them (the gatekeepers) providing opportunities to access mediated knowledge, thus highlighting the gatekeepers role as a two way communication channel. Thus, one which allows information in, but, also facilitates coaches' outward discovery of expert knowledge:

*I've joined the local coach development team now with [coaches' name] and [club and coach development officer's name], who's our Surrey representative so I get access now to quite a lot.*

Similarly, Ian noted this multidirectional flow of access to information and praised his allocated gatekeeper directly as the individual who controlled such flow of information to and from the coaches:

*She is now a club and coach rep and she is fantastic, she is the bees knees, we're on the LCDP and she is brilliant, she does Cornwall and Devon, she would be the person I could approach. She's great at getting me coaching seminars down in Exeter. She ought to be the first port of call.*

Thus, the gatekeepers appeared to have a specific role in relation to allowing change agents into the athletic social system which coaches within the system could subsequently access. Whilst this process was reported positively, those who previously reported a lack of knowledge were notably not part of such a programme of activities as notably none of their transcripts referred and thus contributed to this theme. Hence, given that a gatekeepers' role is to operationalize the coach development programmes and this respect narrative revealed a clear role for the gatekeeper, it also highlighted disparity within the social system with regards to who had access points to such gatekeepers.

Those on the LCDP sang the praises of the role but those with an apparent lack of knowledge failed to mention such people, thus highlighting reasons as to why they perhaps have a lack of knowledge or that lack of access to gatekeepers maybe linked to a lack of knowledge.

### 5.11.3 Communication with Change Agents

Communication with change agents arose as the third antecedent factor contributing to mediated sources of knowledge. This in itself evidences towards a hierarchal structure to the development of knowledge in relation to the process of diffusion. In relation to content, the role of the change agent (as discussed in Chapter 2, section 2.3.1.3.1 of the literature review) was defined by Ulrich (1997) as an individual who could translate strategy into action, consequently their positioning within the social is said be to be critical to the successful acquisition of information. With regards to psychology, Nair (2013) suggested the psychologist to be the change agent due to their positioning which enable them to influence others, through for example mediated information from beyond the realms of their immediate social system. Thomas spoke more broadly of such role in 1971 when he suggested psychologists were positioned to be change agents. As a performance coach with an educational background in sport, George recalled his initial exposure to a sport psychologist and how it triggered interest in the subject area:

*The first sport psychologist I came across really was [person's name] who had done loads of Olympics prior to moving out of psychology and I saw them work with people who were or went on to be big names at the time and world beater and I was fascinated.*

Rudi also discussed the notion of an individual from outside his own athletic arena which sparked his interest in the subject and had a similar coaching profile to George, in that he was performance orientated, but did not hold a sport based educational qualification:

*My daughter has just graduated in psychology, coincidentally, and so that's sparked some fascinating conversations.*

These parallel insights regarding a change agent from outside their own social systems triggering an interest in the subject of sport psychology suggests that the work of the

gatekeeper (who was previously discussed as the person who introduces coaches to sport psychology) could be overcome. However, both these coaches are participation orientated compared to those coaches with lack of knowledge who for the majority were participation coaches. Thus evidencing some type of difference whether it be, motivation, the need for information or simply the type of coach they have chosen to be.

In total contrast, Noah, a participation coach with no educational background discussed the point at which a change agent would be bought in and why, thus disputing that choosing to be a participation coach leads to a lack of awareness of change agents:

*The coach will get them to a certain level and then they might just need something to, you know, image something at the end of the rainbow, you know they're (sport psychologists) the one's that can come in with stuff the coach hasn't thought of.*

Steve describes a similar use of the change agent despite being a performance coach with an educational background in sport:

*I do know someone in Portsmouth, X, and someone in Southampton...and they have elevated knowledge so I reach a point where I call upon those people.*

Both Steve and Noah's quotes highlight the point at which external help may be needed as well as the trigger that caused the need for accessing sport psychology. However, dissection of their coach profiles do reveal them to both be opinion leaders with greater levels of experience than the previous participation coaches with a lack of knowledge who failed to discuss change agents when probed. Thus, experience appears to emerge as a factor which triggers the use of a change agent in this manner rather coach characteristics.

Further to this, unlike the role of the gatekeeper which was defined similarly by coaches, examining the patterns of responses of coaches under this theme revealed a divide between the coaches belief surrounding the role of the change agent. Coach narratives in the current study showed that for some coaches the change agent as a person who triggered an interest in the subject as articulated by Rudi and George. In contrast, other coaches described a trigger which then required the change agent to be bought into the social system (as per Steve and Noah's quotes). Despite differences in

why they are used, the manner in which they are used saw the sport psychologist confirmed as being the potential change agents responsible for introducing sport psychology into the system as a result of various triggers. This was due to the specific nature of information they could provide to coaches as summarised in the quote from Ollie:

*There's a girl who runs the programme, X, she's a great reference.*

Such information provides new insights into the jobs associated with various roles within the athletics social system.

#### **5.11.4 Courses and Workshops**

The final mediated source of knowledge was the only antecedent to not directly relate primarily to the role of a specific individual. Categorised as courses and workshops, they were however facilitated by an expert and attended by the coaches. This form of communication channel brought mixed opinions in terms of how coaches utilise them. As a performance coach who held an education qualification in sport, Christina noted that her knowledge of sport psychology derived from her teaching background and as such courses and workshops now acted as a means of continuous professional development:

*I suppose most of the knowledge I've got has come from being a teacher for nearly 40 years and a lot of the basic psychology is the same whether it's in a classroom talking about maths or literacy or sport. Beyond that I attend loads of workshops and course's to constantly up-date everything, the practical, the theory.*

Showing a different path, Lewis who holds a similar number years of experience in the sport but, didn't gain his sport based education until he was in this athletic context (whereas Christina gained hers in a teaching context prior to entering athletics) highlighted the National Coach Development Programme as being the initial access point to sport psychology:

*It was through that NCDP, you know [coaches' name]? Well he's my mentor, he's the national mentor for youth development and one of the first things he*

*said, what would you ideally like to look into? And I said sport psychology and then eventually he came back and said if I could find a course, England Athletics will pay for everything, so I did it on the Open University.*

However, he also noted that this would not happen anymore due to cuts in funding. Fundamentally however, mentors, the coach development programme and a gatekeeper were all involved in Lewis gaining sport psychology information. Conversely, despite being offered access points to information, Freddie reported:

*I don't particularly want to go off to Lee Valley on a Sunday morning, one is convenience, I feel with respect I don't need to do that.*

Such comments indicate that not all gatekeepers bring sessions to coaches, which inhibits access. Amy suggested that this was due to personal barriers as opposed to those directly caused by the NGB:

*I just attend the local workshops but that's mainly because of my childcare but I know a lot of the coaches higher up, like [name] and [name] and a couple of others, they will go to Exeter or Birmingham if they see something they like but it's just because it doesn't fit in with what I do.*

Amy's narrative revealed, as with previous participation coaches with no educational background in sport, an apparent lack of motivation to utilise available communication channels to gain sport psychology information. Likewise, as in previous sections, the level at which coaches operate affected their discovery behaviours.

## **5.12 SUMMARY OF QUALITATIVE RESULTS; KNOWLEDGE**

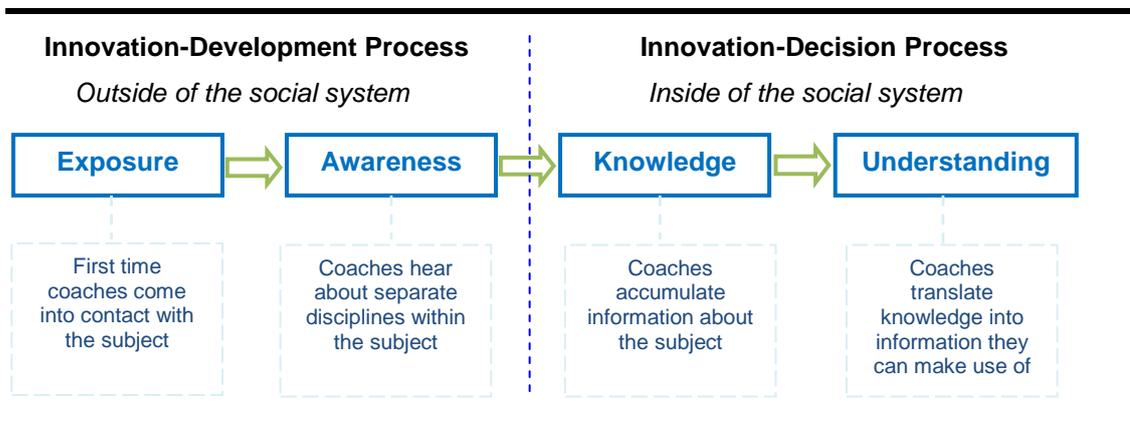
In summary, the coaches' narratives showed word of mouth as a continuous thread of communication throughout each of the second order themes. However, the nature of this communication, mediated or unmediated, varied according to their role within the social system (coach, opinion leader, gatekeeper or change agent), motivation and experience. Additionally, at this stage of the process structural barriers and facilitators such as location of courses and workshops were pertinent to the diffusion process and coaches cognitive adoption of the subject. These appeared to exist predominantly in relation to participation coaches and their access to mediated sources of knowledge.

## 5.13 SECTION THREE, DISCUSSION: EXPOSURE, AWARENESS, KNOWLEDGE AND UNDERSTANDING OF SPORT PSYCHOLOGY

### 5.13.1 Merging the Innovation-Development and Innovation-Decision Processes

The literature review established that gaining knowledge of an innovation is depicted in both Rogers's (2003) Innovation-Development Process which is concerned with exposure and awareness and The Innovation-Decision Process which focuses on knowledge and understanding. However, initial findings revealed a merging of the two processes (as shown on Figure 17 below).

**Figure 17.** Display of the relationship between component elements associated with Knowledge



Despite such acknowledgements by Rogers (2003) of the component elements of knowledge, research from within the athletics context has to date paid little attention to their occurrences. However, these component elements (shown in Figure 15) are thought to influence potential users' interactions with available knowledge and therefore affect the diffusion process and adoption of, in this instance, sport psychology into the coaching context.

## 5.14 COACHES INITIAL EXPOSURE TO SPORT PSYCHOLOGY

Triangulation of the quantitative and qualitative data demonstrated that the majority of coaches within the quantitative sample reported exposure to sport psychology occurred prior to entering the athletics environment. This contradicted previous understanding of exposure points identified within the nine traditionally recognised areas of diffusion research (Chapter 2, Section 2.9) as they have typically either failed to have been mentioned (Lennon *et al* 2007) or as in the work of Patogo *et al* (2007) the exposure point was assumed to be in the context in which the innovation would be used. When seeking explanation for such a difference in the point of exposure, the individual characteristic of educational background in sport appeared to be associated with such exposure. Thus, for those coaches with an educational background they were commonly found to be exposed to sport psychology prior to being a coach. Subsequently, while they had awareness of the subject the information was not context specific. This was however expected based upon the conclusions of Blinde and Tierney (1990). While failing to examine education as a variable, Blinde and Tierney (1990) recommended future research to do so due to their inadvertent finding that education moulds the decision-making process of a coach. However, not all coaches' had an educational background in sport and these coaches exposure points were divided between unmediated sources of knowledge, which included surfing the internet and reading popular culture books both prior to, and post entry into the athletics domain. What appeared to be lacking, but more so desired by coaches in relation to exposure points was one centrally supported source of sport psychology information from a recognised body within the athletics context that coaches could access and trust.

A consequence of such discrepancies between initial exposure points also posed an initial barrier. Specifically, talking from their own experiences, coaches reported, observing those with educational-based learning qualifications did not enter the athletic domain (hence) the uneven spread of coaches with and without an educational background in sport. This was perceived as being due to the voluntary nature of the sport and therefore there are limited career opportunities. The second foci of analysis, type of coach (either participation or performance), failed to explain any of the variance

in coaches' exposure to sport psychology. This was to be expected as coaches only formally decide upon their classification as a participation or performance coach once they had entered the coaching domain, which comes after they had already had initial exposure to the subject.

Studies by Rogers (2003) and Rogers *et al* (2005) have previously determined that points of exposure (as above) affect subsequent stages of the diffusion process. Thus, clarifications of those individual characteristics which affect this first stage of the Innovation-Decision Process are important insights. To this end, narratives of the qualitative results provided explanations surrounding the definition of knowledge in the athletic context. To date, knowledge and understanding have been used synonymously despite having distinct definitions whereby according to Carpenter and Lehrer (1999) knowledge is static and understanding concerns constructing relationships between concepts. However, results from the current study evidenced a need to separate the previously interchangeable terms. Consequently, an initial contribution to knowledge was that knowledge was found to refer to the information gained (knowledge accumulation), whereas understanding concerned coaches ability to translate this information into useable coaching tools (knowledge construction (Wilding 2016)).

The time between these two occurrences (accumulation and construction) was labelled as the individual's 'time-lag' and reflected the rate of adoption (Chapter 2, section 2.3.1.4.1). Importantly, this time-lag increased when exposure occurred outside of the social system as the accumulated knowledge remained latent for longer. Therefore it was concluded that lack of interaction with the accumulated knowledge (point of exposure) prevents understanding of the innovation's function (knowledge construction). Similar to the explanations from Blinde and Tierney (1990), this hindrance was found to be a result of coaches' failure to move beyond the cognitive processes (characterised as the knowledge, persuasion and decision stages in the original version of Rogers (2003) Innovation-Decision Process Figure 2, Chapter 2, page 40) as they had no requirement for sport psychology specific knowledge, at that point in time, hence moving away from the stages depicted in Figure 2 (Chapter 2, page 40).

Furthermore, the results indicated that learning about sport psychology prior to entering the coaching domain meant the nature of the information was non-specific to the coaching environment (Wilding 2016). This, combined with a lack of continued interaction by coaches, led to a failure in understanding of how to translate their knowledge into useable coaching tools. These findings suggest the diffusion process in the sporting realm may be contextually sensitive (differs to how the process works across other recognised social systems). Hence, while differences in rate of adoption do occur due to the nuances of each social system, such claims around cultural sensitivity are grounded outside the previous literature, as to date, while information is assessed and may not go any further due to irrelevance, it has not been acknowledged that this disregarding of information is due to exposure occurring at a prior point outside of the relevant context and thus social system. Consequently, the diffusion process differs in athletics due to this interpretation of how initial exposure occurs. Additionally, it changes the manner in which initial content in the social system occurs. Thus, for those with prior exposure, coach education programmes need to focus on the translation of knowledge into understanding how to make use of such information.

## **5.15 TRIGGERS FOR KNOWLEDGE AND DISCOVERY BEHAVIOURS**

Triggers were considered to be a cluster of events occurring within the social system which galvanised coaches to seek sport psychology knowledge. From the findings of the current study, within athletics, the clusters were identified as 1) athlete behaviour, 2) CPD or 3) interaction with other people. Further to this, those incidents where coaches were pushed into seeking information were categorised as intentional discovery behaviours. However, for some coaches' discovery occurred accidentally. Thus, once in the coaching context, coaches who had a specific issue with their athlete(s) were found to often be pushed into actively seeking sport psychology information (discovery behaviour) due to their athlete's requirements, as opposed to being pulled into discovery behaviours as a result of their own quest for knowledge (discussed in Chapter 5, section 5.3.2).

Distinctions in coaches differing desire for knowledge offered a key finding. It was realised that for those with no educational background in sport, discovery behaviours more closely aligned with coaches' thought processes associated with triggers for knowledge as opposed to those surrounding initial exposure. Once again, results of the current study contradicted previous research as three triggers (athlete behaviour, CPD and interaction with others) for initiating discovery behaviours were exposed in comparison to Peterson's (2010) two (chance and need). Furthermore, these triggers specifically applied to coaches' discovery behaviours of industry-specific knowledge once they had entered the athletic context. Such discoveries drew parallel findings to those discussed by Roetert and Lubbers (2011) within the coaching literature, rather than coaches' first contact with the subject as discussed by Peterson (2010) in the diffusion literature. Thus, knowledge was used to improve performance and create a positive training environment rather than serendipity analysis due to chance. Consequently, triangulation of the quantitative data pertaining to triggers for knowledge, discovery behaviours and coaching literature extended current understanding of how coaches' initial interaction with sport psychology occurs as opposed to Rogers (2003) simply referring to clusters of triggers.

Generally speaking, the results of the sequential design (within the current study) showed inconsistencies between the triggers that caused coaches to gain knowledge of sport psychology beyond their initial point of exposure. The qualitative results from phase one (Chapter 4, sections 4.6) reported initial exposure as being accidental whereas the quantitative results from stage two (Chapter 4) revealed that once in the athletics context, coaches' displayed intentional seeking behaviours as there was congruity between both sets of participants and the question asked. This finding initially aligned with the work of Peterson (2010) who suggested the attainment of knowledge to be caused by one of two circumstances, chance or a need to solve a problem. Specifically, athlete behaviour (causing the need to solve a problem) was the most common trigger with word of mouth interactions (chance) being the least likely trigger.

The qualitative results additionally extended the previous work of Peterson (2010) to reveal a third trigger for knowledge, CPD. Exploration in the qualitative interviews revealed CPD to be related to the demands of the respondents' day job (outside of the athletics context), as opposed to that of the athletic context in terms of coaching

activities. For coaches', this triggered the thought that what they learnt could be transferred to their coaching practices and thus can change the perceived need for sport psychology. Hence, the third finding allowed for the theorisation that CPD activities offer coaches the chance to solve a problem. This self-learning, and coaches ability to transfer knowledge across subjects, implies coaches' can be pulled towards sport psychology if the information disseminated is deemed relevant to their athlete and coaches' own set of circumstances.

Consequently, exploration of initial exposure and triggers for discovery behaviours (Chapter 5, Sections 5.3.2) revealed new contextual understandings of the rate of adoption of sport psychology in that coaches often encountered sport psychology prior to entering the athletics social system which caused generic information to be latent for varying lengths of time causing a time-lag of knowledge. This initial form of exposure caused barriers, particularly for participation coaches. For them, gaining non-specific knowledge prior to entering the athletics domain provided a lack of relative advantage as they perceived the subject as being too generic (see Chapter 2, sections 2.3.2.1 for explanation). Thus, when information was finally in the relevant context, devoting time to learning about sport psychology was hindered as other technical areas were deemed more important at the stage of their coaching career they were at due to perceptions formed based on the previous generic information which had not been discussed previously. This expands the point previously made by Jones (2009) who reported emphasis on technical aspects of training to be due to an increased understanding of coaching technical constructs over the past two decades. In terms of overcoming such issues, gaining knowledge of sport psychology to solve a problem (commonly evidenced by performance coaches) reduced the time lag between knowledge and understanding occurring and thus coaches were more likely to engage with the material in order to make it work for them (reinvention as discussed in Chapter 2, section 2.3.2.4 of the literature review), hence speeding up the rate of adoption and in turn reducing the time-lag.

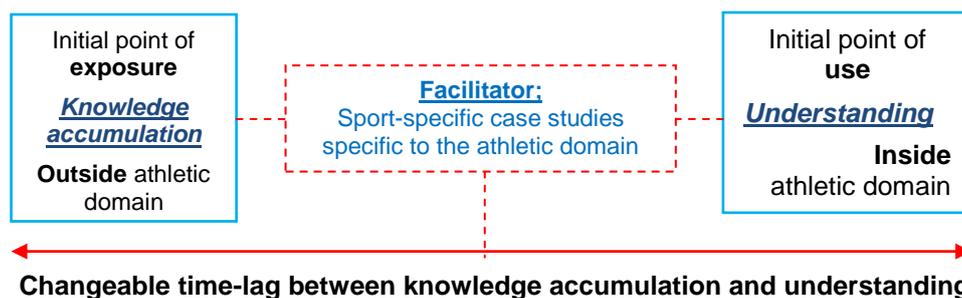
## **5.16 REDEFINING KNOWLEDGE AND UNDERSTANDING**

The overall conclusion of the amalgamated analysis of the concurrent sequential design has evidenced that, within the athletic setting, what was important was not the cause of

exposure. The important element was the time lapse between acquiring knowledge and the need to understand the information within the athletic context. Such findings change our understanding of how the constructs within the first stage of the diffusion process interlink. The findings showed that the longer knowledge lay dormant, the less likely coaches were to understand it and its relevance to their personal context as an athletics coach as the information at the point of exposure was not necessarily athletic orientated making transference harder. Therefore, once coaches entered the environment, they knew of its (sport psychology) existence but lacked understanding of its function in their context. Consequently, these results provided new insights regarding the relationship between knowledge and understanding in the athletic domain which within Rogers (2003) Innovation-Decision Process were not acknowledged as separate entities. Analysis of the qualitative data, combined with the suggestions of Werthner and Trudel (2009) that utilising information goes beyond merely accumulating knowledge, led to the inference that knowledge is only useful when its relevance is understood.

As a consequence, the current study shows a distinct separation between knowledge and understanding (shown in red on Figure 16 below), which was also found to slow the rate of adoption (depicted by the arrow in Figure 16). However, facilitative measures could be operationalised if those providing sport psychology information took into consideration the notion that coaches more often than not seek situation specific knowledge. Therefore, it is recommended that a provision for sport-specific case studies pertaining to knowledge on how to use sport psychology would decrease the time-lag and increase the rate of adoption as the issue of gaining generic knowledge when outside of the specific social system is negated (as shown on Figure 18).

**Figure 18.** New conceptualisation of the diffusion of sport psychology at the knowledge stage of the Innovation-Decision process



## 5.17 EXPOSURE TO SPORT PSYCHOLOGY

### 5.17.1 Disciplines of Sport Psychology

Results showed that all participants across the sample had heard of sport psychology as a tool which could be used in the athletics context. However, examination of stage one results revealed this was not as positive as first appeared. Coaches were unable to articulate (define) what the subject was. Responses ranged from explaining what it can do, to who it can help. Overwhelmingly however, within pockets of the stage one sample, sport psychology was explained as being common sense. When compared to the literature, such results were not surprising. Previous research examining coach or athletes perceptions failed to distinguish between the various disciplines of sport psychology.

Within phase two of the sequential design, coaches' exposure to the separate sub-disciplines of sport psychology varied. Consequently, participants' awareness was therefore examined. This unearthed interesting findings which could impact upon the provision of information made available during the training of coaches. A combined analysis of the quantitative and qualitative findings showed that those sub-disciplines of sport psychology associated with providing a solution to a problem (mental skills training and applied sport psychology) had the greatest levels of coach awareness.

With regards to the individual characteristic of type of coach, the quantitative results indicated that performance coaches were more likely to have been exposed to applied sport psychology and mental skills training than participation coaches. It is proposed that this was due to these disciplines involving the development of coping strategies for, predominately, performance athletes. Despite being a new contribution to knowledge, it was not surprising given that the coaches' main trigger was associated with the need for specific information. Moreover, coaches desired coping strategies to aid athlete behaviour which commonly falls under the umbrella of applied sport psychology and mental skills training. Additionally, as Sontos *et al* (2010) reported, it might be expected that coaches hold a certain level of specialised knowledge in order to be

efficient in tasks and that sport-specific knowledge was a factor in the enhancement of athlete performance.

Consequently, the findings of this research offer insights into the nature of specialised knowledge in the performance domain. Interpretations of the qualitative results showed participation coaches having a preference for receiving technical information. This finding offers support to the previous work of Martindale and Nash (2013) who found that, in general, coaches preferred discipline specific technical knowledge to that of sport science (rather than sport psychology specifically). Qualitative narratives of the current study provided deeper insights into coaches thought processes surrounding this preference. Coaches reported that being at the early stage of their coaching career caused them to consider technical knowledge, or what Werthner and Trudel (2009) called coaching-specific knowledge, to be more important. This was revealed to be because coaches perceived sport psychology as being soft knowledge due to a lack of objectivity in the subject. Overall, coaches suggested a need to learn their craft before adding what they perceived to be non-essential information in comparison to technical knowledge.

In terms of awareness of the role of sport psychology, coaches identified a lack of understanding and awareness of the multitude of roles sport psychology can have. By way of example, skill acquisition and motor control and learning could strengthen coaches' skill base when coaching the technical aspects. However, these were not deemed part of their technical knowledge. Therein was a clear difference between types of coaches (participation and performance) desire for sport psychology information as performance coaches desired performance enhancement subject-specific knowledge, as opposed to participation coaches desire for coaching-specific technical knowledge. In the current study, sport psychology was hence determined as being a form of subject-specific knowledge; sport psychology was considered soft knowledge.

Such findings provide support for the concept of a continuum of knowledge which varies according to the stage of the coaching career and classification of type of coach. This new interpretation of coaches varying desires for different types of knowledge allows those providing information to athletics coaches to construct material and workshops aimed specifically at particular categories of coaches. Thus, education on

what sport psychology actually is and how it can aid skill development for participation coaches or those at the early stage of their career would be of benefit. Alternatively, subject-specific performance enhancement knowledge for performance and experience coaches is required. Recognition of such differences would increase the usefulness of the sources of information.

The quantitative results pertaining to coaches' exposure to sport psychology revealed that coaches were being exposed to some specific disciplines of sport psychology more than others. This was in part due to the respondents' educational background but also appeared to be due to the type of information that coaches were seeking which was related to one of three triggers from section 5.4.1.1 (Chapter 5). Specifically, the type of coach an individual classified themselves as instigated differences in searching behaviours which consequently in the current study led to differences in awareness levels of the various sub-disciplines of sport psychology.

Rogers (2003) explains such inconsistency to be the result of selective exposure whereby in this instance coaches sought the information they had knowledge of and thus would not look for alternative solutions. This raised questions pertaining to whether those areas sought most often, in a basic form, should be included in coach education programmes in order to ensure the material is fit for purpose. Or, alternatively, whether this inconsistency was a result of coaches' lack of understanding about how other areas of sport psychology could aid their training techniques. Hence, coaching courses require a focus on introducing all sub-disciplines of sport psychology in order to increase the breadth of coaches' technical knowledge.

By way of conclusion, coaches in strand two of the qualitative results (part B) indicated a need to offer subject-specific knowledge for the areas sought most often and wider exposure for participation coaches, hence indicating a need to offer different knowledge bases to different types of coach.

## **5.18 COMMUNICATION CHANNELS IN THE ATHLETIC SOCIAL SYSTEM**

According to Rogers (2003) communication channels are a key element of the diffusion of an innovation. To this end they were found to represent the mechanisms utilised in the flow of information in and around the athletic social system. However, there was a need to clearly articulate those mechanisms specifically used in athletic social systems because, while identifying the preferred communication channels is a well-established task in areas such as marketing and communication, health and consumer behaviour (see Chapter 2, section 2.4), no such references could be found within the sport psychology literature. Findings from strand two, part A, the quantitative survey revealed commonly used communication channels as being predominantly forms of general media such as the internet. This was followed by word of mouth which initially appeared to contradict Werthner and Trudel's (2006) finding that primary sources (those which allow for learning in the moment) are the preferred source of information in comparison to secondary information channels which lack in the moment interaction. However, deeper analysis of the quantitative data revealed this as being too simplistic in its explanation of communication channels.

As an extension to current understanding, the quantitative results demonstrated the use of four communication channels (general media (internet), specific media (ucoach), general word of mouth (other coaches), and specialised word of mouth (expert facilitation), see Chapter 5, section 5.6.1.1) as opposed to the two (media and word of mouth) proposed by Rogers (2003). The determination of general categories was found to refer to unmediated sources of knowledge. This was information which had not been peer-reviewed or verified by an authorised expert. In contrast, specialised sources referred to mediated sources of information. This mediated information has been in some way provided by a certified individual (i.e. chartered or registered sport psychologist) in the field being diffused. Amalgamating literature from the Theory of Diffusion of Innovation and coaching literature thus allows for greater comprehension of the phenomenon of diffusion in the athletic social systems in relation to understanding through which communication channels coaches prefer to receive information.

Further analysis of the qualitative data suggested that coaches would more often than not use more than one communication channel to gain sport psychology information. Thus search strategies, in the first instance, appeared to be generic in the sources used to acquire initial information and were dominated by the narratives of experienced participation coaches, but more specialised mediated sources (see Chapter 5, section 5.6.1.1 for explanation) were used by performance coaches and those who had an educational qualification in sport.

However, despite their recognised usefulness, coaches in the qualitative discussion of barriers (Chapter 5, section 5.11) additionally reported that attending mediated courses was costly especially when travel was required. This potentially explains why coaches tended to use the internet as the predominant communication channel. Furthermore, in view of the fact that coaches in all strands of the current study reported a lack of input from NGBs, there appears to be an opportunity to facilitate the diffusion and adoption of sport psychology via the internet resources already in place (ucoach, the NGBs internet based source of information) but which at present lacked sport psychology specific information.

### 5.18.1 Structure of the Athletic Social System

Analysis of coaches' sources of knowledge revealed a structure to the athletics social system (Figure 19) based on, firstly, coaches individual characteristics and, secondly, the roles which coaches consistently prescribed to certain individuals within the macro and micro social systems (Chapter 2, section 2.3.1.3.1 for discussion).

**Figure 19.** Organisation of the Athletics Social System



The results from the coach narratives revealed, in the first instance, at a micro level, that inexperienced coaches were learning by observing others. These individuals were determined as being opinion leaders, referred to as mentors by those in the athletic context (see Chapter 5, section 5.11.1). The defining factor of the opinion leader was respect which arose from one of two contributing factors: 1) academic background or 2) their past role as an athlete. Tarde's (1903) Law of Imitation was thus apparent within the current findings as he previously suggested that being in close proximity to others causes a trickle-down process from superiors to inferiors. Thus, knowledge, behaviours, and underlying beliefs permeate to those lower down the social system. This, coupled with the construct of respect increased the acceptance of the information being disseminated. The existence of this trickle-down process reveals an opportunity within the athletic social system to maximise the 'conquering epidemic' (those at the top of the process influencing those at the bottom) as a way of increasing the adoption of sport psychology. This could be achieved through an explicit use of vicarious experiences when operating within the micro system. Hence, exchanging knowledge from mentors to mentees could be a mechanism for overcoming the lack of and inadequate knowledge and thus up-skilling participation coaches.

Dealing with mediated knowledge emerged as the ideal point for the introduction of a change agent into the social system. The purpose of a change agent is to translate knowledge to understanding so that information could move beyond cognitive processes to behavioural acts. However, this requires the involvement of a gatekeeper to allow access to the micro social system. This study, within the qualitative strand B, Part B, confirmed that Club and Coach Development Officers as those whose role was to provide opportunities for coaches (gatekeepers) to access mediated knowledge as depicted in Figure 46. Thus, they are the link between the micro and macro social systems and control the flow of information in and out of each system. Hence, they can aid the establishment of sport psychology as a normal practice within athletics but whether or not they did was often determined by the gatekeeper's knowledge and whether they perceived sports psychology to offer a relative advantage to coaches and athletes.

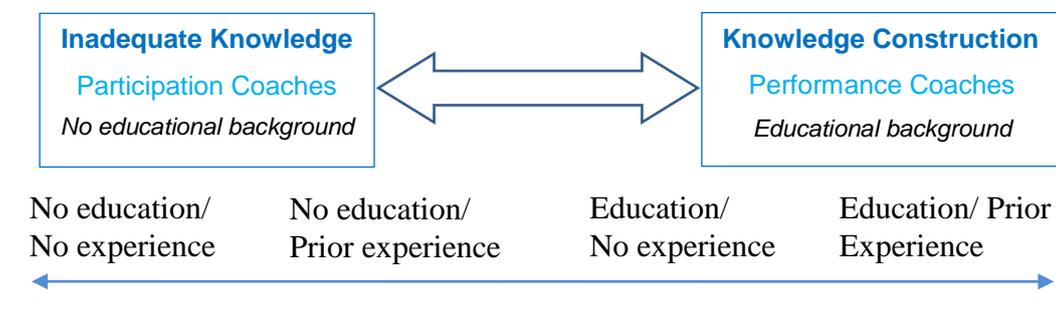
According to Whetten (1989) this form of mapping of the contextual landscape allows for greater understanding of those factors pertinent to the subject being studied.

Mapping the athletic social system shows the roles and thus potential access points along with potential barriers to the flow of information between individuals in the system.

## 5.19 THE CONTINUUM OF KNOWLEDGE

Previous coaching literature from Nash and Sproule (2011) recognise that coach learning develops in stages from novice to elite but they fail to articulate or conceptualise the specific stages of development in terms of learning and construction of knowledge. Consequently, one of the innovative findings of the current study was the identification of coaches' level of knowledge occurring on a continuum (Figure 20) from inadequate knowledge typified by participation coaches to understanding the function of newly digested information. This is otherwise referred to as knowledge construction.

**Figure 20.** The Knowledge Continuum



Principally, based upon results from the quantitative survey and supported by coach narratives, the continuum showed that participation coaches reported to have either a) lack of knowledge (thus whilst they had heard of the subject they had no working knowledge that could be applied to their coaching environment) or b) knowledge which had been gained through their own personal experience of being an athlete. The initial antecedent factor was found to result in inadequate knowledge due to the absence of evidence-based learning and thus emerged as a limiting factor to coaches' industry based knowledge of the subject, while at the opposing end of the continuum there was reliance by performance coaches on mediated sources of knowledge from a) individual experts or b) workshops. This was found to lead to understanding whereby coaches have

the cognitive awareness to use the information gathered in their own coaching context. The findings of this research agree with the assertions from Blinde and Tierney (1990) concerning the role of education and further fulfil the suggestions from the literature review (Chapter 2, section 2.3.1.4.1) that potential users' characteristics should be determined in order to aid the choice and development of suitable communication channels to provide access to knowledge.

## **5.20 CONCLUSION OF KNOWLEDGE RESULTS**

Interpretations from the data set reveal a number of theoretical contributions to knowledge, some of which are generalizable across other sports science disciplines and therefore have important conations for coach educators. The first concerns the merging of Rogers (2003) Innovation Development Process and his Innovation Decision Process. Previously, research has primarily focused on the Innovation Decision Process which fails to account for where and when user's knowledge was obtained. However, results of the current research evidences initial exposure to have predominately occurred outside of the social system in which it is to be used. This impacted not only on the type of knowledge gained, in that much of the material failed to go beyond 'common sense' and surface level. But, also how they gained information for example through mediated educational systems or unmediated forms of personal experience.

Initial exposure thus influenced coaches' subsequence movement through the knowledge stage as it led to various time-lags which caused a separation of knowledge and understanding. Specifically, the longer the time-lag the less likely coaches were to translate the knowledge into useable applied practice. This was in part due to the structure of the social system which was revealed to be limiting coaches' ability to access deeper or wider topics of interest. This caused coaches knowledge of sport psychology to vary and thus made it possible to place coaches on a continuum depending on their career stage and demographic background information.

## **CHAPTER 6 – PERSUASTION; ATTITUDES, PERCEPTIONS AND RECEPTIVITY TO SPORT PSYCHOLOGY**

### **6.1 ORGANISATION OF THE CHAPTER**

The following chapter focuses on the second stage of Rogers' (2003) Innovation-Decision Process, persuasion. In line with chapter 5 it is divided into three sections representing the quantitative generalizable results (strand A), then strand B the transferable qualitative results. The final section focuses on the discussion comparing results of the current research project to previous research.

### **6.2 STRAND A, QUANTITATIVE RESULTS: PERSUASION, PERCEPTIONS, ATTITUDES AND BELIEFS**

#### **6.2.1 Stage Two of the Innovation-Decision Process: Being Persuaded**

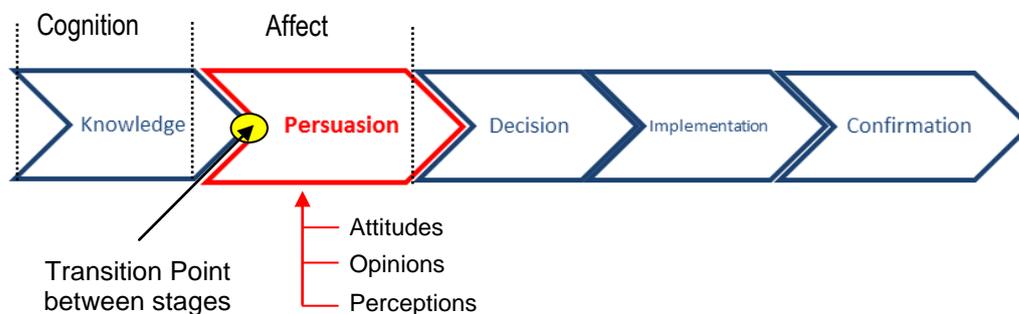
The examination of the Innovation-Decision Process evidenced that the intervening variable between knowledge and implementation was the attitude of the individual or, when in a collective, the norm of the social system. Furthermore, the literature review (Chapter 2) showed that knowing about an innovation and using it were two different things. Thus, according to Sahin (2006), the persuasion stage of the Innovation-Decision Process is concerned with the attitudes and opinions of the potential user which, in turn, causes them to develop either a favourable or unfavourable attitude towards the innovation.

As a result of the stage one finding, in relation to those factors which influence coaches' actions and decision, beliefs are suggested to be at the centre of the persuasion process as they are internalised statements which are not necessarily proven or rational. One's

expression of these beliefs occurs through the sharing of opinions. These expressions then spread through a social system and become embedded as a perception of the group. Finally, attitudes are thought to be the most changeable element of this process as if the belief changes so does the attitude and thus the subsequent actions or decisions. Combined these form the second stage of the Innovation-Decision Process as depicted in Figure 21.

The aim of this section was therefore to explore respondents' attitudes to, and opinions of sport psychology and the extent to which these have influenced coaches' perceptions of sport psychology (the underlying conceptual elements of persuasion as depicted in Figure 21). Specifically, its purpose was to gain a deeper understanding of the coaches' perceptions of sport psychology which in turn, would provide insights into those factors which persuaded coaches' subsequent adoption of sport psychology. To achieve the aim a number of research questions pertinent to the persuasion stage of the Innovation-Decision Decision were generated;

**Figure 21.** The Innovation-Decision Process highlighting the Persuasion stage



1. Do the individual characteristics of the coaches' impact upon the seeking behaviours of coaches?
2. What is the perceived usefulness of the sources of information coaches have access to?
3. Who do coaches believe the beneficiaries of sport psychology to be?
4. What are the perceived benefits of sport psychology?

This section therefore starts by establishing the transition point between the two initial stages of knowledge and persuasion (as per Rogers' (2003) Innovation-Decision Process) and the defining characteristics which potentially define this boundary. Focus then shifts to the examination of the perceived usefulness of the sources of information utilised to gain knowledge as these were thought to contribute to the persuasion of coaches' attitudes towards the subject. Finally, the benefits of sport psychology were identified at two levels, 1) elite, and 2) grassroots. Tables are presented according to the two foci of the inferential analysis in order to articulate extensions to the current literature base surrounding the characteristics which are associated with attitude formation and thus coaches' perceptions of sport psychology.

### **6.2.2 Transition from Knowledge to Persuasion**

As a result of Rogers' (2003) omission to articulate the boundaries of each stage of the Innovation-Decision Process, the later work of Sahin (2006) was used. His work implied that those who sought information in an active manner should be defined as being at the persuasion stage, whilst passive receivers of knowledge remain in the previous stage of knowledge (as shown on Figure 13 above). Based on this explanation of the division between the first two stages, the research at hand used the division between passive and active seekers of information as the mechanism for clearly distinguishing the positioning findings within the process. Such clarifications are expected to result in an enhanced understanding of diffusion as a process in relation to sport psychology. It was hypothesised that performance coaches and those with an educational background in sport would be significantly different to participation coaches in their seeking behaviours in relation to sport psychology information.

The underlying assumption of being persuaded is that potential users will be persuaded by the information they actively seek as it is this they will cognitively evaluate favourably or unfavourably, due to the concentrated focus on the possible advantage to be gained.

## 6.3 FREQUENCY OF SEEKING BEHAVIOURS

Whilst triggers for seeking information were addressed previously in Section 5.4.1.1 (Chapter 5), within the current section the focus is on the frequency of this behaviour (as a reflection of attitudes). Thus, seeking behaviours were defined by the number of times coaches had sought out sport psychology information in the last six months as this was deemed evidence of engagement behaviour. Frequency analysis was conducted on 158 respondents and revealed seeking behaviours ranging from 0 (never sought out information) to 100 (times sought out information). Subsequently, three categories of analysis (never, 1-20, and 20+ times in the last 6 months) were used to explore the nature of coaches' seeking behaviours (Table 6.1). The largest single response category was that of coaches who never looked specifically for sport psychology based information ( $n=69$ , 43.7%). However, when combined the two categories related to engagement behaviour (1–20 times in the past 6 months and 20+ times in the past 6 months) revealed that over half of the respondents ( $n=89$ , 56.3%) did in fact seek sport psychology information thus representing movement into the persuasion stage of the Innovation-Decision Process.

**Table 6.1.** Seeking Behaviours for sport psychology in last 6 months (frequencies)

Measure		Responses		
Engagement Behaviour	Category of Seeking Behaviour	Frequency (n)	Percentage	(%)
Latent Behaviour	Never	69	43.7	
Engagement	1 – 20 times	65	41.1	
Engagement	20 + times	24	15.2	

### 6.3.1 Perceived Usefulness of Sources of Information Coaches have Access to

Researchers (Rogers 2003; Sahin 2006) have suggested that once a potential adopter had awareness of an innovation, users at the persuasion stage evaluate the information they find which ultimately aids them to shape (persuade) their opinion. Importantly, if the information is deemed unfavourably, negative attitudes towards, in this case, sport

psychology are formed, the outcome of which is thought to impede the remainder of the Innovation-Decision Process hence rendering it an important avenue for exploration.

Recently, Edwards and Barker (2015) noted that spread of sport psychology has only occurred in areas where there was access to training in the form of mediated sources of knowledge (Chapter 5, section 5.11). This study has found that 43.7% of coaches who participated had not sought access to any form of knowledge source in the past six months which raises questions over whether poor access prior to the preceding six months caused such latent behaviour given that exposure to each sub-discipline of sport psychology (Chapter 5, section 5.5 above) was never lower than 155 out of 160 respondents. As a result, when assessing the factors that shape coaches' perceptions of sport psychology, access to information, and coaches' opinions of this information, could firstly, explain the findings pertaining to communication channels in the previous section (Chapter 5, 5.6.1.1 above). Secondly, it could provide further insights into the variables which indeed influenced the development of favourable or unfavourable opinions of sport psychology.

Coaches were asked about the usefulness of any sport psychology information they had access to in relation to two conditions; 1) its appropriateness to their own level of practice, to ascertain if the information was being disseminated in a manner which allowed them to translate it into actual training sessions; and, 2) whether the information was appropriate to the coaches' level of knowledge and understanding. Such knowledge could help ascertain if different levels of information specific to coaches' knowledge needed to be provided in order increase the likelihood of favourable attitude development.

Tests of differences were performed to establish whether individual characteristics contributed the findings. The two conditions were analysed under the heading of access to sport psychology. Firstly, whether the information the respondents had access to was appropriate to their level of coaching. The second condition concerned the information coaches' had access to (that which they had come across, not specifically that which they sought out) and whether it was appropriate to their level of knowledge and understanding.

Table 6.2a (below) evidences that participation coaches were found not to be significantly different from performance coaches in their perception of the appropriateness of the information they had access to. Furthermore, both types of coach leaned towards the perception that information was not appropriate to their own coaching, leaving room for possible improvements in the type of information provided. Contrastingly, the Chi-square Test for Independence (Table 6.2b below) revealed a significant difference between those with a sport based education and their perception that the accessible information was appropriate to their own level of coaching and those without. Specifically, those with a sport based education were more likely to perceive that the information they accessed was appropriate to their own level of coaching than those with no such educational background. Thus, with a moderate effect size ( $r=.256$ ) the null hypothesis was rejected, which could be due to those with academic qualifications having superior access as a consequence of reading for a degree and the need to reference material or in turn more informed selectivity.

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**Table 6.2:** Access to Sport Psychology Information

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**Table 6.2a:** Characteristics of the coach and access to sport psychology information

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Information accessed is appropriate to own level of coaching	Type of coach					
	Participation		Performance		Total	
	No.	%	No.	%	No.	%
Yes	16	39.0	60	51.7	76	48.4
No	8	19.5	29	25.0	37	23.6
Don't know	17	41.5	27	23.3	44	28.0
Total	41	100.0	50	100.0	157	100.0
Test statistics – Chi Sq – Pearson	Value:	df:	p:			
	4.972	2	.083			

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**Table 6.2b:** Educational background and access to sport psychology information

Information accessed is appropriate to own level of coaching	Sport education					
	Yes		No		Total	
	No.	%	No.	%	No.	%
Yes	31	60.8	44	41.9	75	48.1
No	14	27.5	23	21.9	37	23.7
Don't know	6	11.8	38	36.2	44	28.2
Total	51	100.0	105	100.0	156	100.0
Test statistics – Chi Sq – Pearson	Value: 10.251	df: 2	p: .006	Phi: .256		

## 6.4 PERCEIVED BENEFICIARIES OF SPORT PSYCHOLOGY

A beneficiary is determined to be a person who gains the advantage from something. To this end, Bishop (2008) previously reported there to be a general consensus that the transfer of knowledge from academics to practitioners was poor, thus leading to limited understandings surrounding the end beneficiary of sport psychology. Consequently, based upon the suggestions from Bishop (2008), that targeting the correct audience with appropriate information could increase the likelihood of sport psychology being diffused through the social system four categories of beneficiaries were identified. 1) The athletes' personal coach (Zakrajsek 2011), 2) the athlete (Zakrajsek 2011), 3) other coaches (Zakrajsek 2011) and 4) parents (Harwood and Knight 2009; Ross *et al* 2015).

It was hypothesised that coaches' individual characteristics, type of coach and educational background, would cause differences in coaches' perception of who they perceived could gain the greatest advantage from sport psychology. Additionally, it was expected that the personal coach and athlete would be considered the primary beneficiary, with other coaches and parents as more peripheral beneficiaries, as this would reflect a hierarchal structure of the social system in which they operate (as discussed in Chapter 2, section 2.3.1.1.1).

Initial investigations evidenced three quarters of respondents believed that as the coach they had an advantage to be gained from sport psychology. Yet, despite recognising this

advantage, overwhelmingly almost all ( $n=153$ , 97.5%) of the respondents believed athletes had the greatest advantage to be gained. These results indicated, as expected, that the immediate coach and athlete were seen as the primal beneficiaries. Additionally, other coaches ( $n=92$ , 58.6%) and parents ( $n=95$ , 60.5%) were still reported as beneficiaries but, on average, responses were 25 percentage points lower, thus providing evidence that they were considered peripheral beneficiaries. Overall, such results appear to be a positive step forward in relation to coaches understanding of sport psychology in relation to for whom it can be beneficial and thus implying it has a role to play in the wider social interactions between those involved with the athlete. This offered new insights into coaches' perceptions of the primary and peripheral relationships between those involved in the athletic social system and sport psychology.

Despite the clear perception of athletes as the main beneficiary, the NGB's current stance is to invest in coach development programmes due to the athletes' need to have someone guiding athletes training. Further, the athletes' personal coach as the potential beneficiary was discussed by respondents in the stage one results and is a notion supported by Thelwell *et al* (2013) but they concluded that coaches often forget to suitably prepare themselves psychologically. However, Diffusion of Innovation Theory would suggest differences in coaches' attitude toward sport psychology. This raises questions over coaches' holistic understanding of the possibilities of sport psychology. In relation to the overall responses results reveal around 75% of respondents felt sport psychology was beneficial to them, thus indicating some consistency in perceptions across the individual characteristics. The next step of the exploration was therefore to use Chi-square Tests for Independence, to examine whether the two foci of analysis (type of coach and educational qualification) differentiate between coaches' perceptions regarding the beneficiaries of sport psychology. The null hypotheses were therefore tested with results displayed in Tables 6.3 to 6.6 below.

Specifically, Tables 6.3a and 6.3b show that in both cases the null hypothesis was accepted at the 95% level of confidence. Therefore, each of the two foci of analysis revealed no significant difference between participation or performance coaches, or those with and without an educational background.

**Table 6.3:** Personal coach as the beneficiary

<b>Table 6.3a:</b> Characteristic of the coach and the use of sport psychology being beneficial to yourself						
The use of sport psychology is beneficial to yourself	Type of coach					
	Participation		Performance		Total	
	No.	%	No.	%	No.	%
Yes	30	71.4	87	75.7	117	74.5
No	12	28.6	28	24.3	40	25.5
Total	42	100.0	115	100.0	157	100.0
Test statistics – Chi Sq – continuity correction	Value:	df:	p:			
	.109	1	.741			

<b>Table 6.3b:</b> Educational background and the use of sport psychology being beneficial to yourself						
The use of sport psychology being beneficial to yourself	Sport education					
	Yes		No		Total	
	No.	%	No.	%	No.	%
Yes	74	69.8	41	83.7	115	74.2
No	32	30.2	8	16.3	60	25.8
Total	106	100.0	49	100.0	155	100.0
Test statistics – Chi Sq – continuity correction	Value:	df:	p:			
	2.678	1	.102			

With regards to athletes as the beneficiary (below), previous research studies (Hatzigeorgiadis *et al* 2008; Kizildag and Tiryaki 2012) examined intervention techniques. In addition, phase one results (Chapter 4, section 4.6) revealed respondents to believe sport psychology was a tool for athlete performance.

Type of coach (Table 6.4a) revealed the null hypothesis was not rejected as there were no significant differences between participation and performance coaches. The consistency between the two coach populations can be interpreted positively given that 97.5% of respondents agreed athletes could gain an advantage from sport psychology.

**Table 6.4:** Athlete as the Beneficiary

**Table 6.4a:** Characteristic and the coach and the use of sport psychology is beneficial to your athlete

The use of sport psychology is beneficial to your athlete	Type of coach					
	Participation		Performance		Total	
	No.	%	No.	%	No.	%
Yes	41	97.6	112	97.4	153	97.5
No	1	2.4	3	2.6	4	2.5
Total	42	100.0	115	100.0	157	100.0
Test statistics – Chi Sq continuity correction	Value:	df:	p:			
	.000	1	1.000			

The analysis based on educational background of the coach (Table 6.4b) violated the assumptions of the Chi-square Test for Independence, as the cells had an expected count of less than 5. Therefore, no inferences could be made regarding the null hypothesis. However, given the numbers involved this is not surprising as only a very small number in each case answered no.

**Table 6.4b:** Educational background and the use of sport psychology being beneficial to your athlete

The use of sport psychology being beneficial to your athlete	Sport education					
	Yes		No		Total	
	No.	%	No.	%	No.	%
Yes	47	95.9	104	98.1	151	97.4
No	2	4.1	2	1.9	4	2.6
Total	49	100.0	106	100.0	155	100.0
Test statistics – Chi Sq – continuity correction	Value:	df:	p:			
	2.678	1	.102			

Test criteria issues: 50% of cells have an expected count less than 5

When considering the diffusion of sport psychology, ascertaining whether coaches saw benefits to other coaches (Table 6.5) provided insights into the overall nature of relationships within the social system. Specifically, whether a demonstration effect could be harnessed, whereby if a coach saw a colleague utilising for example sport

psychology with some degree of success, could this persuade the coach to adopt it themselves (Berry *et al* 2015). Contrary to this, if coaches failed to see sport psychology as beneficial to others, this could be a result of competition between coaches and their athletes thus showing a lack of social interaction within the social system. This would shed greater light on the possible impact of WoM within the athletics social system and hence, provide insights into coaches' likelihood of sharing information which could affect the rate of adoption (as discussed in Chapter 2, section 2.3.1.3.1).

The Chi-square Tests for Independence (Table 6.5a) did not result in rejection of the null hypothesis. Overall, 58.6% respondents stated other coaches' to be a beneficiary of sport psychology, thus evidencing similarities in perceptions irrespective of the coaches' classification of participation or performance orientation.

In contrast, educational background (Table 6.5b) showed a significant difference between those who had a sport based educational background and respondents who did not. With a moderate effect size ( $r=.240$ ), the null hypothesis was rejected as coaches' with an educational background were more likely to perceive other coaches as being a beneficiary of sport psychology than those without. However, despite this, those who held a sport based education were also the smaller population group which poses questions regarding how to expose those without this form of qualification to the type of information that causes this level of persuasion.

**Table 6.5:** Other coaches as the beneficiary

<b>Table 6.5a:</b> Coach characteristic and sport psychology being beneficial to other coaches						
The use of sport psychology being beneficial to other coaches	Type of coach					
	Yes		No		Total	
	No.	%	No.	%	No.	%
Yes	28	66.7	64	55.7	92	58.6
No	14	33.3	51	44.3	65	41.4
Total	42	100.0	115	100.0	157	100.0
Test statistics – Chi Sq – continuity correction		Value:	df:	p:		
		1.118	1	.290		

**Table 6.5b:** Educational background and the use of sport psychology being beneficial to other coaches

The use of sport psychology being beneficial to other coaches	Sport education					
	Yes		No		Total	
	No.	%	No.	%	No.	%
Yes	37	75.5	53	50.0	90	58.1
No	12	24.5	53	50.0	65	41.9
Total	49	100.0	106	100.0	155	100.0
Test statistics – Chi Sq – continuity correction	Value: 7.939	df: 1	p: .005	Phi: -.240		

When attempting to comprehend coaches perceptions of who sport psychology was beneficial to parents, as discussed earlier, had been identified as key stakeholders (Harwood and Knight 2015; Wilding *et al* 2012). Exploration of coaches' perception surrounding whether parents required sport psychology information could then be used to determine whether coaches considered them to be part of their social system. For those disseminating information, such findings could assist in understanding whether coaches would support or hinder the diffusion of sport psychology through the wider social system.

**Table 6.6:** Parents as the beneficiary of Sport Psychology**Table 6.6a:** Coach characteristics and parents as the beneficiary

The use of sport psychology is beneficial to parents	Type of coach					
	Participation		Performance		Total	
	No.	%	No.	%	No.	%
Yes	25	59.5	70	60.9	95	60.5
No	17	40.5	45	39.1	62	39.5
Total	42	100.0	115	100.0	157	100.0
Test statistics – Chi Sq – continuity correction	Value: .023	df: 1	p: .879			

**Table 6.6b:** Educational background and the use of sport psychology is beneficial to parents

The use of sport psychology being beneficial to parents	Sport education					
	Yes		No		Total	
	No	%	No	%	No	%
Yes	38	77.6	56	52.8	94	60.6
No	11	22.4	50	47.2	61	39.4
Test statistics – Chi Sq – continuity correction	Value:	df:	p:		r.	
	7.576	1	<b>.006</b>		.235	

Table 6.6a showed that an analysis by type of coach ( $p=.879$ ) did not reject the null hypothesis but did however, show the emergence of positive attitudes towards parents having something to gain from sport psychology as over 50% of both categories of coach (participation and performance orientated) agreed parents could benefit from having knowledge of sport psychology.

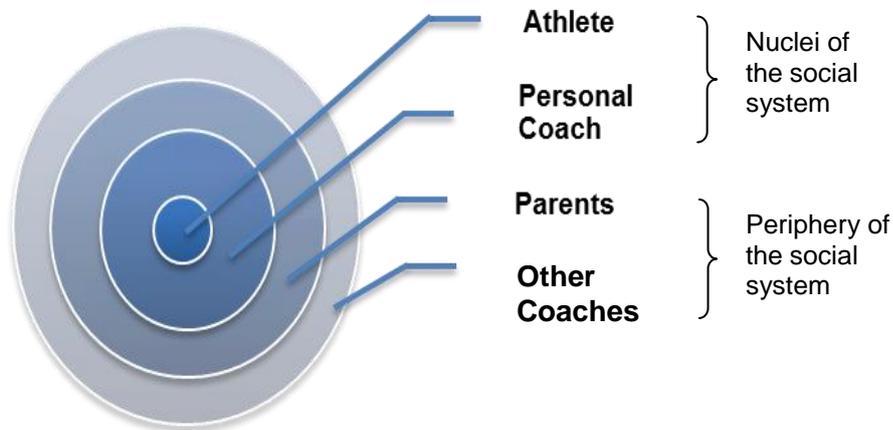
In contrast, Table 6.6b displayed data pertaining to the second foci of analysis, educational background in sport and rejected the null hypothesis. With a moderate effect size ( $r=.235$ ), the results showed a significant difference between the sub-groups hence, those with a sport based educational background were more likely to perceive parents as a beneficiary of sport psychology.

In summary, exploration of who coaches perceived sport psychology to be advantageous to revealed athletes as being key recipients, followed by themselves as the coach. Therefore, the combined results revealed a hierarchal structure (Figure 22) to the benefits of the diffusion and adoption of sport psychology within the athletic social system in terms of who coaches' perceived had the most to gain from sport psychology. In terms of individual characteristics, the results showed educational background to be a distinguishing factor when dealing with the peripheral recipients.

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**Figure 22.** Hierarchical structure of the beneficiaries of sport psychology
 

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Such findings provide clarification with regards to the structure and organisation of the social system along with those who are involved in relation to the core focus and those on the periphery who could influence the process of diffusion and adoption. At an applied level this provides insights as to who sport psychology consultants could aim services towards and specifically in what order of priority. Furthermore, such comparisons provide new insights as previously each population base has been examined in isolation.

## 6.5 BENEFITS OF SPORT PSYCHOLOGY

### 6.5.1 Grassroots and Elite

Rogers (2003) proposes that potential users' perceptions are based on knowledge which was formed from both reliable and unreliable sources of communication, as highlighted in section 5.6.2 (Chapter 5). This can lead to misconceptions and misinterpretations, as even mediated knowledge can be reinvented when no expert is on hand to fully explain the content and context of the retrieved information (Rogers 2003). Consequently, not only did the beneficiaries of sport psychology need identifying but arguably, and more importantly, the coaches perceived benefits of the subject itself required examination as unfavourable perceptions could limit the diffusion process and adoption. Therefore, the

intention of the following section is to further understand coaches' subjective reality of sport psychology.

To achieve this, based upon literature (such as Martindale and Nash 2013) which has previously deciphered between experts (elite) and novices (grass roots), the coaches were asked to report one perceived benefit of sport psychology in relation to 1) elite athletes, and 2) grassroots athletes. It was expected that coaches' responses would provide valuable information concerning the categories of benefit as created by coaches. Such information has received little attention in the existing literature base and would provide new understanding surrounding opinions toward sport psychology and the factors associated with such perceptions.

Participants were asked to name one benefit at the grassroots level and one at the elite level. Collectively, 143 benefits of sport psychology were identified. Due to the range of responses, based on the raw data, the positive benefits of sport psychology were subdivided into three categories 1) self-awareness and development, 2) coaches' needs and 3) performance benefits) based upon their confounding purpose of benefit and were relevant to both the grassroots and elite levels.

### **6.5.2 Perceived Benefits of Sport Psychology at the Elite Level**

Table 6.7 evidences that the predominant benefit related to that of the athletes, which added additional support to the earlier result regarding whom the beneficiaries of sport psychology were 97.4% of respondents felt sport psychology was for athletes and specifically their performance gains. This information set out an initial understanding of coaches' perception of sport psychology in that it was regarded as a mechanism to enhance athlete performance. In contrast, despite coaches recognising their own position within the nuclei of the social system, at the elite level coaches reported sport psychology to aid their performance as a coach as being the least beneficial use of the subject.

**Table 6.7.** Coach's main benefit of Sport Psychology; Elite Level (Frequencies)

Self Awareness & Development	Category of response and component of contribution		Coaches' Use		Performance Control			
	N	%	N	%	N	%		
Self Management	7	14.8	Understanding your athlete	2	66.6	Coping with competition	8	10.0
Self Awareness	1	2.1	Part of the jigsaw	1	33.3	Consistent performances	8	10.0
Motivation	7	14.8				Edge of the competition	2	2.5
Mental positive attitude	12	25.5				Focus/ Concentration	6	7.5
Self belief	20	42.5				Emotional control	13	16.25
						Preparation for competition	10	12.5
						Peaking	4	5.0
						Routines	2	2.5
						Improve performance	18	22.5
						Mind training		
<b>Total</b>	<b>47</b>	<b>100%</b>		<b>3</b>	<b>100%</b>		<b>80</b>	<b>100%</b>

### 6.5.3 Perceived Benefits of Sport Psychology at Grassroots Level

The results of Table 6.8 indicate that the most commonly cited perceived benefit at grassroots level were those related to self-awareness and development factors. It could also be noted that 'Coaches Use' had increased in comparison to those at the elite level (2.1%). This implies that the respondents in this sample either firstly, see greater benefits of sport psychology for grassroots coaches' than they do at elite or, secondly, that they better understand the benefits at this level of competence.

**Table 6.8:** Coach's main benefit of sports psychology – Grass roots Level (Frequencies)

Self-awareness & development	No		Response and components of response		No		Performance & enhancement	
	No	%	Coach's Use	No	%	No.	%	
Confidence	34	23.6	Sets good behaviours	5	3.5	Mind training	5	3.5
Become committed	6	4.2	Makes it fun	9	6.3	Less nerves	7	4.9
Motivation	9	6.3	Improves relationships	2	1.4	Maximise improvement	5	10.5
Enable athletes to learn	5	3.5	Instils professionalism	3	2.1	Peaking	3	2.1
Cope with conflict	3	2.1	Encouragement	4	2.8	Positive thinking	3	2.1
Develop self-awareness	5	3.5	Develop coach	1	0.7	Concentration	7	4.9
Self-control	2	1.4	Overcome barriers	1	0.7	Exceeds expectations	1	0.7
						Relaxation	1	0.7
<b>Total</b>	<b>6.4</b>	<b>44.6</b>	<b>Total</b>	<b>25</b>	<b>17.5</b>		<b>59</b>	<b>29.4</b>

## 6.6 SUMMARY FOR QUANTITATIVE RESULTS; PERSUASION

The results reveal that overall the three components (attitude, opinion and perception) converged to persuade coaches' thoughts of sport psychology in a favourable or unfavourable way. It was apparent that whilst coaches recognised sport psychology as being beneficial to their own coaching practices, the overriding beneficiary was consistently viewed to be the athlete. What is more, understanding who coaches believed could benefit from the subject unearthed a hierarchal nature to the social system whereby the coach and athlete form the central nuclei of the social system with parents and other coaches on the periphery. Such organisation of the athletics social system could allow for prioritised targeting of sport psychology information in order to ensure specific knowledge pertinent to their role and position within the system is provided.

## **6.7 STRAND B, QUALITATIVE RESULTS: DEVELOPING PERCEPTIONS OF SPORT PSYCHOLOGY**

### **6.7.1 Myths and Misconceptions**

Analysis evidenced the emergence of 100 raw data themes relating to factors involved in the development of perceptions toward sport psychology (appendix 7). Underpinning the general dimension, inductive reasoning led to the emergence of initially three separate findings (which were refined within the text). The first focused on measuring the impact of sport psychology, which saw the inclusion of two contrasting higher order categories or themes: the ability to objectively measure the impact of sport psychology versus the ability to subjectively measure the impact of sport psychology. The second, which emerged through deductive analysis, related to attitudes towards sport psychology and measured resistance to sport psychology through to receptivity to sport psychology. A final inductive analysis theme emerged, that of perceived characteristics that influence coach perceptions of sport psychology.

Overall, the raw data themes were amalgamated to form the eight semantic higher order themes which included four which were deductive and based on Rogers' *et al* (1982) characteristics of an innovation. Firstly, visibility otherwise referred to as observability, a term coined by Rogers (1983) in his Theory of Diffusion. In particular, participants discussed the role of the media and visibility as connected concepts which were currently omitted from the literature base. Secondly, trialability of sport psychology referred to participant's ability to test various skills, techniques and tools before making a decision regarding the subject area. Thirdly, complexity in the coaching arena arose in relation to the terminology utilised and whether coaches felt able to understand it in relation to their coaching practices. Finally, the relative advantage of sport psychology involved participants undertaking a cost/benefit ratio analysis to determine its worth to their current coaching practices. The purpose of the current section is therefore to identify the factors and causal relationships which influenced the development of coaches' perceptions of sport psychology.

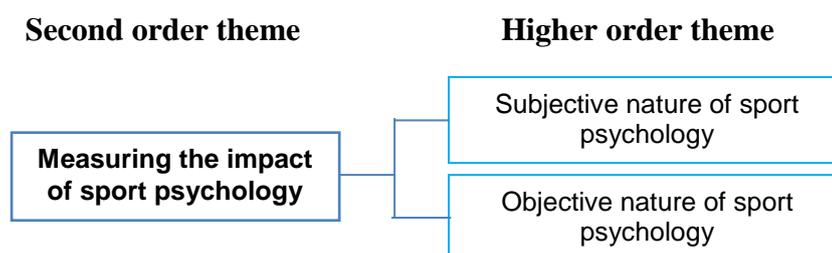
There has been a substantial amount of literature (e.g. Ferraro and Rush, Ravizza 1988, Gould 1990, Silva 1999) which has previously examined perceptions of sport

psychology. Collectively, the research indicated that these perceptions persuaded potential end users of sport psychology to adopt or reject the subject matter. Yet at present, existing work (Ferraro and Rush, Ravizza 1988, Gould 1990, Silva 1999) omits such conclusions, focusing on establishing whether resistance exists as opposed to why. Thus, whilst there was a common understanding of how for example, gender, age and the media are associated with perceptions, reasons as to why and how such factors shape and therefore persuade individuals for and against the discipline is unknown. Consequently, in the current study the antecedent factors leading to the formation of opinions are examined to better understand how perceptions are formed, and gave rise to the general dimension of developing perceptions of sport psychology.

## 6.8 ABILITY TO SUBJECTIVELY MEASURE SPORT PSYCHOLOGY

Absent from previous studies, one's ability to measure the impact of sport psychology within coaching was a common theme raised by respondents as impacting upon their perceptions of sport psychology. As a higher order theme (displayed in Figure 23 below), the ability to subjectively measure sport psychology in relation to its desired impact occurred on a subjective to objective continuum.

**Figure 23.** Continuum for measuring the impact of sport psychology



### 6.8.1 Subjective Measure of Sport Psychology

Alonso articulated an absolute resolve surrounding his opinion regarding the measurability of sport psychology and further articulated that it was the lack of measurability itself that was the problem as he believed you cannot scientifically state how much it has improved performance by:

*I mean there's no magic answer, I can't measure that (sport psychology).*

In comparison, Marty encapsulated coaches 'issue' with the subject of sport psychology but went further than Alonso as he provided a deeper explanation as to why he held such values:

*I sort of have a problem with all the 'ologies' because at the end of the day it is all down to opinions and who is to say that my advice as a part-time volunteer is any less valid than someone with letters after their name.*

The second half of Marty's quote provided interesting insights into the context in which he operated, in relation to being a volunteer which is not uncommon within the athletic arena. However, his discussion of opinions and advice left his perception of sport psychology open to interpretation. This was as there appeared to be a similar perception to those coaches in Phase One of the research (Chapter 4, section 4.2.1), which implied sport psychology was no more than common sense and a subject which was void of scientific underpinning. This was an issue raised within the art versus science debate posed by McNab (2014). In his quote below, James also questioned the measurability of the subject, but his perception of the subject fell more in line with the definitions of applied sport psychology in relation to needs analysis. Further to this, it showed some movement from the fixed mindsets of Alonso and Marty's in that James suggested 'most of' rather than an absolute opinion:

*Their psychological needs and how to solve them, most of this is not measurable.*

Ian's quote summarises the issues related to the objectiveness of sport psychology and the lack of ability to measure it being a negative:

*I'm not convinced about all its claims. It's not something that's readily measureable from an objective point of view and I think that's the negative side of it.*

The quote below from Charlie provided alternative insights into the underlying motives for using sport psychology and rather than looking at the subject as measurable *per se*, he made reference to the need for an individual to prove to him the worth of the subject.

Therefore, the measurability was in the proof of the intervention as opposed to the subject itself. Charlie would therefore sit midway along a continuum:

*If someone could prove to me that there's something there that can make that athlete do better then I'm up for it and that is the bottom line to it really.*

Unknowingly drawing in the art versus science debate and the differences between the measurability of some areas of sports science over others, Devon made the connection of performance being the underpinning motive thus adding support to both James and Charlie's perceptions:

*It's very easy to say, right here's a technical model for this event and this is how you can perform it and how your body moves in different ways, but there's less available about how the mind works and that impacts on their performance.*

Additionally, as a performance coach with no educational background in sport, Devon implied that his opinion was not absolute and that the lack of information pertaining to sport psychology's visibility and measurability were the issue rather than the subject itself. Noah, a participation coach, who also has no sport based education background, stated his belief to be that sport psychology was subjective but put his perception down to his own lack of sports science background. He suggested that it was his lack of understanding that caused his perception. Thus, when asked, he reported that if he were to be informed of the scientific underpinning he would change his opinion, therefore highlighting the importance of a change agent and mediated sources of knowledge (as previously discussed):

*My perception is that it's very subjective, it's very difficult to be objective if you're not in the discipline of science as I don't really understand it.*

Bill put forward a facilitative intervention for overcoming the negative side of sport psychology and indirectly suggested that objectivity could be achieved through a targeted club programme which was specific to the athletic disciplines:

*If you aim that (sport psychology) at a club, you can ask the club to collect some feedback, how useful it was and you can actually look at the development of specific materials for particular disciplines.*

George appeared to hold a similar perspective to Bill in that he focused his discussion on strategic interventions were more than simply art but, similar to George, he called upon the role of the change agent:

*Simple techniques work well, they are real skills. Sport psychologists have skills that will help people achieve, how it's delivered is key, get more people understanding.*

### **6.8.2 Objective Measure of Sport Psychology**

Analysis of the quotes relating to the objective measure of sport psychology reveals that unlike the quotes associated with the subjectivity of sport psychology where coach narratives held similarities in their content and specific use of words such as 'measurable', coach discussions of the objective nature of sport psychology evidence wider variation in their perceptions of the performance gains sport psychology could offer, as evidenced initially by Steve:

*It (sport psychology) gets you at least 1% in performance cases and in some cases much much more.*

Similarly to Steve, Freddie was explicit in his perception of sport psychology as an objective science:

*It's (sport psychology), a science that uses the ability to get inside people's minds to affect the way they operate or function.*

Taking a different perspective, the latent content of the quote by George indicates an arrival at his scientific understanding of the subject which is evidenced by the discussion of a process and the fact that initially he believed sport psychologists had a 'magic wand' and therefore something that lacked solid underpinnings.

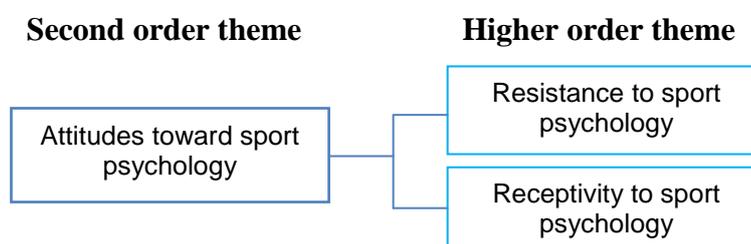
*It turned out of course they (sport psychologists) didn't have a one hit magic wand at all it was a process by which they got the athlete thinking and taking ownership.*

Thus, there was enough evidence to report that coaches appeared to have a sense of sport psychology being subjective, but that this was not necessarily negative. Noah, for example, stated that sport psychology could provide *'understanding for some of the reasons that might not be objectively apparent within a performance'*. Furthermore, there were clear links and, in some instances, overlap with other antecedent factors. Hence, coach narratives illustrated that the development of coaches perceptions could not be attributed to one single factor as they did not occur in isolation but more so, a complex web of intricate social interactions.

## 6.9 EVALUATION OF ATTITUDES TOWARDS SPORT PSYCHOLOGY

Attitude is considered to be the orientation of the mind toward a subject, which in this case, is sport psychology, and has received widespread attention within the literature (Orlick and Partington 1987). Despite this, researchers such as Venerchia (1992) consistently report that sport psychology is still yet to be fully integrated into the athletic arena. Two confounding attitudes reflect the latent meaning behind the cluster of quotes surrounding coaches' attitudes towards sport psychology: resistance (Ferraro and Rush 2000) and receptivity (Blinde and Tierney 1990) as depicted in Figure 24 below.

**Figure 24.** Attitudes toward Sport Psychology



### 6.9.1 Resistance to Sport Psychology

A number of respondents, who could, according to the previous discussion regarding individuals within the social system be considered opinion leaders, discussed resistance

that they had observed within their own environmental contexts. Richard clearly evidenced such resistance when as club chairman he stated:

*We've found that any attempt at introducing psychology is not welcomed by our members.*

Such a response was not untypical as most coaches referred more specifically to other coaches' resistance as opposed to their own. For example, Rudi, a performance coach, with a sport educational background, reported on the mixed perceptions of sport psychology and distinguished between coaches according to their ingrained habits:

*There are some (coaches) that don't want to buy into it. This is the 'I've done it, this is the way I've always going to do it' luckily there are not so many as there used to be, but there is still that element around.*

With an identical background to Rudi, Christina also raised the notion of witnessing other coaches' resistance and noted the negative consequence of such observations:

*We have a coach in our club who believes that training is training and you treat everybody the same (in relation to psychology) and he drives us mad because the girls won't train with him.*

Evidencing consistency in such type of resistance, Amy also identified ingrained beliefs as a factor which caused resistance:

*It's been a real struggle for the older coaches to adapt to this (sport psychology). The coaches don't think there's anything in sport psychology.*

Thus, commonalities between the coaches' observations pertaining to what was referred to in phase one result's (Chapter 4, section 4.2) as being 'old school' attitudes amongst coaches were apparent. Worthy of note however, was that witnessing such attitudes was based on their role within the social system as opposed to their individual characteristics. Thus, there was a perception by younger educated coaches that the older coaches would not like the use of the subject as an innovative tool within coaching.

## 6.9.2 Receptivity to Sport Psychology

The opposing attitude, of receptivity towards sport psychology, was acknowledged by Blinde and Tierney (1990). They concluded that, when exposed to sport psychology, coaches were receptive to the subject. This was a viewpoint expressed by Rudi who, as a performance coach with no educational background in sport, evidenced that after gaining awareness he subsequently showed a willingness to learn more:

*I'd be very willing to explore sport psychology.*

Likewise Ian, as a coach who had self-confessed low levels of knowledge, stated his receptivity to sport psychology but entwined within this was an underlying indication of the subject being outwardly portrayed as “naïf”:

*I do find it quite intriguing because of the corny thing about the mind being a great asset in anything, just life, positive thinking itself.*

Alternatively, Freddie made reference to his observations of the benefits for others within the social system (as examined in Chapter 6, section 6.4 of the quantitative stage above):

*Some athletes' or coaches' who are setting out, who having never done the event maybe need a lot more psychology than someone who has done the event and translated experience in to practice, that's the psychological side that I believe in quite strongly.*

This supports the idea that once exposed, and understanding of the knowledge accrued is achieved, performance coaches were able to see where sport psychology could be beneficial to others just starting out. This Freddie suggested was due to a lack of previous experience to draw upon. This perception does however conflict with the opinions of participation coaches at the early stage of their coaching career. They previously dismissed the need for such information due to the requirement to learn their craft physically rather than mentally as discussed by Amy in section 5.9.1. Such conflicts raise issues surrounding the persuasion mechanisms, specifically communication channels between experienced and inexperienced coaches as mentioned previously by Steve.

Steve, a performance coach with an educational background in sport, remarked upon his journey regarding the development of his receptivity towards sport psychology and the resistance he had to overcome. He initially reported that as an athlete:

*It (sport psychology) was always important to me, I won a lot of competitions by not being the most gifted athlete there, but playing it very carefully and getting my motivations right.*

But when he transferred into the coaching environment, as a gatekeeper he reported, similar to opinion leaders, resistance from others. He noted this to be due to, in this instance:

*Their expertise in other areas of sport science,*

This he suggested caused that knowledge to supersede sport psychology. But in this instance, Steve discussed how this affected his own diffusion process:

*Quite a high element of the workforce aren't strong in that (sport psychology), I had to come through that...others were very very strong in biomechanics and technically, but, 100% coaches' should have a base rate of sport psychology absolutely.*

Overall, it was apparent that there was a perception that resistance to sport psychology still existed as discussed by opinion leaders but not spoken of directly by coaches, thus extending current knowledge of resistance. Likewise, ingrained beliefs that result in resistance were unearthed along with the belief that many coaches resisted sport psychology due to 'old school attitudes'. Such factors caused other areas of sports science to supersede it (sport psychology), which has not been to date, identified. Such resistance was however, potentially balanced by coaches receptivity to sport psychology.

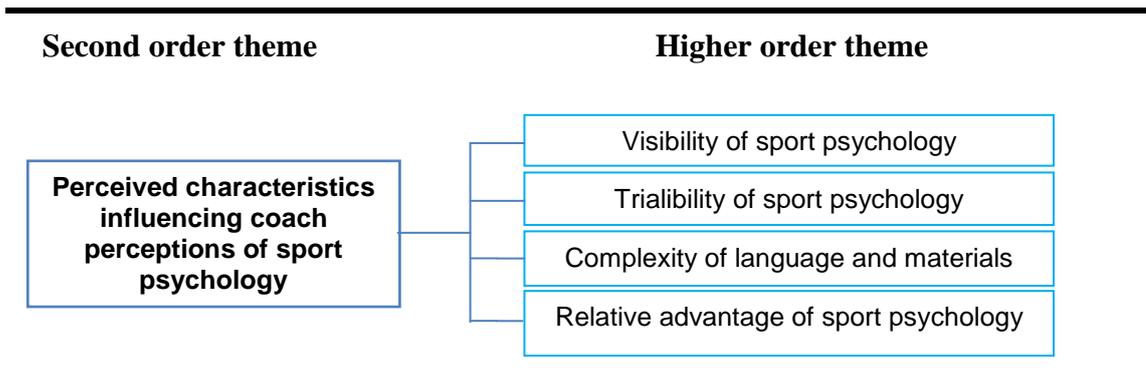
Receptivity appeared to be based upon coaches own experience of the subject which was where differences in the coaches' individual background, specifically, educational background in sport were apparent. Coaches with an educational background in sport were more absolute in their receptivity and thus passed comment on other's level of resistance. In contrast, those with no background had shorter responses and were unable to fully expand upon their underpinning motives. This implied that a lack of knowledge

transferred to the second stage of the Innovation Decision Process and affected coaches' perceptions of the subject.

## 6.10 CHARACTERISTICS INFLUENCING COACH PERCEPTIONS OF SPORT PSYCHOLOGY

Rogers (1995) previously identified five characteristics (relative advantage, compatibility, trialability, complexity, observability) which were thought to predict the rate at which potential users diffused and adopted sport psychology (Chapter 2, section 2.3.2). Subsequent explorations led Rogers (1995) to state that within the diffusion literature base there were dangerous oversimplifications by alternative researchers. He suggested them as noting all characteristics as equal in their weighting. As a result of this concern, inductive analysis was used (in the current study) to examine the underlying characteristics which appeared to inform athletic coaches perceptions sport psychology. While all five attributes (relative advantage, trialability, observability, complexity and compatibility) were researched, coaches responses revealed four characteristics as being influential at this stage of the process (as shown in Figure 25).

**Figure 25.** Perceived Characteristics Influencing Coach Perception of Sport Psychology



### 6.10.1 Visibility of Sport Psychology

Discussed as observability within the Diffusion of Innovations Theory (Rogers 1995, Chapter 2, section 2.3.2.5), within the current study, visibility of sport psychology arose as a contributory factor to coaches' attitude formation towards sport psychology. This

was a point raised by Biddle in 1989 but subsequent research has failed to fully examine if visibility influenced perceptions of sport psychology leaving a gap in the knowledge base.

Rudi referred to visibility in relation to that which he had seen on the television whereby someone he considers a role model discussed the subject which Rudi believes increases the profile of sports psychology:

*At the Olympics (2012), Michael Johnson kept referring quite a lot to the psychology and the mental toughness and things like that and past athlete's talking about it, things like that kind of raises its profile.*

Daisy also made reference to observing sport psychology on television during athletic specific programmes but in the context of commentators analysing performance rather than simply discussing the subject as an entirety as mentioned by Rudi above:

*I've seen it (sport psychology) on sport programmes, they have talked about people how they are doing well or not doing well (psychologically), when people have been interviewed or talking about peoples performances'.*

While Rudi and Daisy both refer to television as their source of visibility, their quotes reveal a latent content of observability whereby they can see it but it has no direct impact on them other than recognition of the subject. Lewis suggests more generally that this form of awareness is developing and why:

*I think there's more in the public domain now that sport psychology is an integral part (of coaching).*

However, there are numerous quotes regarding the fact that sport psychology needs to increase its visibility. Beau simply stated it just needs to be visible implying that that, in itself, would make a difference:

*Its (sport psychology) one of those things where you've got to get it out there.*

Likewise, Freddie states more articulately where it needs to increase visibility and suggests television to be one of these outlets but, in contrast to the above quotes, which

merely stated the mechanisms through which coaches had seen the subject, Freddie suggests specific content which could potentially remove the intangible nature of the visibility that was portrayed in Rudi and Daisy's quotes and get people engaging with the subject:

*Make it (sport psychology), media savvy, telly, internet, national papers because I think when you can start to get more blogging on the benefits of sport psychology.*

Leading on from discussions of visibility and more towards the outcomes of such visibility, Ian stated the need to see sport psychology in action in order for it to, for him, translate from theory to practice:

*Actually seeing it for real, and I need to see it happening, as well as knowing how it should happen.*

Hence, overall visibility was raised as a point of concern. It was a key determinant to coaches' positive perception of sport psychology. Likewise, of importance to the successful diffusion process, lack of visibility had a negative impact on perceptions. To this end, coaches such as Ollie reported lack of visibility as having a negative impact, causing sport psychology to be a taboo subject and hence creating its own barrier to the diffusion process and adoption:

*Within my field (sprinting) I don't feel it's used as much as it should be and really it's almost a black art where it's not promoted enough.*

Amy offers a similar perspective to Ollie's final point regarding the lack of promotion around the subject of sport psychology when she stated:

*I haven't seen anything, I've never seen anything around sport psychology.*

Hence, lack of clarity and inconsistency in the visibility of sport psychology, left room for additional factors to influence the formation of coaches' perceptions. This was evident in the quote from Daisy who commented she would try it 'as long as it wasn't called sport psychology'. Such a quote implies a stigma attached to the title of the subject.

### 6.10.2 Trialability of Sport Psychology

A further higher order theme which emerged from respondents that again fell in line with the work of Rogers (2003) was that of trialability. Specifically, analyses of respondents' narratives appear to be congruent with the first stage of the Innovation-Decision Process (knowledge) and the need to use a suitable communication channel in order to encourage trialability. These in terms of process this raises questions over the positioning of trialability as a conceptual element purely at the persuasion stage of the Innovation-Decision Process. In terms of content of the Innovation-Decision Process, early career participation coaches felt a need to have appropriate individuals in place to facilitate their understanding of the material in order to trial the interventions in a positive manner. Daisy captured such a point in her narrative as a participation coach. She highlighted that for her, trialability, was actually about having someone to talk to in order to verify her attempts at implementation:

*I would be open to someone coming in and showing me how to do sport psychology without calling it that. Really it's about having someone to talk about what's it's all about.*

In contrast, as a performance coach and opinion leader, when asked about trialling new ideas, Phil's quote evidence less of a reliance on others when he stated:

*I'm prepared to try something and if the cap fits wear it.*

By way of comparison, Ian (a performance coach) took a large scale approach and implied that all coaches' should have the opportunity to try sport psychology but recognised that it might not be an effective tool for all personnel, but failed to explain why:

*You don't want to be closed shop; you want everyone to be in on it (trial of sport psychology) so that they embrace it and see if it works.*

Acknowledging the role of visibility but highlighting it not to be the crux of the matter (hence why it is under the trialability theme), Bill stated issues surrounding knowledge transfer and specifically the complexity of transferring knowledge into practice

(trialability) as being the key factor to be overcome if widespread diffusion and adoption is to occur:

*You can throw all the media at it, whether it is face to face, internet, podcasts, all the things out there, it's not what the media is and it's not just what the content is, it's how you take that and translate it's applicability to what your delivering at the time.*

Thus, Bill implicitly points towards interconnections between the perceived attributes. Hence, visibility will only get you so far in terms of diffusion. Once coaches are aware of the subject this does not automatically translate to trialling the innovation. Coaches need support even at the trialling stage of the process. This Bill suggests is due to what he perceived to be the complexity of implementation. Supporting Bill's recognition of complexity, five other coaches also provided narratives surrounding the notion that complexity evolved around language but was articulated by Beau:

*It's that language and using what the athletes' know...but I find in sport it does get confusing...I'm trying to find a way or words to overcome and get across the mindset.*

However, a further insight into the aspect of complexity was provided by Ian who extended current understanding surrounding the complexity of sport psychology. Whilst Daisy reported sport psychology as being '*just common sense really*', Ian inferred that it was not the subject itself which was complex, but the application of the theory into something useable for the athlete's that was difficult. Thus, once again defining complexity to lie in the knowledge transfer from sport psychologist to coach and more so from coach to athlete:

*The difficult thing is when you're dealing with 14, 15, 16 year olds, actually getting them to take it on board. It wouldn't know where to start so I've never done it. I wouldn't know how to go about it.*

## **6.11 SUMMARY OF QUALITATIVE RESULTS: PERSUASION**

In summary, it appears persuasion has led to two perspectives taken by coaches, which arise on a continuum from resistance to receptivity. Four perceived attributes of an

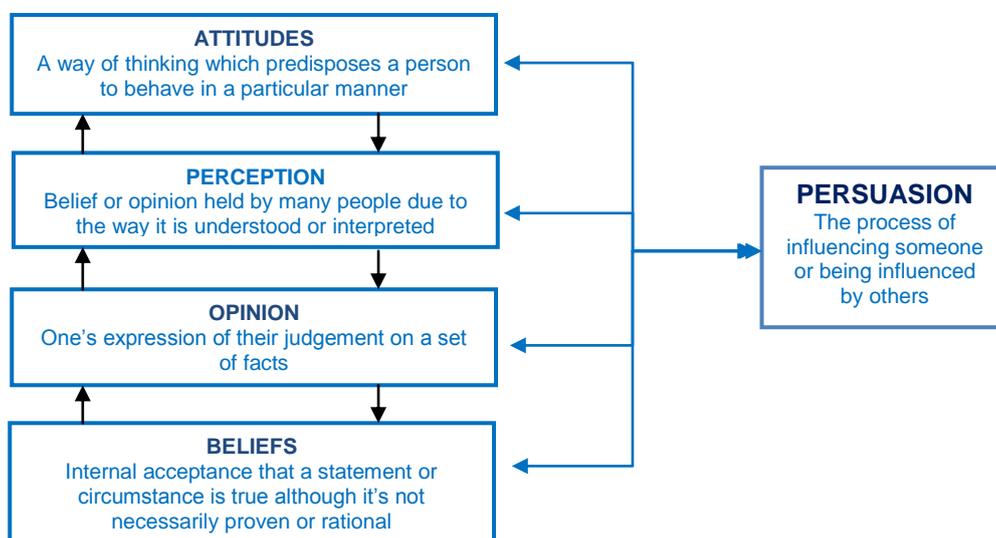
innovation appear to affect coaches positioning on this continuum. To this end, a new interconnected relationship between the perceived attributes was revealed between visibility and trialability. But this was hindered by the complexity of what is being trialled. However, prior to these even arising, coaches made an evaluation of the relative advantage of the subject. Such an evaluation was based upon the, measurability surrounding the possible outcomes of the sport psychology.

## 6.12 SECTION THREE, DISCUSSION: PERSUASION VERSUS PERCEPTIONS

### 6.12.1 Underlying Properties of Persuasion

Persuasion commonly deals with individuals (in the instance coaches) being persuaded to seek information regarding the innovation due to heightened interest from the information gained at the knowledge stage of the Innovation-Decision Process. Such actions can lead to either a favourable or unfavourable perception (see Chapter 2, section 2.4.3.5) of the innovation. Whilst past research has widely examined perceptions of sport psychology (Gould *et al* 1991; Pain and Harwood 2004; Silva *et al* 1999; Wylleman *et al* 2009), the underlying antecedents and subsequent effects on an individual's take up of sport psychology have yet to be examined holistically. Consequently, at this stage of the study, attitudes, opinions and perceptions which persuade coaches' for or against sport psychology were analysed (Figure 26).

**Figure 26.** Underlying Properties which Influence the extent to which Persuasion can Occur



Consequently, unlike hard innovations which have a tangible interface, soft innovations such as sport psychology were found to be intangible and driven by the multidimensional relationships between beliefs, values and opinions.

### **6.13 THE ROLE OF PERCEIVED ATTRIBUTES ON THE DIFFUSION AND ADOPTION OF SPORT PSYCHOLOGY**

Previous studies (Lennon *et al* 2007; Moore and Benbasat 1996) have suggested that the attitudes, or belief, of a potential user controls their actions and decisions. The quantitative results of the current study support and extend this literature by suggesting that collectively these (attitudes and beliefs) are intra-personal factors which were found to underpin coaches' perceptions. Across all three phases of the research design it was consistently evidenced that those attributes with an intra-personal focus had the strongest influence over the development of coaches' perceptions. The direction of this relationship offered support for the integration of the LCM as a mechanism for increasing understanding of the factors affecting the diffusion and adoption of sport psychology due to its hierarchal perspective based on the closer the individual is to the subject at hand, the greater the influence.

Additionally, as internalised processes, it was found that both attitudes and beliefs could be influenced through the manipulation of the perceived characteristics of an innovation (see Chapter 2, section 2.3.2 for a discussion of the five attributes). To this end, from the quantitative results it was apparent that trialability had greater persuasive force than visibility which the qualitative results showed led coaches to favourable attitudes. This was found to be as a result of coaches being able to generate first-hand experience through participation (trailing) as opposed to simply observing (watching) how sport psychology could be integrated into their coaching practices. This finding aligns with findings from the coaching literature (Erickson *et al* 2008; Werthner and Trudel 2006) which reported first-hand in and on (meaning practical rather than watching) was coaches preferred method of learning. In comparison, for participation coaches in the current study, visibility concerned witnessing the subject via general mass media (thus more distal to themselves and lacking the first hand in and on experience), but the

outcome of which was the normalisation of sport psychology as an element of athletic performance. Such impact was of importance to the early career coaches within the sample and their embedding of sport psychology into their everyday coaching practices. From the perspective of enhancing understanding the conceptual elements within the Diffusion of Innovation literature, visibility was revealed in this instance as being one step removed from trialability thus, showing an important link between the two elements if sport psychology is to be normalised and tested within an athletics social system.

Consequently, such findings were consistent with the previous work of Biddle (1989) and additionally progressed understanding of the conceptual elements. The current findings revealed that, despite being depicted as an attribute contributing to the social norm of the social system, as per Tardes (1903) Law of Imitation, visibility failed to teach individuals about the subject it simply allowed sport psychology to be viewed so that it was evident to potential adopters what sport psychology could do. Subsequently, examination of the results across both quantitative and qualitative studies led to the conclusion that observability through general communication channels had little impact upon coaches' behavioural adoption of sport psychology but did increase symbolic adoption. This appeared to be a consequence of its high software dominance (see Chapter 2, section 2.3.1.1 for explanation) making it less tangible than other sports science disciplines which is why visibility and triability must be continually available to coaches as this leads to credibility as direct impact for others will take away a fear of misuse of time and increase its perceived measurability. Hence, trialability for these participants related to knowledge transfer (as discussed in Chapter 2, section 2.1) and coaches' opportunity to verify their beliefs regarding sport psychology. However, the extent to which a coach was fully able to trial or transfer knowledge to an active behaviour appeared dependent upon their perception of complexity.

In the athletic context complexity emerged within the quantitative data and supported was by the qualitative narrative on two levels depending upon coaches' classification as type of coach (participation or performance). Firstly, complexity related to understanding language and, secondly, complexity of use. In the participation coaches' narratives, complexity of language was weak hence often referred to as being no more than common sense (as noted in phase one of the sequential design section 3.6). This resulted in the formation of unfavourable attitudes, the outcome of which was, sport

psychology being perceived as too simplistic which did not add advantages to existing training practices. Whereas, for performance coaches complexity related to the level of difficulty, not of the subject matter, but of the translation of theory into practice.

Thus, while coaches could take on board information, knowing how to translate it into practical tools was deemed difficult. This strengthened the distinction between coaches cognitive processes referred to as phase one of Rogers (2003) Innovation-Decision Process (knowledge, perception/decision) and the behavioural phase (Implementation and confirmation as discussed in Chapter 2, sections 2.4.3.7 and 2.4.3.8). These extensions to current understanding of how coaches contextualise the perceived attributes of sport psychology as an innovation in the athletic social system allows for separation in the operation of manipulating the attributes in order to enhance the output of favourable attitudes towards sport psychology.

Consequently, the results suggest that participation coaches have different uses for the perceived characteristics of an innovation as for these coaches they deal with overcoming misconceptions and misunderstandings. This could potentially increase coaches' ranked importance of sport psychology at their level of coaching as persuasion is associated with consolidating knowledge from the previous stage of the Innovation-Decision Process. Such activities are conceptualised as relative advantage within Rogers (2003) Theory of Diffusion of Innovations and should be a key concern to those supplying and disseminating information if coaches are to be persuaded in a positive manner.

For performance coaches, in this study, the attributes were less about influence and more concerned with desired use. Thus, for these coaches the focus was on how they could move forwards through the Innovation-Decision Process, and hence the supply of information needed to focus on practical application of accumulated knowledge in order to develop positive attitudes. Previously this point was raised by Blinde and Tierney (1990) who concluded that to ensure such movement to said application, the provision of resources required examination. Addressing such points, the current study produced similar findings with regards to resources or lack thereof being an inhibiting factor but went further than the previous quantitative findings of Blinde and Tierney (1990) by, gaining qualitative insights as to why. Specifically, the qualitative results of the current

study found resources are available but in a manner that made accessibility difficult due to, as far as performance coaches were concerned, the rigid structures used to disseminate information. This was explained as the NGBs (the macro social system within the athletic context) at present, fail to provide common points of access for all coaches as currently these are only available for those on a coach development programme.

## **6.14 ART VERSUS SCIENCE DILEMMA**

Despite the lack of consideration of the art versus science dilemma in the sport psychology domain, it is widely referred to within the coaching literature (discussed in Chapter 1, section 1.3.2) as the art versus science dilemma. According to McNab (2014) it (the art versus science dilemma) considers whether a coach's underpinning philosophical approach is based upon empirical sport-specific information (considered the art aspect of the dilemma) or alternatively the systematic application of scientific knowledge (the science element).

The ability to subjectively measure sport psychology in the applied setting emerged as a key theme within the inductive qualitative analysis and was found to underpin the formation of the coaches' perception of sport psychology. Specifically, in the current study, this dilemma arose on a scale from subjective to objective. The subjective end of the continuum was commonly associated with unfavourable perceptions. In contrast, objective measures at the alternative end of the scale enabled coaches to articulate the measurable impact of an intervention. Thus, according to the qualitative narratives, measurability was defined as coaches' ability to assess the effectiveness of an intervention as opposed to questioning the worth of the subject. This finding was supported by the quantitative results which revealed the majority of participants believed sport psychology to have a role within the coaching domain. Therefore, coaches overall held favourable attitudes towards the subject. Thus, the results supported the previous investigation of Blinde and Tirney (1990) that found a moderate to large degree of receptivity when diffusing sport psychology into the swimming context. However, they failed to consider whether this was grounded in art or science.

In addition, extending existing understanding of favourable attitudes, measurability was further linked to the concept of relative advantage (the first perceived attribute of an innovation) and the ability to measure sport psychology against other areas of sport science. To this end, measurability was revealed as being the underpinning factor in coaches' evaluation of which areas of sports science were deemed most important. The quantitative results showed that ranked importance of each element of sports science (i.e. physical, biomechanics and nutrition) was linked to the construct of measurability. Particularly, the ease to which each element can be objectively measured, thus, 'hard skills' such as improvements in speed were seen more favourably by early career coaches. Hence, favourable attitudes occurred when coaches could see the impact.

To this end, the quantitative results also revealed that out of five areas of sport science (physical/biomechanical/ technical/psychological/nutrition), sport psychology was ranked as fourth most important. However, when triangulated with the qualitative results, this ranking was found to be over-simplistic. In explanation, the quantitative findings showed that athletes and coaches were elements of the micro social system and the qualitative narratives evidenced that performance coaches widely noted that at different points in the season there was a need for each sports science domain to step into the fore.

Results indicate that it can be theorised that this dynamic movement (various aspects of sports science constantly moving to the fore front of coaching focus and then fading into the background) is due to coaches' use of periodization. This phenomenon is based around phases of structured training practices designed to increase the likelihood of optimal performance. According to Roeter and Lubbers (2011), each phase (preparation, competition, peaking and transition) has a specific purpose in the overall picture and are divided into macro (the overall training period), meso (blocks of training) and micro cycles (which deal with the specific requirements). Thus, it could be said that sport psychology falls into the micro cycle and hence has critical points in the season (preparation and competition) when there's an opportunity for optimal performance to be maximised (Stafford 2005). As a result, it was found that the coaches' ranking of the importance of the areas of sport science changed depending on a number of factors such as the demands of the season.

This theorisation offers support to the finding that coaches wanted year round access to sport psychology information, as it was not possible to predict at what point in the season coaches would need each aspect of sports science. Due to the newness of such understanding of the way in which coaches view sport psychology, general information coupled with strategic interventions were found to facilitate coaches' knowledge and understanding of sport psychology. Thus, it could be concluded that coaches' patterns of interaction with sport psychology changed throughout the athletic season. Consequently, those providing sport psychology need to account for the transient requirements of coaches. Such considerations would help overcome what Blinde and Tierney (1990) previously referred to as obstacles which impinge upon wide scale diffusion. By way of explanation, this pattern of interaction could help coaches better understand the role of sport psychology and thus help coaches diffuse sport psychology more effectively so that adoption can occur at the appropriate time which Blinde and Tierney (1990) failed to consider.

## **6.15 RECEPTIVITY VERSUS RESISTANCE TO SPORT PSYCHOLOGY**

Historically, according to Ferraro and Rush (2000), despite an increase in favourable attitudes towards sport psychology, resistance was still common place. With this in mind, the results of the current study initially confirmed resistance and receptivity as being the two confounding attitudes towards sport psychology. However, evidencing a progression in attitudes since the work of Ferraro and Rush (2000) the findings from the qualitative aspects of the current study noted elements of perceptual alignment with the notion of sport psychology being associated with psychoanalysis but, unlike previous work this was speculative or witnessed as opposed to respondents holding these attitudes themselves. However, of importance to note was that analysis of the respondents making such observations revealed they were all identified as being opinion leaders within the social system. Thus, while the results indicated that on a personal level resistance is decreasing, caution must be taken when commenting on what coaches are witnessing in terms of the practices of others as their own expert knowledge cannot be guaranteed.

## 6.16 BENEFICIARIES AND BENEFITS OF SPORT PSYCHOLOGY

A factor found to shape coaches favourable or unfavourable perception of sport psychology was that of the perceived benefits. According to Rogers (2003) unfavourable perceptions inhibit the diffusion and adoption of an innovation. This appeared to occur as a result of inaccurate foundations of knowledge. The current study took a holistic approach to the study of what specifically the benefits were and who within the social system had something to gain from them. The results showed a hierarchal path of benefit with those closest to the centre point of the micro social system being those who were perceived as having the most to gain from sport psychology as explained below.

Based on Figure 22 (Chapter 6, page 177), the hierarchal path of beneficiary was shown as athletes at the core, and moving out through personal coaches, to parents on the fringes. In addition to this, the quantitative findings surrounding who can benefit from sport psychology, the qualitative results discussed the nature of what the benefits entailed. Evaluation of the coaches' narratives revealed the emergence of three categories of benefit (self-awareness, coaches use, and performance enhancement) across both elite and grassroots levels. Differences in the benefits of sport psychology were found between the grassroots and elite level of athletics. Specifically, at the grassroots level benefits were overwhelmingly perceived as being self-awareness and development of the athlete, while at the elite level, performance control was reported by coaches' in the sample as the key benefit. These results were reflective of the respondents own philosophy of participation coaching being predominantly concerned with the holistic development of the athlete. Contrastingly, performance coaching evolved around athletic prowess.

The qualitative findings produced similar results to that of McCarthy *et al* (2010), Zarajsek *et al* (2013) and Gonzalez-Rivera *et al* (2017) who previously made distinctions between the underlying motives for coaches' involvement in sport. Similarly, they discovered differences pertaining to participation and performance orientation. The quantitative findings thus provided clarity to the notion that the closer to

the centre of the social system the higher the perceived benefit. However, of importance is that the perceived benefit is determined by coaches' classification of type coach (participation or performance). Thus, those supplying information must consider the type of coach who will receive the information. Specifically, in line with the findings of Gonzalez-Rivera *et al* (2017) participation coaches desire knowledge for personal growth in relation to learning their craft, whereas performance coaches desire specialist knowledge for the benefit of competitive performance outcomes.

## **6.17 CONCLUSION OF PERSUASION RESULTS**

In conclusion, a key finding pertaining to the persuasion stage of Rogers (2003) Innovation Decision Process related to the terminology itself. Persuasion was found to be the outcome of the second stage and thus was preceded by a number of constructs which formed a belief system. The system was comprised of hierarchal elements; beliefs, opinions, perceptions and attitudes which led to an individual being persuaded for or against in this instance, sport psychology. This development of an individual's belief system in turn was influenced by a number of factors. Firstly, the perceived attributes of the innovation and whether they conform or positively challenge the belief system. Secondly, coaches' underlying philosophy regarding the balance between the art and science of training practices. Sport psychology was deemed to be a soft science which decreased its value amongst early career participation coaches but increased its use amongst experienced performance coaches. It was therefore evident that more work needs to be undertaken to educate coaches in the various uses of sport psychology, bio-scientific interventions versus enhancement of coaches pedagogical delivery of coaching material.

## **CHAPTER 7 – DECISION MAKING**

### **7.1. ORGANISATION OF THE CHAPTER**

The organisation of the chapter follows the same layout as the previous chapters and thus is divided into three main sections each of which represent the typical constructs associated with the decision-making process. Combined, the quantitative and qualitative results accumulate into credible knowledge in the third section, the discussion.

### **7.2 STRAND A, QUANTATIVE RESULTS: UNITS OF ENGAGEMENT FOR DECISION MAKING**

#### **7.2.1 Stage Three of Rogers (2003) Innovation-Decision Process: Making the Decision**

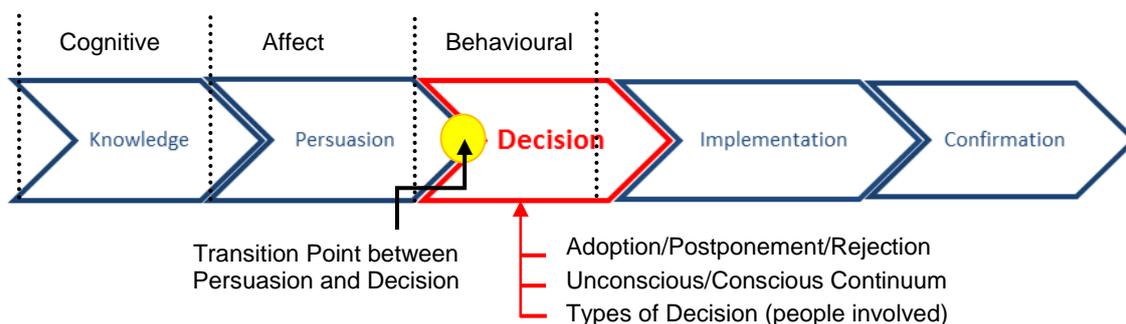
Rogers (2003) reported the decision stage to be the hardest about which to gather empirical evidence but failed to detail why. Within the coaching realms, Stoszowski and Collins (2016) suggest the decision-making process is withdrawn from coaches' choice as they are at the peril of those in power and their deep-seated attitudes and beliefs. Consequently, what was known about the decision stage of the Innovation-Decision Process was that individuals, or other units of decision-making, engaged with activities which led to one of three outcomes - a decision to adopt, reject or postpone use of the innovation (Sanson-Fisher 2004). Patogo *et al* (2007) later reported these outcomes as being the result of individual choice, group consensus, or authoritative choice (as previously discussed in Chapter 2, section 2.4.3.6). Of importance to note, in a similar vein to the work of Rogers (2003), Sanson-Fisher (2004) also noted the difficulty of eliciting conscious information at this stage and thus recommended investigating the activities surrounding the decision in order to ascertain those factors influencing the decision-making process. Yet, Sanson-Fisher (2004) failed to report upon the activities associated with this decision stage, thus leaving gaps in the knowledge base.

As a consequence of the vague notion of decisions, the following section outlines the quantitative analysis relating to the Decision stage of the Innovation-Decision Process (depicted in Figure 27). In line with the suggestions of Macquet (2009), the results were designed to elicit pertinent information focusing on various aspects of adoption and factors predicted to be associated with decision-making in relation to sport psychology (in Figure 27 these are shown on the drop down bar). The purpose of this section is therefore to evaluate whether coaches cognitively accepted sport psychology as a concept and moreover, whether such evaluations transcend cognitions into behaviours. Such investigation could further the current knowledge base by increasing understanding of those factors influencing coaches' decision-making in relation to the diffusion and adoption of sport psychology.

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**Figure 27.** Innovation-Decision Process depicting the Decision Stage and its associated variables

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Due to the difficulties pertaining to the gathering of information about the Decision stage of the Innovation-Decision Process, a number of research questions were proposed;

1. Are coaches aware of their decision making process to attend training activities on sport psychology?
2. What are the influencing variables in the decision stage of the Innovation-Decision Process?
3. Do coaches rely on others when making decisions pertaining to sport psychology?

4. Are coaches adopting sport psychology?

### **7.2.2 Transition Point from Persuasion to Decision**

Authors such as Patogo *et al* (2007) have referred to the decision stage as the cognitive processing of the possible outcomes. Thus, as with the previous transition point, this provided a clear distinction for where questionnaire items were to be placed for pertinent analysis of the data. Addressing such areas overcame the difficulties related to the elicitation of information as pertained to by Rogers (2003) and Sanson-Fisher (2004).

## **7.3 CONSCIOUS VERSUS UNCONSCIOUS DECISIONS TO ATTEND TRAINING ACTIVITIES ON SPORT PSYCHOLOGY**

According to Stoszkowski and Collins (2016) there is a lack of research examining the factors which motivate coaches to seek and engage in the coach learning opportunities provided. Therefore, to examine coaches' engagement in conscious decisions based on the findings of Rogers and Scott (2005), coaches were asked whether they had made a conscious decision to attend sport psychology related activities. According to Ochieng (2006) this form of conscious decisional choice allows for deeper explanations regarding the patterns of decision. Furthermore, it incorporates consideration of the individuals' attitude towards, in this case, sport psychology as Stoszkowski and Collins (2016) recently suggested that in relation to coach learning sport-specific knowledge focusing on the "ologies" was deemed the most useful by coaches. As the literature was unequivocal in its reporting that the decision stage was the most difficult to dissect, 'yes' and 'no' as well as, 'don't know' as it ensures coaches were not forced into a response as it was important to ascertain coaches thought processes.

Descriptive statistics revealed that the highest single response group was that of making unconscious decisions (thus those which involved no active engagement in making a decision) to attend training sessions ( $n=67$ , 43.2%). Additionally, 22.6% ( $n=35$ ) of respondents were not aware of their decision making process, leaving 34.2% ( $n=53$ )

making conscious decisions. These results could have implications for gaining insights into the decision stage of the innovation-decision process due to coaches' lack of conscious engagement with their decision-making process.

### 7.3.1 Individual Characteristics and Coaches' Conscious Decision to attend Sport Psychology Training Sessions

Klonglan and Coward (1970) reported that to make the decision stage more explicit, a review of the different sets of variables needs to be undertaken in order to discover whether these help clarify factors influencing the decision process. To this end, Macquet (2009) reported experience as a key predictor of positive decision-making outcomes. In addition, it also suggests experience to be a predictor of positive decision-making, but suggests that performance coaches would have received additional training (therefore experience) surrounding the ability to deliver upon expectations which allow athletes to implement solutions to deal with challenges within the competitive environment. Combined, this literature suggests experience distinguishes between coaches decision-making and thus, type of coach was used as a foci of analysis.

**Table 7.1:** Conscious Decision to attend Training Activities

**Table 7.1a** Type of Coach and Conscious Decision to attend Training Activities

Conscious decision to attend training activities related to sport psychology	Type of coach					
	Participation		Performance		Total	
	No.	%	No.	%	No.	%
Yes	9	22.0	44	38.6	53	34.2
No	15	39.0	51	44.7	67	43.2
Don't Know	16	39.0	19	16.7	35	22.6
Total	41	100.0	114	100.0	155	100.0
Test statistics – Chi Sq – continuity correction	Value:	df:	p:		Phi:	
	9.346	2	.009		.246	

The second foci was educational background in sport as, according to Ochieng (2006), coaches with such a background had a greater understanding of how to translate information received during training activities into usable coaching methods.

**Table 7.1b:** Educational Background and Conscious Decision to attend Training Activities

Conscious decision to attend training activities related to sport psychology	Sport education					
	Yes		No		Total	
	No.	%	No.	%	No.	%
Yes	19	37.3	33	32.0	52	33.8
No	24	47.1	43	41.7	67	43.5
Don't Know	8	15.7	27	26.2	35	22.7
Total	51	100.0	103	100.0	154	100.0
Test statistics – Chi Sq – continuity correction	Value:	df:	p:			
	2.159	2	.340			

Presented in Table 7.1a, the type of coach analysis revealed a statistical difference between sub-groups, with performance coaches most likely to make unconscious decisions, thus rejecting the null hypothesis. Participation coaches' did not make a conscious decision to attend training sessions.

In contrast Table 7.1b reveals that, with regards to educational background in sport, coaches did not significantly differ in their conscious decision to attend training activities related to sport psychology. Due to this lack of statistical difference the null hypotheses was not rejected.

## **7.4 OTHER PEOPLE INVOLVED IN COACHES' DECISION TO USE SPORT PSYCHOLOGY**

Social determinants of decision-making are thought to be embedded within the interpersonal relationships between people and the impact of these relationships on decision-making (Ochieng 2006). Given this, it was considered necessary to examine between whom social interactions occur within the athletic social system in order to

determine whether social interactions influence decisions (Chapter 2, sections 2.3.1.1.1 and 2.4.3.6). This is because it is thought that those with limited knowledge and experiences of the innovation would rely on others to help them make a decision. Clarification by others would influence the rate of adoption as having to consult others, lengthens the decision chain and therefore time before any decision can be implemented. Therefore, such investigations could provide understanding surrounding the structure of the social system in which coaches operate and subsequent effects upon the decision-making chain. Due to all coaches having to undertake training in participation coaching prior to specialising in performance coaching it was hypothesised that performance coaches would be more autonomous in their decision-making as would those with sport education qualifications due to their underpinning knowledge base providing foundations for decisions (Blinde and Tierney 1990).

The results of the Chi-Square Tests for Independence shown in Tables 7.2a and 7.2b revealed no significant differences between the independent variables of type of coach ( $p=.368$ ) and sport based educational background ( $p=.129$ ) respectively and whether others are involved in the decision-making process. Therefore, the null hypothesis was not rejected for either foci of analysis. However, responses overall reveal a divide at around the 50% mark with participation coaches involving others in their decisions and performance coaches relying less on others.

**Table 7.2:** Others involved in the Decision Making

Others involved in the decision making	Type of coach					
	Participation		Performance		Total	
	No.	%	No.	%	No.	%
Yes	20	52.6	48	42.5	68	45.0
No	18	47.4	65	57.5	83	55.0
Total	38	100.0	113	100.0	151	100.0
Test statistics – Chi Sq –continuity correction	Value:	df:	p:			
	.810	1	.368			

**Table 7.2b:** Educational Background and Others involved in Decision Making

Others involved in decision making	Sport education					
	Yes		No		Total	
	No.	%	No.	%	No.	%
Yes	28	54.9	40	40.4	68	45.3
No	23	45.1	59	59.6	82	54.7
Total	51	100.0	99	100.0	150	100.0
Test statistics – Chi	Value:	df:	p:			
Sq – Pearson	2.300	1	.129			

## 7.5 SYMBOLIC ADOPTION

Symbolic adoption, according to Rogers (2003), relates to having generated enough information to assess the arguments and cognitively accept the innovation although this, however, does not automatically lead to behavioural adoption but more so galvanises the inertia of diffusion. Further to this, Merton (1949) suggests obliteration then deals with the notion that an idea is so ingrained that conscious thought of its surrounding activities does not occur as it is common knowledge. To establish the existence of symbolic adoption, and, specifically, obliteration within the athletic arena, coaches were asked if there was a place for sport psychology in the athletic arena in order to verify their underlying belief system towards sport psychology. The underlying rationale originated from Rogers (2003) who suggested that beliefs played a role in the development of positive perceptions which in turn led to symbolic adoption. Ultimately such data could thus explain the dominance of unconscious decisions and therefore coaches lack of awareness regarding their decision-making, not because they have a negative attitude towards sport psychology but because it is embedded within their coaching as common knowledge.

Initial investigations revealed coaches to consistently report there to be a place for sport psychology in athletics ( $n=146$ , 91.2%). These findings add support to the positive perceptions found in section 6.3.6 (Chapter 6), but additionally suggest that respondents do cognitively accept sport psychology as a subject. However, the Chi-square Tests for Independence revealed violations of the tests assumptions in both independent variables (type of coach and educational background) as 33.3% of cells had an expected count of 3. Despite the inability to determine differences, there was however enough evidence to

support the conclusion that coaches were open to the acceptance of sport psychology. This is due to the assumption that there are no differences and there was overwhelming support to the statement. This suggestion of high levels of obliteration (knowledge becoming embedded rather than a negative rejection), support the notion of symbolic adoption (cognitively accepting sport psychology). But, to ascertain if this leads to behavioural implementation of sport psychology, coaches' patterns of adoption require scrutiny. Such examinations would aid the establishment of key causal conditions which lead to each of the three possible outcomes (adoption, rejection or postponement).

## **7.6 SUMMARY FOR QUANTATITIVE RESULTS; DECISION-MAKING**

The results pertaining to coaches' decision-making processes imply that the majority of coaches were not making conscious decisions about their engagement with sport psychology training activities. According to Patogo *et al's* (2007) definition, this would suggest that coaches were not engaging with the decision stage of the Innovation-Decision Process. However, contrary to this, the associations that were identified, coupled with the results from the persuasion stage (Chapter 7, section 7.3), actually implied that coaches were in fact receptive to sport psychology. Therefore, the decision stage appeared to involve more than merely conscious or unconscious decisions to attend training activities as determinants of being at the decision stage of the Innovation-decision Process. Hence overall, section 7.4 (Chapter 7) provides support for the notion that, how individual's make a decision was somewhat difficult to directly assess due to the unconscious processing undertaken by individuals. Furthermore, it highlighted that the single definition from Patogo *et el* (2007) that the decision stage is concerned solely with coaches' choice to engage with training activities appeared to limit exploration of coaches' acceptance, rejection or postponement of the subject. It was clear that the decision stage went beyond this definition and additionally encompassed the decision to accept or reject sport psychology as an entity.

## **7.7 STRAND B, QUALITATIVE RESULTS: DECISION-MAKING FOR THE ADOPTION OF SPORT PSYCHOLOGY**

### **7.8 POTENTIAL OUTCOMES OF A DECISION**

The general dimension of decision-making for the adoption of sport psychology encompassed three higher order themes as depicted in appendix 7. Each represented one of the possible outcomes (acceptance, rejection or postponement) pertaining to the adoption of sport psychology, as discussed by the likes of Rogers *et al* (1982). Consequently, deductive content analysis revealed athletic coaches to fall into one of three categories in relation to their decision-making outcome. Firstly, rejection of sport psychology, whereby coaches decided not to implement sport psychology within their coaching practices on a conscious level. Secondly, acceptance of sport psychology which referred to coaches decision to utilise sport psychology as a conscious part of their coaching practices. Finally, postponement of sport psychology meaning whilst coaches were aware of sport psychology, they chose not to utilise it at the present time. These three second order themes were derived from seven higher order themes, including four categories pertaining to coaches' level of choice. This fell in line with previous literature from Patogo *et al* (2007), who highlighted the notion of various types of choice which to date have not been explored in the athletic arena.

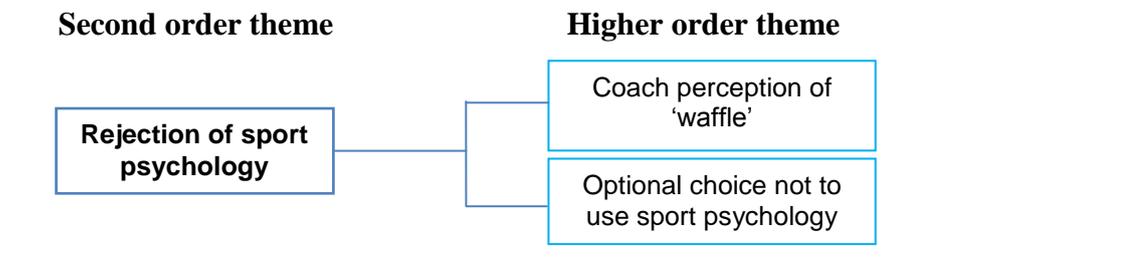
Overall, frequency analysis uncovered the dimension of decision-making to have the lowest number of associated raw data quotes. Specifically, participants only made reference to some kind of decision-making process 36 times; however the quality and richness of the quotes provided in-depth insights into coaches decision-making processes, which extended the current literature base as outlined in Figure 11. The purpose of the current section was therefore to investigate the decision-making choices and their associated impact upon coaches' adoption of sport psychology.

#### **7.8.1 Rejection of Sport Psychology**

The second order theme relating to the rejection of sport psychology from coaches practices was comprised of two antecedent factors (Figure 28); 1) coaches perception of

‘waffle’ whereby they dismissed the subject due a perceived lack of credibility in terms of the subject’s substance, and 2) coaches optional choice not to use it based on a personal rationale.

**Figure 28.** Antecedent factors to the Rejection of Sport Psychology



### 7.8.1.1 Coach Perception of Waffle

From the perspective that sport psychology fails to be underpinned by science, the art versus science debate previously discussed by McNab (2014) emerged as a factor underpinning coaches’ rejection of sport psychology. Freddie articulated the negative aspect of this debate when he stated:

*There was a slight amount of waffle because it was psychology, there’s more emphasis placed on it than perhaps there should be.*

Marty used the same word as Freddie, ‘waffle’ to describe aspects of sport psychology and likewise also rejected sport psychology:

*I may not feel able to accept everything ... there’s a lot of waffle...I’ve used it and haven’t found it works properly.*

Probing around the notion that Marty had in fact trialled techniques and found them not to work was based upon unmediated sources of knowledge. While Marty and Freddie were both performance coaches with no educational background, Alonso, a participation coach with an educational background in sport similarly discussed his rejection of sport psychology and simply stated “*There’s a lot of guff*”.

Analysing the quotes in combination shows that these males all used dismissive words such as ‘guff’ and ‘waffle’, despite the difference in their coach characteristics, when

rejecting the subject. Moreover, these words lack any form of objective perception or scientific meaning.

### 7.8.1.2 *Optional Choice not to use Sport Psychology*

The second theme associated with the rejection of sport psychology related to coaches' optional choice not to use the subject matter as simply stated by Freddie:

*It's my own personal choice not to use it (sport psychology).*

The underpinning reason linked back to his perception of waffle as discussed in 5.5.2.1. This shows links between themes as does the quote from Alonso:

*The honest answer is no I don't want to integrate it into coaching.*

This connection between themes continued but between themes in other stages of the Innovation-Decision Process and specifically, the initial knowledge stage. All the coaches within the study had heard of the subject but some evidenced a choice not to utilise the subject due to external factors of athletes' age and level of competition, as evidenced by Noah:

*I don't think they (athletes) need it unless they're going to another level or something like that, I don't think there's a need at this stage and so I don't use it.*

Additionally, intrapersonal factors related to the coaches' own level of coaching as identified, as evidenced by Amy:

*It's really just off the radar at the moment, if you're teaching things like warm ups that aren't correct, it's obviously more damaging to the athlete than psychology.*

These intra and interpersonal derivatives were also observed by other coaches. Similar to Amy, Ian stated sport psychology as simply being off coaches radars:

*I don't really think it's on a lot of coaches' radars.*

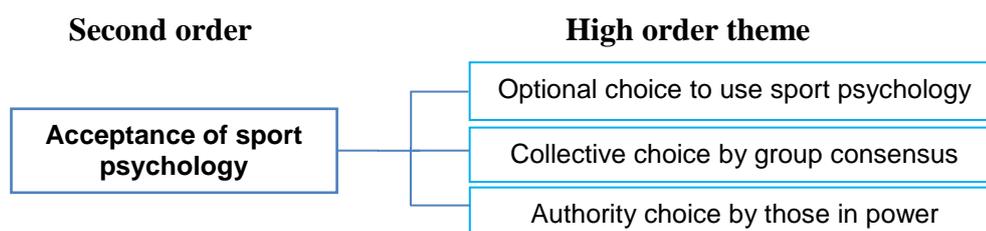
Ian went onto state he believed this was because for early career coaches the subject's common sense which was found to be a limiting factor in the phase one results (Chapter 4, section 4.6).

Overall, rejection was not however, an absolute as two forms of decisions were made, firstly, whether or not to use the innovation and secondly, how to implement the intervention. Specifically, coaches could accept the subject but reject a specific type of intervention. Furthermore, statements of rejection were limited to a small pocket of predominantly participation coaches. The exception to that was Freddie who later detailed sport psychology as being '*a scientific study of the mind*' and upon examination of his narratives it appeared he rejected mediated sources of knowledge from change agents as he preferred to choose his own information rather than being dictated to.

### 7.8.2 Acceptance of Sport Psychology

Acceptance of sport psychology emerged under the umbrella of three available choices which evidenced a hierarchal nature to the freedom coaches' held within their social system, 1) optional choice to use sport psychology, 2) collective choice by group consensus and 3) authority choice by those in power, as depicted in Figure 29.

**Figure 29.** Antecedent factors for the Acceptance of Sport Psychology



#### 7.8.2.1 *Optional Choice to Use Sport Psychology*

Coaches 'optional choice' to use sport psychology concerned coaches' individual decision to adopt sport psychology. Coaches' motivation to make an optional choice appeared to relate to a particular athlete or reason which was evident in the narrative from performance coach Devon whereby he purposefully selected an athlete he felt he could be successful with in order to show others in the group what it could do:

*I deliberately work with him (athlete) because, he is the one (athlete) that I was most likely to be successful with (psychologically) initially and I wanted to establish a routine.*

Freddie, also a performance coach, noted a specific purpose for his optional choice to use sport psychology and hence evidenced deliberate use of sport psychology. However, his narrative highlighted the process he uses as opposed to the desired outcome of the decision:

*I do it (sport psychology) quite consciously and what I try and do is not get inside their mind but try to persuade them that by learning to do it (sport psychology technique) properly, they are going to do it (the skill) better and that's the simply psychology behind it.*

Optional choices were not dominated by male coaches. Christina also a performance coach stated:

*Yes it's a conscious decision on my part because I think they'll get a benefit.*

The exception to these underpinning characteristics was the quote by Lewis who, as an opinion leader said:

*When I'm coaching I use it all the time but it's a personal choice.*

Overall analysis revealed, unlike coaches who reported to reject sport psychology, those pertaining to the optional choice to use sport psychology were predominantly performance coaches'. Yet they were still characterised by no educational background in sport. This indicated towards a difference in the diffusion patterns of respondents with differing educational backgrounds.

### **7.8.2.2 Collective Choice by Group Consensus**

In contrast to the category of optional choice which evidently occurs independently, similar to the constructs within the LCM (Crawford and Godbey 1987), the latter two second order themes involved interactions between individuals within the social system.

The initial interactions occurred between those within the coaches' immediate social system which was the athletic club within which they operated. Extending current knowledge of how decisions were made in relation to the adoption of sport psychology in athletics, coaches consistently reported the clubs committee as being responsible for deciding whether new coaching practices were to be introduced to their club. However, what was apparent at this stage was that change agents were brought in to facilitate the change in coaches' behaviour, whereas optional choices related to those which coaches could independently embed within their own coaching. Making such distinctions, Freddie provided a rationale for collective decisions:

*Bearing in mind that I'm one coach amongst several within the club, that (decision to use sport psychology) would have to be a committee decision, not a decision for me, one coach, albeit a fairly senior one.*

However, whilst further highlighting the collective decision of the committee, Rudi described the entire process from how awareness of an innovation could occur through to how the decision would be made, thus providing new insights into the decision process:

*It's our committee really (that make decisions) and in terms of things like if we wanted sport psychology, I think we're quite good at things coming bottom up, so it would be our athlete's that would identify that, then the coaches' in particular. The role then of our committee is we need to ensure employment of a sport psychologist is a) sustainable and b) we're allocating the money with some degree of equity across the sport.*

The previous quotes discuss the committee as being the driving force behind collective decisions, but this was not as consistent as it initially appears to be. Bernie, in his narrative, moved away from committee decisions to groups of coaches deciding how to implement sport psychology rather than deciding whether or not to bring in a sport psychologist:

*As a group of coaches we've probably got to work out how best to incorporate it (sport psychology).*

Devon's narrative also takes an alternative approach. If the committee imparting a decision is an example of a top down approach, then Bernie and Devon's social system take a bottom up approach:

*We're quite good at things coming bottom up so it would be our athletes that would identify that and then the coaches.*

Hence evidencing a two way system, both top down and bottom up, which may better fulfil the needs of all those in the social system.

### **7.8.2.3 Authority Choice by those in Power**

The final form of decision to emerge related to, those made by someone in a position of power (authority decision) as opposed to democratic order. Unlike the consistent referral to the committee at the collective decision level, there was some indecision as to who exactly the authoritative power was within the athletic arena. Despite this, there was still a hierarchal nature to the chain of command. Specifically, coaches' narratives indicated an inconsistency surrounding who was considered an authoritative power within the athletic social system. Anya reported her '*club head coach*' as being the authoritative decision making power compared to Ian who said he would '*take it to the club chairman*'. These differences were unearthed as being due to the differences between club structures as Steve, a gatekeeper in the athletic arena, explained. He stated historically NGB's failed to communicate and, whilst improvements were occurring currently, their focus was not on reducing these inconsistencies:

*British Athletics is a marker and came in very quick overnight and are called British Athletics for marketing reasons. In the home countries we have England Athletics and they look at development...I have spent a lot of time researching stuff to get myself back up to date. They all sit in one building now which is good, I haven't always felt in the past they've spoken the same language, I think it's getting better but there is an awful lot more to be done, so it's quite a minefield to navigate your way around. The plan for this four years has been very very much biased towards recreational running, not so much on the types of things we might like to see in sport such as coaching and conferences, it's much more about the health agenda.*

Hence, Steve's narrative evidenced the chain of command had previously been blurred which had made communication difficult. Closer to the micro social system, Amy also

noted England Athletics as the authoritative body but failed however to mention British Athletics which supported findings from section 5.35 which revealed that coaches felt the NGB did not provide enough information to clubs and specifically coaches. However, as a gatekeeper Amy did recognise the changes which had permeated down from the NGB and again acknowledged the advancements which had been made, but also noted that as an authority they still had work to do. More importantly, she noted the hierarchal structure to communication in that the NGB communicated to her and in turn, she co-ordinated these in terms of coaches:

*I think psychology will have a big part to play in that (coaching) and I think it's definitely something England Athletics needs to support on. I think they need to put some resource in terms of people power because basically I literally do everything, I run all the courses, I do all the activation work...although you have a lot of volunteers doing it (coaching), you still have to coordinate those volunteers.*

At the lower end of the hierarchy it thus became apparent that coaches seldom witness the authoritative decisions of the NGB's as mentioned by Charlie:

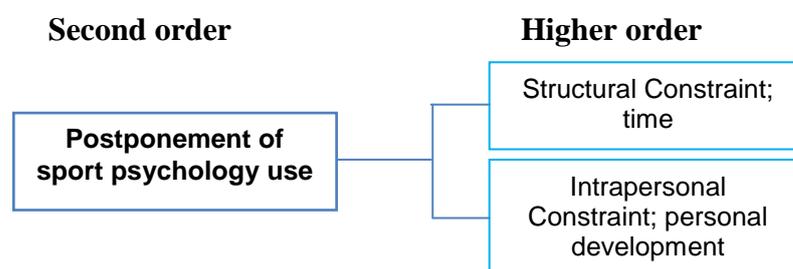
*As far as I can see UK Athletics don't play a major part in any course that I've done. So I think you've got to have the club behind you.*

There is thus enough evidence to suggest an apparent hierarchal structure to the decision-making process of sport psychology within the athletic social system. With each type of choice relating to the coach's degree of freedom and autonomy in their decision making, hence evidencing an inverse relationship. Specifically, coaches' perception of waffle and optional choice not to use sport psychology led to rejection of the subject. Optional choice to use sport psychology, authority choice by those in power, and collective choice by group consensus all lead to the acceptance of sport psychology, although in the latter two categories freedom of choice was taken away from the coach yet implementation of sport psychology occurred. Thus, further explorations are required if diffusion and adoption is to occur (discussed in section 7.5.6).

### 7.8.3 Postponement of Sport Psychology

The final possible decisional outcome in Rogers (2003) Innovation-Decision Process was that of postponement which was found to be evident within the athletic environment. Specifically, it was discovered that in the current study postponement occurred for one of two reasons, as refined on Figure 30.

**Figure 30.** Antecedent factors to the Postponement of Sport Psychology



#### 7.8.3.1 Structural Constraint; Time

Time arose as the main structural constraint which caused coaches within the sample to postpone their use of sport psychology. However, unlike previous studies which report time in an all-encompassing term, coaches narratives noted two differing dimensions of time. 1) Time commitment to the whole sport and the need to divide theirs between the various aspects of coaching and the rest of their lives. 2) Direct contact time and only having a set amount of allocated hours with athletes each week, thus, coaches reported the need to prioritise various aspects of training. With this in mind, Bill discussed the postponement of sport psychology for reasons pertaining to time. However, he also referred to the postponement of other sport science disciplines rather than just that of sport psychology:

*We've talked about things such as coaches' rotating to do a one off session on a particular discipline or a particular dimension of coaching and that could be one of the biomechanical coaches' giving a biomechanical lesson for the long distance guys or apply a metric session from the jumps coaches' to throwing people or it could be a bit of sport psychology from one side. We'd like to do that in down time, in the low time, outside the competition cycle but we're still trying to establish that...just don't have time.*

These antecedent divisions extended current understanding via coaches' narratives which provided new insights into factors which contributed to the postponement of sport psychology.

*With every aspect of my athletics I'll only allow myself to allocate, it's quite a lot of time in the week for athletics but I get tied into so many other aspects (of coaching) as I have a strategic view...so it's simply the time to understand things.*

The quote by Rudi, a performance coach with no educational background in sport, not only raised the notion of time but more importantly, unlike previous studies, explained that time related to the amount he was willing to allocate in order to gain an understanding of how to utilise the subject in a manner which could then aid athletes' holistic development. Additionally, Bill explicitly spoke of time as an issue but in relation to how to implement the subject as opposed to the learning of it (as he had an educational background in sport):

*This is a very tricky one because although you're aware of what sport psychology is, you get very little time with the athletes' themselves on a volunteer coaching basis.*

Similarly, Steve, a performance coach with an educational background in sport, also highlighted the issue of time in relation to commitment:

*I can't even commit to coaching...I definitely can't commit to do something beyond coaching and so for me...until I get to a point where I am more able to apply my time... I don't want to take on the extra challenge and then leave it there, so I wouldn't start it unless I know I could carry through with that area.*

Thus, overall time appeared to be a contributing factor to coaches' postponement of sport psychology which reflected the results of phase one (Chapter 4, section 4.6) where Ollie reported '*time, it's all based around time as I only have 3 sessions a week so not much left in the training cycle*', which implied postponement of psychological techniques as he further stated '*with 15 upwards (the number of athletes per session), you can't spare time for one athlete*' hence implying his use of sport psychology would

be for individual requirements as opposed to integrated psychological skill development which he could achieve by embedding sport psychology into his coaching tool base.

Time appeared to be a confounding element in coaches' postponement of the adoption of sport psychology. However, the concept of time varied depending on coaches' individual characteristics.

### 7.8.3.2 *Intrapersonal Constraint; Personal Development*

Devon, a performance coach with an educational background in sport described personal engagement with sport psychology and a personal attempt to facilitate the adoption of sport psychology throughout the social system via personal development opportunities. Moreover, in line with the explanations of section 6.3.5 (Chapter 6) which revealed coaches' belief that the athletic social system encompassed those beyond merely the coach-athlete relationship, Devon noted those in his social system and why he decided they could benefit from sport psychology in his CPD. Furthermore, he evidenced postponement of his planned activities due to the optional choices of other individuals:

*I had a session set up which didn't actually run last year but I was hoping it would run on sport psychology and what I wanted to do is I wanted to involve all parents, coaches' and athlete's in the session because I don't think there's any clear boundary in terms of where does it start and where does it stop and I think too often we talk to the athletes or maybe coaches' about psychology of sport but we don't link them together and engage all the people that should be involved and that has an impact. I say the parents need to be involved because they've spent most of the time with the athletes'.*

Max discussed sport psychology in terms of his own future development rather than present focus:

*If I wanted to take my coaching further, then yes, it would be a good idea to do some sort of course (on sport psychology).*

When probed further on the difference between current focus and future plans, he explained that at present he was learning about the sport as he had previously come

from the fitness industry and personal training specifically, rather than sport. Throughout various themes, this focus on developing hard skills was a reoccurring rationale for participation coaches' behaviour and was reportedly due to a need to gain knowledge related to their coaching discipline. Participants such as Amy, Kali and Max stated that once such basics had been learnt, their focus would then turn to the soft skills including sport psychology. This could lead to alleviation of performance coaches' reason for postponement.

## **7.9 SUMMARY FOR QUALITATIVE RESULTS; DECISION-MAKING**

Overall, clear differences emerged in relation to coaches understanding of sport psychology as an applied intervention (used to address a specific situation), versus sport psychology as a behavioural coaching tool to be embedded within coaching practices. To this end, rejection and postponement seemed to occur when coaches were referring to the use of sport psychology as an intervention technique.

## **7.10 SECTION 3, DISCUSSION: DECISION-MAKING PROCESSES**

### **7.10.1 Possible Outcomes of a Decision**

Traditionally the decision stage of the Innovation-Decision Process has been notoriously difficult to evaluate due to the potential users lack of awareness of their personal decision-making process (Rogers 1983). Consequently, a review of the literature (Chapter 2) revealed the outcome of decisions (adoption, rejection or postponement) has often been the focus of analyses. In this vein, Patogo *et al* (2007) concluded that decisions are the result of one of three decisions (individual, group or authoritative, see Chapter 2, section 2.4.3.6 for explanation). Despite such developments, and in order to unearth deeper insights, Harting *et al* (2009) more recently called for additional qualitative data. As a result the following section has three key areas of focus; 1) to examine the role of conscious and unconscious decisions in the athletic environment, 2) to understand the patterns of decisional choice with the athletic social system and 3) to

identify the social determinants which contribute to the decision-making process regarding sport psychology in athletics predominantly through qualitative results.

### **7.10.2 Conscious and Unconscious Decisions in Athletics**

With regards to conscious processing it was concluded from the quantitative results (see Chapter 7, section 7.4.3) that the majority of coaches made unconscious decisions (cognitive processing information without being aware of it) surrounding engagement with training activities. Added to this, the responses suggested that performance coaches were more likely to make unconscious decisions than participation coaches. Such results were unexpected due to performance coaches' greater levels of positive contribution to the previous two stages (knowledge and persuasion) of the Innovation-Decision Process compared to participation coaches who appeared to have more barriers at these early stages such as lack of access points to mediated information. Specifically, based upon the work by Rogers (1983), it was expected that as a result of relative advantage (the cognitive evaluation of the innovation) conscious decisions would be dominant within this category of coach as it was thought that this would lead to engagement.

Rejecting such theory, the dominance of unconscious processes appeared to be the result of embodiment rather than negative perceptions as presented by Rogers (2003). Thus, lack of conscious engagement did not automatically equate to rejection. On the contrary, the results evidenced conclusions consistent with Nelson *et al's* (2012, p.2) discussion of 'obliteration by incorporation', whereby knowledge becomes so embedded within an individual's psyche they no longer consciously evaluate relevant material as acceptance has already occurred. With regards to this new insight, the results of the current study thus showed support for the occurrence of symbolic adoption of sport psychology within the athletic social system. However, few studies were found to document conclusions surrounding symbolic adoption. Consequently, in line with the suggestion of Nelson *et al* (2012), those offering training opportunities need to be careful. There is a need to ensure they do not assume false negatives regarding.

### 7.10.3 Role of Social Determinants

Triangulation of both the quantitative and qualitative results provided inference consistency due to the similarities between the data outcomes. Thus, it would appear that other social determinants beyond those of individual characteristics as proposed by Mann and Sahin (2012) and negative perceptions (Ferraro and Rush 2000) are at play within the athletic environment. Despite supporting the suggestion from Harting *et al* (2009) that facilitating factors can lead to increased diffusion, the results obtained in the current study (barriers discussed in Chapter 11, section 11.8 and facilitators Chapter 11, section 11.9) provided alternative means of facilitation than those proposed in their work. Specifically, rather than first-hand experience as reported by Harting *et al* (2009), support systems from the NGBs were desired for the progression of sport psychology. It was noted by the participants in the qualitative survey (Strand two, Part B), that NGBs support for sport psychology should fall in line with resources available in other aspects of sports science. This would place equal emphasis on the role of sport psychology as at present there was a perception that NGBs under-valued the subject, which in turn impacted upon participation coaches' decisions. Despite the work by Zakrajsek *et al* (2013) being based upon American college coaches their results provided underpinning explanations for the current results. They found that coaches with limited knowledge or experience would more likely accept sport psychology in the future if recommended and supported by their organisation as this removed barriers and stigma. This concurs with the barriers reported in the current study. According to Rogers (1983) the Diffusion of Innovation literature refers to this as a system effect which causes a normalisation of the innovation within the social system. Such normalisation in the current study, however, would imply sport psychology had been embedded within the athletic context and thus widespread diffusion of sport psychology which was not the case.

### 7.10.4 Patterns of Decisional Choice

The results from the qualitative findings confirmed the emergence of three decisional outcomes; acceptance, rejection and postponement all of which fell in line with those proposed by Rogers (1983). Additionally, antecedent factors were determined in order to better understand decision-making processes in athletics.

#### **7.10.4.1 Rejection of Sport Psychology**

Of interest, with regards to participation coaches, is that it was apparent that rejection was based upon the coaches' perception that there was an absence of scientific underpinning to sport psychology. Researchers (Stoszkowski and Collins 2016) have previously suggested this to be the result of coach education programmes focus on procedural knowledge (i.e. doing) rather than declarative knowledge (i.e. why) thus causing beliefs that learning the craft (technical areas) through reproduction of existing practices occurs at the expense of innovation. Evidently, when examining the antecedents of such rejection findings were consistent with those above whereby, lack of guidance from the NGB allowed for the continued perception that sport psychology was no more than common sense. Findings of the current study thus support the theorisation from Rogers (2003) that perceptions affect the potential user's decision.

In relation to the perceived attributes of an innovation, having been omitted from the persuasion stage (as depicted in Rogers (2003) Innovation-Decision Process, Chapter 2, section 2.4.3.3, Figure 2), the perceived attribute of compatibility emerged within the current study at the decision stage. Compatibility was found to be an antecedent factor contributing to the rejection of sport psychology when coaches deemed the subject as being not compatible with their athlete's characteristics (age and level of competition) rather than those of their coach characteristics as portrayed in previous works relating to the banking industry (Mann and Sahin 2012).

Utilisation of the LCM allowed for deeper understanding of the factors influencing coaches' decision-making process. To this end was the discovery that at this stage of the Innovation-Decision Process coaches' individual characteristics (type of coach and educational background) had no impact upon decisions which to date had not been identified. However, it was theorised that due to internal beliefs being stronger influencers on behaviours than opinions, coaches' personal values overrode external social influences.

#### **7.10.4.2 Acceptance of Sport Psychology**

The acceptance of sport psychology was a reflection of the social system in which the coach operated thus representing the structural component of the LCM. Further, similar

to other research findings, all three forms of choice (individual, group and collective) were evident in the acceptance of sport psychology. Given that few studies had previously documented the decisional structure in athletics, the results were compared against those in previous sections of the current study for triangulation purposes.

In line with the coaches triggers for information (Chapter 4, section 4.2.3), performance coaches' decisions were based on external social influencers. Explicitly, athletes' requirements as opposed to that of the coaches (as per the decision to reject the innovation) were confirmed from the quantitative analysis. Likewise, the qualitative finding that other people were involved in the coaches' decision-making process also concurred with the quantitative results. However, the coaches' narratives went further than the statistics (Chapter 7, section 7.5.2.3) to reveal that collective choices referred to the utilisation of a change agent to diffuse sport psychology into the micro-system. This was often achieved through the club committees, whereas authoritative decisions were in comparison, found to be made by one person in a position of power. Reflecting the quantitative results, the NGB was not involved in the widespread diffusion or individual adoption of sport psychology. This suggests that whilst the processes of decision-making are the same as those in other industries, including communication and education, the people involved (i.e. Club and Coach Support Officers as gatekeeper) and the manner in which this occurred appeared to be specific to the social system being studied.

This raised the importance of change agents understanding the structure of the social system, into which they are potentially entering and those within it. They must understand who to persuade about the merits of the innovations. This offers support to the previous conclusions of Zakrajsek *et al* (2013) who found that for full integration, sport psychologists must be able to fit in and connect with those already in the environment.

#### **7.10.4.3 Postponement of Sport Psychology**

Researchers (Patogo *et al* 2007; Rogers 2003) have suggested postponement to be where potential users put an idea on hold. Unlike previous research, the qualitative evaluations revealed a number of intra-personal factors which contributed to such a

decision. According to Macquet (2009), unlike athletes who must make fast decisions whilst under pressure, coaches have time to plan and resource elements of their training. Yet the results (both quantitative and qualitative alike) of the study indicated time as a contributing factor to coaches' postponement of sport psychology. Coaches suggested administering interventions was perceived as being time consuming in both terms of preparation and delivery which falls in line with Kremer and Marchant's (2002) suggestion that lack of subject-specific knowledge can be an impeding factor to full integration. This appears to explain such contradictions between the results, particularly when participation coaches' lack of knowledge is considered. Hence, participation coaches had to invest too much time into firstly, learning how to translate knowledge and then secondly, how to integrate this into training practices. According to the narratives the reason for that was that voluntary coaches they did not have the time to do this for just one component of training practice that could not be directly observed.

Offering CPD opportunities to coaches contributed to the growing distinctions between types of coaches in the athletic social system. Particularly, at the decision stage performance coaches offering sport psychology related to CPD activities unearthed participant coaches postponement decisions. Once again, this postponement was based on the earlier established beliefs that in the early stages of their athletic coaching career they perceived the need to develop other aspects of training first.

This consistent finding throughout the diffusion process regarding the development of hard skills such as technical mastery is not uncommon in the coaching domain as evidenced in the previous work of Tusak and Tusak (2001). They reported that focus on training programme execution in sport is common practice because skill mastery (physical training) is the most obvious part of a training package. Such views were evident in the responses of the early career participation coaches' in both the qualitative elements (Strands one and two) of the current study. Hence, these participation coaches revealed a level of naivety within their decision-making process as researchers (Evered and Selman 1989; Napier *et al* 2008; Poppar and Lipshitz 1992; Tusak and Tusak 2001) widely agree that to achieve such skill mastery, coaches must structure the athlete's environment appropriately to enable them to thrive and reach their potential in both training and competition. Crespo and Reid (2007) have suggested utilisation of the psychological concept, known as motivational climates, to enable the setting of a

productive environment hence showing a wider use of sport psychology beyond that of interventions as described in the narratives of performance coaches with an educational background in sport. Thus, training for participation coaches regarding the use of sport psychology theories, as facilitators to enhance their own coaching techniques, is required if postponement is to be avoided. Linking to section 5.6.4 (Chapter 5), it adds further evidence to firstly, coaches having a lack of understanding of the discipline of skill acquisition and its possible role in the enhancement of skill execution. Secondly, in relation to the notion of measurability explicitly, coaches can observe when a skill has been learnt through motor performances. Interestingly, it was performance coaches who reported resistance to CPD opportunities. These were opinion leaders within the athletic social system.

## **7.11 CONCLUSION OF DECISION RESULTS**

It was found that all three possible outcomes associated with an individual's decision were evident within the athletic social system. Furthermore, three out of the original four types of decision (discussed in Chapter 2, section 2.4.3.6) arose at this stage thus omitting transient decisions. Overall analysis of the quantitative and qualitative results led to the conclusion that, individual decision-making processes occur on an unconscious level. However, as the decision-making process becomes conscious in nature, control moves from the individual to those in a position of power. Consequently, the results indicated a shift towards a hierarchal decision-making process. Thus, optional decisions to adopt sport psychology are predominantly made by individual coaches on an unconscious level and thus based upon embedded beliefs, knowledge and understanding. In contrast, collective choices are dominated by conscious decisions discussed by committee members with authority choices being noted as being those made at the macro NGB level as depicted in Figure 31.

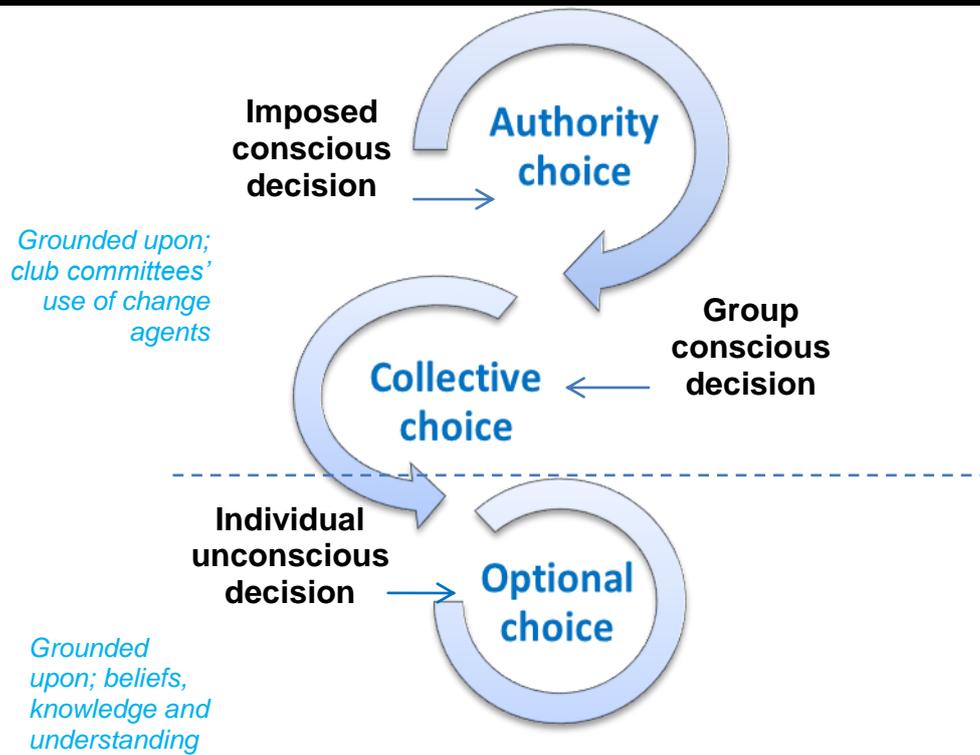
Moreover, using the LCM to theorise on this outcome reveals coaches intra-personal belief systems to be a stronger predictor of a coaches' decision than interpersonal influences. Thus, these opinion leaders appeared not to hold the equivalent value as the mentors discussed in Chapter 5. Such considerations strengthen the idea of respect as being a facilitative factor in changing attitudes and behaviours. Moreover, in terms of

the Innovation-Decision Process, these results show the relationships between stages. Thus beliefs and attitudes formed at the early stages affect subsequent movement through the diffusion process and ultimately the adoption decision.

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**Figure 31. Hierarchal Decision-Making Process**

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## **CHAPTER 8 – IMPLEMENTATION OF SPORT PSYCHOLOGY**

### **8.1 ORGANISATION OF THE CHAPTER**

The purpose of displaying quantitative and qualitative data respectively is to provide information sufficient enough to enable complete interpretation of underlying meaning and patterns of response within the corresponding discussion section. Therefore the implementation of sport psychology will be spilt into three sections, two representing the results and one interpreting these in a combined manner.

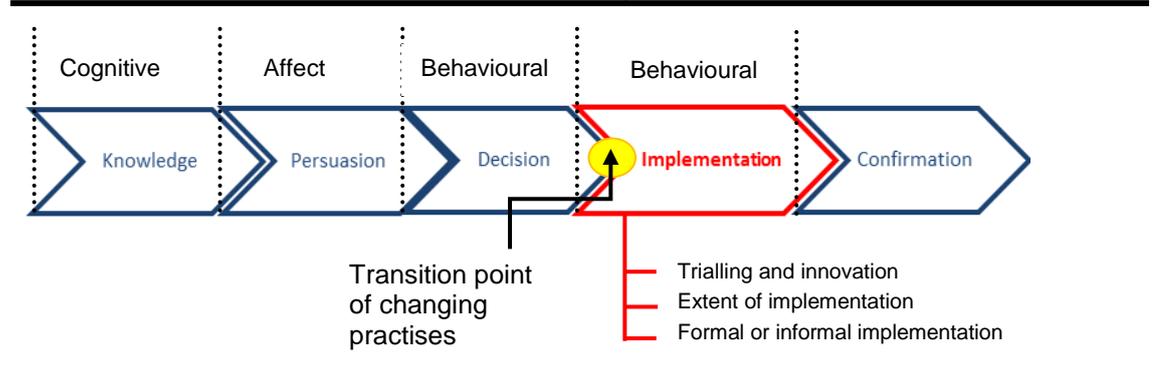
### **8.2 STRAND A, QUANTITATIVE RESULTS: THE TYPOLOGY OF IMPLEMENTATION**

#### **8.2.1 Stage Three, Innovation-Decision Process; Behavioural Adoption**

The key findings from the implementation stage of the Innovation-Decision Process, as depicted in Figure 32, are outlined in the following section. Broken into three broad areas, this section covers the central conceptual elements associated with implementation. Initially, as with previous sections, the transition point between the decision and implementation stage was addressed in order to clearly articulate the boundaries between stages. Analysis of the basis upon which implementation occurred was examined alongside whether the structure of the athletic social system impacted upon coaches' implementation of sport psychology.

As portrayed in section 2.4.3.7 (Chapter 2), implementation concerned the actual use of the innovation although this was thought to occur to various extents. Implementation thus articulated the outcome of the decision stage. Hence, adoption at the decision stage does not automatically equate to use due to the symbolic processes previously discussed.

**Figure 32.** Innovation-Decision Process depicting the Implementation Stage and its related Components



Therefore, implementation deals with trialling an innovation in practice. Consequently, those items pertaining to implementation were the dependent factors whilst those factors thought to influence implementation (type of coach and educational background in sport) were considered as the independent factors.

At this stage of the process the key research questions were;

1. Has exposure to sport psychology changed the training practices of the respondents?
2. Which aspects of sport psychology are coaches implementing?
3. To what extent are the various psychological interventions being implemented?
4. Is sport psychology being used on a formal basis?

### 8.3 CHANGING TRAINING PRACTICES

Orr (2003) suggested that the average population was risk-averse and this risk would cause individuals to postpone or even decline the use of an innovation thus hindering behaviour change in potential users. The implementation stage of the Innovation-Decision Process is therefore a representation of the outcome of the previous decision stage and use of an innovation is often the first overt indication of a change in behaviour and cognitions. As a result, respondents were initially questioned about the nature of

their training practices and whether these had altered since coming across sport psychology. Such elicitations provided insights as to whether coaches were progressing past cognitive engagement (symbolic adoption) to behavioural acts: implementation.

Frequency analysis indicated that of 155 respondents, 58.1% ( $n=90$ ) had changed their practices since coming across sport psychology whilst 27.1% ( $n=42$ ) reported not to have changed their practices. Even less ( $n=23$ ) 14.4% were unsure. This initial finding thus showed that exposure to sport psychology can change coaches training practices. With a similar rationale to that of the previous sections, two foci of analysis were utilised, to ascertain any differentiations in coaches' implementation of sport psychology.

Analysis of the two foci represented in Tables 8.1a and 8.1b revealed two independent variables for which the null hypothesis (type of coach ( $p=.840$ ) and sport education background ( $p=.079$ ) was not rejected. Specifically, there was no significant difference between participation and performance coaches, or those with and without educational background in sport, and coaches having changed their coaching practice since coming across sport psychology.

**Table 8.1:** Change in Coaching Practice

**Table 8.1a:** Coach Characteristic and Change in Coaching Practice

Changed coaching practice since coming across sport psychology	Type of coach					
	Participation		Performance		Total	
	No.	%	No.	%	No.	%
Yes	22	55.0	68	59.1	90	58.1
No	11	27.5	31	27.1	42	27.1
Don't Know	7	17.5	16	13.9	23	14.8
Total	40	100.0	115	100.0	155	100.0
Test statistics – Chi Sq – Pearson	Value:	df:	p:			
	.348	2	.840			

However, within both variables more than 50% of respondents had in fact changed their practices. Such results indicate that coaches' individual characteristics were not associated with their decision to implement sport psychology.

**Table 8.1b:** Educational Background and Change in Coaching Practice

Changed coaching practice since coming across sport psychology	Sport education					
	Yes		No		Total	
	No.	%	No.	%	No.	%
Yes	35	70.0	54	52.4	89	58.2
No	8	16.0	33	32.0	41	26.8
Total	50	100.0	103	100.0	153	100.0
Test statistics – Chi	Value:	df:	p:			
Sq – Pearson	5.071	2	.079			

## 8.4 IMPLEMENTATION OF INTERVENTION TECHNIQUES

Examination of the current sport psychology intervention based research evidenced that similar to section 5.2.4 (Chapter 5), techniques were investigated as distinct facets. Hence, analysis of regularly prescribed mental skills training techniques tended to identify the isolated use of a structured intervention programme. This left gaps in the knowledge base surrounding the overall extent to which sport psychology was being implemented. To overcome such shortcomings seven categories of commonly prescribed interventions were selected for examination. Each intervention covered a facet of sport psychology previously examined in section 5.2.4 (Chapter 5) in order to ensure continuity between knowledge and implementation. This enabled those facets of sport psychology coaches had knowledge of, and the subsequent implementation of related interventions, to be examined.

Frequencies of use were measured on a uni polar 5 point Scale, with the value of one attributed to every session and the value of 5 to never (used sport psychology). The middle point was that of 3 (monthly use) therefore one and two equated to more frequent use leaving four and five representing lower usage level of the intervention. Coaches were required to state their use of each facet of sport psychology, thus Table 8.20 displays the means and SD for each technique in turn.

**Table 8.2:** Mean Values for the Frequency of using Sport Psychology Techniques

Measure	Responses	
	Mean <i>M</i>	Standard Deviation <i>SD</i>
Sport psychology technique		
Relaxation	3.03	1.47
Visualisation	2.71	1.32
Goal setting	2.49	1.09
Concentration	1.92	1.26
Self-Talk	2.38	1.31
Performance routines	2.04	1.23
Self-Confidence	3.37	1.42

Table 8.2 shows the descriptive statistics for the overall use of sport psychology interventions. When considering the scale items on an individual basis, concentration ( $n=83$ , 52.9%) was the most frequently reported technique as it was reported to be used during ‘every session’. The intervention technique furthest removed from use at every session was self-confidence ( $n=19$ , 12.1%) ‘once a season’. Thus, it was not an intervention purposely implemented on a regular basis. ‘Weekly use’ saw self-talk as the most common intervention and goal setting was used mainly on a ‘monthly basis’ and also recorded the smallest standard deviation.

In addition to examining the frequency of use for each technique, further analysis of how often coaches used sport psychology as a whole. Table 8.2 showed that ‘weekly’ was the most commonly reported response when amalgamating the means. Likewise, using sport psychology during every session was not common practice across the respondents. Thus, overall the results alluded to sporadic implementation of sport psychology. Consequently, both foci of analysis (type of coach and educational background) were used to examine differences within coaches’ implementation of techniques.

#### 8.4.1 Factors Affecting the Implementation of Sport Psychology

Work by Orr (2003) reported a person’s set of characteristics as being key influencing factors in their evaluation of implementation and consequent changes to their practices of something new. Thus, the two foci of analysis were examined to better understand their role in the implementation of sport psychology. Mann-Whitney U Tests were utilised as two sub-groups were being analysed. Results were displayed according to the

sport psychology technique being examined. This analysis was designed to identify the factors affecting the implementation of intervention techniques. This, it was anticipated, would aid the applied aim of the current study and understanding of the factors contributing to why variance in implementation of given techniques occurs.

Based upon the work of Orr (2003) it was hypothesised there would be significantly different responses between respondents within each sub-group. Additionally, as a consequence of the recommendations of Blinde and Tierney (1990), in relation to educational background those coaches who had engaged in professional activity were predicted to report significantly different responses to their counterparts as they would have had the opportunity to convert knowledge into understanding and a period of trialling.

#### 8.4.1.1 Implementation of Relaxation Techniques

Literature from Ortiz and Grange (2006) and Parnabas *et al* (2014) demonstrated that, in their widest form, relaxation techniques (ranging from progressive muscular relaxation, breathing and mediation) had positive performance effects in areas such as anxiety reduction. Therefore, respondents were asked to report on whether they implemented relaxation techniques during every session (1) weekly (2) monthly (3) once a season (4) or never (5). The question clearly focused on the frequency of use in order to gain deeper understanding of the extent to which coaches embedded the technique along with those factors which influenced such use. Thus the tables show the means of the scale.

From the analysis of data in Table 8.3a, it was observed that type of coach ( $p=.002$ ) resulted in the rejection of the null hypothesis. Specifically, significant differences in use of relaxation techniques were found between participation and performance coaches. Based on the medians, performance coaches reported monthly use, whereas participation coaches implemented relaxation techniques less frequently (once a season).

**Table 8.3:** Relaxation Techniques**Table 8.3a:** Characteristics of the Coach and Relaxation Techniques

Type of coach	No.	Mean	Median	Mean Rank	U	Z	P	R
How often do you use relaxation techniques?								
Participation	42	3.64	4.00	97.54				
Performance	115	2.81	3.00	72.23				
Total	157	3.03	3.00		1636.5	-3.159	.002	.10

**Table 8.3b:** Characteristics of the Coach and Relaxation Techniques

Sport based education	No.	Mean	Median	Mean Rank	U	Z	P	r
How often do you use relaxation techniques?								
Yes	49	2.84	3.00	72.82				
No	106	3.10	3.00	80.40				
Total	155	3.02	3.00		2343.0	-1.000	.317	

However, Table 8.3b indicates that the null hypothesis in relation to coaches' educational background and use of relaxation techniques should not be rejected. Therefore no significant differences arose between implementation of relaxation and whether or not coaches had an educational background.

#### 8.4.1.2 Implementation of Goal Setting

Past research consistently evidences the motivational components of goal setting, eliciting performance improvements in industrial psychology (Kyllo and Landers 1995). However, they further note that similar results were not as clearly demonstrated in the sporting context. Consequently, respondents were asked to indicate whether they utilised goal setting and specifically to what extent.

The Mann-Whitney U Test displayed in Table 8.4a revealed no statistical differentiations for type of coach. The null hypothesis therefore was not rejected as no significant association between type of coach and the use of goal setting was unearthed. The results in Table 8.4b, however, suggest that coaches with an educational background were more likely to implement goal setting than those without. Specifically, those with an educational background reported weekly use whereas those without

reported monthly use. Consequently, significant differences were evidenced and the null hypothesis rejected.

**Table 8.4:** Goal Setting Techniques

<b>Table 8.4a:</b> Characteristics of the Coach and Goal Setting Techniques								
Type of coach	No.	Mean	Median	Mean Rank	U	Z	P	r
How often do you use goal setting techniques?								
Participation	42	2.57	3.00	81.76				
Performance	115	2.46	3.00	77.99				
Total	157	2.49	3.00		2299.0	-.482	.630	.

**Table 8.4b:** Educational Background and Goal Setting

Sport based education	No.	Mean	Median	Mean Rank	U	Z	P	r
How often do you use goal setting techniques?								
Yes	49	2.12	2.00	62.61				
No	106	2.68	3.00	85.11				
Total	155	2.50	3.00		1843.0	-3.043	<b>.002</b>	.01

Overall, coaches appeared to use goal setting on a monthly basis which may fall in line with either competition schedules or coaches periodised programming. Educational backgrounds were reported as the only factor to distinguish between coaches use of goal setting.

#### 8.4.1.3 Concentration Techniques

Categorised as a cognitive strategy, Highlen and Bennett (1979) claim that the athletes' calibre affected coaches' choice to implement concentration techniques. Defined by Moran (1996) as the ability to maintain focus on appropriate stimuli and not be distracted by either internal or external factors, concentration is considered a major part of sport psychology.

**Table 8.5:** Concentration Techniques

<b>Table 8.5a:</b> Characteristic of the Coach and Concentration Techniques								
Type of coach	No.	Mean	Median	Mean Rank	U	Z	P	r
How often do you use concentration techniques?								
Participation	42	2.21	2.00	86.62				
Performance	115	1.82	1.00	76.22				
Total	157	1.92	1.00		2095.0	-1.387	.165	

Table 8.5a shows that with regards to type of coach and concentration, the null hypothesis was not rejected. Specifically, no significance difference was revealed between participation and performance coaches and how often they used concentration techniques. However, the result shown in Table 8.5b revealed the reject hypothesis ( $p=.010$ ). Therefore there was a significant association between the background of coaches and how often they used concentration techniques.

**Table 8.5b:** Educational Background and Concentration Techniques

Sport based education	No.	Mean	Median	Mean Rank	U	Z	P	r
How often do you use concentration techniques?								
Yes	49	1.78	1.00	65.55				
No	106	2.02	2.00	83.75				
Total	155	1.93	1.00		1987.0	-2.566	<b>.010</b>	.10

#### 8.4.1.4 Implementation of Performance Routines

Performance routines are widely accepted as being an effective technique for performance preparation (Cotterill 2010). The conclusions of Beauchamp *et al* (1996) claimed that, as a cognitive-behavioural psychological skill, performance routines could increase intrinsic motivation, lead to more consistent behaviours and improved performances of closed skills. Given that past research supported performance routines as a variable psychological tool within the sporting context, an understanding of those factors associated with its frequency of implementation within athletics was required.

This could lead to the identification of current behaviours which, to date, had not been widely established within this context. Furthermore, such identifications could contribute to the understanding of those factors that can be maximised in order to influence the changing of coaches' practices.

Results of the Mann Whitney U Tests (Tables 8.6a and 8.6b) showed that there were no significant differences between either of the two foci of analysis and coaches' use of performance routines. Consequently, the null hypothesis was not rejected as there were no significant differences between any of the associated subgroups for type of coach ( $p=.388$ ), or educational background ( $p=.788$ ).

**Table 8.6:** Performance Routine Techniques

<b>Table 8.6a:</b> Characteristics of the Coach and Performance Routines								
Type of coach	No.	Mean	Median	Mean Rank	U	Z	P	r
How often do you use performance routines?								
Participation	41	2.24	2.00	83.41				
Performance	115	1.97	2.00	76.75				
Total	156	2.04	2.00		2156.0	-.862	.388	

However, it can be noted that coaches consistently use this intervention on a weekly basis irrelevant of individual characteristics hence showing consistency in use of performance routines across the foci of analysis.

**Table 8.6b:** Educational Background and Performance Routines

Sport based education	No.	Mean	Median	Mean Rank	U	Z	P	r
How often do you use performance techniques?								
Yes	49	1.96	2.00	76.17				
No	105	2.05	2.00	78.12				
Total	154	2.02	2.00		2507.5	-.269	.788	

## 8.4.1.5 Implementation of Confidence Techniques

Hays *et al* (2007) stated confidence to be multi-directional due to its connections with performance accomplishments, social support, skill execution and coaching behaviours, to name but a few. Additionally, Gould *et al* (1989) previously reported confidence as being a distinguishing factor between experts and novices with Vealey (2009) further suggesting confidence as being one of the most important attributes elite athletes can possess. Consequently coaches' frequency of use was examined.

**Table 8.7:** Confidence Techniques

<b>Table 8.7a:</b> Characteristics of the Coach and Confidence Techniques								
Type of coach	No.	Mean	Median	Mean Rank	U	Z	P	R
How often do you use confidence techniques?								
Participation	42	3.74	4.00	90.42				
Performance	115	3.23	3.00	74.83				
Total	157	3.37	3.00		1935.5	-1.971	.049	.07

Table 8.7a reveals a statistical difference between the type of coach and their use of confidence techniques and that the null hypothesis should be rejected. Specifically, performance coaches' used confidence techniques more frequently than participation coaches ( $p=.049$ ). Performance coaches' thus tended to use techniques relating to confidence on a monthly basis whereas participation coaches' in the sample reported use once a season. Analysis of the data based on educational background failed to reject the null hypothesis. Specifically, there was no significant difference between coaches with a sport based education background and those without ( $p=.957$ ).

**Table 8.7b:** Educational Background and Confidence Techniques

Sport based education	No.	Mean	Median	Mean Rank	U	Z	P	R
How often do you use confidence techniques?								
Yes	49	3.37	3.00	78.28				
No	106	3.37	3.00	77.87				
Total	155	3.37	3.00		2583.5	-.054	.957	

In summary, given that section 5.2.4 (Chapter 5) revealed varying levels of awareness regarding the facets of sport psychology, it was not surprising that coaches' implementation of sport psychology was also inconsistent in use.

Overall, the results indicated that the type of coach accounted for some of the variance in the use of applied sport psychology techniques. Such information allowed for a more detailed understanding of not only the use of sport psychology but, additionally, the patterns of response from the coaches. Whilst statistically significant differences occurred, results indicate that coaches in the current study commonly used techniques on a monthly basis.

#### **8.4.2 Varying Levels of Implementation of Mental Skills Training Techniques**

Dorp and Lane (2010) suggested that whilst the implementation stage dealt with actual use of an innovation, use varied depending on the situation. Additionally, considering stage one results which revealed 1) the multidisciplinary nature of athletics (in terms of the multiple disciplines), and 2) the notion that the competitive season for each discipline ran across different times of the year, further analysis concerned the extent to which respondents varied their implementation of sport psychology throughout the competitive year. Results showed that over three quarters of the respondents varied their use of sport psychology throughout the athletic season ( $n=122$ , 79.7%). However, 15% ( $n=23$ ) of the sample reported not to vary their use of sport psychology across the season, leaving a number of respondents unsure ( $n=15$ , 5.3%). These initial insights provided new information regarding coaches patterns of use of sport psychology which to date had received little in the literature.

To identify whether coach characteristics account for any variations in use of sport psychology across the competitive year, based upon results from phase one (Chapter 4, section 4.6), it was hypothesised that implementation would vary as participation coaches' would embed sport psychology as a development tool, whilst performance coaches would use it to solve specific competitive issues causing fundamental differences in use. Additionally, based on the work of Blinde and Tierney (1990), those

with sports based educational background were expected to differ in their use of mental skills training techniques due to gaining mediated knowledge through facilitated mechanisms.

The Chi-Square Test for Independence, which was undertaken to ascertain if the two foci of analysis shed light on the variation in results above, all violated the test assumptions. As such for both type of coach and educational background 16.7% of cells had an expected count of below five and therefore the tables were not displayed.

## **8.5 SUMMARY OF QUANTITATIVE RESULTS: IMPLEMENTATION**

Overall the implementation of sport psychology by coaches and those factors affecting this were examined throughout the section. The results indicated that as a result of exposure to sport psychology, coaches were found to be changing their coaching practices. However, the levels of implementation varied across the intervention techniques and in turn use varied across the season, thus, causing use of sport psychology to appear sporadic. Such findings provide new insights into the various types of sport psychology techniques used in athletics, the patterns of use along in terms of frequency along with the manner in which it is utilised.

## **8.6 STRAND B, QUALITATIVE RESULTS: THE DICTONOMY OF IMPLEMENTATION**

### **8.6.1 The Utilisation of Sport Psychology**

Previous work from Blinde and Tierney (1990) failed to make a distinction between knowledge and understanding, hence implying they were different but related entities within the first stage of the process. Yet, within the current study, emerging evidence at the knowledge stage of Rogers (2003) Innovation-Decision Process eluded to the notion that understanding was not a concept solely isolated to the knowledge stage of the process. More so that, understanding underpinned each stage of the process and fully materialised (separately to that of knowledge) at the implementation stage, as it was

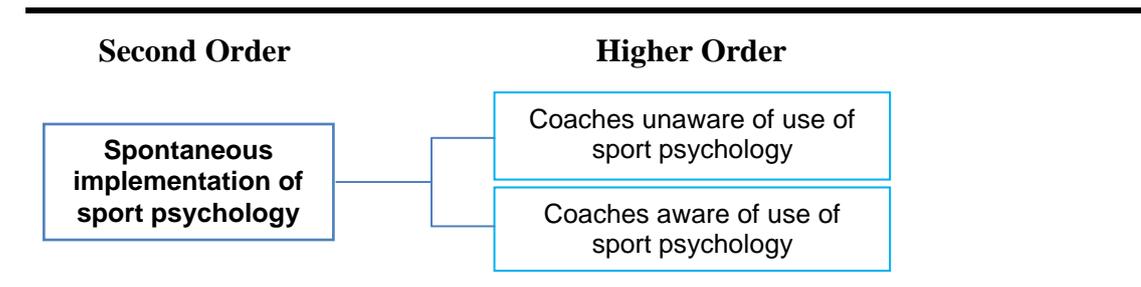
here that the differences between a coach's ability to implement sport psychology theory into meaningful practice occurred. Consequently, the purpose of the current section is to explore the notion of implementation in the adoption of sport psychology by athletic coaches. Specifically, the aim was to explore the contributing factors which unearth the nature of implementation in athletics.

Implementation of sport psychology encapsulated all those data themes which indicated coaches had or were utilising sport psychology within their coaching practices whether that be consciously or accidentally (as discussed in Chapter 5, section 5.4.3.1). Consequently, a continuum of implementation from spontaneous to planned use of the innovation was uncovered. The translation of information regarding implementation was the mid-point of the continuum thus determining at which end of the continuum coaches sat based on their narratives shown in appendix 1.

### 8.6.2 Spontaneous Implementation of Sport Psychology

Spontaneous implementation of sport psychology emerged as the initial second higher order theme and was divided into two antecedent or primary order categories; unaware and aware of use of sport psychology whilst as shown in Figure 33.

**Figure 33.** Antecedents to the Spontaneous Use of Sport Psychology



#### 8.6.2.1 Coaches Unaware of Use of Sport Psychology

Initial findings revealed some respondents were unaware of their use of sport psychology although they were aware of the subject itself. The antecedents for such uncertainty appeared to relate to coaches individual characteristics and specifically type of coach. In particular, participation coaches revealed a lack of awareness of their head coach's programme, thus additionally showing support for the hierarchal decision

making identified in section 7.4.4 (Chapter 7). As evidenced by Max, participation coaches were less likely to make a conscious decision surrounding the use of sport psychology and moreover were not fully aware of what implementation was occurring within their social system:

*I'm not sure to what extent we're actually implementing it in terms of our athletes' groups at the moment. I think it's evolving, so I think on a one to one basis there has been some goal setting.*

Further to this, as a performance coach, Devon was able to discuss what he was implementing, yet, was uncertain as to whether sport psychology was the correct terminology to describe his behaviour;

*I assume what I do with NLP type techniques, using Steve Peters techniques, working on mental toughness, motivation etc is classic sport psychology, as I am self-trained I have worked on the assumption that it is.*

This theme of uncertainty regarding their use of sport psychology continued with performance coach Phil:

*I'm not really sure to what extent we've actually implemented it...unless somebody said by the way this is one of the tools from sport psychology.*

Examining the narratives in combination reveals that the later performance coaches (Devon and Phil) are also opinion leaders and discuss their own potential use of the subject. Whereas, the participation coach (Max) spoke of striving to be a performance coach in the future and furthermore was a mentee of an opinion leader with an educational background in sport. Therefore, a similarity arises between those with no educational background and uncertainty of use, and furthermore, raises a question over the influence of mentors.

#### **8.6.2.2 Coaches awareness of use of sport psychology**

The second aspect of spontaneous implementation of sport psychology pertained to coaches' informal use of sport psychology (Figure 33, above). Seven respondents chose

to implement the subject ‘informally’. This informal use occurred on two levels. One, where coaches were aware of their implementation and that there were limitations to that implementation due to either time or understanding as reported by Bill:

*We’re down at the track maybe for an hour, hour and a half session on two occasions and that’s difficult to build in all the technical, the conditioning, the endurance, the techniques as well as the sport psychology aspect. So, although I’m aware of the sport psychology component, building it in is more on an informal basis and you try to build it around concepts that you’re aware of that would work with a junior athlete who doesn’t have the same understanding as the senior one.*

He went on to explain how and when he does use sport psychology:

*We do it informally in the 5 minute chats between the breaks.*

Despite having a different background to Bill, Ian also referred to understanding in terms of his athletes but also his own:

*You can do it informally; I don’t actually sit them down and say we are actually going to talk about sport psychology, what the hell do I know, but it’s whilst they’re talking or they’re throwing or training or whatever.*

Ollie also explicitly described his informal use of sport psychology:

*Although I’m aware of the sport psychology component, building it in is more on an informal basis.*

When asked why he uses it informally he stated because it is just one aspect of what he does, hence it is an implicit skill to teach the athletes. These coaches thus all appeared to use but informally due constraints such as knowledge and understanding and time.

Alternatively, two coaches reported informal use of sport psychology was something which naturally occurred in the way they delivered their coaching sessions. By way of example, Marty evidenced utilisation as an underpinning behaviour to his coaching practices rather than in the form of an applied technique:

*I use some form of psychology in a general way that is part of the session and not something that I sit and think deeply about, it's something that happens during training.*

This form of informal practice was further evidence by both Alonso and Christina respectively who both had teaching backgrounds and similarly reported psychology as being a natural part of what they did. Hence, they were aware of use but it was informally integrated from their knowledge base rather than planned:

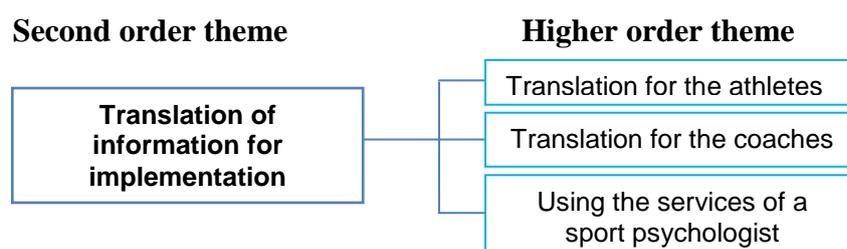
*As a teacher and coach at grassroots level I use psychology all the time with every individual and this becomes sport psychology when it's applied to sport. I've been using it for 50 years! I have that all in my head and do it naturally.*

Such narratives provide evidence for the conclusion that sport psychology was being implemented by athletic coaches. However, more importantly, they provided new insights into the nature of the implementation being that for some it is an implicit part of what they do.

### 8.6.3 Translation of Information for Implementation

Due to questions over the nature of coaches' implementation of sport psychology, Rogers (2003) findings pertaining to the notion that potential users adapt an innovation in order to make it suitable for their context (as discussed in section Chapter 2, 2.4.3.7) required closer examination. Subsequently, the second order theme of translation of information for implementation emerged. It consisted of three higher order themes of, 1) translation for the athletes, 2) translation for the coaches, and 3) using the services of a sport psychologist for implementation as shown on Figure 34.

**Figure 34.** Antecedent Factors to the Translation of Information for Implementation



### 8.6.3.1 Translation for Athletes

The initial primary order theme which emerged related to coaches' requirement to translate information for the athlete, as described by Ivy:

*I don't give them chapter and verse but I gain information and pass it on.*

However, Lewis provided greater insights into the nature of his translation for athletes, highlighting the need to instil psychological skills into athletes. However, he achieved this, not through evidence-based techniques, but more through his own ideas in order to increase athlete buy in. He indicated that a certain amount of trial and error was involved as he stated, '*I've found*'. Ideally coaches could use qualified experts such as sport psychologist in order to avoid undesired, misinterpreted sport psychology. This raises issues related to the academic underpinning of his implementation and whether this was compromised in the adaptation process. This could result in the opposite desired effect on athletes' perceptions of the subject:

*It's having that ability to have ideas to build confidence, making them (the athlete) have confidence in themselves and I think the other big thing that I've found to help is to make them responsible for their own development, that's varying from the young ones through to the older ones, if you can get them to buy into it I think that makes quite a difference.*

Ian also portrayed the need to translate information for athletes'. This rationale linked to issues raised previously in section 6.4.3.2 regarding receptivity. But, like Lewis above, implementation was undertaken with the aim of increasing athletes' openness to the subject rather than his own as per section 6.4.3.2:

*Do they understand what you're talking about, can they perceive the benefits of it (sport psychology).*

Occupying a unique perspective regarding translation for athletes, Max discussed the need for translation in a positive light in that it's not about translating information in order to '*dumb down*' the information, but more about how you filter information in order to aid the athletes' understanding so they can adapt the information to suit

themselves. Thus, to suit the uniqueness of each athlete, such adaptations offer new pathways for increasing athletes' receptivity:

*If we feed them a little bit at the beginning and then they understand the processes, they can start mapping out their own visualisations or rehearsals or experiences...I guess in the early stages we'll have to drive the process, in terms of giving the principles and how sport psychology works, so you might need to filter out the coaches who have the knowledge. I think we'll have to offer it in little pieces to begin with maybe, we should only give them one or two points to focus on otherwise they'll get overloaded with too much stuff.*

Thus, translation for athletes mainly concerned coaches dispensing information by word of mouth. This form of communication channel was used in order to increase athletes' perceived benefits of the subject. Additionally, once again Max's approach offered a form of translation which could overcome the issue of translation undermining credibility, as it was concerned with empowering the end user rather than changing the basic premise of what was being implemented.

In addition to translating the content for athletes two (Ian and Beau respectively) coaches discussed changing the structure of implementation to make it suitable to their athletes but how they did this was different, Ian stated that for him it was about structure:

*It's got to be put in a structure that makes sense to the athlete.*

*Whereas, as a dual role coach, thus a coach as well as a change agent Beau stated that she had "no set protocol". This was because she had the confidence and knowledge to adapt material for whoever was in front of her indicating these to be underpinning factors to translation of information.*

### **8.6.3.2. Translation for Coaches**

Further needing to translate information for athletes, Lewis also discussed the need to translate information for coaches:

*It's about how can they (coaches) take it back and apply it to where they're working and the people they're working with.*

Commonality occurred between coaches discussion of this need to adapt information to increase the likelihood of implementation. It emerged that this was because it related to coaches need to learn the material in order to be comfortable coaching such information. Specifically, Max highlighted implementation to be linked to the earlier stage of knowledge. Thus, if knowledge was understood he would continue to the implementation stage of the Innovation-Decision Process. Hence, the underlying mechanism which allowed such movement was that of being comfortable with the material. For this to occur, a process of learning needed to be undertaken:

*It's really a question of learning and being comfortable with the content so that you can then go and coach it.*

Thus, learning material at the cognitive phase appeared to underline coaches' implementation of sport psychology. Hence, mediated facilitation of learning material at an earlier stage affected the ability of coaches to adapt with confidence, the interventions being utilised as evidenced by Ian:

*Some of the terminology I had to change for my basic end...for me to make sense of it I had to put it back into layman's terms.*

As previously, Beau, a coach and change agent, discussed the importance of not only content but further to this the process of how you change the information as being important:

*It's not just what the content is, it's how you take that and translate it's applicability to what you are delivering at the time.*

Such theorisations implied the need for mediated support mechanisms in order to aid the translation of knowledge accumulated into understanding.

### **8.6.3.3 Using the Services with a Sport Psychologist**

Consequently, and unsurprisingly, using a sport psychologist as mediated support emerged as a theme. Additionally, within the phase one results (Chapter 4, section 4.6)

Katy reported ‘*guidance and direction is particularly important so we can make it work for us*’, therefore also supporting further explorations surrounding what guidance was required. Phase Two findings revealed coaches believed that having a sport psychologist was a suitable support mechanism. Such results fell in line with findings of section 5.3.4, where the sport psychologist was found to fulfil the role of the change agent and therefore the individual who could bring about change within the social system.

Steve stated the point at which a sport psychologist would be sought was when there was a gap in his own knowledge, but felt that such awareness of his own boundaries was a strength rather than weakness:

*If you reach 80% then you’ve done pretty well, real expertise fills the rest...I make it my business to know who they are and how good they are at capturing the audience. It’s knowing quite broadly who has the technical knowledge and expertise in a whole range of areas and I’ve made it my job again as a performance to make sure I know where that expertise is.*

Akin to such thoughts, George also noted engagement with experts and that once you have found an expert the focus changes more towards whether they would blend into the environment:

*A person who has a real sense of environment...qualifications as this validates their level of understanding...I’ll go for the one who has the same philosophy as we have to unlock potential.*

He went on to state that as the coach, when introducing people into the athletic support network, they must be managed so that everyone has awareness of their role but more so that long-term benefits can be reaped:

*Everyone’s passionate about their own services, they want to, because they’re passionate, push it onto the athlete and perhaps in the athletes world they really need it, so my observation would be you have manage your team of people and if they get too enthusiastic as their experts in their field you have to manage the expectations and almost get them self-aware of where they fit into the team...I’ve used sport psychologists to work with teams of people so we all gain the skills so it’s not just a quick fix for the athlete it’s for the team so they can enhance the team.*

Thus, Steve and George (performance coaches who had sport related educational qualifications) both noted the benefits which they believed could be gleaned from a change agent. They did however note some of the precautions which needed to be observed if the relationship is to work.

Alternatively, whilst the same theme of services of a sport psychologist emerged, as a participation coach Noah was the only participant who discussed the notion of bringing a sport psychologist into the fold as a positive action. Yet, it cannot go unmentioned that his narrative was a less developed perspective to that of the performance coaches above, as Noah revealed an understanding that the change agent was there for guidance. He also saw sport psychology as something that was imparted to athletes rather than as an integrated approach as discussed previously by the performance coaches:

*The sport psychologist is there to give them (athletes') guidance to understand what they're doing outside of their training and stuff like that.*

Such narratives evidenced coaches' recognition that the role of a sport psychologist was to facilitate skill development, albeit in relation to athletes' and others within their support team. However, such views were not held by all respondents, with Alonso reporting a contrasting perception to that of Steve, George and Noah: *'to be a good coach you have to be a good psychologist as well'* and therefore the perception that a sport psychologist was the only person who could deliver any of the subject matter was a problem for Alonso:

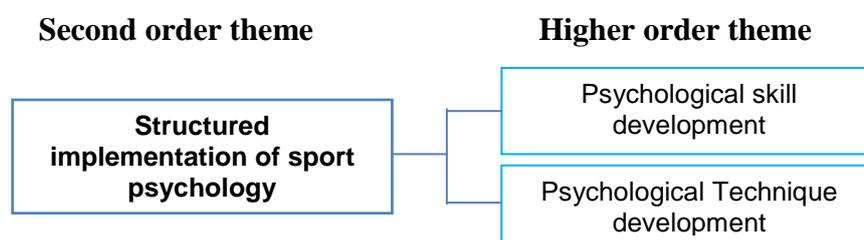
*The problem is the premise that the only sport psychology is that employed by and provided by a specialist.*

Thus, it was apparent that the implementation of sport psychology was occurring and within the performance realms as part of a well-defined and articulately selected team. In contrast Noah, as a participation coach, used a sport psychologist in order to overcome his own deficiencies in knowledge. A point which Alonso disagreed with and stated, coaches should be able to implement the subject matter themselves without adaptations. This offers support for the notion of implementation, but without the need for a specifically trained individual.

### 8.6.4 Structured Implementation of Sport Psychology

The final second order theme fell in line with the work of Weinberg and Gould (2010), whereby it became apparent that the structured implementation of sport psychology involved one of two strategies (Figure 30). Firstly, implementation of psychological skill development was the initial theme to occur and related to for example, building confidence and understanding anxiety.

**Figure 35.** Antecedent Components for Structured Implementation of Sport Psychology



#### 8.6.4.1 Psychological Skill Development

A number of coaches were found to be implementing evidence-based interventions which had the purpose of developing athlete's psychological skills during training session. This lead to the second order theme pertaining to the implementation of psychological skills by coaches indicated that the process of diffusion was leading to adoption of sport psychology, as shown in the quote from Ivy:

*We do little psychological games to give them motivation.*

Likewise, Christina not only noted use of sport psychology but additionally a variety of tools which specifically developed athletes' motivation:

*I've done all sorts of stuff about motivation and the psychology behind how you react with your athletes.*

Steve similarly lists the skills he looks to develop. But links this back to the concept that arose earlier in that some skills coaches implement in a formal but implicit manner:

*We looked at things like confidence, managing nerves, performance anxiety...build them into the coaching session.*

Alonso discussed a different psychological skill, which dealt with competition stressors, hence evidencing variation in the skills coaches sought to develop in their athletes:

*You get them used to the idea of feeling the stress of competition and coping with the stress of competition so you don't just bang them in, you know first time out.*

Bill's narrative supported the notion of having not only multiple methods for ascertaining competence as portrayed by Christina, but also denoted the need for conscious competency when implementing such methods:

*I would like to see the status of sport psychology progressed beyond that which we can just give in school or in a coaching course or in something else to say that it's ok for the happy amateur to deliver good old fashioned confidence boosting psychology without understanding why because I do think on some planes, without the full understanding you can actually do as much damage or harm because you're not aware of the protection and control mechanisms that need to be in place...it needs to be conscious competence because otherwise you're doing harm along the way as there isn't one size fits all, there isn't one rule fits all and there isn't one aspect of sports psychology that is the way to go.*

This point of conscious competency was also an issue for other coaches. Daisy previously stated that whilst sport psychology as an intervention was not suitable to her stage of development, she did recognise that coaches required some elements of the subject otherwise coaches could do more harm than good:

*I think we should know a little bit because I think it's important that we are saying the right things and making sure that they (athletes') are getting the right messages.*

Consequently, overall it appeared that in line with the thoughts of Christina, coaches' implementation was based upon 'sort of a generic, intrinsic process' but moreover that coaches want to implement sport psychology in a scientific form as 'a lot of people don't naturally understand that (sport psychology)'. Hence, in terms of psychological skills, implementation was in fact occurring but not on a widespread scientific basis.

#### 8.6.4.2 *Psychological Technique Development*

In contrast to coaches' use of psychological skills, psychological techniques were described in detail by a number of respondents. Specifically, a range of acknowledged terminologies utilised within the academic literature were detailed. Moreover, coaches had converted these techniques into interventions as originally intended. Coaches discussed these techniques as methods they utilised as training tools to enhance either training or competitions, and to ultimately improve athlete performance. Notably, the coaches involved were performance orientated. Fulfilling such observations was Freddie's discussion of cue words:

*If you ask my youngster they will probably tell you that it's got to be beautiful, balletic and balanced, they're my three B's. The three B's are a do, but by sowing the idea in the brain you do have the psychological aspect of it.*

Through his three B's, Freddie evidenced understanding of the basic mechanisms required of the intervention (self-talk) and the ability to transfer such knowledge in a meaningful way to the athlete without the need for adaptation to the self-talk technique. Using a different psychological technique, Lewis also discussed his implementation of psychological techniques but his narrative portrayed a progressive structured intervention:

*One of the things that I tried very early on, was to get a pre-event routine, well I took it a bit further because I took it right to the night before and listened to music and all those kinds of things.*

Of interest, while the content implemented differed, the diffusion process displayed similarities. Within the quotes from Freddie and Lewis there was no evidence of conscious planning of how to diffuse these techniques into training. There is an occurrence of intrinsic embedment of the tools as opposed to additions to normal practices, which was a point noted by Steve:

*I now make sure we coach psychology, for instance for them to come up with a goal for that session.*

In contrast, using the theory of goal setting, Devon discussed his structured implementation programmes which, in line with the investigations of section 5.4.3 within the quantitative findings, showed a conscious decision to undertake such an intervention:

*There was a lot of work that went into it (winning English Schools), psychology wise I tried to set realistic targets. We recognise that the gold's were possible but we didn't actually set that as the target. We set silver as the target because that was in keeping with the ranking so I tried not to raise his expectations because I wanted him to be successful and I think that was the biggest psychological think I did with him, so set realistic targets, ones that he could achieve and then revise and reset.*

From an alternative perspective, rather than shedding light on what is implemented, Christina, inadvertently revealed insights into being the recipient of diffused information and what the outcome of this was for her. Specifically, Christina discussed how her coaching practices had changed since coming across a specific mediated source of knowledge, thus signalling a link to stage one of Rogers (2003) Innovation-Decision Process. This provides deeper insights into how knowledge can develop into implementation:

*I went on a course not that long ago and they were talking about just having key words, that prompted a response and my jumps group key word is 'ping'. They knew that whether they're on a high jump take off or a long jump take off, they've got to be on the ground for the shortest possible time and they're got to drive that power and not sink back in so just having a key word has made a big difference. They'll look around at me after they've done the jump and say 'sorry, no ping' because it's new in their psyche.*

Overall, there appeared to be a dichotomy of implementation; spontaneous and planned use, which displays how sport psychology is implemented.

## **8.7 SUMMARY OF QUALITATIVE RESULTS; IMPLEMENTATION**

Coaches' implementation of sport psychology appears to depend not only on their educational background, but more so their earlier experiences of the Innovation-

Decision process and specifically the knowledge stage, thus showing a link between cognition and behaviour. Specifically, results show that coaches' level of cognition appears to influence the level, need and confidence that coaches have to use, translate and ask for help when implementing sport psychology.

## **8.8 SECTION THREE, DISCUSSION; OPERATIONALISING THE IMPLEMENTATION SPORT PSYCHOLOGY**

### **8.8.1 Transition from Cognitive to Behavioural Adoption**

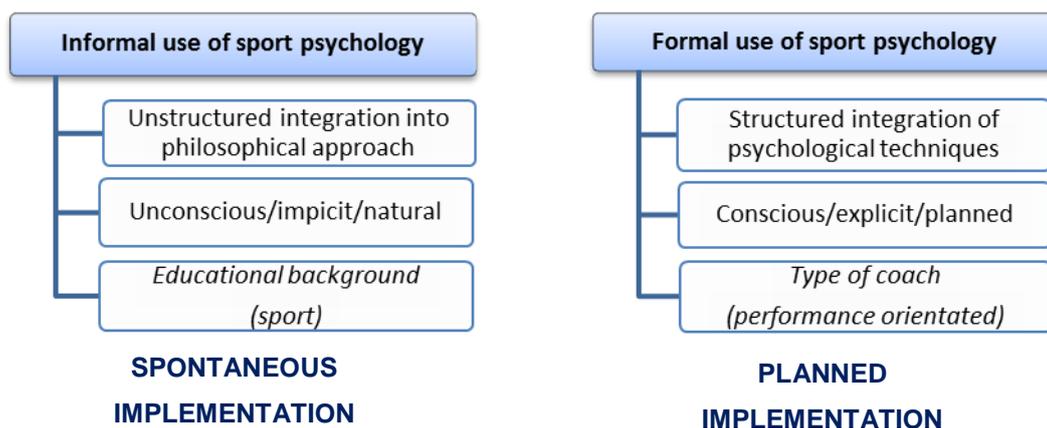
In order to monitor the outcome of the decision stage, the changing of coaching practice post exposure to sport psychology was examined. The quantitative results revealed that for over half of the respondents, exposure to sport psychology had changed their coaching practices. However, in terms of translating cognitive processes into behavioural implementation, the results showed sporadic use of each of the disciplines under the umbrella of sport psychology. Further examination revealed this to be a result of lack of awareness of the various sub-disciplines of sport psychology as identified at the earlier knowledge stage of the Innovation-Decision Process: thus showing connections between the cognitive and behavioural phases of the Innovation-Decision Process. Consequently, in terms of the diffusion process leading to adoption, results suggest a multidimensional relationship between knowledge and implementation.

## **8.9 INFORMAL VERSUS FORMAL IMPLEMENTATION OF SPORT PSYCHOLOGY**

At the decision stage of Rogers (2003) Innovation-Decision Process, the quantitative results showed that performance coaches were found to make unconscious decisions. In contrast, at the implementation stage, the qualitative results showed participation coaches to be making unconscious decisions surrounding use of sport psychology. Consequently, it appears coaches' lack of ability to construct knowledge at the initial stage of the Innovation-Decision Process may have impacted upon coaches' awareness of use. As a result, a key finding from triangulating the results was the difference between informal and formal use of sport psychology. Specifically, those with an

educational background in sport provided evidence that builds upon the theory related to obliteration of involvement. Therefore, for some coaches sport psychology was the foundation to their coaching practices in the form of implicit knowledge thus taking up little conscious attention (Krane 1994). For these coaches the qualitative narratives from Strands A and B revealed their coaching philosophy was grounded in psychological principles which resulted in the embedding of sport psychology into their everyday practices. This changes existing awareness of the ways in which coaches utilise sport psychology and may account for some of the variance within the quantitative results for those who reported not to change their practices throughout the athletic season (Chapter 5, section 5.7.5.4). Combined these results add new understanding to how sport psychology is implemented within the athletic context as depicted in Figure 36. Triangulation of the quantitative and qualitative results showed coaches implementation of sport psychology occurs on two levels, 1) spontaneous, whereby coaches' use is unplanned as it is embedded into coaching practice as part of the coaches approach to training. 2) Planned use, where the coach has researched and structured their use in order to achieve a desired outcome, normally for the benefit of their athlete as opposed to the coach.

**Figure 36.** Depiction of Coaches' Use of Sport Psychology



Coaches' individual characteristics (type of coach and educational background in sport) appeared to be the underlying influence on their informal or formal use of sport psychology. In line with constructs from the Theory of Diffusion of Innovations, informal use was determined as spontaneous use. This was characterised by

unconscious decisions to use sport psychology. Hence, coaches made transient (on-going) decisions during their coaching practices as and when they felt sport psychology could aid or enhance their coaching or athletes performance. Interpretation of the triangulated results showed, this was determined as implicit use, the precursors to which were evidenced as being, 1) educational background in sport, which provided the opportunity for knowledge accumulation through mediated sources of information. 2) Belief system that sport psychology can underpin coaching practice. Combined, these led coaches to implementation of sport psychology as and when required in an integrated manner.

Alternatively, coaches appeared to engage in planned use of sport psychology. This was determined as coaches' formal use of the subject. This involved explicit, planned use which was identified as requiring coaches to consciously plan when, where and how sport psychology was to be used in their coaching practices. This type of use was often demonstrated by performance orientated coaches or participation coaches who were considered as being experienced or expert in their particular field. Overall, spontaneous use aimed to ensure positive experiences and holistic development of athletes, McCarthy *et al* (2010) referred to this as the provision of skills which could be transferred to other domains of life. In contrast, planned use occurred for the purpose of athletic enhancement which led to explicit decisions to utilise sport psychology interventions for what McCarthy *et al* (2010) called performance-related purposes. Additionally, the quantitative data evidenced that performance coaches with an educational background in sport were found to have a wider intervention base to call upon. Such results support the previous findings from researchers (Gonzalez-Rivera 2017; Nash and Sproule 2011; Stoszowski and Collins 2016) and that performance coaches more often than not hold greater specialist knowledge, specifically because, they learn differently from participation coaches due to differences in their role, function and motivation, a point raised by participants in the current research project. Thus, for future development to occur, change agents need to target those coaches with limited past exposure to sport psychology. This requires the provision of education surrounding the variety of tools and ways in which sport psychology can be utilised, the outcome of such actions could be widespread diffusion and adoption is to be realised. Woolway and Harward (2015) report this could be achieved through a two prolonged approach; firstly better training for service providers and secondly more specifically

designed marketing materials for the end users. Alternatively, Bertram et al (2017) suggest NGBs should create stronger relationships with universities in order to deliver advanced coach education that, as called for from Nash and Sproule (2011), allows movement from knowledge to understanding thus better enabling and supporting coaches to translate knowledge into practice as they have the resources, know-how and support mechanisms to provide this.

## **8.10 REINVENTION IN ORDER TO IMPLEMENT SPORT PSYCHOLOGY**

A further aspect of implementation which came out of the coaches narratives, fell in line with the work by Rogers (2003) who suggested that in many instances potential users reinvent the innovation in order to make use of it in their own context (discussed in Chapter 2, section 2.4.3.7). The coaches' narratives explained this adjustment of technique as a facilitating factor which increases athlete acceptance. However, in many cases reinvention was based upon personal experience and trial and error as opposed to evidence-based literature. Thus, precautions need to be taken to ensure the techniques utilised are not compromised. The results have also shown reinvention in the athletic environment to be restricted to the use of psychological interventions. These were aimed at increasing athletes' skill as opposed to coaches' general psychological approach to training. Coaches referred to this process as the transition of material. If undertaken effectively it can be used as a facilitator to increase the implementation of sport psychology. However, if the intervention is reinvented too much it can lose its original purpose meaning the intended outcome or impact of the technique cannot be assured. This could lead to further negative perceptions as coaches would believe sport psychology to be ineffective as reported in Chapter 5, section 5.7.2.

Similar to the work of Zakrajsek *et al* (2013), the qualitative results revealed a heavy dominance on translation of material for the athletes' benefit. This was not surprising when triangulated with results from section 4.3.6 which found that coaches saw athletes as being the primary beneficiary of sport psychology. Specifically, the coaches reported the need for translation as a result of the issues raised in section 5.6.3 (Chapter 5) pertaining to athletes receptivity (age and level of competition). This result revealed

sport psychologists had not responded to the calls of McCarthy *et al* (2010) and Zakrajsek *et al* (2013) to enhance their understanding of the changing needs of coaches and consequently to adapt their dissemination of information to coaches so that it was easy to understand and relatable. However, due to the current study including facilitating factors for the implementation of sport psychology, as a mediated support mechanism, change agents (sport psychologists) need to use the provided insights. Consideration of the differing needs of those participating for self-development versus performance development to deliver more pertinent content thus overcoming this lack of development. Further to this, the qualitative narratives suggest that this form of mediated facilitation would additionally overcome concerns regarding the credibility of adapted material thus increasing implementation whilst also maintaining or creating positive perceptions in athletes. Finally, based upon performance coaches' suggestions that the role of the sport psychologist should be well articulated, such specifications could address these concerns thus offering similar findings to Zakrajsek *et al's* (2013) study of American Collegiate coaches'.

## **8.11 CONCLUSION OF IMPLEMENTATION RESULTS**

The implementation stage of Rogers's (2003) Innovation-Decision Process marks the transition from cognitive thought to behavioural actions. If this occurs, coaches in the current sample evidence two forms of implementation, one of integration whereby use occurs as part of the coaches' everyday practice and thus they can use it in a spontaneous manner as and when required. Alternatively, coaches typically with prior experience from being an athlete but no advanced education use it a planned, structured manner as they have to invest time in learning and structuring their use.

# CHAPTER 9 – CONFIRMATION OF SPORT PSYCHOLOGY

## 9.1 ORGANISATION OF THE CHAPTER

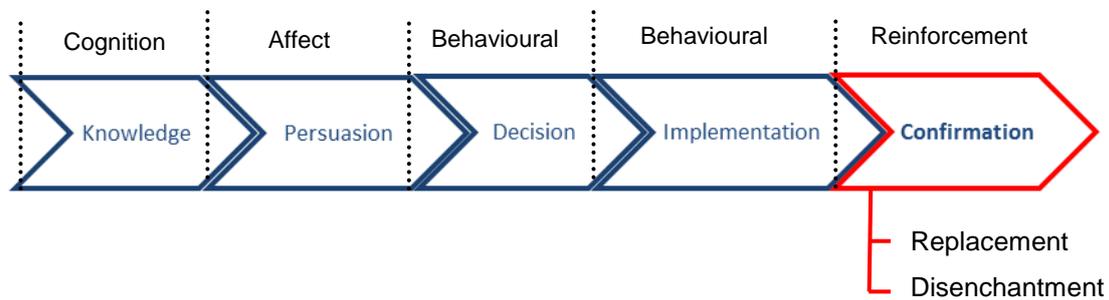
The first strand of inquiry allows for the examination of demographic characteristics that may limit subsequent generalisations and more assist in the organisation of the subject matter pertaining to the confirmation of sport psychology. The second strand relates to the qualitative results and focuses on ensuring rigor and credibility through the use of excerpts from participants. The discussion then draws together the two approaches to data collection.

## 9.2 STRAND A, QUANTITATIVE RESULTS: CONFIRMATION, THE FINAL EVALUATIONS

### 9.2.1 Stage Five, Innovation-Decision Process: Confirming the Decision

Within Chapter 2 (section 2.4.3.8), confirmation was deliberated and determined as being concerned with the final evaluation of the decision previously made regarding the innovation and was thus the final stage in the Innovation-Decision Process (Rogers and Scott 1997). To this end, after initially trialling the innovation, users sought reinforcement of their decision. As such, if positive reinforcement failed to arise, discontinuance could occur even after previous use. Discontinuance is comprised of two components; 1) replacement, whereby some other unit supersedes the innovation being used and, 2) disenchantment, whereby current practice no longer satisfied users' requirements. Consequently, the current section is devoted to the results of the final stage of the Innovation-Decision Process as depicted in Figure 37.

**Figure 37.** The Innovation-Decision Process highlighting the Confirmation Stage and its associated variables



Rogers and Scott (1997) suggested confirmation to be the tipping point of the diffusion process whereby the innovation had the opportunity to exponentially spread throughout the social system if the underlying mechanisms were maximised. Here at the adoption level, individuals confirm, and thus continue, their use of the innovation. In terms of the diffusion process, an individual's satisfaction leads to widespread adoption through communication with others. The purpose of the current section is therefore to report on the respondents' cognitions surrounding the reinforcement of sport psychology. This was achieved through an analysis of a number of research questions:

1. What are the underlying cognitions which reinforce coaches' behaviours surrounding sport psychology?
2. To what extent is dissatisfaction apparent in the coaching domain?
3. What is the ranked importance of sport psychology in comparison to alternative facets of sports science?

### 9.3 REINFORCEMENT OF SPORT PSYCHOLOGY

Reinforcement is referred to as a consequence which influences the prospect of future behaviour in terms of repetition, increased intensity, persistence or increased uptake of the desired behaviour (Olds *et al* 1954). In order to evaluate the diffusion and adoption of sport psychology, coaches' perception of whether they felt sport psychology should be formally spread throughout the social system was used as a mechanism to assess

respondents' engagement with confirmation. Thus, based on the notion of Reinforcement Theory, measurement related to those factors which supported the use of sport psychology. Findings related to such factors would unearth whether alignment between coaches' cognitions, beliefs and attitudes formed throughout the previous stages (knowledge, persuasion and decision) were being confirmed either positively or negatively at this latter stage. Based upon the results of Phase one (Chapter 4, section 4.6), where coaches' reported sport psychology as being part of the jigsaw, three items of measurement relating to their confirmation of training desires towards sport psychology were used to examine coaches' cognitions regarding the reinforcement of sport psychology as a form of coaching practice: 1) formalised training provided, 2) embedding into coaching practises, and 3) its place in athletics training. The results should provide indications as to whether there was/is a desire for the adoption of the subject formally throughout the social system.

The respondents were asked as to whether they believed sport psychology should be embedded into their everyday coaching practice. The results showed three quarters of respondents felt sport psychology should be embedded into everyday training practices. Further to this, whilst a similar number of respondents (to that of receiving training) reported 'no' ( $n=9$ , 5.8%), it was the 'don't know' category where the change in response occurred. Specifically, there was a 21.1% difference in this particular category, thus only 9.0% ( $n=14$ ) responded 'don't know' which was reflected in the rise of the 'yes' responses. Moreover, with regards to whether coaches' believed there to be a place for sport psychology in athletics overwhelmingly, 98% ( $n=146$ ) agreed there was.

In summary, overall coaches support the use of sport psychology as a coaching tool. Conversely, less than 10% of respondents in each category reported 'no' to support the training and embedment of sport psychology into training. Similarly, in relation to coaches' believing there to be a place for sport psychology in coaching practices, no coaches reported there not to be a place for the subject, but 2% ( $n=3$ ) did report an undecided response of 'don't know'. Combined, these results evidenced enough support to conclude that coaches overall supported the diffusion and adoption of sport psychology within the athletic domain.

## 9.4 ADVANTAGES OF SPORT PSYCHOLOGY

According to Orr (2003), the cost-benefit ratio was an instrument for analysing the advantages and disadvantages of diffusion and consequently impacted on the spread of an innovation as uncertainty caused people to be risk-averse. Therefore, to enhance diffusion, users need to establish the advantages of use. Reinforcement thus relied on potential users understanding the functionality of the innovation hence linking to the first stage of knowledge (Chapter 2, section 2.4.3.4). Specifically, the cost-benefit ratio involved cognitive cross comparisons between the strengths and weaknesses in order to establish the feasibility of adopting the innovation. Thus, at this point of the Innovation-Decision Process users looked to confirm whether any benefits were advantageous to their coaching behaviours when compared to costs. As a result, in the form of an open question, coaches were initially asked ‘what the benefits of the subject are in relation to their coaching practice’.

**Table 9.1.** Categorisation of Coaches Key Benefits of Sport Psychology; Coaches’ own Level of Coaching, (Frequencies)

Self-awareness & development	Response and Components of Response							
	No	%	Coach’s Use	No	%	Performance & enhancement	No	%
Motivation	9	6.3	Communication Tool	9	6.3	Cope with Pressure	14	9.9
Better vision	12	8.5	Creates positive Environment	9	6.3	Less nerves	2	1.4
Confidence	23	16.2	Understand your athlete	10	7.0	Positive thinking	7	4.9
Holistic Development	5	3.5	Encouragement	3	1.9	Optimise Performance	12	8.5
			Coach development	7	4.9	Positive Attitude	1	.7
			Achieve athletes’ goals	5	3.5	Manage performance	3	2.1
			Another tool	2	1.4	Peaking	2	1.4
<b>Total</b>	<b>49</b>	<b>34.5</b>	<b>Total</b>	<b>45</b>	<b>31.3</b>	<b>Total</b>	<b>41</b>	<b>24.0</b>

Coaches were asked to report one main benefit of sport psychology at their level of coaching. Responses were then categorised in line with its underlying purpose. According to Table 9.1, self-awareness and development (overall development of the athlete as a person) was reported as a benefit by 34.5% ( $n=49$ ) of coaches. Coaches use (tools which the coach themselves use in order to improve their sessions) was reported by 31.3% ( $n=45$ ) coaches as a benefit. With regards to performance coaches, 24.0% ( $n=41$ ) of coaches' reported (those techniques an athlete would undertake in order to manage the psychology of the competitive environment) as the main benefit of sport psychology. However, negative or neutral response received the lowest overall response ( $n=7$ , 4.9%).

The next step was to identify the components of each category in order to ascertain the contributing elements to coaches' positive perceptions. Two (1.4%) of the 112 respondents reported that they did not use sport psychology, which differed when compared to that reported in the previous section 5.3.6 (Chapter 5) which may be due to knowledge and understanding of the subject becoming more apparent as the respondents progressed through the questionnaire as reported by one coach in the 'any other information' section of the questionnaire. Motivation ( $n=9$ , 6.3%) and confidence ( $n=23$ , 16.2%) were evidenced as components of self-awareness and development as coaches' reported sport psychology to be about instilling these skills into the athlete to achieve holistic development (elements associated with participation coaching). Seven components contributed to the category of coaches' use which could be further divided into two entities of creating a positive motivational climate through an athlete-centred approach and secondly, the coaches' own continuous professional development. Performance control consisted of seven component parts and included two key areas of coping with pressure ( $n=14$ , 9.9%) and optimising performance ( $n=12$ , 8.5%) which was commonly associated with performance coaching.

These results suggest that the benefits of sport psychology outweighed the negatives: to test this, the concept of relative advantage (discussed in Chapter 2 section 2.3.2.1) was examined. Specifically, using a Likert scale, with one being totally disagree, three being neutral and five totally agree, coaches had to respond to statements about sports psychology and, by implication whether the benefits of sport psychology outweighed

the negative and sport psychology took time away from more important areas of

**Table 9.2: Cost-benefit ratio**

**Table 9.2a: Educational Background and Cost-Benefit Ratio**

Sport based education	No.	Mean	Median	Mean Rank	U	Z	P	R
The benefits of sport psychology outweigh the negatives								
Yes	51	3.76	4.00	78.55				
No	101	3.73	4.00	75.47				
Total	152	3.74	4.00		247.50	-.426	.670	

**Table 9.2b: Type of the coach and cost-benefit ratio**

Type of coach	No.	Mean	Median	Mean Rank	U	Z	P	R
The benefits of sport psychology outweigh the negatives								
Participation	41	3.88	4.00	79.45				
Performance	113	3.72	4.00	76.79				
Total	154	3.76	4.00		2236.5	-.344	.731	

The results presented in Tables 9.2a and 9.2b all indicated that the null hypothesis should not be rejected and therefore no significant differences were found between of the sub-groups relating to type of coach and sport education background and coaches perception that the benefits of sport psychology outweighed the negatives.

Overall, the coaches reported that the benefits of sport psychology outweighed the negatives. When compared to the previous results in section 6.3.6 (Chapter 6) these results evidenced a shift in perceptions in relation to the benefits of sport psychology. Contrary to coaches beliefs (in section 6.3.5, Chapter 6) that athletes were the main beneficiary of the use of sport psychology, at the coaches own level of practice, coaches' appeared to see the need for a balance between performance drives and the holistic development of the athlete as a person. Furthermore, the results also indicated that coaches saw themselves as the disseminator of information, whereby sport psychology benefited them as the coach in such a way that they could subsequently use the information to develop their athlete as opposed to improving their own coaching.

## 9.5 DISENCHANTMENT

As previously indicated, disenchantment relates to dissatisfaction due to feelings of disillusion where satisfaction previously resided. As a result, items pertaining to satisfaction with sport psychology were examined. Disenchantment was thus thought to occur when the expected outcomes failed to emerge or the innovation could not be reinvented enough to be integrated into their coaching practices.

Initial explorations of Tables 9.3a and 9.3b revealed that almost half of respondents believed that the information they had access to concerning sport psychology was useful to their coaching practice. The lowest response rate was ‘no’ it is not useful at under 10%. The responses thus indicated towards positive reinforcement as opposed to disenchantment. This was further supported when considering confirmation of previous cognitions, attitudes and beliefs reported at the persuasion stage. To this end, when compared to the results of section 5.3.4 (Chapter 5, which deals with the perceived usefulness of sources of information coaches have access to) and coaches perceived appropriateness of information to their level of coaching and knowledge and understanding, an apparent increase in positive responses by 19.6 percentage points and 16.7 percentage points respectively is evidenced. Such results appear to be due to a drop in negative responses whereby, in relation to confirmation, only 6% reported sport psychology as not being useful to their coaching compared to 32.6% and 20.5% at the persuasion stage. Overall, such results indicated that sport psychology was cognitively accepted as part of athletics. To determine whether results changed according to coaches individual characteristics Chi-square tests of Independence were performed.

The analysis of foci presented in Tables 9.3a and 9.3b showed one focus did not result in the rejection the null hypothesis as no significant differences were found between the sub-groups. The coaches’ educational background was the only variable that distinguished between coaches. The significant difference showed that coaches with a sport based educational background were more likely to perceive the access to be appropriate to their level of coaching. Thus the null hypothesis was rejected.

**Table 9.3:** Access to Information**Table 9.3a:** Characteristic of the Coach and Appropriate Access to Information

Information that you have access to appropriate to your level of coaching	Type of coach					
	Participation		Performance		Total	
	No	%	No	%	No	%
Yes	16	39.0	60	51.7	76	48.4
No	8	19.5	29	25.0	37	23.6
Don't know	17	41.5	27	23.3	44	28.0
Total	41	100.0	116	100.0	157	100.0
Test statistics – Chi Sq – Pearson	Value: 4.972	df: 2	p: .083			

**Table 9.3b:** Educational Background and Appropriate Access to Information

Information that you have access to appropriate to your level of coaching	Sport education					
	Yes		No		Total	
	No	%	No	%	No	%
Yes	31	60.8	44	41.9	75	48.1
No	14	27.5	23	21.9	37	23.7
Don't know	6	11.8	38	36.2	44	28.2
Total	51	100.0	105	100.0	156	100.0
Test statistics – Chi Sq – Pearson	Value: 10.251	df: 2.	p: <b>006</b>			

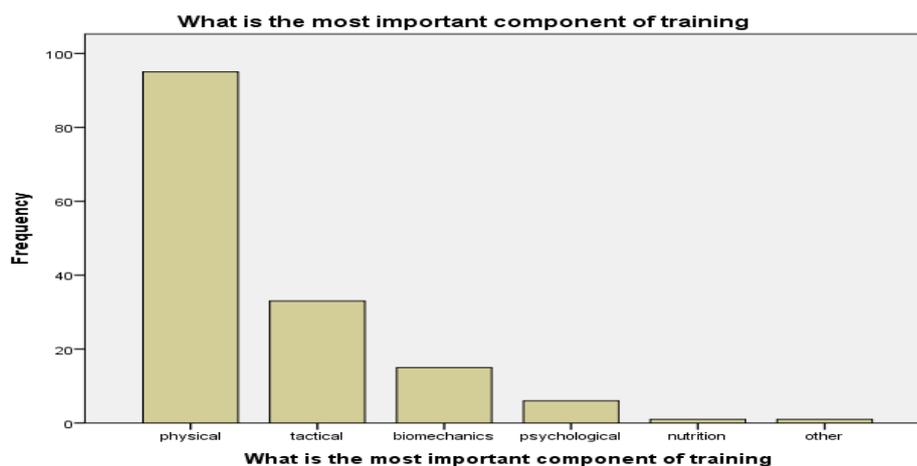
## 9.6 REPLACEMENT; THE RANKED IMPORTANCE OF SPORT PSYCHOLOGY

As an element of discontinuance, replacement, Rogers (2003) suggests, is concerned with the rejection of one innovation in order to utilise another which supersedes it. With regards to the current research, the art versus science debate of coaching (highlighted within the introduction) revealed equivocal opinions regarding the role of not only sports science, but more specifically sport psychology. Specifically, at present there is a lack of understanding surrounding sport science in the coaching arena (as suggested in Chapter 1, section 1.3) and moreover which elements of sports science were deemed most important within the athletic domain. Therefore, in order to establish the

positioning of sport psychology in relation to its adoption as an innovation, an appreciation of what it could supersede was required.

As can be seen in Graph 1 (below), sport psychology was viewed by the respondents as the fourth most important component of training with six respondents placing it in prime position. In terms of coaching practices, physical training superseded sport psychology by 58.9 percentage points. Therefore, extending the current knowledge base, the results showed that whilst sport psychology was deemed an element of coaching practice there were more important areas of training. The ranked positioning (1, most important, 6, least important) of the elements of sports science was to date sparse yet could aid understanding in relation to addressing coaches beliefs surrounding the science of coaching.

**Graph 1. Ranked Importance of Sport Psychology (Frequencies)**



## 9.7 SUMMARY OF QUANTITATIVE RESULTS: CONFIRMATION

The confirmation of sport psychology revealed positive results surrounding coaches' reinforcement of the subject. However, new insights into the structural importance of the facets of sports science which to date had not been previously established. Specifically, those with no advanced education of sports science lean towards the objective, tangible sciences compared to those with experience and advanced learning

recognise that at different periods within the coaching cycle each facet of sports science will come to prominence and then fall away into the background. This they suggest better fulfils the needs of the athletes thus producing more well-rounded competitors.

## 9.8 STRAND B, QUALITATIVE: CONFIRMATION OF THE DIFFUSION OF SPORT PSYCHOLOGY

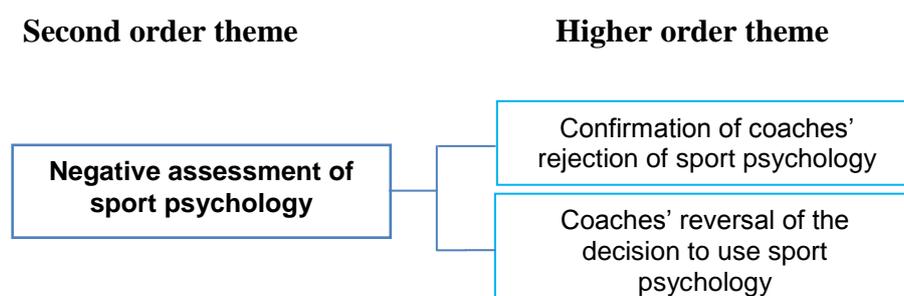
### 9.8.1 The Reinforcement of Previous Decisions

Confirmation refers to the individual user confirming their decision to accept or reject the innovation. Thus, it was the point at which the individual unit of adoption consolidates their previous decision to accept or reject the implementation of the innovation as depicted as raw data in appendix 8.

## 9.9 NEGATIVE ASSESSMENT OF SPORT PSYCHOLOGY

Given that confirmation commonly referred to an individual's final decision regarding an innovation, it is said to be characterised by an evaluation process. It was not surprising that respondent narratives led to the emergence of negative assessment of sport psychology as a second order theme. This theme initially surrounded coaches' negative reversal of the decision to implement sport psychology. Additionally, confirmation of coaches' rejection of sport psychology also occurred (as shown in Figure 38).

**Figure 38.** Antecedent Factors for the Negative Assessment of Sport Psychology



### 9.9.1 Confirmation of Coaches' Rejection of Sport Psychology

In the aftermath of explicitly considering how and if sport psychology played a role within coaches training practices, a number of coaches confirmed their rejection of sport psychology but, not in the expected way. Previously, sport psychology has been divided in terms of subject content such as use of performance routines (Cotterill 2012), profile wheels, self-talk (Hardy 2006) and goal setting (Locke and Latham 1985). In the current study, respondents evaluated the subject based upon factors including their athletes' status, as noted by Amy. She rejected sport psychology as a result of her athletes' disabilities. Thus, the antecedent of her evaluation process was grounded in her belief that sport psychology would have little impact due to the individuality of her athletes' and their ever changing motivations. This had led to a perception that once her athletes' had made a decision there was little impact that she, as the coach, could have on their mindset:

*The people we take are all completely individuals so what motivates them on that particular day might not be the same the following week. If they turn up and they've decided that they don't want to take part, you can't do anything to change their mind.*

Another participation coach (Daisy) inadvertently confirmed her rejection when she evaluated her lack of knowledge and concluded that her negative attitude was due to a lack of understanding of the subject as opposed to that of her athletes:

*Maybe if I did know more about it, I would say yes it does help.*

Thus, working knowledge of the subject appeared to impact upon coaches' evaluation of sport psychology. Thus indicating, changing coach's working knowledge base could change their beliefs, especially if it would ultimately aid the athlete's development. As Daisy stated, she didn't see '*any problems in using anything that helps the kids*'.

There appears to be an emerging connection between the negative perceptions of sport psychology and issues at the initial stage of knowledge appear to be occurring again as discussed in section 5.3.2 above. Thus once again, evidencing cognitions affect behaviours and in this instance confirmation of the decisions made previously.

### 9.9.2 Coaches' Reversal of the Decision to Use Sport Psychology

Analysing the development of quotes reveals coaches are not necessarily consistent in their appraisals of sport psychology thus showing the Innovation-Decision Process to be dynamic and temporal in nature. Thus, coaches constantly change their perceptions and decisions based on new and old information and the extent to which various interventions work. Thus coaches can symbolically adopt the subject but their decisions over techniques can change depending on who they work with. This was evident in the narrative by Alonso who demonstrated a reversal in his explicit use of sport psychology when he said '*I tried but it didn't always work...the younger kids don't need it*'.

When probed he stated that he traditionally coached in this manner (implicitly using sport psychology) for so long it was hard to determine where one element (coaching, psychology or teaching) finished and another started. Therefore, over the years, it had indeed merged into his subconscious as one in the same thing. He went on to explain that when working with elite senior athletes he used sport psychology to prepare athletes for international competitions but this wasn't needed in his current role as a participation with younger athletes.

While also showing a change in attitude towards sport psychology, Freddie stated:

*My instincts tell me it's not the best value on the market.*

Throughout the narratives relating to Freddie, he constantly changes between sport psychology being an implicit part of what he does (he referred to the three B's), to the quote above. However, analysis of the quote indicates that he is not completely rejecting sport psychology but more so indicating that in relation to relative advantage when asked, he suggested that there were other areas of sport science that he prefers, but probably because he understands those more.

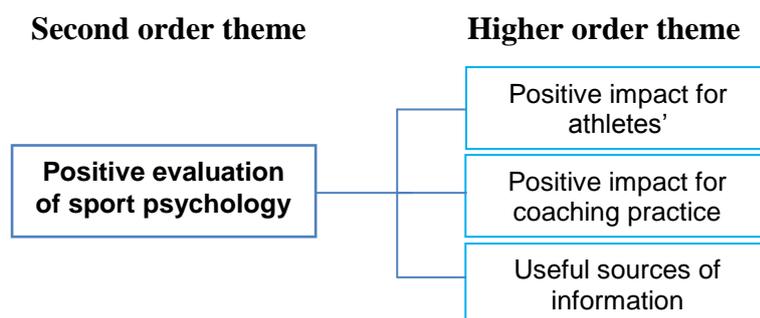
Results indicated that, coaches' negative evaluation of sport psychology occurred as a result of predominately coaches own optional choice. However, for many coaches the antecedents to such decision arose from two factors: 1) characteristics of their athletes

and 2) their lack of knowledge and understanding. Thus evidencing support for the diffusion process whereby stages are interconnected rather than occurring independently of each other. However, due to this process it was also evident that rejection was not absolute and all encompassing.

## 9.10 POSITIVE EVALUATION OF SPORT PSYCHOLOGY

The negative confirmation of sport psychology was contrasted by the coaches' positive reinforcement of the benefits of sport psychology. Therefore, the second order themes all related to positive evaluations of sport psychology. Positive assessments of sport psychology were displayed by many of the participants, but in various forms. Consequently, data was sub-divided into three second order themes. The first of which was positive evaluation of sport psychology (Figure 39):

**Figure 39.** Contributory Factors to Coaches' Positive Evaluation of Sport Psychology



### 9.10.1 Positive Impact for Athletes'

Coaches such as Ian made positive evaluations '*it's always been positive, it's never been negative, you'd be blinkered or naive to ignore it (sport psychology)*' which epitomised coaches acceptance of sport psychology. To this end, coaches at this stage described their positive experiences of sport psychology to have occurred in relation to their use of sport psychology to achieve an identified outcome. Such narratives resulted in the categorisation of sport psychology having a positive impact for athletes' during competition, as recalled by Lewis:

*It's been really good, I remember when we went to English Schools, we used positive self-talk and we were just saying 'I can do this' and then we changed it to the final 'I will do this', both of them won silver.*

Likewise he also stated more generally about his use of sport psychology with his training group in general:

*There was one day...I said 'right we are going to do an imagery exercise' ...I thought it was good.*

In comparison, Bill evaluated why sport psychology worked for his athletes in the training context, which led to acceptance:

*Quite often for the athlete it's (sport psychology) new and indifferent (coaches word), they've not come across it in a structured sense or a structured way before and therefore it's a boost and there is quite a lot you can do with sport psychology which is actually quite fun.*

When coaches confirmed the positive impact for athletes, coaches spoke specific interventions, techniques and circumstances, whereas at the cognitive stage of the Innovation-Decision Process sport psychology was discussed in its entirety.

### **9.10.2 Positive Impact for Coaching Practice**

In addition to the positive impact for athletes', coaches also made reference to the positive impact sport psychology had upon their own coaching practice which added further support to section 6.3.5 (Chapter 6) where coaches acknowledged sport psychology as being beneficial to them as a personal coach. In relation to such acknowledgements Ollie, in line with the literature from section 1.5 (Chapter 1) stated sport psychology as being '*just one aspect*' of what he did as a coach. Drake also drew such parallels towards sport psychology:

*All aspects of sport science support are importantly valuable and part of my practice as a coach most; answers could be used to reflect my appreciation and value of sport psychology.*

Combining the benefits to athletes and coaches, some respondents reflected upon the impact of the usefulness of the sources of information they used to build their implementation upon. Devon made reference to the Coach Development Programme

and that this aided his transference of knowledge from theory into practice with his athletes’:

*It’s relatively useful that we did that programme, so I’ve implemented it with the young athlete the moment, to my mind it fits into the performance category.*

This shows that in order to make positive confirmations, material implemented needed to fall in line with his personal values. Furthermore, Lewis also reported the Coach Development Programme as a useful source of information which fulfilled this requirement. He went further to note that those in the programme gained a different experience which enriched their skill base. Thus, if the diffusion process had occurred via this programme positive confirmation was more likely to occur. This highlights the process of how to reach the point of positive confirmation of sport psychology by athletics coaches:

*There definitely seems to be a different kind of experience for coaches that are in that network to coaches that are out of that network because coaches that are within it are very self-sufficient, they know where to get the information from and how to get the information.*

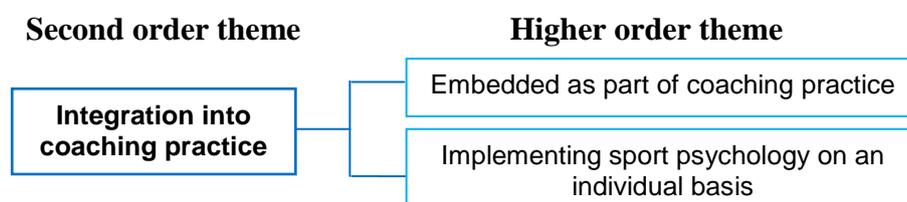
Overall, sport psychology was reported to have beneficial properties on a number of levels from enhancing coaches’ behaviour to that of athletes’ performances. Furthermore, it was apparent that such positive perceptions were based upon coaches’ ability to access quality information which aligned with their personal values.

## **9.11 INTEGRATION INTO COACHING PRACTICE**

Integration into coaching practices was underpinned by two forms of embodiment. Firstly, that which was embedded into coaches training practices as a behavioural coaching tool. Given its reference in section 5.6.4, it was not surprising that respondents confirmed sport psychology as an underpinning philosophical approach to their behavioural practices. However, in addition to previous references to this type of use, at this stage of Rogers (2003) Innovation-Decision Process, coaches evidenced further developments in their values. It was noted sport psychology as not being ‘*something to bring in when things go wrong*’ as noted by coaches in phase one (section 4.6, Chapter 4). Once again, in line with respondent’s discussions of implementation of targeted

interventions (section 5.6.4) triggered by athlete behaviour, the second category pertained to coaches' purposeful use of sport psychology for a specific individual (Figure 40).

**Figure 40.** Contributing Factors to Integrating Sport Psychology into Coaching Practices



### 9.11.1 Embedded as part of Coaching Practice

A number of coaches' evidenced embedding of sport psychology however there was variation within the way in which they achieved this. Christina, a performance coach with an educational background in sport, reported to use sport psychology in such a manner that the athletes had no awareness of its integration:

*They never have any concept that I'm ever doing psychology with them.*

Yet, as reported previously in section 8.6.4.2, her athletes would be able to utilise the information she had imparted for the benefit of proprioceptive feedback. She gave an example of her athlete's feedback of 'no ping' which was her cue word for hitting the long jump take off board.

In contrast, Ian reported that within his social system, whilst he made no specific reference to direct use of the subject, he referred more to the need to make athletes aware of the subject's level of importance:

*We certainly make them aware sport psychology is part of what they need to be aware of that; it's one of those tools in the box for them.*

Such values of the subject could be traced back to a previous section (5.4.4.2), where Ian reported his athletes' receptivity as being a key influencing factor in his use of sport

psychology. Thus, as a performance coach with no educational background in sport, Ian's confirmation linked once again to his experiences at an earlier stage of Rogers (2003) Innovation-Decision Process.

Findings additionally revealed differences in relation to the coaches' references of diffusion versus adoption. Christina's narrative focused on adoption and hence confirmation of her individual use of sport psychology, whilst in comparison, through his use of the plural (we), Ian referred more to the widespread diffusion of sport psychology throughout his social system. Such differences could be due to their positioning as Ian was the chairman of his athletics club whereas Christina was a coach within hers. Hence, evidencing different levels of authority make types of decision with those higher in the social system making them on a mass scale. Despite not being an opinion leader, Devon reported a similar approach to that of Ian and confirmed the widespread diffusion of integrating sport psychology as he stated:

*Yes it is there as an integral part of what we're doing and trying to get people to support this.*

Hence, performance coaches were witnessed as embedding sport psychology into their coaching behaviours. However, differences in how coaches achieved this arose according to their individual characteristics and standing within the social system. Therefore, coaches confirmed their positive use of sport psychology but from their narratives it became apparent that there were differences in how they operationalized this embedding. For some the focus was on their own individual adoption of material, while for others the focus was on how to achieve widespread diffusion, leaving inconsistencies between social systems. However, as highlighted by George, the emerging picture was that:

*People are recognising it's not a separate thing anymore.*

Thus it is part of the coaching package.

### **9.11.2 Implementing Sport Psychology on an Individual Basis**

Further to coaches' embedding of sport psychology into their coaching behaviours, coaches' narratives also showed their implementation to occur as a planned mental

skills package. Specifically, many coaches confirmed the implementation of sport psychology on an individual basis. Some such as Phil, who based his confirmation on his own experience, confirmed his symbolic adoption of the subject for athletes:

*The area of sport psychology is of extreme interest to me, I believe it can be of immense benefit to athletes.*

In comparison, as a coach with an educational background in sport, Christina confirmed her physical use based upon evidence-based intervention tools and was able to explain her evaluations:

*I did things like a profile wheel with him and that was fantastic because it made him look at what he felt his knowledge of the technique was and how confident he felt.*

Rudi, as chairman of his club, reflected upon the individual approach inadvertently taken by the coaches as a whole within his social system, as opposed to coaches independent choice, as portrayed by Freddie despite his previous rejection of sport psychology:

*I now take an individual approach to try and work out why our athletes perform and don't perform.*

Christina evidenced a similar individualised approach suggesting perhaps the individual approach is not an isolated occurrence:

*We certainly, I know, take an individual approach to try and address why our athletes perform and don't perform and without recognising we're doing it our practice has been shaped by that kind of sport psychology.*

This type of reflection and associated realisation of the implementation of sport psychology was not an isolated case. Similarly, Bernie also stated that only upon conscious reflection of his practices did he realise how much he actually utilised the subject:

*It's made think that maybe I use sport psychology more than I actually realise.*

Lewis, as an opinion leader, highlighted his philosophy regarding sport psychology and one which he shares with other coaches:

*There's no right or wrong way of doing it. People like to do different things with individuals.*

Thus, confirmation appeared when coaches took stock of what they did within their coaching and, moreover, how they did it. Differences therefore seemed to occur between the social systems within which the coach operated. Nevertheless, the end outcome still amounted to positive confirmation of sport psychology.

## 9.12 PROMOTION OF SPORT PSYCHOLOGY TO OTHERS FOR DIFFUSION

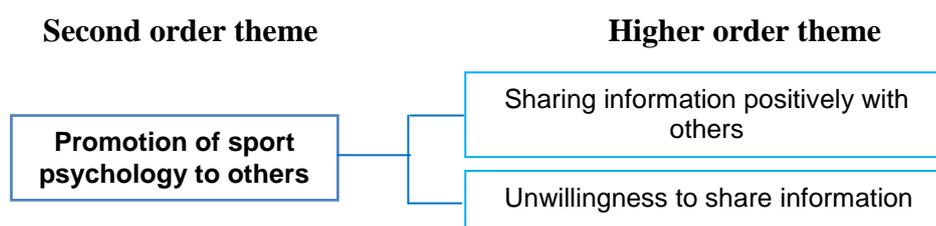
The final type of confirmation transpired from the knowledge stage of Rogers (2003) Innovation-Decision Process. However, unlike the usefulness of sources of information as deemed by the coach, this second order theme pertained to the promotion of sport psychology to others. Consequently, the diffusion of sport psychology throughout a given social system, based upon coaches' word of mouth as a form of communication channel, was explored. Two forms of promotion materialised, one which was positive and one which was negative (Figure 41).

Promoting information to others was deemed to be the final aspect of coaches' confirmation of sport psychology. Thus, once coaches had consolidated their own adoption, both cognitively and behaviourally surrounding the implementation of the subject, their attention turned to discuss other individual's diffusion of information.

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**Figure 41.** Factors Underpinning the Promotion of Sport Psychology to Others

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### 9.12.1 Sharing Information Positively with Others

Initially Christina discussed her perception of why she felt other coaches should experience sport psychology:

*I honestly think it would benefit coaches' if they understood more about how to use motivate different types of children, different ways to come at the same thing.*

Interestingly, as a performance coach, Christina noted coaches need to understand how to motivate athletes through a range of techniques. This was a skill set commonly associated with participation coaches due to their need to maintain athlete's participation in sport. However, she failed to discuss any mechanisms through which she felt this could be achieved (word of mouth or media). Two forms of adoption were apparent at the confirmation stage. Firstly, personal adoption which concerned single units of adoption and secondly widespread diffusion which in the current study was encapsulated as adoption throughout the specific social system in which the coach operated. Despite previously rejecting the use of sport psychology in relation to her own practices (due to the nature of athlete she works with), as a gatekeeper Amy evidenced a reverse in her confirmation of the subject by firstly stating '*I do think sport psychology has maybe got a big bit to play*'. She went on to note that through her vicarious experiences and role within the social system, she attempted to enable others the opportunity to gain similar experiences:

*[Coaches' name] was really positive about it (sport psychology), really really positive, so I forwarded it onto the coaches' and I was hoping a couple of the coaches' that I knew were struggling with would take up on the offer. Just because you pass the information on doesn't mean they take it.*

However, of importance to note was that despite making such opportunities available to coaches it did not guarantee adoption by others. A point which was also made by Freddie:

*Psychology is only as effective as the person who is taking it on board.*

### 9.12.2 Unwillingness to Share Information

Freddie further noted *'I'm not going to take any responsibility for it (sharing information on a technique), I'm not sure it's right for me'*. Freddie therefore epitomised why coaches either failed to share knowledge or did so in a negative manner, but noted that if he did dismiss the information he was sharing, it would be *'for a good reason'* such as he *'didn't think the technique was right or the designer of the technique was right'*. In a similar manner, Alonso noted the need for caution when sharing information as if undertaken incorrectly, despite good intentions, it could affect the amount of impact the information had on the receiver:

*I would have thought that unless they (the communicator of information) have sorted that out (their own knowledge base), that they would find it very hard to advise in any kind of meaningful way in order to enhance performance.*

Thus, in this instance the coaches' unwillingness to share information was due to questions over the credibility of the intervention they were sharing or equally, questions over whether they had enough knowledge to disseminate such information. Coaches with such views held similar positions in the social system and furthermore, evidenced making optional choices to use sport psychology but were not in a position to make collective choices. Consequently, freedom of choice could be an antecedent factor to a lack of willingness to move beyond single units of adoption. Overall, confirmation appeared to occur on three different platforms, 1) acceptance or rejection, 2) spontaneous or planned and, 3) adoption at a personal level.

## 9.13 SUMMARY OF QUALITATIVE RESULTS: CONFIRMATION

The qualitative results of the stage made it apparent that coaches were able to cognitively accept sport psychology but behaviourally reject aspects of the discipline. Consequently, this stage was characterised by transient decisions whereby, coaches would go back and forth with decisions depending on a number of factors, the key one being their athletes' needs at any given point in time. The second overall finding

concerned coaches' integration of sport psychology into their coaching as part of their competency skill base. Two forms of use were identified, firstly use of psychological principles to enhance their delivery of materials and secondly, using sport psychology as an intervention for athletes and their performance.

## **9.14 SECTION THREE, DISCUSSION: CONFIRMATION OF THE DIFFUSION AND ADOPTION OF SPORT PSYCHOLOGY**

### **9.14.1 The Theory of Reinforcement**

According to Rogers (1983) confirmation concerns the evaluation of the previously made decisions throughout the diffusion process. Therefore, it is primarily concerned with reinforcement of the diffusion process thus far (as discussed in Chapter 2, section 2.4.3.8). The results obtained in the current study indicated the occurrence of positive reinforcement of sport psychology, thus offering support to the Theory of Reinforcement occurring within the athletics domain as the ultimate objective is adoption by individual coaches leading to widespread diffusion. However, in order for this to occur, according to the qualitative results, to move beyond symbolic adoption and sporadic implementation a structured programme of training was desired. Supporting previous findings of Werthner and Trudel (2009), which found that coach development programmes need to be specific to the coach's needs, the qualitative narratives in the current study reported a need for information which focused on knowledge transfer. Specifically, how coaches can use their knowledge and construct it into useable coaching interventions which could enable coaches' use of sport psychology to move beyond single units of adoption. In the current study this was prevalent via the use of authority decisions.

## **9.15 ACCEPTANCE/CONFIRMATION OF SPORT PSYCHOLOGY**

Despite the earlier quantitative results revealing sport psychology as being ranked fourth in terms of importance compared to other sports science disciplines, the coaches overwhelmingly showed positive evaluations of sport psychology. Thus, evidencing progression from the results of Blinde and Tierney (1990), the quantitative survey of this study showed that athletic coaches were not only receptive to sport psychology but additionally reported there to be windows of opportunity. This construct evolves from the concept of Long Term Athlete Development (Stafford 2005). Windows of Opportunity involve planning the maximisation of critical periods in trainability. Thus, at critical periods accelerated learning can be achieved for, in this instance, enhanced psychological adaptations. Previously, Stafford (2005) reported these to have been predominately physical constructs but current findings reveal there to also be psychological windows. At these points potential users are ready to take on board aspects of the innovation. With regards to coaches this would be embedding the subject into their coaching philosophy making it an implicit part of their coaching practices in the long-term.

Coaches' positive acceptance of sport psychology was derived from their athletes' needs. Hence athlete's behaviour was a driving force which pushed coaches towards the sports psychology. This finding was initially revealed by the quantitative results but is supported by the qualitative narratives (Chapter 5, section 5.9). Consequently, it was theorised that for sport psychology to be seen as a plausible element of training practices athlete endorsement is required.

## **9.16 NEGATIVE CONFIRMATION OF SPORT PSYCHOLOGY**

Linking to the decision stage of the Innovation-Decision Process, according to the qualitative results, rejection at the confirmation stage was the result of optional decisions (coaches' ability to make independent decisions) whether or not to use sport psychology. This provided support for the use of transient decisions (on-going fluid decisions) as opposed to contingent choices as proposed by Patogo *et al* (2007). This

indicates transient decisions are conscious in nature as compared to initial decisions concerning the coaches overall perception of the subject which were evidenced as unconscious in Chapter 4 (section 4.4.3).

In the behaviour phase of the process, as far as the athletics domain is concerned, this has implications for widespread diffusion of sport psychology. It suggests coaches decisions are not final and will change depending on the make-up of their training groups. Thus, adoption at this stage is defined as the cognitive acceptance of sport psychology as a legitimate aspect of training practices. Tools implemented are then evaluated based on their individual merit. Of importance, while rejection of specific tools may occur, the underlying acceptance of the innovation does not change, meaning coaches still symbolically adopt sport psychology.

## **9.17 THE RECIPIENTS OF SPORT PSYCHOLOGY**

The confirmation stage saw the on-going debate surrounding who sport psychology was for come to the fore. The coaches portrayed themselves as being the vehicle through which dissemination to athletes could occur. This offered further support for the perceptions generated at the persuasion stage which indicated that coaches' predominantly believed sport psychology was for athletes followed by coaches. Hence, coaches use sport psychology for athletes rather than for enhancement of their own coaching and performance as discussed in the work of Thelwell *et al* (2008) which, despite the qualitative findings of Thelwell *et al* revealing that coaches use psychological skills for their own benefit, the quantitative findings in the current study found very few coaches used sport psychology in such a manner. Whilst different methodological approaches could account for such differences, given the positive outcomes reported by Thelwell *et al* (2013), greater education regarding the potential uses of sport psychology are perhaps required in the athletics domain even where adoption and widespread diffusion is occurring.

## **9.18 CONCLUSION OF CONFIRMATION RESULTS**

The confirmation stage highlights many of the issues surrounding the adoption and diffusion of sport psychology whereby results evidenced no definitive

acknowledgement and therefore understanding of the wide ranging topics that fall under the subject, nor for whom the subject can benefit. Consequently, coaches were found to reinforce use of the techniques that they already utilised thus limiting the scope of widespread positive impact and limiting coaches interpretation of the innovations perceived attributes. Furthermore, data additionally revealed new constructive insights surrounding the notion decisions. Overall, results showed that decisions were not limited to the third stage of Rogers (2003) Innovation-Decision Process but more so that they fell into two realms. Firstly, an acceptance or rejection of sport psychology as a subject which occurred at stage three. Secondly, decisions surrounding coaches' use and development of specific disciplines, psychological skills and methods are transient. Specifically, coaches evidenced that they are constantly re-evaluating their use of sport psychology depending on the cluster of events that are arising, the issue at hand and the athlete they are working with. As a result coaches can accept the subject but reject given techniques due to for example their complexity to teach to young athletes.

## **CHAPTER 10 - CONSOLIDATION OF THEORETICAL DEVELOPMENTS**

### **10.1 ORGANISATION OF THE CHAPTER**

This chapter considers Rogers (2003) Innovation-Decision Process in its entirety and specifically its transference into the coaching domain. Overall it considers and examines the central constructs of the process and specifically, the extent to which they help explain and predict coaches' diffusion and adoption of sport psychology. The fundamental Innovation-Decision Process and thus whether it accurately depicts the stages through which coaches pass during the diffusion and adoption of sport psychology before looking to examine the driving forces which inhibit or facilitate such movement in the subsequent chapter.

### **10.2 CONSOLIDATION OF THE CONCEPTUAL FRAMEWORK**

#### **10.2.1 Conceptual Elements of Diffusion and Adoption**

The five stages of the Innovation-Decision Process aligned with the current study as it allowed for the consideration of the role of perceptions which have previously attracted much attention (Ferraro and Rush 2000; Ravizza 1990) in the sport psychology literature. However, while this literature base has identified what the perceptions of the subject are, across different sports (not including athletics), athletes and coaches, but have lacked consideration of the mechanisms which influence these. The inclusion of perceptions transpired to be an important conceptual element which shed light on coaches within the athletic context. Perceptions were initially raised during phase one results (Chapter 3, section 3.6) of the current study and continuously throughout phase two (strands A and B). Furthermore, the results reflected the previous research which identified that perceptions affected coaches' use of sport psychology both positively and negatively (Green *et al* 2012; Johnson *et al* 2011; Kasiulis and Garbaliuskas 2010; Page *et al* 2001; Rahmati *et al* 2017; Woolway and

Harwood 2015; Wrisberg *et al* 2009). However, adaptations to the original model (Rogers (2003) Innovation-Decision Process) occurred in order to enable it to be used as an applied model of the facilitation of a soft innovation rather than being theoretically descriptive. Particularly, the stages were divided between two component parts, the initial cognitive process (knowledge accumulation, knowledge construction, perception development and decision) then the behavioural aspect of the process (implementation and confirmation). The outcome of this adaption was the finding that the initial cognitive process is a layered process where knowledge accumulation, knowledge construction and perceptions (the adapted stages as discussed in section 6.8.1) were circular in nature and thus there was no one distinct starting point. Consequently, the findings showed a departure from the linear nature of the original models of Rogers (2003). However, the second behavioural phase was found to remain linear thus allowing constant flow back and forth between the two constructs.

From the work of Roberts-Gray's (1985) the construct of exposure emerged as a conceptual element of importance within the current study. Unlike the previous study from Blinde and Tierney (1990), who found exposure to sport psychology was limited within the swimming arena, over 10 years on, it was found to be occurring within athletics, albeit sporadically (as evidenced in Chapter 4, section 4.5.3.2). It was revealed in Chapter 4 (section 4.2.4) that referring to sport psychology as a singular concept over simplified the diffusion process. It was theorised in the current study that such developments in the field were due to the manner in which the previous studies were theoretically framed. Earlier research (Blinde and Tierney 1990; Ferraro and Rush 2000) examined awareness of sport psychology as one entity. However, results of stage one of the current study, evidenced the subject to have moved beyond this unified perspective. The subsequent concurrent mixed methodology explored the specialised disciplines of sport psychologists (Chapter 1, sections 1.4 and 1.5) along with emergent of bodies of literature. Interventions of specific psychological tools have resulted in increased evidenced-led practices. On the contrary however, it also appears to have led sport psychology as a subject to be within coaches' sphere of awareness but what differed was their exposure to its various facets. Consequently, it was concluded that each exposure point to a new aspect of the subject caused a new cognitive cycle with the outcome being either rejection, postponement or advancement to the behavioural aspect of the process (as depicted on Figure 42).

A novel conceptual component within the process was that of knowledge construction (the process of coaches turning accumulated knowledge into practical training tools). From the coaches narratives it became apparent that this was a key factor in the instigation of moving from cognitive processes to behavioural actions.

With regards to the second (behavioural) stage of the process, the adoption of sport psychology interventions was found to be dependent upon three factors; 1) compatibility with existing practices, 2) coaches' athlete's needs, and 3) coaches' level of knowledge, based on these, decisional outcomes were not absolute. Consequently, the utilisation of the term confirmation was maintained as it implied certainty but not fixed behaviours for a period time. Therefore, the Innovation-Decision Process partially explained the decision-making process regarding the use of an innovation. But, constructs from alternative models were additionally required to fully explain the factors which affect full integration of the innovation. The result of which was an applied model which allows for facilitation of an innovation.

Figure 42. Adapted Innovation-Decision Process with Conceptual Elements

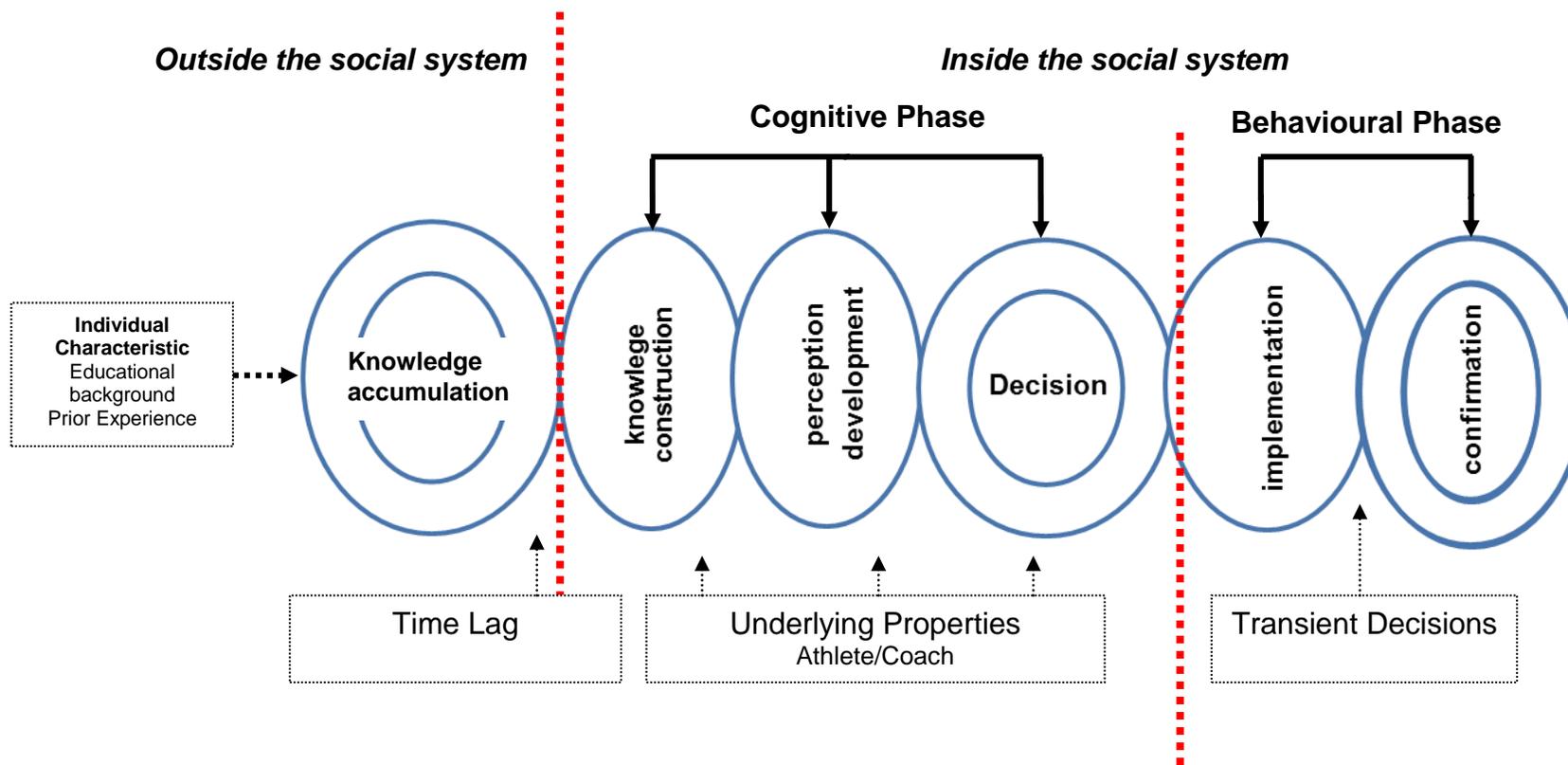




Figure 42 provided a visual display for the interpretations of the research findings in order to firstly examine the Innovation–Decision Process as a plausible vehicle for understanding the diffusion and adoption of sport psychology. Secondly, to explore those factors which impact upon the diffusion and adoption process in the athletic context. Overall, it was found that while the diffusion of innovation is a viable theory for illustrating the stages through which coaches pass in their decision-making process, they are not as isolated and distinct as proposed by Rogers (2003). With regards to this insight it was evidenced that the initial point of exposure as discussed by Rogers (2003) and Roberts-Gray (1985) occurred outside the social system in which the coaches ultimately operated. Theoretically this changed the starting point of the decision-making process. Consequently, greater consideration for the Innovation-Development Model is required. To date, no published research could be found relating to this preceding model.

Furthermore, the results demonstrated the distinction between the cognitive and behavioural aspects of the process as being an important factor in distinguishing between concept acceptance and actual use. A point which previously had been noted but not examined to any great extent within the diffusion literature. This extension to knowledge contributed a valuable addition to understanding the diffusion of sport psychology by coaches and demonstrated the decision-making process to occur mentally and then physically operationalised. Finally, the nature in which sport psychology was implemented revealed new insights into the manner in which coaches utilised sport psychology. Planned and spontaneous, depending on the individual characteristics of the coach, were the two identified modes of adoption. This distinction in use afforded deeper understandings of how sport psychology was applied in the athletic context and changes the required interface for those delivering information.

### **10.3 CHALLENGING AND EXTENDING EXISTING KNOWLEDGE**

Following the consolidation of what is already known, consideration of what has been added is required. According to Whetten (1989), theoretical developments concern

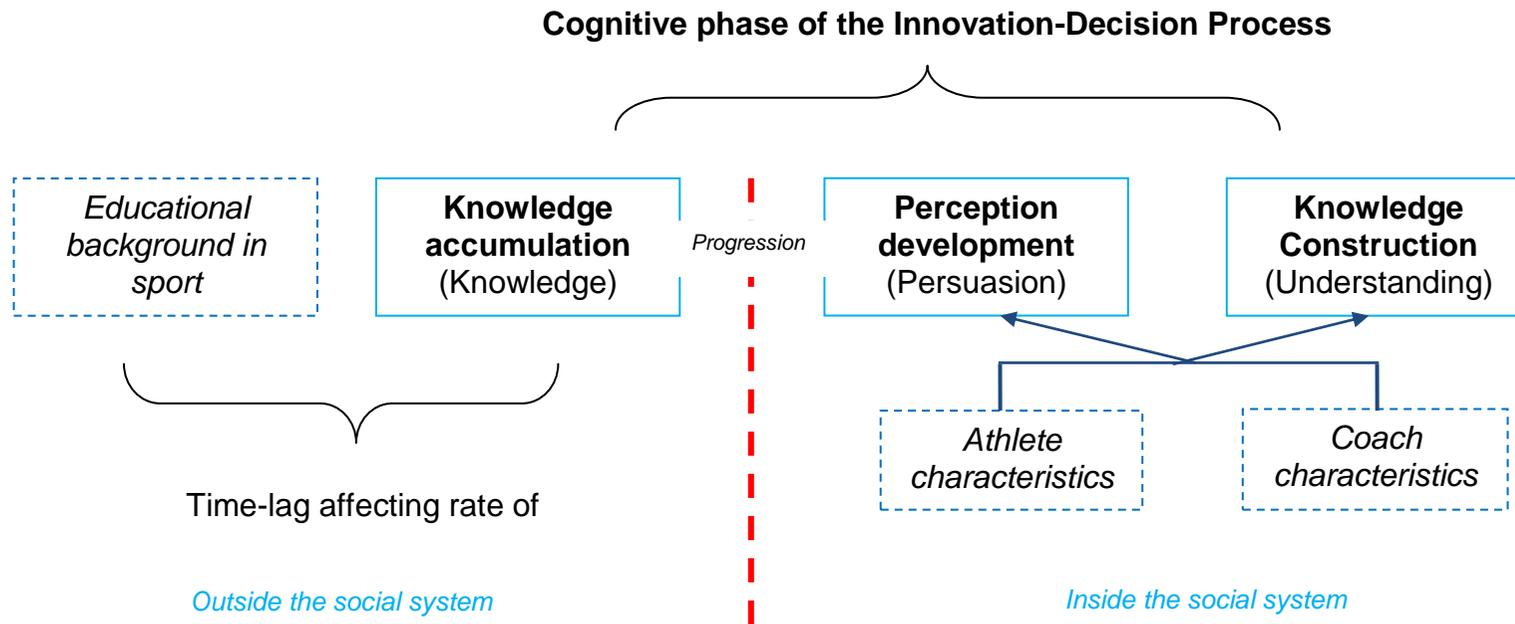
challenging and extending existing knowledge without compromising the credence of the phenomenon being studied. With this in mind, it is clear that due to being a staged process, the use of Rogers' (2003) Innovation-Decision Process within the athletic domain has allowed for a systematic understanding of the process through which coaches pass when deciding whether or not to utilise sport psychology. However, it is evident that contextual sensitivities (issues specific to sports science and the athletic environment) have altered the fundamental structure of the Innovation-Decision Process, explicitly relationships between variables. Specifically, it was discovered that coaches' initial knowledge of sport psychology occurs prior to entering the specific social system in which the knowledge will be used. Thus, the quantitative results show a departure from the existing Innovation-Decision Process.

The early stages of the model fall more in line with that of the Roberts-Gray (1985) model with exposure as the initial stage where knowledge construction does not necessarily occur as information gathered is not specific to the environmental context. Thus, exposure concerns the accumulation of sport psychology information. In turn, within the current study, the knowledge stage deals specifically with knowledge construction and was identified as a crossover point where information is understood specific to the athletic domain. Consequently, a coach's ability to transform information from sheer accumulation to that which is useable in a practical context influences coach's cognitions pertaining as to whether or not to use sport psychology.

Extending understanding of the existing process, the two phases (cognitive and behavioural), occur independently of one another. Accordingly, it can be theorised that coaches can like sport psychology but not specific techniques (and vice versa). Therefore, isolated incidences of the rejection of sport psychology do not inhibit adoption of sport psychology as a concept. However, conversely, cognitive rejection results in a coach's failure to progress to the behavioural aspect of the model. For example, knowledge accumulated at the initial cognitive phase will influence what can be implemented at the behavioural phase. The underlying determinants of the behavioural phase were: type of coach (participation or performance), educational background in sport (yes or no) and athletes being coached (age and competitive level). While the first two determinants were hypothesised, based on the work of Blind and Tierney (1990), the later factor relating to the athletes being coached was a new finding

which arose in the current study, thus needs further examination. This insight alters the way in which change agents should consider their dissemination of information as it indicates a need to target coaches based upon 1) coaches underlying motive for involvement in athletics (participation or performance) and, 2) the characteristics (age and level at which their athletes compete) of the athletes being coached (Figure 43).

**Figure 43.** Depiction of Theoretical Contributions: Conceptualisation of the Cognitive Phase of the Innovation-Decision Process

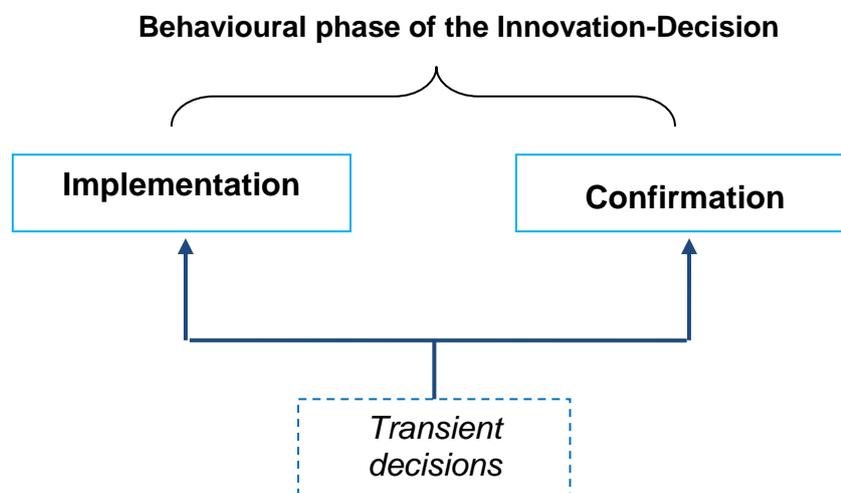


The results contained within Chapters 4, to 9 confirmed the final two stages of Rogers (2003) Innovation-Decision Process as implementation and confirmation respectively. The current study found these to mark a change from cognitive processes to produce behavioural outcomes (as shown in Figure 46). Furthermore, in contrast to existing understanding of the process, the current study discovered that the decisional stage continues into these latter two stages in the form of transient decisions. It was found that throughout the behavioural phase coaches continuously engaged in decision-making regarding the specific sport psychology tools being implemented, and will then confirm whether or not they are liked.

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**Figure 44.** Conceptualisation of the Behavioural Phase of the Innovation-Decision Process

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These findings have implications for, firstly, the initial cognitive phase as exposure occurring outside of the athletic context. Thus, according to the coaches, information was organic in nature rather than subject specific. Triangulation of the strands of research (one and two, Part A and B) evidenced that if such generic information was generated outside of the athletics social system from multiple sources the rate of adoption was slower making the process more unpredictable. Based upon the qualitative narratives this was because information had to be re-assessed in relation to relative advantage, along with conative (experiment) knowledge. However, if coaches learnt about sport psychology upon entering the athletic social system many could be easily persuaded of the merits of sport psychology due to their openness to new ideas. However, unlike previous studies which have reported upon the predictability of diffusion in a given context through the use of the S-shape curve (Bass 1969), the time-

lag between initial exposure and knowledge accumulation could not be measured in the athletic environment. This was in the current study, due to two main factors, 1) the knowledge being latent for a period of time as coaches have awareness but no need to for the knowledge at that point in time and 2) freedom of choice, thus marking a movement away from the typical S-shaped adoption curve towards a bell pattern as described by Rogers (2005). Furthermore, in relation to the behavioural phase, the transient nature of decision-making requires sport psychologists to constantly adapt the information supplied to coaches. This was found to be due to the constant turnover of athletes within training groups. Meaning, information required will constantly change due to athletes being a determining factor in the cognitive phase of the process. Secondly, as coaches' knowledge construction widens so will the range of possible interventions introduced to coaches.

Such theorisations (as above) have led to practical implications for change agents. Specifically, the need to provide overall factual information as coaches initially enter the athletics context so that coaches can overcome the naivety of what, and for whom, sport psychology is for. Progression routes then need to provide information specifically based around the performance elements of the subject. Such actions would increase the likelihood of diffusion and adoption occurring.

#### **10.4 CONCLUSION TO THEORETICAL CONTRIBUTIONS**

The emergent theoretical findings concerned the reframing of constructs within Rogers (2003) Innovation Decision Process. Specifically, it was found that each stage of the process is dynamic and within itself contained a process through which coaches passed. For example, knowledge can be broken down into discrete stages including, knowledge accumulation which can be defined as the acquirement of information, secondly, a time-lag which was found to be determined by 1) the athletes being coached, 2) coaches' career stage, and 3) type of coach; participation or performance. Finally, knowledge construction whereby coaches translate knowledge gained into useable information which changes the process from cognition into behaviour. In turn this was broken down into two main forms, 1) embedded into coaches' delivery and, 2) use as an intervention to improve athlete performance.

# CHAPTER 11 - BARRIERS AND FACILITATORS OF SPORT PSYCHOLOGY

## 11.1 INTRODUCTION

According to Tutore *et al* (2013), the models associated with the Diffusion of Innovations clearly articulate the origins of an innovation and the factors which influence the pattern of diffusion within a social system. However, despite the common consensus regarding the process of diffusion and its component parts across a number of disciplines (Chapter 2, section 2.4), there has not been such agreement in the establishment of clearly defined barriers. Consequently, alternative explanations need to be examined as every innovation has its own set of intricate inhibitors which need to be established within their own contextual environment.

According to the LCM (as discussed in Chapter 2, section 2.7.1), systematic understandings of the origins of constraints allow three barriers to be classified into meaningful subgroups. This can potentially aid the facilitation of positive cognitions and behaviours to overcome such constraints. However, the model fails to discuss the mechanisms through which facilitation could occur due to what Khalid *et al* (2013) referred to as a lack of engagement with the end users leaving it an under-researched area of investigation.

Subsequently a number of research questions were generated to increase understanding of the barriers and facilitators incorporated in the diffusion and adoption of sport psychology in the athletics context:

1. What are the barriers to the diffusion and adoption of sport psychology within the athletic environment?
2. Does the Leisure Constraints Model provide a vehicle for the classification and organisation of the identified barriers related to the diffusion and adoption of sport psychology within the athletic context?

3. What is the nature of the relationships between individual characteristics and coaches' motivation, cognitions and behaviours associated with overcoming the barriers of sport psychology?
4. What are the facilitative factors and activities which could aid the integration of sport psychology into coaches' practices?

In the following section data is presented in four main sections; the first establishes whether the perceived characteristics of an innovation (as discussed in Chapter 2, section 2.3.3.2) enhanced or hindered the process of diffusion and adoption. This was due to Holloway's (1975) conclusion that perceived attributes provide the grounding for potential user's beliefs, values and attitude towards the innovation. Barriers specific to coaches in the athletic environment are then examined and through the use of frequencies, they are classified into the three hierarchal levels of the LCM. Using coaches' cognitions, motivation and behaviours as the dependent variables of analysis, the third area of interest aimed to establish the nature of relationships with coaches' individual characteristics as a means for understanding those factors which contribute to coaches' negotiation of the barriers. Finally, the facilitators of sport psychology, specifically in the athletics context, were examined in terms of context and activities.

## **11.2 STRAND A, QUANTITATIVE RESULTS: BARRIERS AND FACILITATORS OF SPORT PSYCHOLOGY**

### **11.2.1 Barriers to the Diffusion and Adoption of Sport Psychology**

#### ***11.2.1.1 Classification of Barriers***

Described by Axtell *et al* (2000) as intrinsic factors, within the hierarchal LCM, the initial category of intrapersonal barriers, dealt with an individual's personal attributes, which ultimately influenced coaches' formation of attitudes (similarly to that of stage two of the Innovation-Decision Process). Thus, the key consideration used to determine the positioning of coaches' responses into the intrapersonal category was whether the items related to the coaches' personal need and attitude towards sport

psychology. In opposition to the internalised processes involved with the intrapersonal barriers, otherwise referred to by Axtell *et al* (2000) as group factors, White (2008) reports interpersonal barriers (the second category of constraint) to be those relating to external social interactions. The final category of barrier was therefore, that of organisational or structural constraints, which related to those factors which in part, lay outside of the individuals control as they were associated with the environmental context.

At this stage of the study, barriers were analysed independently of the Innovation-Decision Process in order establish their positioning and thus impact, if any, on the process of diffusion. This allows for the establishment of those barriers particular to the athletic social system. Consequently, respondents were asked to provide three barriers they had experienced, in order of ranked importance. Ranked importance ranged from 1 (biggest barrier) to 3 (smallest barrier to coaches' use of sport psychology). The rationale behind such analysis was to provide insights not only in relation to what the current barriers in the athletic context were, but additionally to organise and arrange the barriers so that those working with coaches' could categorise and subsequently prioritise coaches' barriers as, to date, such identification and categorisation has not been undertaken.

Participants were asked to provide up to three barriers in ranked order from that which poses the biggest to smallest barrier. These were then placed under the heading of intra, inter and structural according to Axtell *et als* (2000) framing. Table 11.1 shows the three categories of barriers along with the number of times coaches mentioned the barrier as the biggest through to smallest level of ranked importance. Finally, the total number of times each barrier was mentioned was reported and therefore the analysis was of the responses rather than respondents.

The distributions of response across three categories of barriers are displayed in Table 11.1. It was observed that the interpersonal category held the highest number of responses across all three levels of ranked importance ( $n=91$ ). This indicates that those factors relating to social interactions between coaches and others produced the largest number of barriers for participants. Additionally, the interpersonal barrier of athletes' negative attitude ( $n=26$ ) was the largest single response item, closely followed by the

structural barrier of time ( $n=25$ ). In terms of the number of items raised by coaches within each category, intrapersonal barriers generated the greatest number ( $n=9$ ), with structural barriers ( $n=6$ ) generating the least. Overall, 195 individual responses pertaining to barriers were noted in comparison to 64 responses from coaches' stating they had no barriers and four coaches' noting that they had never tried it (which in itself was a change in response from the previous section).

**Table 11.1:** Classification of Respondents' Barriers to Sport Psychology

Category and barrier	Ranked importance						Total	
	No.	%	No.	%	No.	%	No.	%
<b>INTRAPERSONAL BARRIERS</b>								
Habit of not using sport psychology	3	8.5	0	00.0	0	00.0	3	6.3
Lack of knowledge	14	40.0	1	16.6	2	33.3	17	36.1
Other priorities	0	00.0	0	00.0	1	16.6	1	2.1
Lack of understanding	6	17.1	2	33.3	1	16.6	9	19.1
Lack of confidence in using sport psychology	5	14.2	1	16.6	1	16.6	7	14.8
Sport psychology is only for elite athletes	1	2.8	0	00.0	0	00.0	1	2.1
Fear of the unknown	0	00.0	2	33.3	0	00.0	2	4.2
Subjectivity of the subject	0	00.0	0	00.0	1	16.6	1	2.1
<b>Total</b>	<b>35</b>	<b>100</b>	<b>6</b>	<b>100</b>	<b>6</b>	<b>100</b>	<b>47</b>	<b>100</b>
<b>INTERPERSONAL BARRIERS</b>								
Athletes' negative attitudes	26	48.1	12	52.1	5	35.7	43	47.2
Athletes' age	6	11.1	2	8.6	0	0.0	8	8.7
Senior coach	2	3.7	0	00.0	1	7.1	3	3.2
Other coaches'	4	7.4	2	8.6	3	21.4	9	9.8
Parents	3	5.5	4	17.3	4	28.5	11	12.0
Other people	2	3.7	1	4.3	0	00.0	3	3.2
Athletes' understanding of sport psychology	10	18.5	2	8.6	1	7.1	13	14.2
Relationship of trust	1	1.8	0	00.0	0	00.0	1	1.0
<b>Total</b>	<b>54</b>	<b>100</b>	<b>23</b>	<b>100</b>	<b>14</b>	<b>100</b>	<b>91</b>	<b>100</b>
<b>STRUCTURAL BARRIERS</b>								
Time	25	78.2	3	30.0	3	21.4	31	54.3
Cost	1	3.1	1	10.0	0	00.0	2	3.5
Access	3	9.3	1	10.0	3	21.4	7	12.2
Support and Resources	0	00.0	3	30.0	6	5.2	9	15.7
National Governing Body	2	6.2	1	10.0	0	00.0	3	5.2
Group Size	1	3.1	1	10.0	2	14.2	4	7.0
<b>Total</b>	<b>32</b>	<b>100</b>	<b>10</b>	<b>100</b>	<b>14</b>	<b>100</b>	<b>57</b>	<b>100</b>

This form of identification and categorisation process could offer those delivering sport psychology insights into the type and intensity of barrier (ranked importance) which may need to be addressed prior to embarking upon any intervention programme. This could increase the likelihood of success as, to date, such attempts have not been made and so whilst generic barriers to sport psychology have been identified, this mode of presentation extends current knowledge.

### 11.3 OVERCOMING THE BARRIERS

Within the Diffusion of Innovations literature, Tutore *et al* (2013) discussed the need to overcome the barriers associated with an innovation as they can slow the rate of adoption. According to Crawford and Godbey (1987), this action transforms barriers into constraints thus making them negotiable. Hence, to understand the factors associated with successful negotiation of previously identified barriers (in Table 11.1) respondents were asked a series of questions regarding their motivations, cognitions and behaviours surrounding barriers. Such lines of enquiry provided a pattern for overcoming barriers and those factors which caused rigidity in cognitions surrounding barriers along with those which assisted the negotiation of constraints.

Table 11.2 revealed coaches had a relatively even spread of responses across their desire for help to overcome the barriers they faced with the exception of ‘no’ they don’t want help which was the lowest category of response ( $n=12$ , 8.1%). Only 4 percentage points separated ‘yes’, the largest single category of response and ‘don’t know’ and ‘don’t have any barriers’. Such information suggests coaches were uncertain of their desired level of help. Such indecision was also apparent in relation to whether coaches’ had previously overcome barriers with 41.5% ( $n=55$ ) answering ‘don’t know’. Thus overall, in relation to translating barriers into constraints which coaches’ could negotiate appeared to display mixed results. This, in line with the thoughts of Axtell (2000), could be down to individual characteristics as they help determine human motivations. Hence, there was a need to explore the individual characteristics which shaped coaches’ motivation, cognitions and behaviours surrounding the barriers of sport psychology.

**Table 11.2.** Measures for Overcoming the Barriers facing Sport Psychology (Frequencies)

	No.	%
<b>Are you motivated to overcome the barriers to sport psychology?</b>		
Yes	48	32.2
No	12	8.1
Don't Know	42	28.2
Don't have any barriers	47	31.5
<b>Total</b>	<b>149</b>	<b>100.0</b>
<b>Would you like help to overcome the barriers you face?</b>		
Yes	48	32.2
No	12	8.1
Don't Know	42	28.2
Don't have any barriers	47	31.5
<b>Total</b>	<b>149</b>	<b>100.0</b>
<b>Have you successfully overcome any barriers to use sport psychology?</b>		
Yes	46	34.8
No	31	23.5
Don't Know	55	41.7
<b>Total</b>	<b>132</b>	<b>100.0</b>

In relation to motivation, to overcome the barriers results revealed 20% of cells had violated the assumptions of the Chi-Square Test for Independence and so tables were not displayed. Additionally, results relating to whether coaches had successfully overcome barriers showed that 12.5% of cells violated assumptions of the tests and thus results were not displayed. However, results relating to whether coaches' would like help in overcoming their barriers associated with sport psychology were reported in Tables 11.3a and 11.3b. The first of the two foci of analysis revealed no significant difference between participation and performance coaches' desire to gain help in overcoming the barriers associated with sport psychology. Thus, the null hypothesis was not rejected.

The final foci of analysis (sport education,  $p=.705$ ) revealed no statistically significant differences between coaches' responses therefore failing to reject the null hypothesis.

**Table 11.3:** Overcoming Constraints**Table 11.3a:** Characteristic of the Coach and Help to Overcome Constraints

Sport education	No.	Mean	Median	Mean Rank	U	Z	P	r
Help to overcome constraints								
Yes	46	1.32	1.00	64.40				
No	85	2.07	2.00	66.86				
Total	158	2.49	2.00		1881.5	-.379	.705	

**Table 11.3b:** Characteristic of the Coach and Help to Overcome Constraints

Type of coach	No.	Mean	Median	Mean Rank	U	Z	P	r
Help to overcome constraints								
Participation	34	2.57	3.00	72.44				
Performance	98	2.46	2.00	64.44				
Total	132	2.49	2.00		1464.0	-1.125	.260	

## 11.4 PERCEIVED ATTRIBUTES OF SPORT PSYCHOLOGY AS AN INNOVATION

### 11.4.1 Facilitating the Process of Diffusion

With regards to the perceived attribute, as demonstrated in section 2.3.2 (Chapter 2), typically they are discussed as elements of the Diffusion of Innovations within their own right and thus separated from discussions of the Innovation-Decision Process. However, Rogers' (1995) theoretical framework for the Innovation-Decision Process (discussed in Chapter 2, section 2.4.3.3) depicted the perceived attributes as influential variables on the formation of attitudes and therefore placed them beneath the persuasion stage. However, the work of Tutore *et al* (2013) commented that the perceived attributes can provide insights into not only the attributes of the innovation, but also those of the potential user. Alternatively, Ellsworth (2000) suggested that perceived attributes can assist in the identification of barriers but more so, how to manipulate these attributes to better facilitate the rate of adoption. Thus, in line with

the work of Holloway (1975), and more recently, Butkeviciene *et al* (2008), the perceived attributes were examined to distinguish if differences in attitude, relating to the perceived attributes constituted a constraint or facilitator to the diffusion and adoption of sport psychology.

#### ***11.4.1.1 Relative Advantage***

As the first perceived attribute of an innovation, relative advantage (as described in Chapter 2, section 2.3.2.1), was concerned with whether the new innovation was perceived to be a superior alternative to existing options. Hence, of particular interest was the opportunity to gain deeper understandings of the extent to which coaches felt that sport psychology was a viable option in their coaching practice. Investigations were thus expected to, firstly provide an understanding of those perceptions which facilitated coaches' use of sport psychology and, secondly, to determine whether coaches perceived there to be a viable alternative to that of sport psychology. To achieve this, two foci of analysis were used. Firstly, on a Likert scale (where one represented totally disagree and five totally agree), coaches' were asked to state the extent to which they agreed with the statement 'sport psychology takes time away from more important areas'. Secondly, a bi-polar semantic differential scale (where one was worthless and seven valuable and four being the mid-point) coaches had to complete the statement 'to me sport psychology is' in order to ascertain their cognitions surrounding the placement of the subject. Finally, the bi-polar semantic differential scale was also used to examine coaches' perceptions of the desirability of sport psychology (where one was undesirable and seven represented desirable with a mid-point of four). It was hypothesised that individual characteristics of coaches would lead to differences in their beliefs surrounding the statements.

As indicated in Tables 11.4a and 11.4b, the Mann-Whitney U Tests revealed that the null hypothesis was not rejected in relation to either foci of analysis (type of coach,  $p=.362$  or educational background,  $p=.197$ ), as no statistically significant differences between any of the related sub-groups and their belief whether sport psychology took time away from other areas. Therefore, no matter the coaches' individual characteristics, respondents 'disagreed' with the statement. This was a positive result

for the diffusion and adoption of sport psychology as interpretations indicated that the use of sport psychology was not at the cost of other areas of training.

As coaches within Phase one (Chapter 4, section 4.6) reported sport psychology was just one aspect of the jigsaw, whether or not sport psychology takes time away from others facets of training and thus, coaches' perceived worth of sport psychology was subsequently analysed. Coaches were asked on a scale of 1 (totally agree) to 5 (totally disagree). Tables 11.4a and 11.4b indicate that for both of the foci of analysis the null hypothesis is not rejected. With regards to both type of coach and educational background no significant differences were noted. Specifically, participation coaches were no different to performance coaches as reportedly disagreed that sport psychology took time away from other areas of coaching.

**Table 11.4:** Relative Advantage

**Table 11.4a:** Characteristics of the Coach and Relative Advantage

Type of coach	No.	Mean	Median	Mean Rank	U	Z	P	R
Sport psychology takes time away from more important areas of training								
Participation	40	2.40	2.00	82.83				
Performance	114	2.26	2.00	75.63				
Total	154	2.30	2.00		2067.0	-.911	.362	

Likewise, those with an educational background in sport did not differ in their beliefs surrounding the worth of sport psychology. As a combined sample with an average median of five, coaches' reported to hold somewhat positive perceptions regarding the worth of sport psychology as results were above the mid-point of four.

**Table 11.4b:** Educational Background and Relative Advantage

Sport based education	No.	Mean	Median	Mean Rank	U	Z	P	R
Sport psychology takes time away from more important areas of training								
Yes	102	2.33	2.00	77.13				
No	50	2.26	2.00	75.21				
Total	152	2.31	2.00		485.5	-.033	.197	

As shown on Tables 11.5a and 11.5b, the two variables (type of coach and educational background) revealed no significant differences and therefore did not reject the null hypothesis.

**Table 11.5:** Worth of Sport Psychology

**Table 11.5a:** Type of Coach and Perception regarding the Worth of Sport Psychology

Type of coach	No.	Mean	Median	Mean Rank	U	Z	P	R
To me sport psychology is worthless								
Participation	40	5.73	6.00	68.74				
Performance	111	5.99	6.00	78.62				
Total	151	5.92	6.00		1929.5	-1.289	.197	

**Table 11.5b:** Educational Background and Perception regarding the Worth of Sport Psychology

Sport based education	No.	Mean	Median	Mean Rank	U	Z	P	R
To me sport psychology is worthless								
Yes	50	6.16	6.50	82.91				
No	99	5.79	6.00	71.01				
Total	149	5.91	6.00		2079.5	-1.672	.095	

No statistically significant differences were found between the beliefs of either participation and performance coaches regarding the desirability of sport psychology in either Tables 11.6a or 11.6b (below).

**Table 11.6:** Desirability of Sport Psychology

**Table 11.6a:** Coaches Perception regarding the Desirability of Sport Psychology

Type of coach	No.	Mean	Median	Mean Rank	U	Z	P	r
To me sport psychology is undesirable								
Participation	40	5.73	6.00	66.80				
Performance	111	5.99	6.00	79.32				
Total	151	5.92	6.00		1852.0	-1.611	.107	

Neither were any differences revealed those coaches with an educational background in sport and those without. Overall, however coaches consistently reported a median of five thus indicating towards a belief that sport psychology was somewhat desirable.

**Table 11.6b:** Coaches Perception regarding the Desirability of Sport Psychology

Sport based education	No.	Mean	Median	Mean Rank	U	Z	P	r
To me sport psychology is undesirable								
Yes	51	5.63	6.00	77.15				
No	98	5.64	6.00	73.88				
Total	149	5.64	6.00		2389.5	-.455	.649	

In summary, perceptions regarding the relative advantage of sport psychology, showed that coaches were united in their beliefs surrounding the placement of sport psychology within coaching practices.

#### **11.4.1.2 Compatibility**

The literature review unearthed the notion that uncertainty surrounding innovations caused a reduction in uptake which ultimately caused barriers. Thus, ensuring compatibility with potential users existing values and beliefs increases the likelihood of widespread diffusion and adoption. As a result, of importance is the exploration of the variables which influence, either positively or negatively, coaches' compatibility with sport psychology. Three constructs were used to examine coaches' perceived congruence between sport psychology and their personal circumstances. Utilising the work of Blinde and Tierney (1990), from an intrapersonal stance, compatibility with coaches' own philosophy and practice was examined using a Likert scale (one = totally disagree and five = totally agree). Secondly, the interpersonal connection between the coaches' perception and the athletes' age was analysed. Based upon the work of Addis and Mahalik (2003) coaches had to indicate the degree to which they agreed with the statement 'my athletes' are not the right age to benefit from sport psychology'. Finally, to address the controversies of knowledge transfer (discussed in Chapter 2, section 2.1) a bi-polar semantic scale was used to ascertain if coaches' perceived whether 'sport psychology is hard to fit into my coaching'. Based on the previous literature it was

hypothesised that the coaches' attitude surrounding the compatibility of sport psychology with their personal practices would depend on their individual characteristics due to differing levels of previous interactions with the subject.

The frequencies of answers in Tables 11.7a and 11.7b (below), evidenced consistent responses regarding the complexity of sport psychology. The Likert scale responses only varied between 'disagree' and 'totally disagree' thus indicating that sport psychology could be of use to their athletes. To ascertain if these differences were due to individual characteristics three Mann-Whitney U Tests were performed.

**Table 11.7:** Compatibility with Existing Athletes'

**Table 11.7a:** Coach Characteristics and Athletes' Age Advantage

Type of coach	No.	Mean	Median	Mean Rank	U	Z	P	R
My athletes are not the right age to benefit from sport psychology								
Participation	41	2.37	2.00	90.57				
Performance	115	1.95	1.00	74.20				
Total	156	2.06	2.00		1862.5	-2.127	.033	.08

With regards to type of coach ( $p=.033$ ), results showed (Table 11.7a) that performance coaches were more likely to totally disagree that their athletes were not at the right age to benefit from sport psychology. Participation coaches in comparison tended to disagree thus showing a difference in the strength of their opinion. Thus, a significant difference between the subgroups relating to type of coach and interpersonal compatibility was evident resulting in the null hypothesis being rejected.

In comparison, Table 11.7b evidenced no significant difference between coaches who held a sport education qualification and those who did not. Due to this lack of variation between subgroups the null hypothesis was not rejected. Overall the coaches revealed that 'they disagreed that their athletes' were not the right age which gave new insights into coaches' cognitions surrounding sport psychology and athletes' ability to make use of the subject in relation to their age.

**Table 11.7b:** Educational Background and Athletes' Age Advantage

Type of coach	No.	Mean	Median	Mean Rank	U	Z	P	R
My athletes are not the right age to benefit from sport psychology								
Yes	51	1.82	1.00	70.60				
No	103	2.16	2.00	80.92				
Total	154	2.31	2.00		2274.5	-1.442	.149	

With regards to the second construct pertaining to compatibility, Table 11.8a evidenced the rejection of the null hypothesis. Significant differences were found between participation and performance coaches' opinion that sport psychology was hard to fit into coaching.

**Table 11.8:** Compatibility with Existing Practice (Hard to fit in)**Table 11.8a:** Coaches Perception regarding the Difficulty to Fit Sport Psychology into Coaching

Type of coach	No.	Mean	Median	Mean Rank	U	Z	P	r
To me sport psychology is hard to fit into coaching								
Participation	39	4.23	4.00	63.49				
Performance	111	4.75	5.00	79.72				
Total	150	4.61	5.00		1696.0	-2.044	<b>.041</b>	

Table 11.8b however, indicated that there was no significant difference between those respondents with a sport based educational qualification and those without and their opinion that sport psychology was not hard to fit into their coaching. Thus the null hypothesis was not rejected and so no inferences could be made.

**Table 11.8b:** Coaches Perception regarding the Difficulty to Fit Sport Psychology into Coaching

Sport based education	No.	Mean	Median	Mean Rank	U	Z	P	r
To me sport psychology is hard to fit into coaching								
Yes	50	4.72	5.00	77.68				
No	98	4.57	4.00	72.88				
Total	148	4.62	5.00		2291.0	-.656	.512	

### 11.4.1.3 Complexity

Often thought to concern both understanding and implementation of an innovation, complexity related to how hard potential adopters perceived the innovation was to understand and use (as identified in Chapter 2, section 2.3.2.3). Rogers (2003) suggested this attribute be measured on a simple to complex continuum. Additionally, to elicit more meaningful information, this attribute was additionally measured on a 5 point Likert scale which revealed overall a neutral response to the perceived complexity of sport psychology. Specifically, the largest single group was that of neutral with 26% of the responses. However, the positive end of the scale (totally agree and agree combined) equated to 39.1% with the negative responses (totally disagree and disagree) amalgamating to 38.5%, therefore revealing a spread in perceptions regarding the complexity of sport psychology. In order to ascertain whether coaches' individual differences accounted for this relatively even spread of results coaches' responses, a number of null hypotheses were tested.

The two foci of analysis presented in Tables 11.9a and 11.9b showed the null hypotheses were not rejected. Specifically, in relation to type of coach ( $p=.123$ ) participation coaches were not significantly different to performance coaches in their perception of the complexity of sport psychology.

Further, there was no statistically significant difference between coaches with a sport based education qualification and those without and their perception of the complexity of sport psychology ( $p=.786$ ).

**Table 11.9:** Complexity of Sport Psychology

<b>Table 11.9a:</b> Coaches' Perception regarding the Complexity of Sport Psychology								
Type of coach	No.	Mean	Median	Mean Rank	U	Z	P	r
To me sport psychology is complex								
Participation	38	5.30	6.00	65.89				
Performance	111	5.77	6.00	78.12				
Total	149	5.65	6.00		1763.0	-1.541	.123	

**Table 11.9b:** Coaches' Perception regarding the Complexity of Sport Psychology

Education background	No.	Mean	Median	Mean Rank	U	Z	P	r
To me sport psychology is complex								
Yes	50	3.30	3.00	75.15				
No	98	3.36	3.00	73.19				
Total	148	3.34	3.00		2384.5	-.272	.786	

A further area of study associated with complexity was not about the subject as a whole but more so whether its associated techniques were perceived as being difficult to learn. To this end, Table 11.10a showed that type of coach was not statistically significant and therefore there was no reason to reject the null hypothesis. Therefore no differences between performance and participation coaches' and their perception of how hard it was to learn the theory and techniques associated with sport psychology were found.

**Table 11.10:** Complexity of Learning Sport Psychology

<b>Table 11.10a:</b> Coaches Perception of Sport Psychology being Hard to Learn								
Type of coach	No.	Mean	Median	Mean Rank	U	Z	P	r
To me sport psychology is hard to learn								
Participation	38	4.00	4.00	68.47				
Performance	111	4.26	4.00	77.23				
Total	149	4.19	4.00		1861.0	-1.111	.266	

Contrary to type of coach, Table 11.10b indicated that sport education qualification ( $p=.002$ ) rejected the null hypothesis. Initially, the results show that coaches with a sport education qualification found sport psychology easier to learn thus revealing a significant difference between subgroups. Of importance was that whilst those with a sport based education found it easier to learn, they were in the minority. Thus, those teaching coaches how to use sport psychology could use such results to target particular subgroups in order to up-skill coaches' and teach them differently to those with existing experience. This could potentially change the way in which sport psychology is delivered.

**Table 11.10b:** Coaches Perception of Sport Psychology being Hard to Learn

Sport based education	No.	Mean	Median	Mean Rank	U	Z	P	r
	To me sport psychology is hard to learn							
Yes	49	4.65	5.00	77.15				
No	99	3.97	4.00	89.72				
Total	148	4.20	4.00		1679.5	-3.126	<b>.002</b>	

Overall, the results showed that the majority of coaches' were somewhat undecided as to whether sport psychology was easy to learn. Medians showed that responses sat across the mid-point of four with some coaches falling on the 'hard to learn' end of the semantic scale. Such results have value to those delivering sessions pertaining to sport psychology as consideration of the difficulty level of material which is to be transferred is required.

#### **11.4.1.4 Trialability**

As depicted in section 2.3.2.4 (Chapter 2), trialability concerned the extent to which the potential user could experiment with the innovation (Rogers 2003). Past research (Patogo *et al* 2007; Rogers *et al* 2005) concluded the more potential users could grasp how the innovation would work in their environment the more likely they were to overcome the lack of triability. To extend current understanding of the perceived attributes, and specifically the trailability of sport psychology in athletics, based on the

work of Blinde and Tierney (1990), two constructs of analysis were utilised (required guidance and ease of use).

Descriptive analysis revealed that 46.4% of respondents (the largest single response category) reported ‘they would like more guidance on how to implement sport psychology into their coaching’ (Table 11.11). Furthermore, that percentage point increased to 76.9% of respondents when the ‘totally agree’ and ‘agree’ response categories were combined. With regards to how easy sport psychology was to use, the bi-polar semantic scale was reversed in order to ensure participant engagement with the questions, thus one denoted ‘easy to use’ whilst seven represented ‘hard to use’.

**Table 11.11:** Guidance on the Trialability of Sport Psychology

<b>Table 11.11a:</b> Characteristics of the Coach and Trialability.								
Type of coach	No.	Mean	Median	Mean Rank	U	Z	P	r
More guidance on how to implement sport psychology is needed								
Participation	38	4.21	4.50	79.53				
Performance	113	4.05	4.00	74.81				
Total	151	4.09	4.00		-.616	.538	<b>0.02</b>	

Table 11.11a showed a significant difference between participation and performance coaches’ ( $p=.002$ ) need for more guidance on how to implement sport psychology. Specifically, participation coaches’ reported needing more guidance than performance coaches’ and thus the null hypothesis was rejected. Such information is of importance to those looking to facilitate the behavioural uptake of sport psychology as considering the type of support provided in the trialling of sport psychology could have long term implications.

Bearing in mind that those who had experienced mediated forms of knowledge transfer would have had the opportunity to gain knowledge, ask questions and test ideas, differences were expected in relation to coaches’ professional background (Table 4.36b above). Yet the results did not elicit significantly different responses as the null hypothesis was not rejected.

**Table 11.11b:** Coach Characteristics and Trialibility of Sport Psychology

Sport based education	No.	Mean	Median	Mean Rank	U	Z	P	r
More guidance on how to implement sport psychology is needed								
Yes	51	4.10	5.00	76.63				
No	99	4.12	4.00	74.92				
Total	150	4.10	4.00		2467	-.245	.086	

Table 11.12a (below) indicated that the null hypothesis was not rejected which meant there were no significant differences between performance and participation coaches and ease of use.

**Table 11.12:** Trialibility and Ease of Use

<b>Table 11.12a:</b> Coaches Perception regarding how easy Sport Psychology is to Use								
Type of coach	No.	Mean	Median	Mean Rank	U	Z	P	r
To me sport psychology is easy to use								
Participation	40	3.53	4.00	77.08				
Performance	112	3.53	4.00	76.29				
Total	152	3.53	4.00		2217.0	-.099	.921	

<b>Table 11.12b:</b> Coaches Perception regarding how easy Sport Psychology is to Use								
Sport based education	No.	Mean	Median	Mean Rank	U	Z	P	r
To me sport psychology is easy to use								
Yes	51	3.20	3.00	64.48				
No	99	3.71	4.00	81.18				
Total	150	3.53	4.00		1962.5	-2.301	<b>.021</b>	

Table 11.12b showed significant differences between subgroups and therefore rejected the null hypothesis. Sport education qualification showed that those with an educational qualification were more likely to believe sport psychology was easy to use in comparison to those without a qualification.

### 11.4.1.5 Observability

Reported in section 2.3.2.5 (Chapter 2) as the degree to which an innovation could be seen by others, a lack of visibility was reported by Biddle (1989) to inhibit the uptake of sport psychology. Furthermore, observability was thought to consist of two elements; hardware (i.e. a mobile phone), which was the seen component of the innovation with the supporting software being the second component which in contrast was not so easily visible and consequently was thought to slow the process of adoption. Of importance therefore was the notion that sport psychology is software dominant and thus harder to witness, which can lead to misconceptions and subsequent barriers surrounding the subject. Rogers' (2003) reported the need for the innovation to be approved by others in order to increase the diffusion and adoption of sport psychology. Therefore, on a Likert scale of one (approved) to seven (not approved) respondents were asked to indicate the extent to which they believed sport psychology was approved by their peers.

**Table 11.13:** Observability; Peer Approval

<b>Table 11.13a:</b> Coaches Perception regarding Peer Approval of Sport Psychology Advantage								
Type of coach	No.	Mean	Median	Mean Rank	U	Z	P	r
To me sport psychology is approved by peers								
Participation	38	3.32	4.00	73.08				
Performance	111	3.44	4.00	75.66				
Total	149	3.41	4.00		2036.0	-.330	.742	

Displayed in Tables 11.13a and 11.13b, neither 'type of coach' or coaches' 'educational background' revealed a significant difference between the two sets of subgroups and thus the null hypothesis was not rejected. Whilst inferences could not be made overall coaches' responses were consistent in their belief that the subject was somewhat not approved.

Overall, these results indicated that those coaches who used sport psychology had the perception that others around them approved, whilst those who did not use it perceived

others would not approve. Thus implies, that the opinion of others (whether they be positive or negative) influenced coaches' behaviours.

**Table 11.13b:** Coaches Perception regarding Peer Approval of Sport Psychology

Sport based education	No.	Mean	Median	Mean Rank	U	Z	P	r
To me sport psychology is approved by peers								
Yes	51	3.45	4.00	72.98				
No	96	3.33	4.00	75.91				
Total	147	3.37	4.00		2291.0	-.656	.512	

## 11.5 FACILITATORS FOR ADOPTION AND DIFFUSION

### 11.5.1 Driving Forces for Consideration

The work of Brzycki and Dudt (2005) proposed that facilitators were those processes and mechanisms which brought about change and moreover, that to do so, they had a requirement to offer multiple forms of support and incentives, which were inherent to the desired outcomes. Thus, the driving force behind any facilitator utilised should be the aspiration to ease persistent barriers through congruent and skilled processes (Wales *et al* 2013). Hence, despite the clear understanding pertaining to the outcome that successful facilitation can lead to long lasting implementation, Wales *et al* (2013) found that facilitation strategies were poorly articulated due to what Messmann and Mulder (2013) noted as being a lack of consideration of the characteristics of not only individuals but moreover the context in which they operated. He thus called for closer engagement with potential end users which could minimise the gap between research and practice.

#### 11.5.1.1 Culturally Sensitive Facilitators of Sport Psychology

Wales *et al* (2013) put forward that to produce sustainable, systematic change, interconnected relationships must be articulated if an amalgamation of knowledge and skills was to be achieved. Furthermore, when skilfully facilitated, the innovation had a

greater chance of knowledge transfer (exchange of information from research to practice). As a consequence, respondents were required to select the delivery person (used as an all-encompassing term) they felt should deliver sport psychology information. For each of the five possible answers coaches' were required to indicate whether or not they felt they were a suitable candidate for the delivery of sport psychology information. Results in Table 11.14 show the responses of 152 participants.

**Table 11.14:** Culturally Sensitive Facilitators of Sport Psychology

Delivery person	N	%
Sport psychologist	78	48.8
Coaches	34	21.3
Regulatory body for psychology	66	41.3
NGB	60	37.5
Other	12	7.5

Table 11.14 shows the largest response item as being that of the sport psychologist, indicating coaches' believed they should be delivering materials related to the subject. However, despite being the largest single response it only equated to just fewer than 50% of responses. Therefore, over 50% of responses were spread across four other possible categories. Interestingly, 41.3% ( $n=66$ ) of coaches' reported that a regulatory body for sport psychology should deliver sessions yet over 50% were unable to name such a body. Moreover, over 50% of coaches' reported that the NGBs do not provide enough information on the subject of sport psychology. Thus, results revealed a degree of confusion and discourse between responses.

Tables 11.15a and 11.15b show that the null hypothesis was not rejected and therefore there is no statistical difference between coaches individual characteristics and coaches belief that sport psychologists should deliver sport psychology.

This indicates consistency in opinions and desires across respondents as the coaches were relatively even in their responses across the categories. Thus, practically, this suggests coaches are somewhat open to others delivering information therefore

widening the scope of possibilities. But this also calls into question whether the role of the sport psychologist is fully understood or appreciated as a specialised discipline.

**Table 11.15:** Delivery of Information

**Table 11.15a:** Characteristic of the Coach and Delivery of Information

Should sport psychologists be delivering information	Type of coach					
	Participation		Performance		Total	
	No	%	No	%	No	%
Yes	20	52.6	58	50.9	78	51.3
No	18	47.4	56	49.1	74	48.7
Total	38	100.0	114	100.0	152	100.0

Test statistics – Chi Sq – Value:	df:	p:
continuity correction .000	1	1.000

**Table 11.15b:** Educational Background and Delivery of Information

Should sport psychologists be delivering information	Sport education					
	Yes		No		Total	
	No	%	No	%	No	%
Yes	26	51.0	52	52.0	78	51.7
No	25	49.0	48	48.0	73	48.3
Total	51	100.0	100	100.0	151	100.0

Test statistics – Chi Sq – Value:	df:	p:
continuity correction .000	1	1.000

### 11.5.1.2 Preferred Context for Receiving of Sport Psychology

In consideration of those factors which could aid the facilitation of an innovation, Wales *et al* (2013) suggested that contextual factors must be examined if positive experiences were to be attained. Further, the nature of the group, its dynamics and specifically the creation of an environment of trust, required careful consideration in order to override barriers and successfully manage the transfer of knowledge to recipients. Measures for ascertaining coaches' preferred context for the receiving of information relating to sport psychology were performed. Participants were presented with eight possible environments in which they could receive sport psychology related

information. The 156 respondents were asked to report yes or no for each context in order to ascertain the preferred context for receiving of sport psychology as shown in Table 11.16.

**Table 11.16.** Preferred Context for Receiving Sport Psychology Information

Context	Response	
	Frequency	%
Workshop	130	81.3
Mentoring schemes	87	54.4
Internet	76	47.5
Conference	67	41.9
NGB courses	64	40.0
Squad days	60	37.5
Books/magazines	43	26.9
Other	14	8.8

Of the possible contexts provided, respondents were able to select more than one response in order to gain fuller insights into coaches' subjective reality of through which communication channel(s) they preferred to receive information. Table 11.16 revealed the workshop environment ( $n=130$ , 81.3%) as being the preferred context, whilst books/magazines ( $n=43$ , 26.9%) was the least preferred. Only two channels of communication yielded results of over 50% thus indicating that coaches were open to a wide range of possible mediums through which to receive information but preferred that of workshops and mentoring. This differentiation in preference between those channels with and without interaction is of importance for those responsible for organising the dissemination of information if widespread diffusion and adoption were to occur. Furthermore, these results could offer new information relating to coaches' desired mechanisms for receiving information which previously had received little attention.

Tables 11.17a and 11.17b revealed the two foci of analysis (coach characteristic  $p=.173$  and educational background in sport  $p=.851$ ) showed no significant difference in the preference of how they would like to receive sport psychology related information at a workshop. Therefore, the null hypothesis was not rejected as the results indicated consistency in coach preference. Such information reveals the ideal

situation in which to deliver information in order to better fulfil the coaches desires which in turn could increase the diffusion of sport psychology by providing a more suitable environment for coaches.

**Table 11.17:** Coach Profile and Preferred Context for Receiving Sport Psychology

<b>Table 11.17a:</b> Coach Characteristics and Preferred Context for Receiving Information						
Workshop-preferred context for receiving sport psychology	Type of coach					
	Participation		Performance		Total	
	No	%	No	%	No	%
Yes	13	32.5	54	46.4	67	42.9
No	27	67.5	62	53.4	89	57.1
Total	40	100.0	116	100.0	156	100.0
Test statistics – Chi Sq – Value: df: p:						
continuity correction 1.858 1 .173						

**Table 11.17b:** Educational Background and Preferred Context for Receiving Information

Workshop-preferred context for receiving sport psychology	Sport education					
	Yes		No		Total	
	No	%	No	%	No	%
Yes	21	41.2	46	44.2	67	43.2
No	30	58.8	58	55.8	88	56.8
Total	51	100.0	104	100.0	151	100.0
Test statistics – Chi Sq Value: df: p:						
– continuity correction .035 1 .851						

### ***11.5.1.3. Desired Point in the Season for Receiving Sport Psychology Information***

Analysis of the current literature base failed to unearth literature surrounding whether the point in time information was received by potential adopters influenced the subsequent diffusion and adoption of sport psychology. As a result, due to the expanse of disciplines under the umbrella term of athletics and the variation in competitive seasons, the desired point in the season coaches' wanted to receive sport psychology information was investigated under the premise of temporal factors related to the facilitation of information. Such information could enable a more effective schedule of targeted interventions so that the right information could be shared at pertinent points

in the year. The athletics season was broken down into sections and the 156 respondents were required to indicate at what point they desired to receive information regarding sport psychology (coaches were able to select more than one answer).

**Table 11.18.** Desired Point in the Season for Receiving Sport Psychology

Point in Season	Responses	
	Frequency	%
All the time	93	58.1
During the winter	47	29.4
Beginning of track	19	11.9
End of track	15	9.4
At other time	7	4.4
End of winter	6	3.8
During the track season	5	3.1
No training at all	2	1.3

Displayed in Table 11.18, of the 156 respondents, just over half reported that they would prefer to receive information ‘all of the time’ ( $n=93$ , 58.1%) whilst 1.3% ( $n=2$ ) reported wanting ‘no training at all’. 47 (29.4%) respondents reported ‘during the winter season’ as being their preferred time for receiving information. In order to ascertain whether differences in arose between the characteristics of the coaches and wanting to receive information regarding sport psychology all the time was subjected to further analysis using the Chi-Square Test for Independence as shown in Tables 11.19a and 11.19b.

**Table 11.19:** Coach Profile and Desired Point in the Season for Receiving Sport Psychology

**Table 11.19a:** Characteristic of the Coach and Receive Sport Psychology All The Time

Receive sport psychology all the time	Type of coach					
	Participation		Performance		Total	
	No	%	No	%	No	%
Yes	24	58.5	69	60.0	93	59.6
No	17	41.5	46	40.0	63	40.4
Total	41	100.0	115	100.0	156	100.0

Test statistics – Chi Sq – continuity correction	Value: .000	df: 1	p: 1.000
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**Table 11.19b:** Educational Background and Receive Sport Psychology All The Time

Receive sport psychology all the time	Sport education		No		Total	
	Yes	No	No	%	No.	%
Yes	34	68.0	57	54.8	91	59.1
No	16	32.0	47	45.2	63	40.9
Total	50	100.0	104	100.0	154	100.0
Test statistics – Chi Sq – continuity correction	Value: 1.916	df: 1	p: .166			

Results showed (Tables 11.19a and 11.19b) no significant differences between either coach characteristic ( $p=1.000$ ) or educational background in sport ( $p=.166$ ) and their preference to receive sport psychology throughout the year. The null hypothesis was thus not rejected showing once again consistency in when coaches would like to have access to information. Such consistency is important to the dissemination of information as it indicates individual differences do not determine the need to differentiate in the timing of information. In addition, wanting information ‘all of the time’ supported the notion that coaches wanted information on tap in a timely manner to deal with trigger factors as they arose.

#### ***11.5.1.4 Environment in which Coaches would prefer to receive information regarding Sport Psychology***

Khalid *et al* (2013) reported each social system operated under a unique set of circumstances specific to its own intrinsic system thus requiring diverse activities in environments which were specific to the learning needs of potential users. Similarly, Wales *et al* (2013) portrayed the environment as a factor which could enable the individual to gain first-hand knowledge through observing, questioning and practicing techniques in a mediated environment. Therefore, clarifications of the environmental factors contributing to the facilitation of sport psychology in the athletics domain required closer examination. Participants were asked to note the environments in which they were happy to receive sport psychology related information. Multiple responses were allowed due to a lack of existing insight into the environmental desires

of coaches thus establishing the range of environments which those delivering the subject can maximise.

**Table 11.20:** Environment for Receiving Sport Psychology Information

Environment	Responses	
	N	%
Group Setting	95	59.4
Email	83	51.9
Newsletter	52	32.5
Booklet/powerpoint	47	29.4
One to One	40	15.0
Skype	9	5.6
Telephone	6	3.8
Other	6	3.8

Table 11.20 revealed the group setting ( $n=95$ , 59.4%) generated the greatest number of responses highlighting it as the preferred environment for receiving sport psychology information whilst the ‘telephone’ and ‘other’ were reported as the least preferred ( $n=6$ , 3.8%). This reveals an overall hierarchical preference for the environment in which coaches desire to receive information. Two foci of analysis were then examined in order to establish whether coach characteristics influence differences in responses.

**Table 11.21:** Group Setting as the Preferred Environment for Receiving Information

**Table 11.21a:** Coach Characteristic and Receiving Information in the Group Setting

Desire to receive sport psychology in the group setting	Type of coach					
	Participation		Performance		Total	
	No.	%	No.	%	No.	%
Yes	24	25.3	71	61.2	95	60.5
No	17	41.5	45	38.8	62	39.5
Total	41	100.0	116	100.0	157	100.
Test statistics – Chi Sq – continuity correction	Value:	df:	p:			
	0.13	1	.909			

**Table 11.21b:** Educational Background and Receiving Information in the Group Setting

Desire to receive sport psychology in the group setting	Sport education					
	Yes		No		Total	
	No	%	No	%	No	%
Yes	31	60.8	63	60.6	94	60.6
No	20	39.2	41	39.4	61	39.4
Total	51	100.0	104	100.0	155	100.0
Test statistics – Chi Sq – continuity correction	Value: .000	df: 1	p: 1.000			

Results (Table 11.21a and 11.21b) showed no significant difference within coach characteristic ( $p=.909$ ) and educational background in sport ( $p=1.000$ ) and the desire to receive sport psychology information in the group setting. Therefore, the null hypotheses were not rejected indicating that individual differences do not influence the context for receiving information. This indicates that it is not necessary to provide different learning context for coaches.

#### 11.5.1.5 Purpose for which Coaches would like Sport Psychology Information

The current study sought to address imbalances between processes and content, which Wales *et al* (2013) reported to be of importance as current facilitation strategies over emphasise the process at the expense of content. Understanding for what purpose coaches' wanted the information, according to Messmann (2013), would allow information to be tailored specifically to their needs. To establish a level of specificity in the purpose for which information is desired participants were able to select multiple responses. This would provide both breadth and depth to the purpose of information.

**Table 11.22.** Purpose for which Sport Psychology is Required

Purpose	Response	
	Frequency	%
Improve athletes' performance	134	83.8
Improve own coaching performance	122	76.3
Implementation into coaching practices	114	71.3
General background	79	49.4
Don't know	6	3.8
None	4	2.5

Table 11.22 highlights that the majority of coaches' desired sport psychology as an innovation to improve athletes' performance ( $n=134$ , 83.8%). In contrast, 'no purpose' evidenced the least number of responses thus showing that coaches' did have a desire for sport psychology. Collectively the results show that the coaches' had a desire for information that fulfilled a specific purpose. In line with the results of section 6.3.5 (Chapter 6) that information for athletes was the primal desire followed by those for the coaches' benefit, all of which pertained to over 50% of responses. Thus, preliminary results indicate that to facilitate the diffusion of sport psychology specific information will be more effective than information for general purposes as this equated to less than 50% of responses. To ascertain whether differences arise between the desire for information for the athletes purpose and coaches individual differences Chi-square Tests for Independence were undertaken. Significant differences were expected due to individual characteristics.

Importantly, these results (Tables 11.23a and 11.23b) extended the current knowledge base as they revealed all three categories that represented content holding a specific purpose (for use in coaches' own practice, to improve own coaching performance and improve athletes' performance) was the most desired. Whereas, for general background fell just under 50% ( $n=79$ ) of respondents.

**Table 11.23:** Information for the Purpose of Improving my Athlete

**Table 11.23a:** Characteristic of the Coach and Information to Improve my Athlete

Information for the purpose of Improving my athlete	Type of coach					
	Participation		Performance		Total	
	No.	%	No.	%	No.	%
Yes	34	87.2	100	87.0	134	87.0
No	5	12.8	15	13.0	20	13.0
Total	39	100.0	115	100.0	154	100.0
Test statistics – Chi Sq – continuity correction	Value: .000	df: 1	p: 1.000			

**Table 4.23b:** Educational Background and Information to Improve my Athlete

Information for the purpose of improving my athlete	Sport education					
	Yes		No		Total	
	No	%	No	%	No	%
Yes	42	85.7	91	87.5	133	86.9
No	7	14.3	13	12.5	20	13.1
Total	49	100.0	104	100.0	153	100.0
Test statistics – Chi Sq – continuity correction	Value: .002	df: 1	p: .961			

Such findings had important connotations for the facilitation of sport psychology and those delivering or targeting the delivery of sessions. The current findings suggested deliverers needed to provide focused information which fulfilled a specific purpose as this would be of greater interest to coaches than generic information.

## 11.6 SUMMARY OF QUANTITATIVE RESULTS; BARRIERS AND FACILITATORS

In summary, barriers to the diffusion and adoption of sport psychology were apparent and could be classified according to three categories (intra-person, inter-person and structural) of constraint. Moreover, when motivated, coaches' suggested barriers to be constraints thus negotiable as opposed to being ridged and absolute. New information regarding coaches' preferred method of engagement with sport psychology revealed targeted content based on contextual information such as having limited time with athletes was of greater benefit than generic information aimed at different categories of coach. Such information provided new understandings which could aid knowledge transfer of sport psychology.

## **11.7 STRAND B, QUALITATIVE RESULTS; BARRIERS AND FACILITATORS TO THE USE OF SPORT PSYCHOLOGY**

### **11.7.1 Structure and Organisation of Barriers**

Within the current study barriers materialised at each stage of Rogers (2003) Innovation-Decision Process. Due to a current lack of conceptualisation of the barriers associated with the Theory of Diffusion of Innovations, the LCM from Crawford, *et al* (1991) was therefore utilised as a potential vehicle for the organisation of barriers to sport psychology (as discussed in Chapter 2, section 2.7.1). In many instances replication of the barriers occurred in the discussions of both the Innovation-Decision Process and the LCM, thus indicating barriers and facilitators to be ingrained within the process of diffusion and adoption which to date had not been unearthed. Although studying barriers independently of the five stages caused (in places) duplication of results, they were investigated in their entirety, separately at this stage of the study (Figure 36) to better establish firstly, what barriers existed within coaches diffusion and adoption of sport psychology and secondly, to understand whether organising barriers into categories according to the LCM could help ascertain their role and impact in the overall process in order to provide a platform for negotiating such barriers.

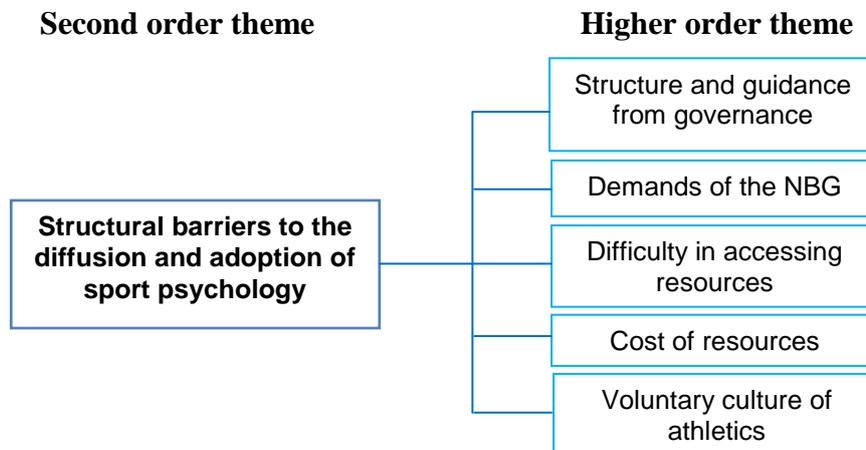
## **11.8 STRUCTURAL BARRIERS TO THE DIFFUSION AND ADOPTION OF SPORT PSYCHOLOGY**

The literature review revealed structural barriers related to any factor that occurred due to external conditions within the environment in which an individual operated (Chick and Dong 2003). Analysis of the respondents' narratives led to five higher order themes (Figure 45) which coaches both directly and indirectly suggested impeded their knowledge and use of sport psychology thus causing the inhibition of diffusion and adoption in sport psychology.

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**Figure 45.** Contributory Factors to the Structural Barriers facing Sport Psychology

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### 11.8.1 Structure and Guidance from Governance

Structure and governance was explicitly mentioned by Rudi:

*Home nations all have different set ups, in terms of Governance and structure which makes it difficult.*

This initially gave way to the first of the higher order theme as Rudi explained that each Home Country had a structure that they felt suited their country in terms of population and its distribution, combined with their allocated resources. Further analysis of narratives revealed respondents commonly referred to a lack of consistency within the structure of the sport as being a contributory factor to the lack of diffusion and adoption of sport psychology. As a performance coach with no educational background in sport, Ollie not only illustrated the issue surrounding lack of guidance when he reported that whilst he would like to use sport psychology more frequently, a lack of visibility and endorsement from UKA had led to overall, negative perceptions of the subject:

*The fact is, from UKA as a structure it's not cascaded down to the grassroots level where I coach.*

In Bill's discussion concerning guidance, whilst offering no solution to the issue, he implied that NGBs needed to achieve a balance between no guidance as mentioned by Ollie but also too much guidance as this can equally create problems:

*At the top end you've got national bodies. You can't scare the people at the bottom because you'll have no take up but you can't just let a complete free reign.*

It was this free reign of activity including that of sport psychology which was noted by Alonso as having a negative impact on his impression of the NGB:

*As far as I can see, they don't play a major part in any course that I've done, I've not really seen much evidence of it being there.*

Further to this, Beau, who has an educational background in sport, believed this lack of input from the NGB had caused an absence of sport psychology in coaches' practices:

*I think environmental factors have really been lost and actually like anything they can have such an impact upon the mind-set of the coaches.*

By way of explanation, Beau stated that sport psychology was seen as an 'add-on' instead of 'integration skills' thus, as soft skills they sat externally to coaches practices and hence something to work on once the technical aspects had been conquered. A point raised previously by the likes of Amy and Ian who both stated that for many coaches sport psychology was 'just off their radars'. Bill considered such issues to be confounded by the NGB's lack of guidance which he reported, leads to continued lack of coach awareness:

*On the negative side, I do think there is an aspect of lack of education or awareness from the top into the non-aware coaches.*

The quotes at this stage were made across the sample, thus there was input from coaches (Bill), through to Beau, as a gate keeper. There was a common discussion of the organisation of the social system whereby there was an implied recognition of BA being at the top of the hierarchy, with the Home Nations beneath them and coaches

individual social systems at the bottom. The problem from many was that information was not getting through the layers to the people who perhaps needed it the most.

### 11.8.2 Demands of the NGB

Coaches in a position of responsibility (opinion leaders such as Noah), gate keepers like Amy stated that they were aware that provision was in place for the dissemination of information, but perceived there to be a rigid manner to which NGB's allowed individuals to engage with such opportunities thus creating barriers. These amalgamated into the higher order theme pertaining to 'demands of the NGB'. As a participation coach but also a gatekeeper Amy, who had the capacity to provide CPD opportunities for coaches reported:

*I think the stuff that England Athletics want is very heavy.*

She went on to explain that '*it's the structures they wanted*' are '*just too much*' as at some point over the weekend coaches' would '*like to see their family*'. Amy stated that the NGB's demands were perpetuated as a result of the geographical location of her area:

*The problem with England Athletics is they have minimum course numbers...we are really rural...it's difficult to fill courses.*

The problem with this she explained was:

*I think they've got a one rule all across the board and I think they need to be a little flexible.*

Such quotes evidence coaches' desire to receive information from the NGB but at present regulations restrict the number of individuals who can access the information in their prescribed format.

### 11.8.3 Difficulty Accessing Resources

Aligned with the inconsistent guidance and rigid structures, coaches additionally repeatedly reported, difficulty in accessing resources as summarised by Anya when asked if she had any barriers to using sport psychology:

*I think probably accessing appropriate resources.*

This was issue was further evident in the quote from Noah but he explain why, whereby a lack of knowledge prevented his initial discovery behaviours as he simply did not know what to access:

*Where you don't know the answers, you don't know what you're looking for.*

As can be seen from the participant characteristics, whilst inconsistency and demands were an issue for both performance and participation coaches they were however, isolated to those who used sport psychology informally and thus arguably those who had the most to gain from such information with regards to progressing their diffusion and adoption of sport psychology.

Progression with regards to coaches' difficulty in accessing resources occurred specifically within the performance coach population as demonstrated by George (who had an academic background in sport) and reported issues with accessing resources:

*I was struggling, struggling to find a psychologist.*

But his specific reference to that of a sport psychology consultant, (previously categorised as change agents), thus he evidenced knowledge beyond that spoken of by Noah (who had no educational background) previously who did not know where to look. However, less explicitly, Devon, also a performance coach, reported similar views to that of George:

*The biggest barrier is finding the right resources and making sure that the right people are involved.*

From a slightly different perspective, Amy, as a gatekeeper, commented that the NBGs structure in relation to how they divided the country for CPD opportunities meant that

due to their location coaches in rural areas fail to be informed of potentially more accessible information and thus limited her opportunities to access information:

*Because Dorset is synced with South West that there might be a workshop in Southampton but we generally don't get informed about stuff that side of the county.*

This was not an isolated occurrence as performance coach Rudi, also spoke less of his individual characteristics and, like Amy previously, noted his geographical location as an issue:

*An issue for us is accessibility. We can't go along to our local college or uni and do stuff on sports psychology, there's not a range of opportunity.*

Within the current sample, participation coaches hence had barriers associated with lack of knowledge, which inhibited their ability to find resources while alternatively, performance coaches knew what they wanted but did not know where to locate them.

#### **11.8.4 Cost of Resources**

A further second order theme was that related to the 'cost of resources' which in this instance referred to the monetary attachment associated with operating within the athletic environment as simply stated by opinion leader George, *cost is an issue*.

Both participation and performance coaches presented a united front in relation to cost as demonstrated by Amy who referred to the cost of up skilling coaches in general and stated:

*All of the money...it is just too much for people and it puts people off, it really does.*

George continued to state in more detail than Amy all the aspects of what 'all of the money' in his mind entailed and remarked that:

*It is not just the price of courses but the travel and accommodation costs the people need to save for.*

Referred to by Alonso as ‘*funding*’, he made comparisons between various barriers and indicated that many barriers could be negotiated but funding was an issue because if there was limited money available then it restricted what you could achieve:

*I have mentioned barriers as parents, teachers and funding, but the first two can be bought onside and are grateful for being consulted. Limited funding will probably limit targets and expectations.*

Thus, coaches revealed consistent definitions as to what constituted cost and its associated issues spanned across both individual characteristics (type of coach and educational background in sport). The barriers appeared to once again stem from that of NGB run courses.

### **11.8.5 Voluntary Culture of Athletics Coaches**

Deeper explorations saw a final change in direction in relation to structural barriers and gave way to the higher order theme ‘voluntary culture of athletic coaches’. Whilst Rudi reported:

*We pay 6 of our coaches’ and that’s head of endurance, head of track and field and within that a head of sprints, head of middle and senior distance.*

He also recognised that such a structure was not common within the sport:

*I think that makes us unique.*

A point which is made by Max who as an early career participation coach would like to be a full time coach at the grassroots level but stated:

*There are very few paid jobs and a lot of the paid jobs are in the top performance level of the sport in athletics.*

Similarly to Max’s inadvertent statement regarding the voluntary nature of grassroots athletics, the majority of participants in the current sample noted the voluntary nature of coaching within the athletics environment. Such insights could go some way to

explain the united barrier pertaining to that of cost. To this end, coaches further remarked that such a culture of volunteerism within the workforce brought limitations in terms of how much clubs could drive practices forward. Bill, a performance coach with an educational background in sport passed comment on the impact of such a reliance on volunteers when he stated:

*We are volunteer coaches and therefore there isn't a club structure around coaching. It's not a profit organisation so there is nothing in there (the club) that is going to drive things forward beyond the goodwill of the individuals.*

He went on to further state that this type of delivery system meant that you end up with the problem that within club areas:

*There may be a club that's not progressing (in terms of sport psychology) because they don't have either an infrastructure or a coaches' infrastructure or people with the relevant knowledge to try and progress that.*

In combination, when analysing the quotes from Bill, they highlighted the previously mentioned links between themes. Bill made a crossover with firstly, the notion of structure, although in this case in relation to that of the club, and furthermore touched upon Amy's point relating to demands and in this case, the sport making demands on individuals time which limited the amount of investment they could in turn put into their own personal growth. Amy noted this to be due to the notion that:

*People that volunteer are already really busy people, they're volunteering and they're working full time so it's really difficult.*

Consequently, the voluntary nature of the sport appeared to be a thread which underpinned a number of the barriers which impeded the widespread diffusion and adoption of sport psychology.

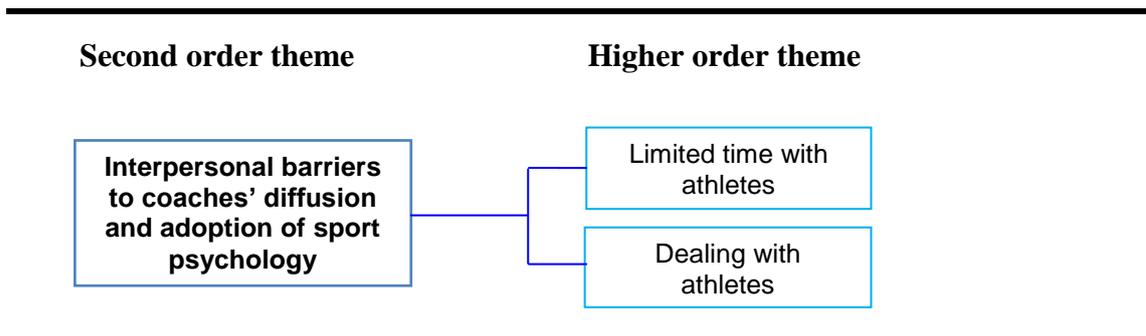
In summary, structural barriers appear to occur on a macro level in relation to a lack of guidance regarding the operational details of implementing sport psychology. Added to which, in terms of the delivery system which gatekeepers could utilise when providing opportunities, the NGB's are reported to detail specific parameters in which

they were able to operate. On the outskirts of such structures were the barriers of accessing resources and the cost associated with accessing information within the social system. The underlying barrier which seemed to in part feed into each category was the voluntary nature of coaches working within the sport.

## 11.9 INTER-PERSONAL BARRIERS TO COACHES' DIFFUSION AND ADOPTION OF SPORT PSYCHOLOGY

Inter-personal barriers were those which deal with the nature of interaction between two or more people (Crawford *et al* 1991), which lead to the categorisation of two higher order themes (as displayed in Figure 46).

**Figure 46.** Contributory Factors to Coaches' Interpersonal Barriers



### 11.9.1 Limited Time with Athletes

Limited time with athletes was raised as a barrier with four coaches. For some this pertained to additional work they wished to undertake with athletes:

*We have introduced a couple of initiatives where those willing have been assigned to individual coaches for 1–1 work outside of club nights. These have all petered out partly because of lack of time for either or both parties. I guess these relationships would have been the best opportunity for sport psychology to have been employed.*

Richard went on to state that athletes reported the coaches not to have the knowledge or expertise to undertake such sessions. However, for others lack of time with athletes related to not having the time to implement sport psychology during actual training sessions:

*Time, it's all based around time, as one third of three sessions a week it doesn't leave much time in cycle for other things.*

This was a point also made by Ollie who implicitly referred to, a criterion of inclusion which psychology for him failed to achieve, hence indicating other forms of training practices superseded it:

*In an athletes' development there's several factors and psychology is one of them. An eighth of a segment in the grand scheme of things so doesn't meet the criteria to use it.*

Such criteria he later revealed was related to whether you could use the training tool *en masse* with large group sizes within the time he had with the group, which he felt he could not do. This was a point additionally raised by Ian:

*With a fairly limited and restricted amount of access time to the kids because of all their other activities, it's a question of how do we incorporate it when we get the opportunity?*

This latter aspect of Ian's quote combined with a second quote from Bill, who did contradict himself to some extent, who reflected that giving coaches more time would not solve the problem due to deeper seated problems:

*So if you say you don't have the time, giving people more time won't necessarily cure it. There's a lot of interdependencies in there and I think you need to unpick them to understand the factors. I think as much as anything else it's the attitude, environment, infrastructure conditions are the common things. It's the intentions of the coaches that make the difference.*

Hence, Bill highlighted not only his personal barrier but more so that barriers do not occur in isolation but more so are intertwined and moreover underpinned by coaches'

attitude and motivations. Such distinctions between uses of time once again evidenced a divide in coaches perception of how best to use sport psychology, whether as an ‘add on’ style intervention strategy or as part of a training session.

### 11.9.2 Dealing with Athletes

Narratives also gave rise to the second contributory factor which also related to athletes but more so dealing with factors pertaining to their individual characteristics rather than that of the coaches. This was a point made by Daisy who stated:

*One of the issues for me is primarily the athletes’ that I’m working with are 10 to 13 years old and I don’t really think we would ever do anything.*

A view shared by Ian but who raised the age range relating to this barrier to 15 years old:

*You have to bear in mind the level of the athlete you’re dealing with, with a couple of exceptions most of them are getting to 15 and disappearing...you can mention it (sport psychology), but you know deep down it doesn’t matter to them...you narrow it down to the competitive athletes, you can talk to them.*

Supporting the narrative from performance coach Ian, participation orientated Max held similar views reporting athletes that he coached as posing a barrier, and specifically their lack of engagement with the subject:

*The barrier might be engaging enough with the athlete to persuade them that it’s a useful tool as well as the physical aspects that they’re doing.*

He reinforced his point again when he confirmed:

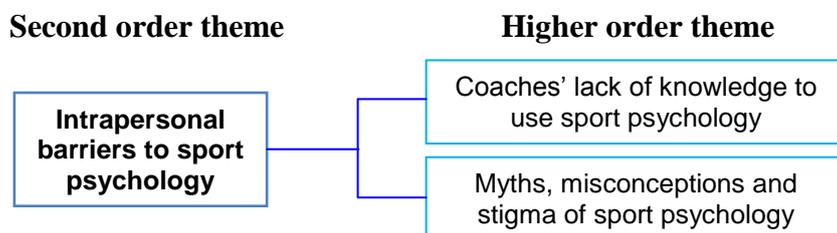
*The only barrier will be persuading them this is a fun activity to be doing, as well as the sprinting and the other activities and that there are long term benefits or benefits for them as well.*

In summary, interpersonal barriers to sport psychology surrounded the coach-athlete relationship but in terms of training practices coaches felt able to deliver and athletes response to attempts to use sport psychology. However, participants begun to again allude to the notion that barriers did not occur in isolation.

## 11.10 INTRAPERSONAL BARRIERS TO SPORT PSYCHOLOGY

The final second order category related to coaches inherent barriers including their own perceptions of others. This led to the emergence of two antecedent factors, one inward facing which concerned of lack of personal confidence to use sport psychology and the second outward focused was somewhat more complex in that it related to the coaches perceptions of others and their attitude towards sport psychology (both displayed in Figure 47).

**Figure 47.** Antecedent Factors to the Intra-personal Barriers to Sport Psychology



### 11.10.1 Coaches' Lack of Knowledge to Use Sport Psychology

For many coaches the barriers came down to their own lack of knowledge to use the subject but interestingly coaches spoke of this in relation to their opinion of others. As a gatekeeper, Steve spoke collectively of coaches' knowledge of sport psychology and commented:

*A high element of the workforce aren't strong in that (sport psychology) area.*

Similarly Rudi, also a performance coach and gatekeeper, provided a narrative concerning his opinion of others in relation to their ability to use sport psychology. However, he provided greater depth by not only noting the issue but where he felt it derived from along with its impact, thus extending understanding of the issue:

*I suppose my concern is we've got some coaches who are very committed, who are very good technically but they left school when they were 15 and they've never really been exposed to a general education around psychology and I suppose they could benefit from a more structured understanding because sometimes they'll liaise and have a relationship with the athlete that isn't necessarily perfect on the psychological front. They'll bully them or they'll criticise them all.*

Whilst still a performance coach, but not a gatekeeper to the athletic social system, Bill summarised the issue of why coaches lack of knowledge of sport psychology was a barrier to the process of diffusion and adoption of sport psychology and again referred to the negative consequence:

*It needs to be conscious competence because otherwise you're doing harm along the way.*

Alternatively, Richard an opinion leader who again was performance orientated spoke of the collective but included himself within that circle. However, in contrast to the other coaches, instead of noting the negative consequence he pushed responsibility for increasing knowledge and thus rectifying the situation onto the athlete:

*We don't feel competent or qualified or authoritative enough to attempt to use it, they're generally intelligent, mature and resourceful enough to do their own research on how to get their mind right.*

### **11.10.2 Myths, Misconceptions and Stigma of Sport Psychology**

The second theme related to coaches' intra-person barriers was that related to the myths, misconceptions and stigma of sport psychology and covered a range of issues which were reported to inhibit the process of diffusion and adoption of sport psychology.

Initially, coaches addressed the myths associated with the subject matter as demonstrated by George:

*Psychologist are seen as quick fix to a problem.*

Inadvertently within one sentence he made reference to ‘brief interventions’ via the quick fix and the argument once again of intervention versus embedment into coaching behaviours due to his mention of ‘*a problem*’ and thus intervention.

In contrast, the more commonly referred to issue was that sport psychology had preconceived perceptions which were articulated by Ivy:

*There’s still a lot of myth busting to do as people have misconceptions confusing psychology and psychiatry.*

Along similar lines, Lewis raised the issue of the stigma associated with sport psychology as discussed in Chapter 2, section 2.6.1.6 of the literature review:

*There is a stigma attached to it (sport psychology) that can put people off.*

Indirectly Rudi combined both issues and like previous coaches noted the negative outcomes:

*The negatives would be misunderstood or misinterpreted psychology...the danger you can have is that people can be over directive and that I suppose can be a concern for me.*

He went onto explain the concern as being that, the information they impart would not be based upon mediated sources. Offering an overall perspective Bill concluded that:

*Intra and inter angles for that are not that easy, they are not individual dimensions but they’re going to be components of a total system.*

Consequently, it cannot go unnoticed that the domain of sport psychology still has work to do surrounding breaking down barriers.

## 11.11 FACILITATORS AS A DRIVING FORCE

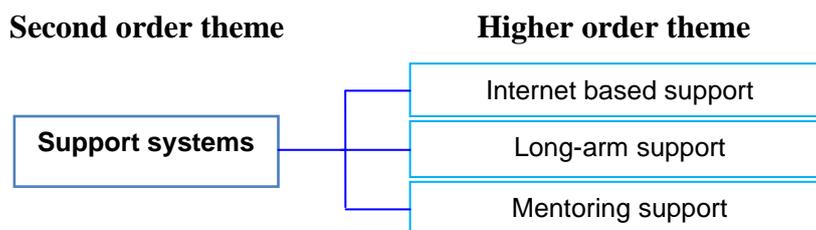
### 11.11.1 Support Systems for Facilitating the Use of Sport Psychology

An area of investigation currently lacking in the sport psychology literature related to those factors that could facilitate the adoption of sport psychology. The final content analysis tree therefore related to the facilitators to the use of sport psychology. As such, two second order themes of support systems and future areas for the development of sport psychology emerged from the data via inductive content analysis. Whilst there were less than half the amount of raw data themes derived from the barriers towards sport psychology the data collated in the facilitators for the use of sport psychology section was insightful and thus rich in term of the depth of information uncovered. Within this dimension, only one theme arose from deductive content analysis which was that of support systems which previously had not been associated with the use of sport psychology in an explicit manner. Thus, three themes emerged as a result of inductive data analysis as displayed in Figure 48.

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**Figure 48.** Support Systems for Facilitating Coaches' Diffusion and Adoption of Sport Psychology.

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#### 11.11.1.1 *Internet Based Support*

Initially, coaches spoke of their need for better support systems which would aid their ability to access knowledge in order to learn more about the subject matter as demonstrated by the participation coach Amy:

*It's nice if something crops up that you can find it on the internet.*

Bill (performance coach) also discussed the internet as a source that would facilitate his uptake of knowledge and was more specific about where he felt this information should be located:

*If I was to receive stuff in the same way we receive stuff from the ucoach, which is a pooled mechanism, you look there you pick stuff up and see what you can reuse.*

Further discussions unearthed that ucoach was an EA tool that was already in place and it notifies you when new information is added and therefore it would put sport psychology on the radar of those coaches with little knowledge of the area. Furthermore, he highlighted from this you would then know where to look for further information causing a two-way communication channel. This location of information was similarly desired by Noah as like Bill he felt coaches already had awareness and access of this tool and so it would ‘make sense’ to place it here so please know where to look:

*Something short on ucoach setting out exactly what the subject covers would be helpful.*

Similarly, George who mentored less experienced coaches reported the internet as an initial support system as this he believed would suit the coaches’ normal behaviours:

*There must be a backup support structure, most people YouTube and Google things so you have these ways of learning, it’s visual, people like visual documentation and visuals seem to be the strongest way of doing it for coaches’ at the moment.*

#### **11.11.1.2 Long-arm Support**

Following this initial point of gaining knowledge, five of the coaches became more focused and structured in their discussion of how to enhance the process of diffusion and adoption of sport psychology. Specifically, three performance orientated coaches who had an educational background in sport spoke of the need to have a sport psychologist at long arms reach. Their purpose being that coaches could call upon them as and when required. To that end, Lewis explained that this was because, in

comparison to participation coaches who did not know where to look for information, they didn't know what to look for. Consequently, he felt competent in the subject but liked to have a sport psychologist on hand:

*I would phone one (sport psychologists) at any time but I'm not sure I would ever bring one in. I'm confident with the knowledge I've got now and the knowledge I can reach, now that will allow me to coach at a level that I want but I would pick up the phone at any point.*

With the same individual characteristics as Lewis, George also reported such a type of use of a sport psychologist in terms of long arm advice:

*I would want to have the sport psychologist on the phone.*

In addition to the above, Marty also spoke of liaising with a sport psychologist on the telephone but unlike those previously, his interactions were also face to face. A subtle difference also occurred in his narrative when he stated that his conversations were not solely athlete focused and thus intervention motivated but moreover that they were also focused on improving his coaching behaviours:

*We can spend a lot of time face to face and on the phone talking about athletes, sessions and various other items related to my coaching style and practices.*

Such differences were important as they provided insights into the underlying factors which shaped coaches use of sport psychology. Thus, face to face elements appeared to change the required role of the sport psychologist. Thus, whilst sharing the same individual characteristics, Alonso spoke of a similar rationale to that of Lewis and George, whereby coaches should bring a sport psychologist in when the situation exceeded their knowledge base. But, went further to state coaches should use a sport psychologist in the first instance to overcome the barrier of time:

*If they've got a group of athletes but they haven't got the time to get adequately in the mind. Then at that point I would have said maybe then bring in a specialist, or if they (coaches') just want a second opinion, look at it a bit like a doctor, if they're not quite sure why this is going that way.*

Interestingly, further analysis of the narratives also revealed the first three coaches spoke in the first person and what they specifically do regarding the role of the sport psychologist. Alonso however spoke from a third party perspective and referred to the actions others should take.

### **11.11.1.3            *Mentoring Support***

Deeper explorations of how to diffuse sport psychology in order to increase adoption lead to the emergence of a second type of support role for the sport psychologist, that of a mentor as noted by Amy:

*I do think there's a place for mentoring and mentoring individual coaches.*

Amy explained that this perception was based upon a relationship she had heard about from a colleague where a sport psychologist had been used as a mentor to observe training sessions and provide feedback. The early stage career coach had reported the experience as being really positive and he spoke highly of the idea and recommended others to do it.

Also referring to sport psychologists in this role, Bill noted that the role of a sport psychologist should change when working at the grassroots level but failed to further distinguish between the performance and participation environment. His narrative also spoke of the role he believed sport psychologists could undertake but unlike the previous coaches, Bill specifically spoke of a hands-on mentoring role with the aim of improvement to the coaches' behaviours and practices (embedded tools) opposed to advice regarding how to improve athletic performance (interventions) as per the previous higher order theme:

*Mentors help clubs at a grassroot level and I think that's an opportunity. I would like to see that, call it the equivalent of the flying coach, I like that onsite commentary and understanding. I would like that to be part of an observation and feedback session and then follow on with a, this is what we can do to help your session. So individual support for coaches to move into that happy medium category away from that negative side of sport but also to*

*help coaches in the amateur space into something which is more effective than what they do and you can only do that with a coach.*

Freddie also discussed a formalised programme of mentoring as a possible mechanism for supporting the uptake of sport psychology:

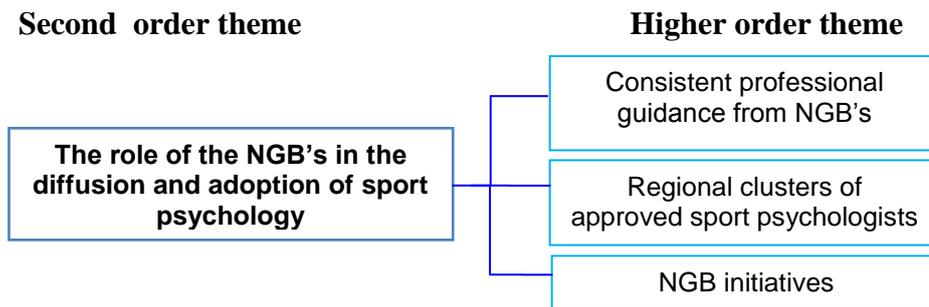
*We take it in turns to be Coach of the Month and 1-1 work outside of club nights. These relationships would have been the best opportunity for sport psychology to have been employed.*

Analysis of coaches' narratives showed that in line with Noah's thought that 'they (sport psychologists) should have some advice somewhere along the line. However, it was evidenced that there were differences between how they felt coaches should use change agents and thus the type of communication channel utilised. Coaches specifically noted that the type of communication channel used depended upon their knowledge base and moreover, that in order to increase this knowledge more than one form would be beneficial. Amy said '*I think it helps to have a mixture of both*' internet and personal contact as if you need to access something quickly and you know what it is that you're looking for the internet is ideal. However, she also noted that when it was something new '*it's nicer to have support in person*'. Thus, in line with the thoughts from George who stated '*they (sport psychologists) have to work out what role they have to play and at what stage*' as coaches access points appear to vary depending on whether interventions or embedment of sport psychology was desired.

## **11.12 THE ROLE OF NATIONAL GOVERNING BODIES IN THE DIFFUSION AND ADOPTION OF SPORT PSYCHOLOGY**

Moving away from access points within coaches' micro social system (as discussed in Chapter 2, section 2.3.1.1), coaches also focused attention on the macro social system in which they operated. Consequently, the sport's NGBs emerged as a second order theme (Figure 49).

**Figure 49.** Contributory Factors to the Role of the NGB's in the Diffusion and Adoption of Sport Psychology



### 11.12.1 Consistent Professional Guidance from NGBs

In relation to BA, coaches discussed the need for some kind of input or direction from the organisation in order to facilitate the process of diffusion and adoption of sport psychology, a point noted by Bernie:

*I would like to see the National Bodies facilitate, so to take an active part.*

This was similar to the quote by Amy who specifically named the body he felt should be involved which was the highest Athletics body in the UK:

*I do think BA should be doing something.*

Building depth to the analysis Phil again noted the specific body she felt should be involved in the process of facilitation and noted the outcomes would be for coaches training practices as opposed to athletes' benefits as discussed in the previous section 6.3.6 (Chapter 6):

*BA should be more interactive with sport psychology so coaches can include it into their coaching practices.*

To this end, there was importantly congruence between participation and performance coaches' opinions on this point as evidenced by Noah and Bill. As the participation

coach Noah firstly highlighted the nature of the problem and went onto consider how they should provide guidance and in what manner:

*If you wanted some advice where would you go to get it? There's no professional guidance. They (BA) should have something on how to approach sport psychology. There's no pathway, even if they had a register so someone could give advice that would be one way of doing it. They should lay down some criteria, if your athlete does this, if your athlete doesn't do that, if your athlete is inconsistent, stuff like that, FAQs and offer basic advice to deal with it, so like a triage. This could then be pulled down into England Athletics to actually deliver this down at our level.*

The narrative from Bill also started by outlining the issue but this time encapsulated the issues pertaining to negative coaching behaviours and how the positive use of sport psychology, as part of coaching practices, could negate such negativity. Moreover, he discussed mechanisms that were being put in place within his own social system in order to address such issues. He suggested England Athletics should be encouraged to take such frameworks on board as they are the organisation which can influence widespread diffusion and adoption:

*Dad's on the side line shouting at a football match to encourage their children to go faster and then telling all the other children off is not the sort of coaching behaviour you probably want to support but it's also not the sort of psychological inference that you want to adopt and I think there's some sort of aspects in the that sport psychologists can build up. In our club we are looking at the codes of conducts, athletes, coaches, parents, helpers and we need to build some of those types of things into those code of conducts so the good point there is maybe try and build psychology things into the EA code of conducts because if you can actually progress psychology in sport.*

Thus, combined such quotes evidence a desire for the progress of sport psychology.

### **11.12.2 Regional Clusters of Approved Sport Psychologists**

All remaining quotes related to the organisational structure coaches felt the NGB's should use to deliver sport psychology in order to support coaches within their social

system, opposed to the overall structure discussed by Bill. Therefore, a further second order theme pertaining to regional clusters of approved sport psychologists for the delivery of sport psychology. This notion of regional areas was raised by Noah who, as an experienced participation coach stated:

*Call it a core region or something like that, to deliver support.*

He explained that the UK is divided into regions with gatekeepers attached to each one so you could have core regions with a sport psychologist attached who could then facilitate the delivery of sport psychology.

Further similarities occurred between a numerous coach statements in that they felt, in a similar manner to that of the Club and Coach Officers, a sport psychologist should be attached to each regional area so that coaches would know the access point. Once again Bill contributed to the theme and suggested designated regions ‘*call it a co-region to deliver support*’ as a means for overcoming issues of lack of funding ‘*as you move down into a space where there isn’t a funding route for people*’ in grassroots athletics as he explained budgets were available when working via the club and coach officer. In relation to this same concept of having a designated sport psychologist covering a specific region, Noah again, explained the need for a move down into the amateur ranks but, this time in reference to the sport psychologist. In addition to Bill, he also outlined what activities he felt would facilitate the adoption of sport psychology and why this would be of assistance to coaches:

*If the sport psychologist were to come down to ground level, perhaps talk to the coaches’, offer advice and a package that’s available through the sport’s governing body. So for example, in this area, if it’s a region there should be some sport psychologist attached to that cluster so you’d have a pathway to the sport psychologist. You may want to use it, you may not but they should have something there in place.*

Beau also spoke of working within ‘*small pockets of coaches*’ and that such work ‘*will make the difference*’. But she raised a note of caution and said that because ‘*it’s coming into its own at the moment; we need to look at how people can differentiate from psychologists, as some of them I think oh what are you doing? What do you do exactly?*’

Hence, collectively coaches recognised the need for approved sport psychologists to operate within the sport and to this end also agreed that working in specific regions would be most productive. However, they reported that such work should be delivered via a NGB as this would increase access points as well as providing trusted mediated sources of knowledge.

### 11.12.3 National Governing Body Initiatives

The Coach Development Programme was raised as the second theme associated with the NGB's. Coaches specifically noted the Local Coach Development Programme as an example of the type of initiative which aids the facilitation of sport psychology within the athletic domain. Christina explained this to be the case because of the needs driven process which is undertaken at the start of the programme:

*They ask you what your needs are, they ask what would you be interested in having a workshop on and so the person who coordinates it will find out what lots of people are looking for and create something in your area.*

Bill discussed its use as a source of information in terms of a structured access point which ensures coaches guidance towards mediated knowledge:

*There are support structures around, there is the local development group that provide it (sport psychology), there are materials that are available.*

Building on the principles of the coach develop programmes, Bill continued that in order to facilitate the diffusion and adoption, sport psychologists should:

*Build psychology things into England Athletics...if you can you can actually progress psychology in sport.*

He suggested building sport psychology more generally into EA as he noted that from what he could see, access was only available to those involved in the coach development programmes and thus this alternative approach would open up the opportunities for facilitation. However, he reported access as being only one half of the problem and that translating the acquired knowledge into useable information was the actual barrier which coaches faced and that overcoming these would eliminate barriers:

*Again it's still how you interpret it, how you translate it that will be the challenge to be able to overcome any individual's personal barriers.*

However, at this point in time Bill offered no suggestions regarding how to help coaches translate knowledge or what that would look like.

At a more local level Lewis suggested:

*Coaching days (from EA) are really important as you've got a captive audience to reach.*

He explained that coaches attend the days with their athletes and so you have athletes and coaches who are all in attendance to learn new information making it an ideal opportunity for facilitating mediated knowledge.

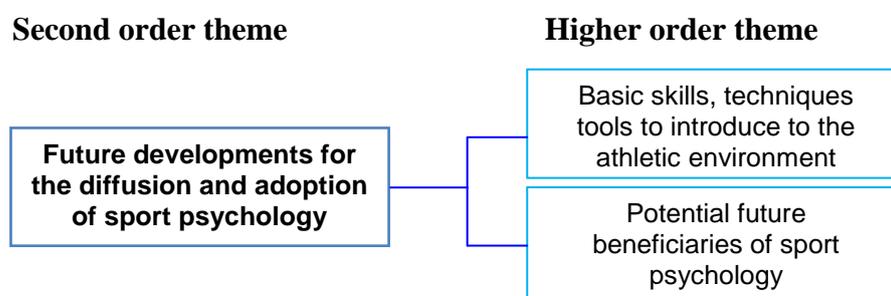
### 11.13 FUTURE DEVELOPMENTS FOR THE DIFFUSION AND ADOPTION OF SPORT PSYCHOLOGY

Respondents repeatedly made reference to the skills, techniques and tools they felt sport psychologists should introduce to the athletic environment in order to aid the facilitation of material. The final theme surrounded potential future beneficiaries of sport psychology as shown in Figure 50.

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**Figure 50.** Antecedent Factors to the Future Developments for the Diffusion and Adoption of Sport Psychology.

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### 11.13.1 Basic Skills, Techniques Tools to introduce to the Athletic Environment

In line with previous results, coaches initially discussed the concepts associated with the first stage of Rogers's (2003) Innovation-Decision Process, knowledge. As a performance coach, and due to her educational background in sport, Christina made reference to how to diffuse sport psychology skills to those coaches with lack of awareness. She suggested group interaction as the form of communication channel:

*I think that awareness should be part of the training...you don't want to be lectured but putting perhaps discussion group situations where psychology, motivation those sorts of things are discussed and behaviour as well. It would help those who didn't have psychology in their training and would help those who don't have any sort of teaching or that kind of background.*

In contrast, as a participation coach who wanted to gain awareness of the subject, Max reported that whilst a given level of knowledge would be beneficial, he wanted also to then understand the practical application of that knowledge:

*I think a mixture of underlying knowledge so at least you know what you are looking for and need to know and practical sessions.*

Discussing the later stage of implementation, Lewis, as an opinion leader and a performance coach with an educational background sport, noted his own starting point when diffusing new techniques:

*Initially what I'd look for is some basic skills, for something like imagery or goal setting.*

Lewis continued to discuss his journey from lack of knowledge through to then diffusing information onto other coaches. Moreover, he noted his journey as being not uncommon and hence others could follow a similar development path in terms of the tools they use:

*I never realised there were outcome goals, performance goals and I'm sure many of the people I'm going to be presenting to don't so just simple things like that where you talk basics, then take it onto things that affect young athletes, that's the road I've come down.*

From a similar perspective, Bill also noted the progression of skills to be imparted to others but emphasised the need to do so without undermining the credibility of the subject. He also went further and made the separation between that which coaches could do and those areas that required trained expertise:

*What you've got to have is easy to administer tools and techniques and then you run the challenge of making sure the get the validities in there and you're not going in to the professional tool sets. I make the distinction between that, the things that as a professional you would underwrite and make sure you administer the right ethics and code of conduct behind it, but you can use a crib sheet for goal setting.*

Additionally, Amy noted who she felt the information should be targeting in order to increase adoption of sport psychology:

*Concentrate on athletes rather than coaches sometimes because some of the coaches, like I say, don't feel there's any need to improve whereas athletes are still young and are willing to learn.*

Overall, no matter what the coaches' level of knowledge, respondents felt there was a form of sport psychology that was appropriate without compromising the tool due to a need to adapt it as mentioned previously in section 2.3.3.2.

### **11.13.2 Potential Future Beneficiaries of Sport Psychology**

Once coaches had addressed their own requirements, respondents additionally made reference to others who they believed could also benefit from education on the subject. Representing the core of the social system Phil stated:

*From an athlete's perspective, they're not so aware of sport psychology, they are aware of the common sense element*

*and that's always a balance...one it's not common sense and two it's not always about sense, it's about creating mental structures...that maybe your next step.*

As part of the peripheral social system, Bill suggested such work with parents would ensure all those involved with the coach and athlete were talking the same language and thus would contribute towards the integration of sport psychology into the micro social system:

*Give the parent an understanding of their language and behaviours and philosophies to change the way messages are given from a coaching side.*

Although making the same case for the need to include the wider social system, Steve made reference to those beyond just the parents but *en mass* rather than specifically and the need to co-ordinate such people:

*More co-ordinated efforts (are needed). Make sure different roles are speaking the same language.*

Overall, the facilitators to the diffusion process and adoption of sport psychology aligned themselves with the initial stage of knowledge and that of implementation. Hence, many of the strategies dealt with mechanisms for ensuring the spread of mediated knowledge and subsequently the use of credible techniques appropriate to the coaches' level of understanding. Coaches put forward both proposed ideas for increasing the adoption of sport psychology but also tried and tested techniques that could be disseminated on a larger scale.

## **11.14 SUMMARY OF QUALITATIVE RESULTS; BARRIERS AND FACILITATORS**

In summary, the facilitators to sport psychology appear to deal with how the NGB's could provide an overall framework for the widespread diffusion of sport psychology. They could offer pooled resources based on mediated sources so as to ensure consistent approaches to the use of the subject matter. Furthermore, moving down the social system in to the meso cycle, coaches reported a role for the Home Nations in terms of

delivery of the wider strategy through attaching a sport psychologist to each of their regional areas. Finally, in relation to the micro system in which the coach operates coaches called for better access points which enabled them to decipher between appropriate and inappropriate information.

### **11.15 SECTION THREE, DISCUSSION: BARRIERS AND FACILITATORS - THE APPLICATION OF THE LEISURE CONSTRAINTS MODEL IN THE ATHLETIC CONTEXT**

Overall, coaches' narratives supported the use of Rogers (2003) Innovation-Decision Process and the Leisure Constraint Model (Crawford *et al* 1984) as vehicles for understanding the current state of sport psychology within the athletics domain. Furthermore, how to increase its widespread use through deeper understandings of the factors coaches have to negotiate. It was apparent that the stages of both models overlapped and therefore solving issues at one stage would negate problems further along the process. Consequently, there was enough evidence to support the dual use of sport psychology in that for some sport psychology was an intervention but for others was an embedded coaching tool.

#### **11.15.1 Barriers and Facilitators of the Use of Sport Psychology**

The use of the LCM allowed for the determination of factors which contributed to coaches' diffusion process and adoption of sport psychology. While previous literature acknowledges the existence of barriers and facilitators to the process of diffusion and adoption, where and when these occur, coupled with the nature of their impact upon the adoption and widespread diffusion of an innovation, had not been addressed. As a response, the LCM was utilised as an explanatory model for where and how barriers arise within the athletic sports psychology diffusion process. With this in mind, it was found that barriers occurred at each specific stage of the process but moreover that those which had not been negotiated carried over to the following stage. Thus, lack of knowledge led to misconceptions which in turn caused rejection or postponement at the intra-personal level. It was shown that limited knowledge often led to positive perceptions but limited implementation. Such insights expand the initial or intended use

of the LCM and offers useful information which has not been previously ascertained. Thus, it allowed for the classification of barriers which offers guidance as to the mechanisms to be put in place to overcome the specifics of that stage.

In relation to the intended use of the LCM it was found that the identification and classification of barriers in athletics was achievable (Table 3). Further, this identification and classification was based on the coaches' individual characteristics and athlete's demographic characteristics. The outcome of such activities was that it made the barriers somewhat more predictable as it provides, for example, change agents with specific information to examine when assessing coaches' level of receptivity and the factors which may impact upon this.

When amalgamated with the Innovation-Decision Process, understanding of the diffusion process is strengthened. In particular, the stages which a potential user of the innovation moves through can be analysed as a consequence of identification of the underlying antecedents (individual characteristics and athlete characteristics). Furthermore, specific barriers pertinent to each stage of the process, which cause undesired behaviours (lack of engagement with the innovation), can be unearthed. Furthermore, these can then be assessed in relation to coaches' likelihood to engage with facilitative behaviours allowing the translation from barriers into constraints.

#### ***11.15.1.1 Types of Barriers and the Stages of the Innovation-Decision Process***

In relation to the types of barriers which arose at each stage of the Innovation-Decision Process (Table 11.24, - represent barriers, + represent facilitators), the categorisation of barriers allowed for the initial identification of those barriers which could be common to the athletic discipline.

Specifically, due to the coach-athlete relationship, along with their central position in the social system, it was revealed that the knowledge stage of the process was predominantly characterised by intra-personal factors. This could be due to, as Werthner and Trudel's (2009) suggest, learning is an individual process. Thus coaches' may reflect internally leading to intra-personal factors being analysed and internal barriers arising. This contrasts with the persuasion stage where both intra and inter-personal

barriers occurred which was thought to be due to persuasion concerning the thoughts and attitudes of the individual hence representing the inter-personal aspect.

**Table 11.24.** The Barriers and Facilitating Factors of Sport Psychology

Stage of the Innovation-Decision Process	Categories of Constraint		
	Intra-personal	Inter-personal	Structural
<b>KNOWLEDGE</b>			
Lack of knowledge	-		
Lack of access to mediated knowledge			-
Misinterpretation of unmediated knowledge	-		
Lack of understanding	-		
Cost of gaining knowledge	-		
Face to face interaction			+
NGB guidance and support			+
<b>PERSUASION</b>			
Negative attitude from coach	-		
Knowledge construction	-		
Lack of endorsement from NGB	-		
Only for elite athletes	-		
Fear of the unknown	-		
Subjectivity of the subject	-		
Athletes ability to understand the subject		-	
<b>DECISION</b>			
Fulfilling athletes needs		+	
Others from within the social system		-	
<b>IMPLEMENTATION</b>			
Limited time with athletes		-	
Need to translate information for use	-		
Habit not to use sport psychology	-		
Lack of confidence to use techniques	-		
Timely availability of resources			+
Possibility of reinventing techniques			+
Professional guidance		+	
<b>CONFIRMATION</b>			
Other priorities	-		
Athletes age		-	
Group size		-	
Support system			+

Furthermore, coaches' intended end-user was the athletes, thus representing an interaction with others and thus accounting for the inter-personal dimension. The results at the decision stage were characterised by intra-personal, inter-personal and structural barriers which was a reflection of the three types of decision (optional, group consensus and authority) that were occurring.

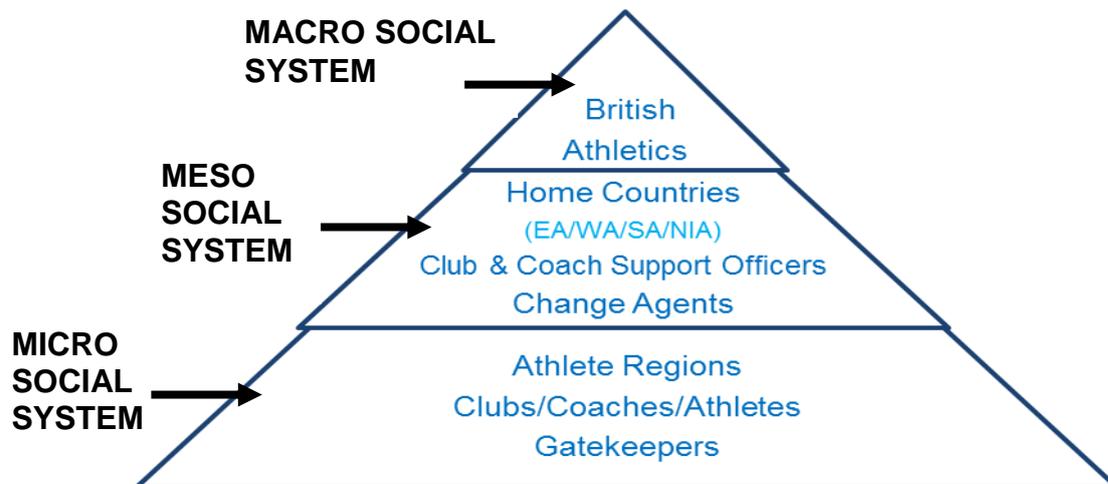
Thus, the decision stage appears to be a connection point where individual cognitions, coach-athlete considerations, and the NGB begin to interact, consequently forming a meso social system. Furthermore, due to all three types of barrier occurring, it was concluded that this was a volatile stage which required considered acquisitions. Change agents, opinion leaders and gatekeepers were found to control the flow of information in and around the social system as discussed in Chapter 2, section 2.3.1.1. Implementation was dominated by inter-personal barriers due to the interventions being provided by coaches to athletes thus requiring social interactions characterised by the inter-personal stage. Lastly, confirmation was characterised by intra-personal barriers as this stage of the process concerned self-reflection on the decision to implement interventions.

Interestingly throughout the Innovation-Decision Process, with the exception of time, structural barriers were apparent but never dominant. Moreover, they were considered a key potential facilitator for overcoming the previously identified barriers. This was due to structure being conceptualised as the NGB and hence the macro system of the athletics domain which sits above that of the micro and meso systems (as depicted on Figure 51 below). It is this higher level of authority that Werthner and Trudel (2009) referred to as having the ability to guide coaches' in their use of sport psychology. Consequently, NGBs input in the form of guidance was thought to increase both the individual units of adoption and diffusion as they set the norms for the social system thus can create a trickle-down effect. Theoretically, these results revealed that an amalgamation of literature from leisure studies and Diffusion of Innovation Theory enhanced understanding of how the level of free-will to make a decision affects the barriers experienced.

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**Figure 51.** Inter-connection between the Macro and Micro Athletic System
 

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## 11.16 CONCLUSION TO BARRIERS AND FACILITATORS

In conclusion, barriers and facilitators were found at each stage of Rogers (2003) Innovation-Decision Process. Many were specific to the stage at hand, whilst others were generic and reoccurring. Developing the knowledge base surrounding Crawford and Godbey's (1991) leisure constraints model, intra-personal barriers were identified as being those which directly affect behaviour and thus coaches actual use of sport psychology. The antecedent factor to such finding was revealed as being the athletes' being coached, specifically their performance needs, age, level of competition and group size. At the cognitive stage however, intra-personal factors affected knowledge accumulation and thus coaches own belief system, however, this could be overridden if athletes triggered a need for information.

Facilitators were revealed as being factors which enabled the translation of barriers into constraints; something negotiable. Facilitators revealed the type, level and depth of knowledge required by coaches at varying points in the season depended on the stage of their coaching career, their identification as participation or performance coach, and the level of input from the NGB. Consequently, a top down approach was revealed as being the area which would significantly change coaches' cognitions and behaviours towards sport psychology.



## CHAPTER 12 - CONCLUSION

### 12.1 INTRODUCTION

The purpose of the chapter is to provide the main conclusions of the programme of research. The aim of the current research was to examine the diffusion process and resulting adoption of sport psychology by athletics coaches. Furthermore, it sought to explore the conceptual elements which contribute to the limitation and facilitation of coaches' decision-making process.

The study operated on the premise that applied sport psychology was concerned with the application of psychological theories through interventions which went beyond common sense in order to facilitate the improvement of performance. The contextual setting of the study was the athletic social system. A hierarchal structure to the athletics social system was identified as an initial finding of the study. It was found that the athletics social system consisted of three levels; firstly the macro system which was identified as the overarching NGB of the sport responsible for the elite governance of the sport (BA). At the meso level were the Home Nations (England, Scotland, Wales and Northern Island) responsible for the training and development of coaches. Athletics clubs were at the micro level and consisted of club committees, coaches, athletes and parents.

The Innovation-Decision Process concerned how, where and when information was communicated throughout this social system and the effect such communication had on coaches' adoption of the subject. With regards to the classification of the information being disseminated or communicated, previous authors (Kanter 1983; Francis and Bessant 2005; Rogers 2003; Liviu 2014) suggested an innovation was that which offered new solutions to existing issues. The findings of the current study concur with such a definition and consequently considered sport psychology as an innovation that could be more widely adopted within the athletics social system. Moreover, this supports the use of the Theory of Diffusion of Innovations as an appropriate vehicle for exploring the athletic coaches' decision-making process

surrounding sport psychology along with the factors and underlying constructs affecting this process.

Prior to this study, existing research pertaining to the decision-making process in respect of innovations was predominantly associated with the Theory of Diffusion of Innovations (Rogers 2003). This focus has led to common understandings of how innovations are adopted throughout the social systems of nine traditional areas of study. Consequently, this provides further evidence for the potential transference of the Theory of Diffusion into the coaching setting. However, such transference was not without its concerns. Unlike many of the nine industries including that of technology, sport psychology was identified as a soft innovation operating in a predominantly voluntary industry. Hence, the structure of the environment in which the innovation (sports psychology) was to be used differed from the nine traditional areas. Added to this, two further considerations arose which were specific to the sporting environment; 1) the competitiveness of sport, driving coach and athletes alike to seek to gain a competitive edge over opponents. 2), the software dominance of sport psychology could lead to fundamental changes in the process of adopting sport psychology therefore creating additional barriers. In relation to such barriers, within the sport psychology literature these have to date been identified in an isolated manner. Consequently, there is a lack of coherent exploration of the barriers which are pertinent to the athletics domain and at what point in the decision-making process they occur. Answers to such questions may impact upon the diffusion and adoption of sport psychology.

Consequently, the Leisure Constraints Model (Crawford *et al* 1991) was examined as a possible framework for the identification and classification of barriers. This led to the synthesis of knowledge which led to the conclusion that a single method design would fail to unearth the reasons behind any changes to the original decision-making process and its associated content. The mixed methods approach afforded a holistic insight into the inter-subjectivity (coaches' experience of the real world) of athletics coaches. The quantitative aspect of the research provided a structured examination of the Innovation-Decision Process in the athletics' coaching domain. Its purpose was to offer quantification of the measures of incidence within the survey which was representative of the overall population. In addition, the qualitative narratives of the

coaches enabled in-depth understanding of the motives and meanings behind the factors which arose specific to the athletics coaching environment. Taking the broader approach has enabled both generalisability and transferability of results, depending on the type of data collection, thus leading to extensions of current knowledge and understanding.

## **12.2 REVIEW OF THE OBJECTIVES OF THE RESEARCH**

### **12.2.1 Summary of the Studies Objectives**

The main aim of the research was to explore the diffusion and adoption of sport psychology by athletics coaches and the factors influencing their decision-making process. In order to fulfil this aim a number of research objectives were formulated as outline below.

#### ***12.2.1.1 Objective 1: To evaluate the application of existing models associated with the diffusion and adoption of an innovation to the study of sport psychology***

A critical review of the literature revealed a number of key findings related to how the models (Innovation-Development Model and Innovation-Decision Process,) transfer into the coaching domain. It has been evidenced within this thesis that disparate constructs of each model contributed to confirmation/rejection of their suitability of use as both theoretical and applied models for the evaluation of the diffusion and adoption process of sport psychology by coaches. Specifically, analysis of the common sequential process (which, in its most simple form is 1) awareness of an innovation 2) building a perception that leads to 3) a decision regarding ones use of the innovation.) The models associated with diffusion and adoption provided a systematic flow for the analytical examination of coaches' decision-making. Furthermore, it allowed exploration of the constructs that arise at given stages of the process and their interrelationships.

With regards to the knowledge stage of Rogers (2003) Innovation-Decision Process this was found to be lacking in explanation of how and when information is obtained. Consequently, the Innovation-Development Process was examined and revealed the

need for reconsideration and thus acknowledgement that, for many, initial knowledge is accumulated outside of the social system in which it will be used. Yet, understanding of the obtained information occurred within the system. Thus, of importance was the time-lag between the two actions (obtaining knowledge and using knowledge) which theoretically represented the rate of adoption in the coaching domain. This intellectually reframes the cognitive phase due to the nuanced description of existing knowledge. This critical redirection of the Innovation-Decision Process alters the initial connection between theories as previously the Innovation-Development Model and Innovation-Decision Process had been seen as separate models. However, the current study implies integration between the two thus changing their theoretical boundaries which addresses the weaknesses in the original models.

Previously, the perceived characteristics of an innovation have been reported by Rogers (2003) to be operationalized during the persuasion stage of the process. However, due to the innovation being software dominant (no tangible point of contact with the end product) the results suggested that this stage concerned wider constructs including opinions, attitudes and beliefs which combined caused perceptions. Additionally, while a distinct decision whether to move from cognitive engagement to that of behavioural actions (adoption) saw the emergence transient decisions (small reoccurring decisions) which were made at the latter stages of the process (behavioural) as opposed to the cognitive stage. As a result the perceived characteristics were concluded to be spread throughout the five stages of the diffusion process specifically whenever decisions were required due to each stage having different criteria by which the innovation was judged. As a novel finding this highlighted the need for opinion leaders, gatekeepers and change agents to consider how to engage with coaches at each stage of the Innovation-Decision Process rather than in its entirety.

The findings demonstrated that each of the noted models contained theoretical constructs which contributed to the understanding of coaches' decision-making process. However, they were deemed most useful when integrated into the Innovation-Decision Process. Combined, the synthesis of constructs provided deeper understanding of the dynamic process and determinants which impact upon the diffusion process and adoption of sport psychology. This moves the process forward in

relation to the emergence of new connections among concepts. Moreover, such insights develop the field of thinking beyond a singular unilateral process of decision-making into a rigorous systematic approach for exploring adoption and diffusion.

***12.2.1.2 Objective 2: Critically evaluate the variables that influence the adoption of sport psychology.***

Two categories of individual factors were examined as variables which could account for variance in the diffusion process and adoption of sport psychology by coaches. Firstly, the characteristics of the coach represented the applied context in which the research was operating thus type of coach was divided according to participation or performance orientation. Secondly, the theoretical bases of analysis, educational background in sport, focused on the difference between respondents with and without a sport based education qualification. Combined, these characteristics provided deeper understandings of coaches' qualification-based learning (industry-specific versus generic educational) and the extent to which they impacted upon the Innovation-Decision Process.

The findings of the study evidence that the variables associated with the diffusion process and adoption of sport psychology varied according to the stage of the Innovation-Decision Process they occupied. The individual coach characteristics were hence found to significantly account for variations in the diffusion of sport psychology and its adoption by coaches. Specifically, early on in the Innovation-Decision Process those with a sport based educational background were found as being more likely to have heard of sport psychology prior to becoming a coach. This raises a question for future research; how can those involved in the delivery of sport psychology increase coaches' knowledge base to be on par to those with such backgrounds.

Further to educational backgrounds affecting the initial point of exposure, it additionally revealed an association with varying levels of exposure. Coaches own empowerment to learn as evidenced by their educational background appeared to be an associated driving force behind exposure to sport psychology rather than how they defined themselves as a coach (participation or performance). However, the idea of selective exposure cannot go unmentioned. It was revealed that coaches sought

information they had awareness of thus causing a regular cycle of continued exposure to the same facets of sport psychology until a new trigger factor was unearthed. When such findings were triangulated with the implemented techniques (section 8.4), athlete characteristics emerged as an associated factor to this process. Consequently, it was concluded that a coach's educational background shaped their discovery behaviour which contributed to a broader understanding of the factors influencing coaches' diffusion process and adoption of sport psychology. Thus, exploration of type of coach and educational background revealed a segmentation of the coaching population in relation to the cognitive stage of the process. It is suggested, however, that athlete characteristics require further examination in future research as they were a fundamental reoccurring factor within coaches' decision-making process.

The decision stage of the Innovation-Decision Process was revealed to mark the transition between the cognitive and behavioural phases of the process. It was determined that knowledge transfer from theory to practical application at an individual level was a fluid process. This was however influenced by barriers (intra-personal/inter-personal/structural) as opposed to coaches' individual characteristics. At the social system level, three decisional choices (optional/collective/authority) again took precedence over individual characteristics (type of coach and educational background).

It was at the behavioural stage of the process that individual characteristics came to the fore. New findings were evidenced regarding variations in how coaches adopt sport psychology depending on their individual characteristics. Adoption of sport psychology occurred at two levels. First, where coaches formally implemented psychological techniques in the form of planned interventions. These had a specific purpose to solve a problem and were therefore structured, planned and explicit. Importantly, it was mainly performance as opposed to participation coaches who were found to make use of sport psychology in this manner. Experienced participation coaches evidenced a desire to use the subject in this fashion but failed to do so due to an expanse of barriers (e.g. lack of understanding). Secondly, informal use of sport psychology was evidenced by; once again, performance coaches but specifically those with an educational background in sport. This caused the use of sport psychology to be

an embedded part of coaches' practices and thus was used in a spontaneous, implicit manner.

With regards to participation coaches, the diffusion process and adoption of sport psychology was limited. The results of the study showed the Innovation-Decision Process to be divided into two phases (cognitive and behavioural, see Figure 44). In many instances participation coaches were operating within the cognitive phase. Thus, while they cognitively accepted sport psychology, due to the construct of relative advantage, the behavioural stage of the process was postponed (as discussed in section 8.5.4). In contrast, performance coaches were found to be more likely to transcend to the behavioural phase of the process due to their ability to overcome barriers thus negating impact. Consequently, it was concluded that individual characteristics caused fundamental differences to coach's process of diffusion and adoption.

In practical terms, an educational background in sport was found to change the knowledge base of the sample and this impacted on the way in which respondents reported to use sport psychology. Furthermore, in relation to that of type of coach, this limits the diffusion process and adoption of sport psychology and prevents the overcoming of barriers. This has implications for the mechanisms and content of information which enters the athletic social system (discussed in section 11.3).

***12.2.1.3 Objective 3: To categorise and critically evaluate the barriers and facilitators which impact upon the diffusion and adoption of sport psychology in athletics***

The LCM (Crawford *et al* 1991) afforded the greatest contribution to understanding the factors affecting the Innovation-Decision Process. The inclusion of the LCM enabled the constructs related to barriers and constraints to not only be identified but more importantly be classified. Despite the abundance of literature discussing the barriers towards sport psychology, little was known of the barriers experienced by athletic coaches and how these impacted subsequent acceptance and use of sport psychology.

With regards to the critical evaluation of the barriers within the athletic social system, original interpretations of what constituted a barrier were initially established, which to date had not been theoretically considered in relation to sport psychology. In the current study, barriers were related to factors which prohibited use and were found to be part of the associated determinants of behaviour. Alternatively, constraints related to factors which coaches overcame via the use of facilitators. To this end, facilitators were influencing determinants or predictors that when manipulated allowed continued engagement with the innovation. Consequently, specific triggers or the need to solve a problem overrode coaches own preference for use. With this in mind, and similar to the leisure studies literature, intra-personal barriers related to coaches individual attributes which were the antecedents from which coaches preferences (for or against sport psychology) were formed.

The LCM was found to offer a structure for the organisation of the identified barriers (section 11.8). To this end and across the spectrum of barriers as expected, the structural barrier of time was the most commonly reported. This was followed by lack of knowledge as the most common intra-personal barrier. Coaches' perception that athletes held a negative attitude towards sport psychology was the third most reported barrier and in turn was the most common inter-personal barrier. It was therefore concluded that in line with the model proposed by Crawford *et al* (1991) three dimensions of barriers were apparent within the athletic context (section 11.2.1.1). However, the findings failed to support the hierarchal nature of the model proposed by Crawford *et al* (1991) as the classification of a barrier occurred as a result of interplay between three variables; 1) the required level of interaction with others within the social system, 2) the existence of facilitating factors such as an educational background in sport and 3) personal perceptions. As a result, the occurrence of these three variables was found to vary across Innovation-Decision Process. Such findings revealed the use of the LCM beyond merely listing barriers as it acted as a mechanism for increased understanding of factors affecting the process of diffusion and adoption of sport psychology. Thus, overall it was found that the diffusion and adoption of sport psychology was not solely based on the absence of barriers but also the existence of intra, inter and structural facilitators. Hence, if mechanisms such as access to mediated sources of knowledge are provided at pertinent times the barriers associated with each stage of the Innovation-Decision Process can be negotiated thus turning barriers

(absolute) into constraints (negotiable). This not only realises objective number three but extends current understanding of how barriers are operationalized in the athletic context and there interaction with constructs of the Innovation-Decision Process.

Consideration of the interaction between the LCM and the Innovation-Decision Process revealed respondents' level of knowledge accumulation influenced their formation of attitudes towards sport psychology. At both the knowledge accumulation and perception phases, intra-personal barriers were apparent. They specifically related to the personal knowledge and attitudinal formation of the coach. Knowledge construction however, was associated with inter-personal factors as there was a need to translate knowledge into practical information that could be used with athletes. This therefore required social interaction in the form of supported trialability as opposed to visibility which does not allow discussion and clarification. Structural constraints were confirmed within the athletic environment to be those which interfered with actual preferences and use of the sport psychology. Interestingly, it was this form of barrier which ultimately determined whether sport psychology was normalised as part of coach's practices.

Overall, and similar to previous authors (Blinde and Tierney 1990, Harwood and Pain 2007), barriers towards sport psychology were still found to exist (as per Chapters 4 and 11)), but those such as resistance to sport psychology have evolved since the mass of literature in the 1980s. Furthermore, the impact of barriers on the diffusion process, and the adoption of sport psychology, was found to differ from the original expectation due to the interplay between social constructs. Specifically, fulfilling the needs of an athlete was a stronger determinant of behaviour than the coaches own preference regarding the use of sport psychology. This provided deeper understanding of the barriers which until this point had been examined in an isolated manner. Consequently, facilitators, and those factors influencing one's ability to overcome barriers, were all but missing from the literature base. Hence, the results of the current study showed structural barriers were the easiest to overcome with intra-personal being most difficult.

The organisation of the social system was revealed as being the fundamental barrier to the overall diffusion of sport psychology and thus the subject becoming embedded into

the cultural norm. Specifically, the micro system witnessed issues between the varying CPD requirements of senior coaches and early career coaches (section 5.3.4). Further to this, those in the meso cycle, who bridged the gap between the micro and macro systems, were identified as the gatekeepers who allowed access for the change agents (sport psychologists) to enter the system. However, this process was dependent on the gatekeepers own knowledge and perception of the subject which caused an additional layer of barrier. Finally, the lack of information or access to mediated sources of knowledge regarding sport psychology fuelled the continuation of misinterpretations and use of unmediated sources of knowledge. There was no endorsed sport-specific mediated source of knowledge thus allowing for variations in the information being accessed.

***12.2.1.4 Objective 4: Synthesise current knowledge and understanding of sport psychology by developing a conceptual framework that contributes to the intellectual framing of the diffusion and adoption of sport psychology by coaches.***

The current study extended and adapted the Innovation-Decision Process (Rogers 2003) to the study of diffusing and adopting sport psychology into athletics coaching. The Theory of Diffusion of Innovations provided a suitable backdrop due to its systematic display of the stages through which individuals pass when making a decision whether or not to adopt an innovation. However, despite its sound underlying principles adaptations occurred based upon other models (as examined in Chapter 2, Section 2.4.3.2) associated with the diffusion process. This enabled deeper understanding of the decision-making process and the factors affecting this which have been largely ignored in the sport psychology literature. Consequently, neither theoretically nor practically was there a vehicle for understanding the process of how to increase the integration of sport psychology into athletics coaching. In an attempt to overcome this shortfall, a process outlining the decision-making stages through which coaches pass was developed.

As outlined earlier, knowledge and understanding were separated in the revised framework as they were determined in the current study's findings to be separate but

related entities. Knowledge related to the accumulation of theory while understanding referred to coaches' ability to translate this knowledge into useable coaching tools. This provided an important contribution to not only the process of diffusion but also deeper understanding of how the constructs influence adoption. Specifically, this closer examination of what constituted knowledge allowed the discovery of why barriers occurred which to date was remiss in the literature base. To this end, it was found that a lack of mediated knowledge led to misinterpretations and misunderstandings of what sport psychology was. Secondly, a lack of understanding of how to make use of the information led sport psychology to drop down the line of importance in relation to the relative advantage that the subject could bring to coaching practices. The third aspect of the model was adapted based on existing sport psychology literature and thus the name was changed from persuasion to perception to allow for the contextual sensitivities. This was deemed a more encompassing term that allowed for the exploration of multiple constructs which influenced the process rather than one which restricted interpretation.

The latter stages of the diffusion process remained in its original form but included a wider range of concepts based upon literature from the coaching domain. Further to this, the qualitative and quantitative findings resulted in four developments; 1) the refinement of how decisions occur, 2) recognition of two forms of implementation (planned and spontaneous, Figure 36, page 258), 3) the notion that confirmation is not absolute. Such developments and adaptations to the original process theoretically provided a framework for enhanced explanation of the process of diffusion and adoption. This resulted in deeper understanding of the underlying mechanisms that cause movement throughout the diffusion process rather than simply describing each stage. Practically, it offers guidance to those seeking to diffuse sport psychology which enables the identified mechanisms to be maximised.

In summary, due to the multiple stakeholders and the need for practical as well as scientific utility, the adjusted concepts and subsequent interrelationships between these creates a bridge from theory to practice. The use of the Innovation-Decision Process allowed for rigorous scholarship of the integration of multiple dimensions.

## **12.3 CONTRIBUTION TO THE KNOWLEDGE BASE**

### **12.3.1 New Perspectives and Understandings**

Analysis in the discussion chapter led to the identification of initially small contextual contributions to knowledge. First, new perspectives and understanding of the existing knowledge base were established through novel interpretations. Second, original findings were unearthed leading to the new framework of understanding within the process of diffusion and adoption. Finally, the study created a synthesis of knowledge through the amalgamation of theories applied to a new research setting.

## **12.4 THEORETICAL CONTRIBUTIONS TO KNOWLEDGE**

Examination of the diffusion and adoption process in the athletics context unearthed theoretically innovative findings at each stage of the diffusion process. Three main theoretical contributions to knowledge have emerged. First, it was discovered that the initial recognition point for sport psychology occurred outside of the athletic social system. This caused a time-lag as a coach may have heard about sport psychology in organic, general terms a long time prior to being a coach. However, as a coach a trigger could cause the need for the organic knowledge to become more specific but beliefs (positive or negative) may have already been embedded based on the organic knowledge. Thus, differences between knowledge accumulation (gaining initial knowledge) and knowledge construction (understanding the knowledge in a context specific way) occur. In turn this affected coaches' ability to translate knowledge into practical tools. Moreover, the longer the time-lag the less likely coaches were to make a decision to utilise sport psychology. However, the need to solve a problem, particularly when related to their athlete, was found to trigger discovery behaviours to overcome gaps in the coach's knowledge base. Interestingly, this time-lag did not influence the development of favourable or unfavourable attitudes towards sport psychology.

Secondly, attitude formation was found to be predominantly a consequence of coaches' positioning on a continuum of knowledge (lack of knowledge to knowledge gained from mediated sources (understanding)). The early career coaches were predominately based at the lack of knowledge end of the continuum, while performance coaches with an

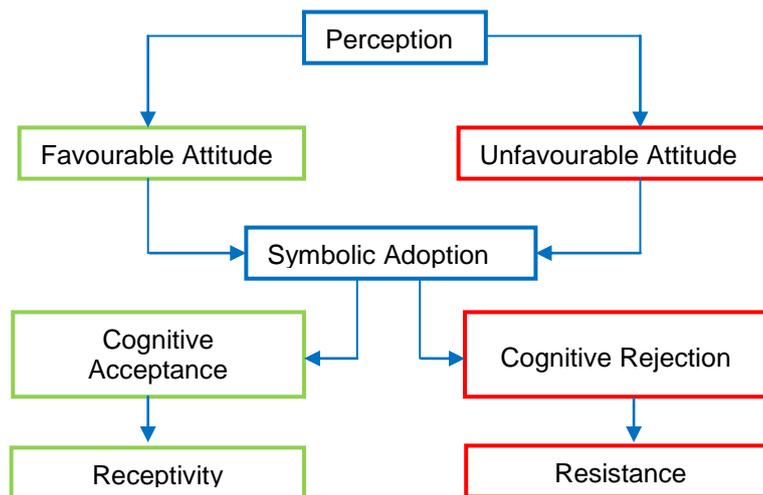
educational background in sport were placed at the understanding end (Chapter 6). It was found however, that a coach's knowledge changes over time as a result of changes to 1) their classification as a type of coach and 2) awareness gained through personal experiences or mentors. As an original contribution to knowledge, this continuum thus recognises the evolving nature of coaches' industry-specific knowledge which was missing from existing discussions of knowledge. This appeared to be because as a form of soft innovation, sport psychology has no finite level of knowledge. Importantly, this allows for the theorisation that knowledge continuums could further apply to other forms of soft innovations. In particular, the alternative aspects of sports science due to 1) the potential end users being the same, 2) the same athletic context, 3) materials could also be classified as soft innovations and, 4) parallel communication channels could be used.

Further to coaches' placement within the continuum of knowledge, the third contribution to the theoretical literature base relates to the articulation of the art versus science dilemma. This was found to be an antecedent factor in coaches' attitude formation. This concerned not the subject of sport psychology as a whole, and the balance of science and creativity, but more so coaches' perceptions regarding the measurability of the impact (of sport psychology). Coaches own preference caused unfavourable attitudes at the objective end of the continuum, as objective content where impact could be observed and quantitatively measured was preferred. Alternatively, coaches with experience, or an educational background in sport, liked the subjectivity of sport psychology. They recognised that often athlete's issues were not observable, thus, nor were the solutions. The need for a continuum (subjective to objective) was due to the quantitative data showing perceptions not to be absolute and therefore fluid over a period of time and increase knowledge accumulation.

With regards to the persuasion stage of Rogers (2003) Innovation-Decision Process, factors influencing perceptions arose. Specifically, it was found persuasion concerned the mechanisms which led to coaches' overall perceptions (Figure 52). Consequently, there was a deviation in terminology away from that within Rogers (2003) Innovation-Decision Process. This had theoretical consequences for the understanding of perceptions and how they influence the subsequent process of diffusion and adoption. Specifically, perceptions concerned two conceptual elements; 1) coaches' overall

attitude towards sport psychology, favourable or unfavourable and 2) the symbolic adoption of sport psychology whereby the subject is cognitively accepted by the coach. These concepts were distinguished by favourable/unfavourable attitudes and coaches' assessment of the material with cognitive acceptance being the outcome.

**Figure 52.** Conceptual Elements of the Perception Stage of the Diffusion Process



Theoretically, the outcome of these conceptual elements influence coaches progression into the behavioural aspect (phase two) of the diffusion process.

Three key extensions to literature were found at the decision stage of the diffusion process. The first related to that of embodiment which arose as a factor to explain coaches' lack of conscious decision-making. Specifically, previous research assumed lack of engagement with conscious decisions was a result of negative perceptions, whereas the current study found evidence of obliteration by incorporation. Thus, in this instance, knowledge and understanding of the subject led to the embedding of perceptions and consequently coaches no longer consciously evaluated their decisions (positive or negative). This led to the emergence of the second extension to literature; patterns of decisional choice.

Within athletics, clear patterns of decisional choice emerged parallel to the hierarchal structure of the social system. Optional choices occurred in relation to the individual's decision (conscious or unconscious) whether or not to use sport psychology as part of their own coaching practises. Collective choices were used for decisions surrounding the

invitation of change agents when educating the social system. Authority choices were undertaken when the social norm was being affected, for example, all coaches were being told to use a given psychological technique. This progressive decrease in freedom of choice has theoretical considerations for those providing educational sessions. Specifically, as freedom of choice decreased recipient's resistance increased and vice versa thus evidencing links to perceptions (discussed in section 6.14).

The third contribution to knowledge relates to the construct of postponement (latent adoption). CPD was unearthed as a key contributing factor to the postponement of adopting sport psychology. Specifically, performance coaches' offered CPD opportunities to others within their social system on the topic of sport psychology. However, participation coaches undertook decisions in line with the perceived attribute of relative advantage. Specifically, coaches were found often to postpone training activities in order to engage with those related to the physical components of the sport. This caused frictions within the social system and specifically highlighted the void between participation and performance coaches. As a way of overcoming such issues, mentors previously discussed in the literature as role models were suggested as a facilitative mechanism. However, for this relationship to work, respect was found to be an important intervening factor. As an innovative finding it was discovered that respect for the mentor was developed either based upon the mentor's educational background in sport, thus their ability to disseminate mediated knowledge, or the mentors past experience as an athlete, meaning they had an understanding of the environment in which they were operating. Such factors led to coaches' trialling ideas and concepts at the implementation stage.

The original contribution at the implementation stage related to the finding that two forms of utilisation of sport psychology were evident. Firstly, spontaneous (informal) use of sport psychology, whereby interventions are unstructured due to the subject being implicitly embedded in coaches' psyche. This was the result of their educational background in sport leading to acceptance of the subject. Alternatively, coaches' planned (formal) use of sport psychology led to the implementation of structured, explicit use. Theoretically, these differences in use warrant further investigations in future research to gain deeper understanding of coaches' implementation of sport psychology.

The confirmation stage of Rogers (2003) Innovation-Decision Process saw the novel interpretation of positive reinforcement. Specifically, via the Theory of Reinforcement it was discovered that those who had progressed to the confirmation stage had a desire for structured psychological interventions specific to their needs. To this end, the ability of a sport psychologist to deliver such sessions influences the second contribution to knowledge regarding the notion that transient decisions. These are decisions which are made continuously throughout the second phase (behavioural phase) of the Innovation-Decision Process (Chapter 7). Therefore, analysis of the theoretical boundary of the decision stage revealed overlap and thus decisions do not occur in isolation at just one point in the diffusion process.

The specific decision stage concerns a coaches' decision whether or not to accept sport psychology as a coaching approach but in terms of use, decisions occur on a continuous basis. Coaches may choose to use one form of sport psychology intervention but not another. Thus, their overall acceptance and beliefs of the subject do not change but their use does. This was found to depend upon the characteristics and needs of their athlete. This has theoretical implications as it fundamentally changes the second phase of the model making it more dynamic in nature. Specifically, it reveals a change in the direction of relationships from one-way to multi-directional. Thus, due to transient decisions, use of various psychological tools flows back and forth between implementation and confirmation of specific techniques rather than the subject in its entirety.

## **12.5 PRACTICAL CONTRIBUTIONS TO THE KNOWLEDGE BASE**

As a result of the theoretical discoveries of the study, a number of practical contributions arose for; 1) sport psychologists looking to operate in the athletics social system, 2) those who work at the meso and macro level of the hierarchical social system.

The newly derived continuums associated with the knowledge stage of the diffusion process have theoretical foundations but moreover practical value to the cognitive phase of the diffusion process. For those working with coaches in aspects of sports science,

industries which involve soft innovations or social systems with a hierarchal structure, change agents enable better identification of user's attitudinal position. This in turn would allow identification of the likely factors (1) characteristics of the coach (type of coach and educational background in sport), 2) stage of coaches' career (early or experienced) and 3) their athletes (age and level of competition)) associated with their position in the process and thus the likely barriers and facilitators they need to take account of. Gathering of such information, thus acts as a new starting point (within an initial assessment) for generating information to better understand the potential user of sport psychology (client). This information on the client could help the determination of whether education (on different sub-disciplines of sport psychology), acquisition (knowledge to understanding) or direct implementation (planned or spontaneous) is required. Thus, the type of information provided, as well as the form of communication channel used would differ depending on coaches' position upon the continuums. This would increase the chances of successful exchanges of information and thus widespread adoption of sport psychology.

Theoretical clarification of implementation and confirmation, representing the behavioural aspects of the diffusion process, led to contributions surrounding the direct use of sport psychology. Recognition of implementation occurring in two distinct ways firstly allows sport psychologists to be able to strategically target CPD activities pertinent to the way coaches use their knowledge (implicit or explicit). The results revealed the need to ensure those partaking in implicit use remain up to date with their knowledge as they are not as active in the seeking of information unless a specific issue arises. Whereas, secondly, ensuring time effective (in terms of researching and then period it takes to teach) interventions are supplied for those using the subject formally as they structure training practices around the techniques. Finally, confirmation had practical implications surrounding the dissemination of information as it caused the need to change delivery style from the group-setting to individual face-to-face sessions. Therefore, gatekeepers providing sport psychologist with access to the social system need to ensure individuals have the skill sets to be able to deliver the relevant type of sessions. Failure to consider such points would cause negative transient decisions thus limiting widespread diffusion.

## **12.6 IMPLICATIONS OF THE FINDINGS**

### **12.6.1 Operationalising the Contributions to Knowledge**

Similar to the thoughts of Corley and Gioia (2011) considering the implications of the study marks the paradoxical point of occurrence. By way of explanation, it marks a closure to the exploration of the findings yet sets the scene for future dialogue examining the new contextual understanding of the research. However, it cannot go unmentioned that the possibilities of the research are bound by limitations of the current study and thus the current section will consider 1) implications of the research, 2) future recommendations, and 3) the limitations of the study.

The fact that the Innovation-Decision Process was the underlying mechanism served as a good starting point for understanding the integration of an innovation. However, within the coaching literature base, there were a number of issues surrounding this process. Firstly, there was a lack of research examining the decision-making process from the end-user of sport psychology perspective. Secondly, there was a lack of understanding of those factors which may act upon the subsequent adoption and widespread diffusion of sport psychology. Yet these conceptual elements (knowledge accumulation, knowledge construction, symbolic adoption etc.) played an integral role in coaches' progression through the diffusion process.

The consequence of reframing the conceptual elements of the diffusion process was the development of the conceptual framework (Chapter 10, Figure 44) for understanding both academically and practically the underlying mechanisms that act as the facilitator for increased adoption and widespread diffusion. Combined, these will facilitate an enhanced understanding of how best to increase the diffusion process and adoption of sport psychology into the athletic coaching domain. This could have wider implications for the well-being of athletes by enhancing their personal development and self-awareness. This could be achieved by using a wider range of sport psychology disciplines to create a positive environment which allows the individual to thrive.

Furthermore, the intricate reframing of the Innovation-Decision Process (discussed in Chapter 10) allowed for deeper dissection of each stage of the diffusion process to occur. Specifically, as a conceptual framework articulating two phases (cognitive and behavioural), the adapted Innovation-Decision Process offered a dynamic catalyst for the adoption of an innovation. This had again both theoretical and practical implications. At a theoretical level the adapted Innovation-Decision Process advances knowledge on how to more effectively solve problems related to overcoming barriers which to date had not previously been achieved.

Hence, as a conceptual framework an articulation of the broader theoretical concepts that were associated with each stage of the Innovation-Decision Process afforded a more robust model which fundamentally refined understanding of individual's decision-making process. On a practical level the adapted Innovation-Decision Process highlighted the need for greater communication between the macro and micro social systems and the need for phase specific information targeted at coaches individual characteristics if increased adoption and widespread diffusion were to occur.

Equally, the increased understanding of the intricate interactions between conceptual elements in the decision-making process can enable coaches to better understand how to integrate sport psychology into their coaching practices. At a performance level these would cause proactive benefits whereby athletes could learn coping strategies prior to issues arising therefore creating a level of control over athletic performance.

The novel findings evidenced within each stage of the process allowed for the developmental of smaller theoretical insights (including the impact of individual characteristics, symbolic adoption, decisional choices and positive reinforcement) which were in fact core driving forces behind the decision-making process. It is these which allow scholars and practitioners alike to capitalise on manoeuvring individuals through the process. Further to this, the theoretical nuances showed departure from the original model (depicted in Figure 2). It was this synthesis of the original models and their related constructs that provides a singular coherent process which in fact allows greater understanding of numerous complex constructs of human thoughts and behaviours.

The amalgamation of perspectives provides increased support for the theoretical findings (i.e. the new framing of the cognitive stage) and makes the adapted Innovation-Decision Process an informative applied model rather than a thought provoking theoretical model. Significantly, this allowed for what Corley and Gioia (2011) discuss as a common interpretive language between academics and practitioners which should enable both parties to become more aware of how to better immerse themselves into the applied field of sport psychology. This would bridge the gap between theoretical reporting and practical use of the literature base thus moving the sport psychology field forward in a positive fashion.

However, the integration of academia and applied practice was also concluded as contributing to confusion in areas from as basic as language to the more complex questions of who is sport psychology for? Therefore, implications and future research needs to address a number of comprehensive propositions which consider the multiple stakeholders. Consequently, the following specific implications are offered.

#### ***12.6.1.1 Consideration Number 1: Individual Characteristics***

The diffusion process and adoption were found to be restricted by coaches' individual characteristics which were specifically found to have varying impact at each stage of the decision-making process. Thus, it is critical to pinpoint coaches position within the Innovation-Decision Process coupled with their associated individual characteristics. This will provide crucial insights into the required changes to cognitions and/or behaviours which are needed to overcome their negative consequences. The division of the process into two distinct sections allows for varying, but concentrated, interventions specifically aimed at either challenging and informing cognitions (required at the cognitive stage) or providing timely and measurable practical interventions (required at the behavioural stage). Practitioners need to use this extended knowledge base concerning the requirement for differing types of information depending on individual characteristics and the stage at which they are at within the process to provide more appropriate education and move beyond the single thought of providing generic interventions.

### ***12.6.1.2 Consideration Number 2: Social Systems***

With regards to the positioning of the roles undertaken by individuals, the micro athletic social system was mapped as being hierarchal in nature (Figure 19, page 160). However, contrary to this, the research indicated that the macro system offers little support, resource or guidance regarding the integration of sport psychology. Respondents further suggested that to establish sport psychology as part of the athletic cultural norm, the NGB has to make a positional stand on the subject. This could be achieved by providing multiple access points (via the NGBs website, sport psychologists and workshops) to mediated sources of knowledge. Such actions would enable users to overcome predominantly structural barriers including lack of access points and resources. However, these would have a trickledown effect and aid the breakdown of intra-personal barriers such as lack of knowledge. This desired requirement has implications for the official bodies of authority within athletics as they were deemed not to be providing enough sport-specific information in the realms of sport psychology.

At the meso level the gatekeepers were confirmed as being the individuals who allow change agents access to the micro system. At the time of the research the NGBs were failing to provide guidance surrounding sport psychology. Thus, it was down to the gatekeepers own discretion who they allowed into the micro system. Consequently, only information and individuals known to them flowed through the system. This has implications for the diffusion process of sport psychology and subsequently adoption, as for those coaches' with limited knowledge there is a lack of opportunity to change that position. Furthermore, it leads to disparity of access to specific sport psychology information depending on their geographical location. Fostering multiple access points using various mediums (i.e. ucoach, conferences and mentor programmes) would increase engagement opportunities and avoid alienating pockets of the coaching population.

### ***12.6.1.3 Consideration Number 3: The push and pull effect upon the delivery of sport psychology***

With regards to Bessant and Tidd's (2011) 4P's Model, the initial construct of product innovation considered the need for changing or improving services on offer. Linked to this was the finding that for many coaches, the need for sport psychology is triggered by an athlete as opposed to their own personal interest. Thus coaches are commonly pushed towards the subject. Consequently, it is critical that as the change agent (the individual looking to change the coaches' behaviour), sport psychologists filter information regarding the full scope and potential of the subject into the social system in order to pull coaches interest.

This difference between being pushed or pulled towards the subject represents coaches' level of motivation towards sport psychology. Hence, different attitudes are attached to each of these forms of motivation. This has implications for how sport psychologists (or other disseminators of information) should deliver information. Specific interventions targeting particular needs would increase receivers' receptivity. In contrast, generic information would cause latent adoption, thus introducing a time-lag between knowledge accumulation and knowledge construction which causes barriers.

The delivery of sport psychology hence shows a requirement to divide the delivery of material into separate entities depending on the individual characteristics of the coach and the push/pull factor. Specifically, participation coaches require a more diverse range of information to help establish a wider base of knowledge accumulation. In contrast, performance coaches require greater understanding of how to embed sport psychology into their coaching practices beyond merely intervention techniques aimed at athletes push/pull effect. Combined, this dual approach to the delivery of sport psychology would enable individual coaches' to adopt sport psychology at a level appropriate to their identified stage within the Innovation-Decision Process. This change in delivery pattern would provide focused strategies fulfilling the need to improve diffusion process (Chapter 2, section 2.3.1).

The ultimate implication thus surrounds the delivery of sport psychology and how to aid end-users construct knowledge by making better use of the identified facilitating

factors. Lack of such exploitation would have negative implications to the deployment of an innovation. Consequently, the deliverer (meaning the direct person disseminating or the organiser of knowledge to be disseminated) of the innovation needs to assess how and where they are providing services. In turn, they need to source understandable, useable information specific to the stage at which the end user is in along with their individual characteristics. This requires consideration of the knowledge and skill base of the deliverer.

In this regard, sport psychologists must give consideration to the social system they are entering. Common terminologies, the role they are expected to hold and how this balances with others operating within the system must not be taken for granted. Additionally, consideration of the need to balance the activities of educating, aiding acquisition of knowledge, through to ensuring coaches' ability to independently implement interventions must be addressed.

#### ***12.6.1.4 Consideration Number 4; Comprehension versus Parsimony***

Due to much of the previous literature focusing on hard, tangible innovations associated with technological advancements, the current study was focused on exploring the diffusion process and adoption of a soft innovation. This was achieved through the use of the Innovation-Decision Process as the underlying theoretical model. However, in relation to increasing the integration of sport psychology into the athletic social system, the Innovation-Decision Process was limited in its explanation. Therefore, a wider scope of literature was called upon from coaching and leisure studies. This amalgamation of literature led to fundamental changes to the display of the diffusion process. Whilst the number of stages was increased, fewer propositions were required in order to understand the diffusion process and subsequently adoption. It also allowed for the attachment of barriers to each stage of the process and their associated facilitators which provides specific detail on how to manoeuvre individuals to the next stage of the process. This would increase the likelihood of widespread adoption.

The results of the current study therefore support the use of the Theory of Diffusion of Innovations in the sports setting. But this claim has a number of important implications. Within the coaching realm initial exposure was found to occur outside of the social

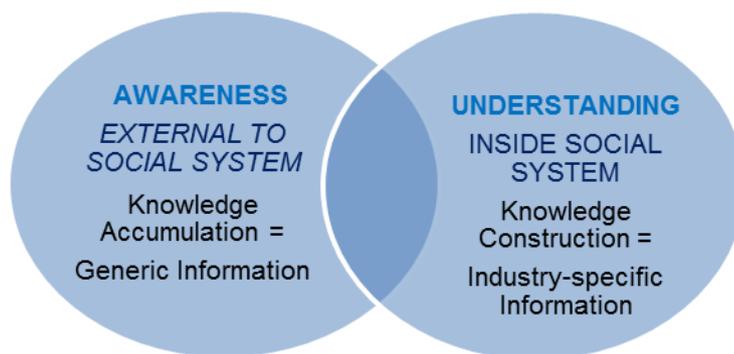
system in which the innovation is ultimately operationalized. This has implications for understanding the trigger points and type of exposure end users initially experience. Specifically, it changes the starting point of the decision-making process (Figure 53). As a consequence, knowledge needs to be dissected into 1) accumulation and 2) construction in order account for the translation of generic knowledge (accumulation) into industry-specific knowledge (construction).

This understanding for the amalgamation of literature requires deliverers of sport psychology to have common practices but additionally, specialise in specific sports rather than specific disciplines of the subject. This would change the way in which sport psychologists are educated and trained in the process of acquiring their professional status.

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**Figure 53.** Depiction of the Comprehension of the amended Diffusion Process

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The previously underplayed distinction between the cognitive and behavioural aspects of the process came to the fore within the current research. Specific to the coaching environment, the fundamental purpose of the cognitive stage was discovered to be important to the provision and acceptance of mediated sources of knowledge. Such provisions would enable end users to make decisions based on informed accurate information as opposed to misconceptions and misunderstandings of self-generated knowledge. The behavioural aspect highlighted the difference between embedment (which is desired as it represents widespread diffusion) and ad-hoc interventions needed to solve a problem which is a requirement specific to the sports context. These changes to the Innovation-Decision Process would allow greater scope for increasing the

diffusion process and adoption as coaches could select training resources specific to their own needs.

## **12.7 FUTURE RECOMMENDATIONS**

### **12.7.1 Theoretical and Practical Recommendations**

The adapted conceptual framework pertaining to the diffusion process and adoption of sport psychology offers an opportunity to open dialogue surrounding the current state of sport psychology in the coaching context. Due to the amalgamation of models, theories and associated constructs a number of possible future extensions could be undertaken both theoretically and practically.

### **12.7.2 LCM as a vehicle for understanding the Driving Forces of Diffusion and Adoption**

The novel use of the LCM as a vehicle for understanding the factors which inhibit and facilitate the diffusion process and adoption of sport psychology revealed three underpinning determinants of barriers; 1) required level of interaction with others, 2) presence of facilitators and, 3) personal perceptions. Consequently, more research is needed to better establish the direction of strength of relationship between these variables and coaches' cognitions and behaviours in relation to sport psychology. This would provide greater understanding of their level of impact and practically where to target interventions.

### **12.7.3 Repositioning Perceptions**

New strategies aimed at the re-positioning of coaches' perceptions regarding the role and potential use of sport psychology have been proposed throughout the current research. Hence, it is recommended that researchers need to examine the relationship between coaches' individual characteristics and their progression through the Innovation-Decision Process. Specifically, a wider range of individual characteristics including their athlete's characteristics (age, level of competition and athletic discipline) require consideration in terms of how and when in the process they

influence decisions. This will enable the further understanding of the factors prior conditions potentially shape and mould coaches perceptions along with their degree of leverage in coaches' decision-making. Overall, this will help establish those factors which galvanise coaches' use of sport psychology.

#### **12.7.4 Extending Selective Exposure**

While as a concept widespread acceptance of sport psychology as a subject was apparent, this was not translated into widespread use of sport psychology. It was evidenced that those with an educational background in sport adopted sport psychology in a positive manner. This was due to greater understanding of the subject and its potential widespread use. However, the remainder of the respondents were found to be caught in a cycle of selective exposure whereby their decision-making process was based on their own knowledge of sport psychology rather than mediated sport-specific information. Coaches with an inadequate knowledge base pose the largest threat to the widespread adoption of sport psychology as it means either they postpone use or implement ill-conceived interventions. Consequently, future research needs to examine firstly, the cycle of selective exposure. This would include gaining an understanding as to why some facets of sport psychology are accessed more regularly than others. Secondly, how this cycle influences subsequent progression through the Innovation-Decision Process. Finally, researchers need to establish how to facilitate qualification-based learning experiences for those lacking an educational background. This will go some way to ensure the quality of sport psychology being imparted by coaches with no formal educational background is not compromised.

#### **12.7.5 Opportunity for greater input from the sports NGB**

The reported lack of guidance and resources surrounding sport psychology from the NGBs highlights the opportunity to create a cultural shift in their approach to sport psychology. Firstly, athletics NGBs need to forge greater links with the applied field and organisations such as BASES and BPS in order to ensure those providing information have the appropriate qualifications and context specific skills to deliver pertinent information. From here they can also create clearer communication channels for practitioners through which to provide information. The expected outcome of such

actions is an increase in the end-users knowledge base thus widening not only the scope of use but additionally the integration of sport psychology beyond performance orientated coping strategies.

### **12.7.6 Practitioner Requirements**

In terms of those working with coaches, and thus extending the work of DeFrancesco and Cronin (1988), the newly adapted conceptual framework needs to offer practical interpretations. The division of knowledge accumulation and knowledge construction offers insight into the key stages of resistance within the diffusion process. From this, interpretations of the facilitating factors can enable the implementation of strategies that are tailored to coaches' individual characteristics. Thus, better consideration of each stage of the decision-making process is required by practitioners to increase the adoption and widespread diffusion of sport psychology through the use of stage specific interventions. Practitioners thus need to better equip themselves with assessment strategies not related to unearthing pertinent information to devise MST programmes, but to establish the end-users wider underlying cognitions and the antecedents of these.

Taking the time within initial assessments to establish end users underlying perceptions would ensure barriers (absolute and non-changing) are translated into constraints (negotiable issues). Subsequently, MST programmes can overhaul underlying issues to increase the likelihood of positive reinforcement.

### **12.7.7 Embodiment, Obliteration by Incorporation**

The decision stage of the Innovation-Decision Process was reported by Rogers *et al* (2005) to be the most difficult from which to elicit pertinent information. This was found to be the case in the current study. However, findings revealed this to be a result of embodiment which caused obliteration by incorporation rather than due to negative connotations (Chapter 2, section 2.6.1.6). This subconscious embedding of acceptance of sport psychology as a subject while a positive finding requires further examination. Firstly, researchers need to establish the ratio of embodiment (lack of conscious decision due to absolute confirmation on previous decision) to rejection. Such clarity

would increase understanding of whether acceptance is positively associated with embodiment and rejection associated negative perceptions. These insights would shed light on coaches' unconscious decision-making practices.

## 12.8 LIMITATIONS OF THE RESEARCH

The adapted Innovation-Decision Model was formulated due to the challenges posed by previous literature (Pain and Hardwood 2006; Woolway and Hardwood 2015). As it aims to explain and predict coaches' cognitions and behaviours, it must be noted that the claims of the extensions are however limited by the assumptions embedded within the methodological design and in turn the impact or influence these have on subsequent interpretations of the data (Price *et al* 2004). Consequently, Dudovskiy's (2017) four criteria for guarding against limitations concerning reliability, validity, credibility and trustworthiness were utilised (as discussed in section 3.8.5.1). However, as per Cohen *et al's* (2007) acknowledgement that not all limitations can be eliminated completely, whilst every effort was made to minimise threat, Szapkiw's (2009) three stages of identifying limitations was utilised to assess the remaining issues; 1) identify type of threat, 2) discuss how it could potentially influence the study, and 3) highlight steps taken to limit threat.

As a result some key limitations were considered. An initial influencing factor which became apparent during the data collection phase of the current research project was the nature of relationships within the social system. It became apparent that data was subject to outside influences namely, athletes, coaches' position (lead or assistant), and the athletics clubs committee structure. Whilst the latter two points had been accounted for by way of investigations surrounding coaches' optional choice, the strength of athletes' influence over coaches' decision-making process was unexpected to the extent of calling into question participants' level of free will within their responses. While this is a new contribution to knowledge, when utilising the model as a predictor of behaviour it must be noted that coaches may provide different responses depending on the athletes they are coaching. Thus, it became apparent within Chapters 8 and 9 that coaches behaviour surrounding gathering and using information alters according to the athletes they are working with. Therefore, future research should seek

demographic information pertaining to the make-up of coaches' training group (size, gender and level of competition) in order to account for displayed behaviours.

While the trustworthiness of the data has been at the forefront of the research design, a number of limitations must also be acknowledged due to what Nagy Hesse-Biber (2010, p.213) referred to as the 'significant challenges in practicing mixed methods'. Firstly, it must be noted that the practice of qualitative research in the current study was in a constant state of flux, whereby interviews varied depending on the role and status of the interviewee. While this added flexibility and depth to the research, as well as multidimensional data due to asking about events which required recall, some narratives may have been subject to memory attrition. Specifically, what Hermam and Edwards (2014) call the telescoping effect whereby, coaches' are focused on the present and therefore recalling information may be subject to selective memory. In the coaching domain this can be caused by periodization and thus the point in the season at which participants were interviewed may influence their perception of the subject and therefore elicit different results. Specifically, because their use for the subject changes (different forms of sports science come to the fore at different points in the season), it may not be in the forefront of their training practices when interviewed. The limitation therefore lays in the method of data collection which was reliant on the individual being the unit of analysis and thus what Hermam and Edwards (2014) refer to as self-reported data. In the current research project attempts were made to account for this by examining coaches changing cognitions and behaviours and collecting data across the full athletic season but future studies may want to consider, repeated interviews which would overcome such issues.

In the current study two foci of analysis were selected, coach characteristics (participation or performance) to represent the practical aspects of coaches' experiences and educational background in sport to represent the qualification-based learning. However, phase one qualitative and phase two quantitative survey indicated that other demographic variables, such as athletic discipline, competitive level of the athlete and the athletes age may further exert influence over the diffusion process. This would provide a broader account of how personal factors account for variance in coaches' decision-making processes.

Finally, the timeframe between the point at which the research idea was originally conceived and the point at which it was undertaken meant that changes within both the athletics and sport psychology contexts occurred. Specifically, at the macro level UKA became known as BA. Fundamentally, their role and objectives did not change but coaches used the terms interchangeably so allowances for varying terminology needed to be made within the strands of research. More significantly, the levels of coaching qualification were changed from assistant, coach 1, 2, and 3 to participation (leading athletics, assistant coach and athletics coach) and performance (event group, coach in running fitness and leadership in running fitness) orientation. This changed the foci of analysis for Strand two, Part A and B in relation to type of coach (assistant, 1, 2, 3 to participation versus performance) which in turn changed the focus of analysis utilisation in the analysis.

In 2012 the term sport and exercise psychologist became a protected term and thus during the intervening period of the research, only those registered as having met the minimum standards set by the Health and Care Professional Council (HCPC) could call themselves a sport and exercise psychologist (Woolway and Harwood 2015). This changed the landscape in terms of who the change agents within the study could actually be and thus who may make use of the findings of the current study from the practitioners' perspective.

### **12.8.1 Holistic Evaluation**

A holistic evaluation of the current research project allowed consideration of those factors which allow or inhibit the continued development of sport psychology in the coaching domain (both academically and practically). Findings from the current research project recognise that the coaching science industry has much to gain from extending its knowledge beyond that of vocational learning and personal experiences. Advanced academic knowledge from the fields of sport psychology, leisure studies and the business setting can offer greater insights into balancing the art and science of coaching practices as called for by previous researchers (McNab 2014; Woolway and Harwood 2015). However, consideration of the overall framing of the research must be noted.

Crotty's (1998) four levels of thinking surrounding the overall underlying research philosophy offers a tightly structured, logical flow to the research process in order to unearth what knowledge is possible to gain. However, it must be recognised that the post-positivist paradigm acknowledges the authors prior background knowledge and the notion that it influences what is observed within a research study (as defined in chapter 1). Thus, while phase one of the current research study explored existing literature and allowed the participants to word to take priority, according to Mertens (2015), the semi-structured interview brings an element of research bias as questions are not fully determined by the participant. Thus, it must be acknowledged that post-positivism includes bias in terms of accepting contact between the researcher and the subject.

Against this backdrop, it is apparent that the mixed methods design supported the transference of models (Rogers Innovation-Decision Process and Crawford and Godbey's (1991) Leisure Constraint Model) into the sport psychology and coach learning domains. This could assist both fields to establish a model for identifying where coaches are within their learning process and therefore the likely outcome of the decision-making process due to the factors which inhibit and facilitate this process. This could help provide clarity to coach's needs analysis in that at present coaches self-refer for development. Therefore, often they only develop areas that are within their psyche. The implementation of the current model would frame this process and take into account fundamental characteristics and properties of the coach and athlete which influence the process of introducing innovations.

With regards to the organisation of the model and its ability to aid the understanding of coaches' decision-making process, the theoretical foundations remain the same as those identified by Rogers (2003). However, deeper understanding of the constructs related to each stage has been established. Specifically, the division of the framework into two operational parts 1) dealing with the cognitive aspects of learning and, 2) the behavioural aspects of changing practices means future research needs to establish support for such divisions. As yet, it is unknown whether such divisions can be upheld in other contextually sensitive coaching environments. Such considerations are required

due to the relatively small sample size. Due to each athletics club having its own structure, organisation and Governance the contextual sensitives identified in the current research project needed to be examined both in terms of breadth and depth.

Due to the original use of the Rogers (2003) Innovation-Decision Process in sport there is also a need to see if the model and the newly identified deconstruction of knowledge and understanding occurs in others sports settings. Additionally, due to the self-report style of questioning, coaches' were required to recall information. To overcome such issues an experimental design testing the constructs and then maximising the facilitators to overcome the barriers would be beneficial. It is recommended that coaches are divided into groups depending on 1) stage in career, 2) type of coach and, 3) educational background. A specifically designed intervention to increase coaches' cognitions and behaviours surrounding sport psychology could be implemented, and then changes in knowledge, understanding and use could be examined. Such extensions to the current findings could provide greater consideration to longevity of the behaviour change which has not been considered in the current study.

There is also the opportunity to enhance coach learning through a centralised information hub. This would give athletics coaches the ability to access information and therefore reduce the threats to coach learning as it would afford the opportunity for coach education to be considered as a two-way process. Specifically, while coaches need to ensure they equip themselves with all aspects of coaching knowledge including that of sports science and specifically sport psychology, those in a position of power and authority need to assist coaches seeking behaviours. Results in the current study revealed that those with advanced education had greater awareness, knowledge and understanding of sport psychology and its various roles in sport. Lack of access to such levels of knowledge proved to be a barrier for many participants. Coaches with no educational background had no access to peer reviewed materials meaning the NGB has at present, no control or knowledge of the types of information coaches were accessing and moreover, no input over the quality of information currently being disseminated and used by coaches. Hence, at present linear models of coach learning are occurring in that, those coaches not currently using sport psychology continue this way as they have no

directive to change such behaviours. Therefore, a centrally controlled platform for accessing mediated knowledge would help drive up standards of coaching. This could be achieved through closer relationships with academic institutions and qualified sport scientists and sport psychologists, thus offering mutual benefits to all those involved.

Overall, results of the current research study provides both end users and service providers with an enhanced understanding of the process through which both groups and individuals go when undertaking a decision-making process with regards to taking on board new ideas. The mixed methods design means results in part, can be transferred to other sports and in particular to athletics other aspects of coach learning and sports science. This has the potential to drive standards of coaching and their associated outputs up faster and more effectively with the support of appropriate infrastructure.

## **12.9 CONCLUSION**

Consideration of Rogers (2003) theoretical models (Innovation-development process and Innovation-Decision Process,) for the study of diffusion and adoption of sport psychology in the athletics environment were analysed. Elements of each contributed to the development of an adapted conceptual framework. Combined they portray the stages through which an individual passes when making decisions. Analytically, it allows for the assessment of factors which affect this decision-making process, thus developing the framework into a facilitative model with theoretical and practical use.

The model fundamentally underpinning the current study was predominantly that of Rogers *et al* (2005) Innovation-Decision Process due to its prior transferability to nine typical areas of Diffusion of Innovations research. Additionally, sport psychology was acknowledged as being an innovation due to its definition of being a new solution to an existing problem. Furthermore, it was classified as a soft innovation as it had no tangible interface. This offered new insights as research has predominantly focused on technological innovations which have tangible products. Combined, these factors presented the opportunity to test the transferability of constructs associated with the Theory of Diffusion of Innovations into the coaching domain in a novel way.

As a consequence of triangulating previous literature from four distinct academic disciplines (sport psychology, coaching, diffusion of innovations and leisure studies), the basic premise of the model remained but sections were adapted to allow for the specific nuances pertinent to the athletic social system. In terms of the findings associated with the newly adapted model, it was found that performance coaches were more likely to diffuse and adopt sport psychology than participation coaches. But, such adoption and widespread diffusion held the caveat that, this was dependent upon coach's individual demographic characteristics. As a result, interventions specific to each stage of the diffusion process are required in order to overcome the barriers associated with each stage.

A number of novel findings were revealed. An overarching finding related to the discovery that holistically examining sport psychology (as one whole subject), limits coaches knowledge accumulation and use of the subject. To this end, results showed varying awareness and use of each facet of sport psychology hence highlighting, overall sport psychology is not being fully exploited. Consequently, coaches wanted increased guidance and access points to mediated forms of information through the NGB. This would require greater integration of sport psychologists who understand the decision-making process and the factors affecting this process in the athletic social system. The intended outcome of such behaviours would be, larger numbers of coaches embedding sport psychology into their everyday coaching practices.

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## APPENDIX

## Appendix 1

### Interview script: Script for Phase One

The following interview will explore your perceptions, use, requirements and barriers to implementing sport psychology. You were emailed in advance the participant information form, having read this do you have any questions? Are you happy to go ahead with the interview?

#### Section 1

1. Could you tell me about your coaching career to date?
  - *Coach profile prompts*

#### Section 2

2. What does the term sport psychology mean to you?
3. Can you tell me about how you source sport psychology information?
4. Can you tell me about the triggers which cause you to use sport psychology?
5. Can you tell me about any barriers associated with your use of sport psychology?
6. Do you have any thoughts on what opportunities you see in the future for athletics and sport psychology?
7. Is there anything else you would like to share regarding the diffusion and adoption of sport psychology?

Thank you for your time.

## Appendix 2

### Participation Information Pack

Dear Coach

My name is Amanda Wilding and I have been a competitive athlete since the age of 11 and consequently followed a career in the sporting environment. As a licensed BA athletics coach and a BASES accredited sports scientist (HCPC Registered), for my PhD I am investigating the current use of sport psychology in track and field athletics by coaches. I am looking at, to what extent do coaches know about it, use it and want it, along with any barriers they may face in relation to these. It is hoped from this we (sports scientists and psychologists) will be able to better support coaches in a way that is useful to their coaching practices.

The questionnaire has been developed following discussions with England Athletics, BA coaches and a range of participation and performance athletes. The questionnaire itself is broken down into 5 sections from current awareness of sport psychology through to when and where you would like information relating to the subject and finally any barriers you have and whether or not you have/want to overcome these. Many of the questions are tick boxes and there are no right or wrong answers. All information will be kept anonymous and confidential and it will be destroyed on completion of the study. If you would like a copy of the results or wish to withdraw your response (which is possible up until the point of analysis, approximately August 2015), then please let me know. If you know any other coaches that would be happy to participate in the study then please forward it onto them as well. They can email it back directly to me on [awilding@bournemouth.ac.uk](mailto:awilding@bournemouth.ac.uk) or via post to;

Bournemouth University  
Dorset House  
Fern Barrow  
Poole  
Dorset  
BH12 5BB

Finally, if you require any further information about the study or you have any concerns that you would like to discuss, please do not hesitate to contact my supervisor:

Professor Roger Vaughan (Bournemouth University): [rvaughan@bournemouth.ac.uk](mailto:rvaughan@bournemouth.ac.uk)

Many thanks in advance for your assistance with this research.  
Sincerely,

*Amanda Wilding*

BASES Accredited Sport & Exercise Scientist/ HCPC Registered  
Senior Lecturer

**Participant Information Form**

You are kindly invited to participate in my research project looking at the diffusion and adoption of sport psychology by athletics coaches. Before the interview/questionnaire (delete as appropriate) begins it is important for you to understand why the research is being undertaken, and what it will involve. Please take the time to read the following information carefully and do not hesitate to ask if you have any questions about the study.

**Who am I?**

My name is Amanda Wilding and I am a PhD student at Bournemouth University. My supervisors are a Professor and an Associate Dean in the Faculty of Management. The research has been approved by the School Research Ethics Committee and is entirely funded by Bournemouth University.

**Why am I doing this research?**

As an academic field, sports science has emerged in recent decades into a multifaceted eclectic mix of viewpoints within which individual elements, or a combination of any parts, can offer significant performance enhancing information and strategies for both coaches and athletes alike.

The current research is specifically concerned with exploring the diffusion of sport psychology, as experienced by athletics coaches: the aim being to increase understanding of the factors influencing the diffusion and adoption of sport psychology. It is noteworthy that, while coaches' perceptions of, and attitudes towards sport psychology have been widely examined, the manner through which these perceptions and attitudes are formed has, to date, been neglected. Hence, at present, there is no understanding of why or how perceptions and attitudes are formed in this area and the extent to which they influence the uptake of sport psychology. The research therefore aims to explore the diffusion of sport psychology and its adoption by athletics coaches in order to better provide coaches with more pertinent information and strategies for performance enhancement.

**Who can take part?**

The research is open to UKA affiliated coaches over age of 18.

**What would be involved?**

I would like you to take part in the interview/questionnaire (delete as appropriate) that is split into 5 key sections and takes approximately 1 hour for the interview and 20 minutes for the questionnaire.

**What will I do with the information?**

In order for me to gain the PhD degree the data will be combined with information from other interviewees and a questionnaire then assessed by a number of examiners. Additionally the data may be used to write and publish articles in academic/industry journals. You will be welcome to see an abstract of the study and any articles once they are available online. The final data will also be shared with England Athletics to inform their coach education programme.

**Will the information from the questionnaire be kept private?**

The information will be stored in locked rooms/computers with password protection, and will only be used by myself and my supervisors. No names/clubs or individual data will be used within the final thesis, publications or given to England Athletics.

**What if you change your mind about taking part?**

Your participation in this study is entirely voluntary, and if at any point you wish to withdraw from the study, you may do so with no explanation required. If you wish to make any comments or complaints about the study, or my performance, please contact Dr Ian Jones (details below).

**Amanda Wilding**

Faculty of Management  
Bournemouth University  
Dorset House  
Fern Barrow  
Bournemouth Dorset  
BH12 5BB  
Tel: 07799141200  
[awilding@bournemouth.ac.uk](mailto:awilding@bournemouth.ac.uk)

**Dr Ian Jones**

Faculty of Management  
Bournemouth University  
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Fern Barrow  
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[jonesi@bournemouth.ac.uk](mailto:jonesi@bournemouth.ac.uk)

### **Informed Consent**

**An exploration of the diffusion and adoption of sport psychology by athletics coaches.**

**Please initial**

A. I confirm that I have read and understood the participant information form. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

B. I give permission for this interview to be recorded on audio phone.

C. I understand that my participation is voluntary and that I am free to withdraw at any time up until the point of analysis, without providing an explanation.

D. I agree to take part in the study.

\_\_\_\_\_  
Name of participant

\_\_\_\_\_  
Date

\_\_\_\_\_  
Signature

### Appendix 3

#### S.P.I.K.E.S Questionnaire Sport Psychology; Information, Knowledge, Experiences & Sources Questionnaire

As an athlete & coach I am interested in finding out about track & field coaches' opinions on the mental aspect of training & competition. There are no right or wrong answers & all information provided will be treated anonymously, if you could spend a few minutes completing the following answers it would be much appreciated.

#### SECTION 1 – COACH PROFILE

In this first section of the questionnaire you will be asked about background information in relation to your coaching status in order to develop a coaching profile

<b>Affiliated Club:</b>	<b>Main coaching discipline:</b>										
<b>Level of coaching qualification:</b>	<b>Years of coaching experience:</b>										
<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 40%;"><b>What type of coach would you describe yourself as?</b></td> <td style="width: 10%; text-align: center;">Children's</td> <td style="width: 10%;"><input type="checkbox"/></td> <td style="width: 30%;"><b>Performance development</b></td> <td style="width: 10%;"><input type="checkbox"/></td> </tr> <tr> <td></td> <td style="text-align: center;">Participation</td> <td><input type="checkbox"/></td> <td><b>High performance</b></td> <td><input type="checkbox"/></td> </tr> </table>	<b>What type of coach would you describe yourself as?</b>	Children's	<input type="checkbox"/>	<b>Performance development</b>	<input type="checkbox"/>		Participation	<input type="checkbox"/>	<b>High performance</b>	<input type="checkbox"/>	
<b>What type of coach would you describe yourself as?</b>	Children's	<input type="checkbox"/>	<b>Performance development</b>	<input type="checkbox"/>							
	Participation	<input type="checkbox"/>	<b>High performance</b>	<input type="checkbox"/>							
<b>How many hours per week, on average, are you involved in coaching athletics?</b>	<b>What County do you predominant coach in?</b>										
<b>Are you currently part of the National or Local Coach Development Programme?</b>	<b>What is your gender?</b>										
<i>Please state which one or put none</i>	Male <input type="checkbox"/>										
	Female <input type="checkbox"/>										
<b>What is your highest level of sport related educational qualification (i.e. A-Level PE)?</b>	<b>What is your age?</b>										
<b>What is your highest level of psychology related educational qualification (i.e. A-Level)?</b>	<b>What gender do you predominantly coach?</b>										
	Male <input type="checkbox"/>										
	Both <input type="checkbox"/>										
	Female <input type="checkbox"/>										
<b>Do you have a membership with any organisation that regulates sport psychology?</b>	<b>What age group do you coach?</b>										
<i>Please state which one or put none</i>	Juniors <input type="checkbox"/>										
	Seniors <input type="checkbox"/>										
	Both <input type="checkbox"/>										
<b>What level do your athletes predominantly compete at?</b>	<b>Period of time you have been coaching your current core group of athletes?</b>										

#### SECTION 2 – USE OF TRAINING TOOLS

In this section you will be asked about your current use of mental tools for training and

- Using the table below a) rank the components of training in order of importance (1 = most important) to your own coaching practice and b) indicate the % of training time you dedicate to each component of training;

Components of training	of	a)Importance Level (1=most important)	b) % of training session allocated to each training component
Physical			

<b>Tactical/technical</b>		
<b>Biomechanics</b>		
<b>Psychological/mental</b>		
<b>Nutrition</b>		
<b>Other</b> <i>(please state)</i>		

**2. Please put an X next to each of the types of sport psychology you have heard of:**

Social Psychology	<input type="checkbox"/>	Applied Sport Psychology	<input type="checkbox"/>
Motor Learning & Control	<input type="checkbox"/>	Mental Skills Training	<input type="checkbox"/>
Skill Acquisition	<input type="checkbox"/>	Psycho-behavioural	<input type="checkbox"/>
Lifestyle Management	<input type="checkbox"/>	Athlete Welfare	<input type="checkbox"/>
Injury Rehabilitation	<input type="checkbox"/>	Other, please specify...	<input type="checkbox"/>

**3. How often do you use the techniques identified below with your athletes?**

(Place an X in the box that best suits your agreement with the statement)	Every Session	Weekly	Monthly	Once a season	Never
Relaxation/energising, <i>e.g. techniques to establish the right frame of mind</i>					
Visualisation/imagery, <i>e.g. seeing yourself doing something in your mind</i>					
Goal Setting/motivation, <i>e.g. setting targets to be achieved</i>					
Concentration, <i>e.g. helping them to stay focused on the task</i>					
Self talk/positive thinking/thought control, <i>e.g. positive mental thoughts</i>					
Performance routines, <i>e.g. regular behaviours they do before/during training/competition</i>					
Self confidence development, <i>e.g. scrapbooks of past achievements</i>					
Lifestyle & athlete welfare, <i>e.g. talking about what's in the athletes best interest</i>					
Organisational Stress, <i>e.g. dealing with pressures from managers</i>					
Other, <i>please specify</i>					

**4. Based on the techniques listed above, upon reflection, do you feel you use sport psychology;**

Formally	<input type="checkbox"/>	<i>(you knew the technique was sport psychology and chose to implement it on purpose)</i>
Informally	<input type="checkbox"/>	<i>(you simply used the technique as its part of coaching, just happens to be sport psychology)</i>
Not at all	<input type="checkbox"/>	<i>Go to question6</i>

5. a) Does your amount of use of sport psychology vary in any one season?

Yes  No  Don't use sport psychology

b) Please explain how & why =

6. In your opinion, is the use of sport psychology beneficial to any of the following;

Put an X in the relevant box

Yourself  Your Athlete(s)  Other Coaches  Parents  Other =

### SECTION 3 – EXPERIENCE OF SPORT PSYCHOLOGY

In this section you will be asked about how you encountered sport psychology and what factors have influenced your subsequent perception of the subject.

If you have never heard of sport psychology tick below & please go to question 14.

7. Did you hear about sport psychology before or after you became a coach?

Put an X in the relevant box

Before  After  Never heard of it

8. As a coach, was your initial experience of sport psychology intentional or accidental?

Put an X in the relevant box

Intentional  Accidental

9. Approximately, a) how many times in the last 6 months have you sought out information about sport psychology, b) what was the trigger for the last time you looked c) what did you seek out?

a) Number of times =

b) Trigger(s) =

c) Information you sought out =

10. Please rank (1 = most useful up to 5 = least useful) the usefulness of the main sources that you have purposely used to gain sport psychology information.

Books/Magazines  Internet  Other Coaches  Courses/CPD   
 Journals  Athletes  DVDs/CDs  TV/Radio   
 Sport psychologist  Organisations, please specify=  
 Other, please specify=

11. Overall, when you look for information relating to sport psychology is the information that you find useful to your personal coaching practices?

Put an X in the appropriate box

Yes

No

Don't Know

**12. Have you had an experience of sport psychology which has significantly influenced your current perception of the subject and if so in what way?**

Put an X in the relevant box

Changed to a negative perception Yes  No  Don't Know

Changed to a positive perception Yes  No

**13. Have you changed your own coaching practices since coming across sport psychology?**

Put an X in the relevant box

Yes

No

Don't Know

**14. At present do you feel sport related organisations provide enough information on the subject of sport psychology? Put an X in the relevant box**

Yes

No

Don't Know

**15. Name 3 organisations which you feel should provide information to coaches regarding sport psychology.**

- 1.
- 2.
- 3.

**16. Are you aware of a professional body/s that governs sport psychology? Put an X in the relevant box**

Yes

No

Don't Know

Name(s):

**17. In relation to sport psychology, is the current information that you have access to appropriate to the following? Put an X in the relevant box**

a. **Your level of coaching**

b. **Your current knowledge & understanding**

Yes   
 No   
 Don't Know

Yes   
 No   
 Don't Know

#### SECTION 4 – THE ROLE AND DELIVERY OF SPORT PSYCHOLOGY

This section seeks to identify your perception of the role of sport psychology within your coaching practices and whether or on the delivery of material influences your use of sport psychology

**18. In your opinion, what is one key benefit of sport psychology in elite (high performance) athletics?**

=

19. **In your opinion, what is one key benefit of sport psychology in grassroots (participation) athletics?**

=

20. **In your opinion, what is one key benefit of sport psychology at your level of coaching?**

=

21. **In your opinion, should coaches receive formal training on sport psychology?**

Put an X in the relevant box

Yes  No  Maybe  Don't Know

22. **Who should be organising the delivery of information about sport psychology to coaches? Put an X in the relevant boxes**

Sport psychologist  Regulatory bodies for sport psychology  No one   
Coaches  Representative from NGB  Other =

23. **In your opinion, at what stage in a coach's career should sport psychology be introduced to him or her? Put an X in the relevant boxes**

Level 1  Level 2  Level 3  Level 4  Other =

24. **In what type of context should sport psychology be introduced to coaches? Put an X in the relevant boxes**

Conferences  NGB courses  Mentoring schemes  Books/magazines   
Workshops  Squad days  Internet(i.e.ucoach)  Other =

25. **At what point in the athletics season would you like training and information on sport psychology to be provided to you? Put an X in the relevant boxes**

Beginning of track season  During track season  End of track season   
During winter season  End of winter  All of the time   
Not at All  Other =

26. **How would you like to receive information regarding sport psychology?**

Put an X in the relevant boxes

1-2-1  Group setting  Telephone  Skype (or equivalent)   
Email  Booklet/powerpoint  Newsletters  Other =

27. For what purpose would you like information about sport psychology? Put an X in the relevant boxes (you can X more than one box)

General background knowledge	<input type="checkbox"/>	To improve my own coaching performance	<input type="checkbox"/>
Implementation into my coaching practices	<input type="checkbox"/>	To improve my athletes performance	<input type="checkbox"/>
None	<input type="checkbox"/>	Other/Don't Know=	<input type="checkbox"/>

28. In your opinion should sport psychology be embedded into everyday coaching practice?

Yes  No  Don't Know

29. How many times in the last year have you attended training activities related specifically to sport psychology? =

30. Do you make a conscious decision (i.e. think about it against some kind of criteria) whether or not to attend training activities on sport psychology? Please provide in order of importance examples of the factors which impact upon your decision;

Yes  No  Don't Know

#### SECTION 5 – BARRIERS AND OPPORTUNITIES TO SPORT PSYCHOLOGY

This section will ask you about the barriers and opportunities you face surrounding sport psychology. Please answer each statement as best as you can.

On a scale of 1 to 5, (1= totally disagree to 5= totally agree, 6 = NO VIEW) to what extent do you agree with the following statements? Please CIRCLE (if electronic put an X) the relevant number

31. My current level of knowledge & understanding of sport psychology is not sufficient enough to implement sport psychology;

1  2  3  4  5  6 Explanation=

32. My athletes level of receptiveness (openness) to sport psychology training sessions influences whether or not I use sport psychology in my coaching practice;

1  2  3  4  5  6 Explanation=

33. Sport psychology takes time away from other more important areas of training;

1  2  3  4  5  6 Explanation=

34. Using a specialist sport psychologist is too expensive;

1  2  3  4  5  6

35. I know when to use a specialist sport psychologist;

1  2  3  4  5  6 Explanation=

36. I wouldn't know where to find a specialist sport psychologist;

1	2	3	4	5	6
---	---	---	---	---	---

37. There is no room for a specialist sport psychologist in track & field athletics;

1	2	3	4	5	6	Explanation=
---	---	---	---	---	---	--------------

38. I know and understand what a specialist sport psychologist does;

1	2	3	4	5	6	Explanation=
---	---	---	---	---	---	--------------

39. Overall, my athletes are not of the right age to benefit from sport psychology;

1	2	3	4	5	6	Explanation=
---	---	---	---	---	---	--------------

40. Overall, my athletes are not at the right level of competition to use sport psychology;

1	2	3	4	5	6	Explanation=
---	---	---	---	---	---	--------------

41. The benefits of implementing sport psychology outweigh the negatives;

1	2	3	4	5	6	Explanation=
---	---	---	---	---	---	--------------

In the questions below, place an X in one box between the words which most closely matches your opinion of sport psychology. For example; using a television remote control is;

Easy	1	<del>X</del>	3	4	5	6	7	Hard
------	---	--------------	---	---	---	---	---	------

42. "To me sport psychology is"...

Worthless	1	2	3	4	5	6	7	Valuable
Undesirable	1	2	3	4	5	6	7	Desirable
Appealing	1	2	3	4	5	6	7	Not Appealing
Complex	1	2	3	4	5	6	7	Easy
Relevant	1	2	3	4	5	6	7	Irrelevant
Subjective	1	2	3	4	5	6	7	Objective

43. "To me sport using sport psychology is"...

Hard to learn	1	2	3	4	5	6	7	Easy to learn
Easy to use	1	2	3	4	5	6	7	Hard to use
Hard to fit into my coaching	1	2	3	4	5	6	7	Easy to fit into my coaching
Approved by my peers	1	2	3	4	5	6	7	Not approved by my peers
Not important	1	2	3	4	5	6	7	Important
Useful	1	2	3	4	5	6	7	Useless
Essential	1	2	3	4	5	6	7	Dispensable

On a scale of 1 to 5, (1= totally disagree to 5= totally agree, 6 = NO VIEW) to what extent do you agree with the following statements? Please CIRCLE (if electronic put X in) the relevant number

44. More guidance on how to make use of sport psychology within coaching practices is required;

1  2  3  4  5  6 Explanation=

45. Sport psychology is compatible with my current coaching philosophy and practices;

1  2  3  4  5  6 Explanation=

46. I do not know what I am meant to implement from sport psychology into my coaching practice;

1  2  3  4  5  6 Explanation=

47. The term sport psychology puts me off using it in my coaching;

1  2  3  4  5  6 Explanation=

48. Please read the statements below and tick the **one** that you feel is most relevant to you;

*Amongst peers I am usually first to try out new ideas*

*If I hear about a new idea relating to training I often experiment with it*

*I like to tell other people about new training ideas*

*I like to see how new ideas have worked for other people before I use them*

*I do not feel comfortable implementing new techniques*

*I will only use new ideas when I have to*

*I like to see evidence (facts/research/others success) before I use new ideas*


49. When making decisions relating to your own coaching practices, are there any other people with whom you must consult with first? Put an X in the relevant box

Yes

No

What is the role of this person(s)?

50. Please list below up to 3 barriers you have experienced when trying to use sport psychology:

1.

2.

3.

51. a) Have you ever successfully overcome any barriers in order to use sport psychology in your coaching practices? Put an X in the relevant box

Yes

No

Don't Know

Don't have any barriers

52. a) Would you like help in order to overcome the barriers/constraints you face?

Yes  No  Don't Know

---

53. On a scale of 1-5 (1=highly, 5=not at all), how motivated are you to use sport psychology?

---

54. What improvements would you recommend in the provision of sport psychology for track and field coaches? Please put none if you don't feel improvements are required, leave blank if you can't think of any.

- 1.
  - 2.
  - 3.
- 

55. Is there a place for sport psychology in track and field athletics?

Yes  No  Don't Know

Please explain your answer =

IF YOU ARE INTERESTED IN TAKING FURTHER PART IN THE RESEARCH PLEASE PUT YOUR NAME & CONTACT DETAILS BELOW, THANK YOU:

## Appendix 4

### Interview script: Script for Phase Two

The following interview will explore your perceptions, use, requirements and barriers to implementing sport psychology. You were emailed in advance the participant information form, having read this do you have any questions? Are you happy to go ahead with the interview?

#### Section 1

1. Could you tell me about your coaching career to date?
  - *Coach profile prompts*

#### Section 2

2. Can you tell me a little about your knowledge & understanding of sport psychology?
  - *Where has your knowledge & understanding come from?*
  - *What has influenced your knowledge & understanding?*
3. Could you tell me about your own personal experience of sport psychology?
  - *Can you give me any examples of the type of contact you have had with the subject?*
  - *Would you say your experiences have been positive or negative?*
  - *Have they influenced your perceptions in anyway?*
4. Can you tell me about any barriers towards sport psychology
  - *Can you think of a time when you would have liked to use it but something stopped you?*
5. Do you have any thoughts on what opportunities you see in the future for athletics and sport psychology

Thank you for your time.

## Appendix 5

## Participant Information; demographic breakdown of qualitative participants – Strand A

Coach profile		Athlete profile
<b>Number of coaches</b> 160	<b>Educational background</b> No sport based = 107 Sport related = 51 No response = 2	<b>Athletes being coached</b> Female = 44 Male = 34 Both = 82
<b>Coach classification</b> Assistant coach = 43.5% Athletics coach = 56.5%	<b>Home country</b> Geographic locations = 35	<b>Age category being coached</b> Juniors = 49.4% Seniors = 16.9% Both = 33.8%
<b>Type of coach</b> Participation = 42 Performance = 118	<b>Coach development programme</b> Yes = 38.9% No = 61.1%	<b>Competition level</b> Club/School = 26.4% County/Regional = 36.5% National/International = 37.1%
<b>Gender</b> Females = 60 Males = 100	<b>Years of experience</b> 0 - 10 = 85 11 - 20 = 28 20+ = 36	
<b>Coach age</b> 18 - 39 = 36 40 - 59 = 78 60+ = 42 No response = 4		

## Appendix 6

### Chi Square Test for Independence

#### Exposure to the disciplines of sport psychology

##### *Social Psychology*

As a sub-discipline of psychology, within the coaching environment, social psychology deals with not only social interactions between individuals but additionally with how an individual behaves, thinks and feels in their given environment (Cox 2011). Furthermore, researchers (Bull 1991; Weinberg and Gould 2014) in this domain, attempted to understand how attitudes, perceptions and beliefs intertwine with areas such as aggression, leadership and communication which are key areas which define the research base. This form of psychology is fundamental to the coaching environment as a result of both the internal and external factors which impact upon behaviours, cognitions and emotions.

<b>Exposure to social psychology</b>						
Characteristic of the coach and having heard of social psychology						
Awareness of social psychology	Type of coach					
	Participation		Performance		Total	
	No.	%	No	%	No	%
Yes	26	61.9	66	57.4	92	58.6
No	16	38.1	49	42.6	65	41.4
Total	42	100.0	115	100.0	157	100.0
Test statistics – Chi Sq –	Value:	df:	p:			
Continuity correction	.106	1	.745			

Professional background and having heard of social psychology						
Awareness of social psychology	Sport education qualification					
	Yes		No		Total	
	No.	%	No.	%	No.	%
Yes	40	81.6	51	48.1	91	58.7
No	9	18.4	55	51.9	64	41.3
Total	49	100.0	106	100.0	155	
Test statistics – Chi Sq –		Value:	df:	p:		
Continuity correction		14.179	1	.000		

### ***Motor control and learning***

This area is concerned with bringing about changes in the body as a result of continued purposeful practice. The subject specifically deals with the neuromuscular system of an individual and the processes which underlie its function including memory and attention, all which are skills utilised within the collective disciplines of athletics. In this sub-section the factors affecting coaches' knowledge of motor control and learning are therefore reported.

Exposure to motor control and learning						
Characteristic of the coach and having heard of motor control and learning						
Awareness of motor control and learning	Type of coach					
	Participation		Performance		Total	
	No.	%	No.	%	No.	%
Yes	21	50.0	73	63.5	94	59.9
No	21	50.0	42	36.5	63	40.1
Total	42	100.0	115	100.0	17	100.0
Test statistics – Chi Sq –		Value:	df:	p:		
Continuity correction		1.799	1	.180		

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**Professional background and having heard of motor control and learning**


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Awareness of motor control and learning **Sport education qualification**

	Yes		No		Total	
	No.	%	No.	%	No.	%
Yes	37	75.5	56	52.8	93	60.0
No	12	24.5	50	47.2	62	40.0
Total	49	100.0	106	100.0	155	100.0

---

Test statistics – Chi Sq – Value:	df:	p:	Phi:
Continuity correction	6.268	1	<b>.012</b>
			-.215

---

***Skill acquisition***

Williams and Ford (2009) reported skill acquisition as the journey of acquiring expertise. This expertise is thought to develop, in part, due to the opportunity to make decisions, gain quality feedback, the level of instruction, along with the type and frequency of practice. Such constructs have obvious benefits to the coaching environment in relation to the skill base of the coach and their ability to provide such opportunities. Thus coaches' level of expertise is thought to influence the athletes' ability to grow and develop. Therefore the components of skill acquisition are predicted to be closely aligned with the required skills of coaches'.

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**Exposure to skill acquisition**


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**Characteristic of the coach and having heard of skill acquisition**


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Awareness of skill acquisition	<b>Type of coach</b>					
	Participation		Performance		Total	
	No.	%	No.	%	No.	%
Yes	26	61.9	86	74.3	112	71.3
No	16	38.1	29	28.7	45	28.7
Total	42	100.0	115	100.0	157	100.0

---

Test statistics – Chi Sq – Continuity correction	Value:	df:	p:
	1.905	1	.168

---

Professional background and having heard of skill acquisition							
Awareness of skill acquisition	Sport education qualification						
	Yes		No		Total		
	No.	%	No.	%	No.	%	
Yes	70	83.7	41	66.0	111	71.6	
No	36	16.3	8	34.0	44	28.4	
Total	106	100.0	49	100.0	155	100.0	
Test statistics – Chi Sq – Continuity correction		Value: 4.269	df: 1	p: <b>.038</b>	Phi: -.182		

### *Lifestyle management*

Lifestyle management deals with a vast array of activities from dealing with the media to dealing with balancing examinations with training needs. This facet of sport psychology is thus about balancing the wellbeing of athletes against their performance desires. Consequently a key focus of this domain concerns understanding the sources of strain which influence the social system in which one is operating (Woodman and Hardy 2001). As a relatively young emerging sub-discipline of sport psychology there is in the literature to date, an apparent lack research surrounding coaches' exposure to lifestyle management. Consequently in its academic form predictions have no foundations for comparison.

Exposure to lifestyle management						
Characteristic of the coach and having heard of lifestyle management						
Awareness of lifestyle management	Type of coach					
	Participation		Performance		Total	
	No.	%	No.	%	No.	%
Yes	22	52.4	76	66.1	98	62.4
No	20	47.6	39	33.9	59	37.6
Total	42	100.0	115	100.0	157	100.0
Test statistics – Chi Sq – Continuity correction		Value: 1.914	df: 1	p: .117		

Professional background and having heard of lifestyle management						
Awareness of lifestyle management	Sport education qualification					
	Yes		No		Total	
	No.	%	No.	%	No.	%
Yes	38	77.6	59	55.7	97	62.6
No	11	22.4	47	44.3	58	37.4
Total	49	100.0	106	100.0	155	100.0
Test statistics – Chi Sq – Value:			df:	p:	Phi:	
Continuity correction			5.954	1	<b>.015</b>	-.210

### *Injury Rehabilitation*

Unfortunately the risk of injury is common at any level of sport. Traditionally the physical recovery has been the focus of rehabilitation programmes. However, the psychological recovery has received increased attention in recent years due to the athlete's loss of self-identity, confidence and the stress of the being out of their normal routine (Johnson 2006). Ensuring athletes are psychologically prepared to return to sport is an important aspect of the coaches' role. It was therefore important to identify those factors which affected coaches' knowledge of the discipline.

Exposure to injury rehabilitation						
Coach characteristic and having heard of injury rehabilitation						
Awareness of injury rehabilitation	Type of coach					
	Participation		Performance		Total	
	No.	%	No.	%	No.	%
Yes	32	76.2	85	73.9	117	74.5
No	10	23.8	30	26.1	40	25.5
Total	42	100.0	115	100.0	17	100.0
Test statistics – Chi Sq– Value:			df:	p:		
Continuity correction			.007	1	.9	

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**Professional background and having heard of injury rehabilitation**


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Awareness of injury rehabilitation	<b>Sport education qualification</b>					
	Yes		No		Total	
	No.	%	No.	%	No.	%
Yes	43	87.8	72	67.9	15	74.2
No	6	12.2	34	32.1	40	25.8
Total	49	100.0	106	100.0	155	100.0

---

Test statistics – Chi Sq –	Value:	df:	p:	Phi:
Continuity correction	5.886	1	<b>.015</b>	-.211

---

***Applied sport psychology***

The essence of applied sport psychology is concerned with optimising athletic performance through the development and use of skills, techniques and methods. Moreover, it deals with the practical application of theory and how an integration of these can influence an athlete's mental processes and behaviour's (Williams 2009). In contrast to the area of lifestyle management, applied sport psychology is a more established sub-discipline of sport psychology with a history of evidence based practice.

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**Exposure to applied sport psychology**


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**Characteristic of the coach and having heard of applied sport psychology**


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Awareness of applied sport psychology	<b>Type of coach</b>					
	Participation		Performance		Total	
	No.	%	No.	%	No.	%
Yes	23	54.8	84	73.0	107	68.2
No	19	45.2	31	27.0	50	31.8
Total	42	100.0	115	100.0	157	100.0

---

Test statistics – Chi Sq –	Value:	df:	p:	Phi:
Continuity correction	3.932	1	<b>.047</b>	-.174

---

Professional background and having heard of applied sport psychology							
Awareness of applied psychology	of sport	Sport education qualification				Total	
		Yes		No		No.	%
		No.	%	No.	%	No.	%
Yes		37	34.9	69	65.1	106	68.4
No		12	24.5	37	75.5	49	31.6
Total		49	100.0	106	100.0	155	100.0
Test statistics – Chi Sq – Continuity correction		Value:		df:	p:		
		1.234		1	.267		

### ***Mental skill training***

Mental skills training deals with the skills required for an athlete to perform consistently on a regular basis by enabling them to be mindful of their psychological state in order to lead to enhanced performance. This sub-discipline utilises intervention strategies such as goal setting, performance routines and concentration techniques to name but a few in order to maintain the athlete's desired performance level (Williams 2009). Despite these recognised benefits, Zakrajsek *et al* (2013) stated that mental skills training, is still not integrated fully into athletic programmes and are at best, moderate. Further to this, they stated that additional information is required if clarity of the factors contributing to coaches' knowledge of sport psychology is to improve. Consequently, the same rationale and procedures are applied to the analysis of mental skills training as per the previous sub-disciplines of sport psychology.

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**Exposure to mental skills training**

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Coach characteristic and having heard of mental skills training

---

Awareness of mental skills training	Type of coach					
	Participation		Performance		Total	
	No.	%	No.	%	No.	%
Yes	17	40.5	79	68.7	96	61.1
No	25	59.5	36	31.3	61	38.9
Total	42	100.0	115	100.0	157	100.0
Test statistics – Chi Sq–Continuity correction	Chi	Value: 9.158	df: 1	p: <b>.002</b>		-.256

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## Appendix 7

**Table A. Coaches individual characteristics and background (qualitative participants – Strand B)**

Pseudonym	Brief coaching profile	Type of coach		Educational background	
		Participation	Performance	Yes	No
Alonso	Over 60 years of age. Currently coach's junior participation athlete's multi-disciplines. Has a teaching qualification which included aspects of psychology.	✓		✓	
Amy	Female athletic coach in her 30s. She coached junior disabled athletes (multi-disciplines) and had no educational background in sport. She worked for one of the NGBs and so was classified as a gatekeeper.	✓			✓
Anya	A female assistant coach who worked with senior participation athletes who were endurance based. Has no educational background in sport.	✓			✓
Ariella	A fully licenced female participation coach. No educational background in sport.	✓			✓
Beau	Female athletic endurance coach for senior athletes. Has an educational background in sport and classified as a change agent and is in her 40s.		✓	✓	
Bernie	A male performance coach in his 50s. He had no educational background in sport.		✓		✓
Bill	As a male performance athletic coach in his 50s, he had a professional background in sport and coaches a junior sprint group.		✓	✓	
Christina	As a female coach in her 50s she was a performance coach for long and triple junior jumpers. As a teacher she studied elements of psychology.		✓	✓	
Devon	Performance throws coach in his 60s. As a teacher he studied psychology and coaches junior athletes.		✓	✓	
Daisy	A female assistant coach of endurance athletes in her 50s she has no educational background in sport and coaches junior endurance athletes.	✓			✓
Freddie	A male throws performance coach. He had no educational background in sport. In his 70s and coaches junior athletes.	✓			✓
George	Male performance orientated throws coach. He had an educational background in sport and was an opinion leader and is in his 50s. He works with both seniors and juniors.	✓			✓
Ian	Male performance orientated coach in his 50s. Coaches junior throwers. No educational background in sport and was an opinion leader.		✓		✓
Ivy	Female assistant coach who is participation orientated.	✓		✓	

<b>Kali</b>	A female assistant throws coach. In her 40s she is performance orientated with no educational background in sport.		✓		✓
<b>Lewis</b>	Male performance endurance coach in his 70s. He gained his educational background in sport after entering the athletics environment. He coached junior sprinters and was an opinion leader.		✓	✓	
<b>Marty</b>	A male performance orientated coach who had no educational background in sport. He worked with junior endurance athletes.		✓		✓
<b>Max</b>	A multi-events assistant coach in his 40s. He was participation orientated, had no educational background in sport and coaches junior athletes.	✓			✓
<b>Noah</b>	A male opinion leader in his 70s. Participation endurance coach who had no educational background in sport and coaches junior athletes.	✓			✓
<b>Ollie</b>	Performance orientated male sprints coach in his 50s with no educational background in sport. Worked with junior athletes.		✓		✓
<b>Phil</b>	Male performance coach. No educational background in sport. He coached both juniors and seniors in multi-events and was an opinion leader.		✓		✓
<b>Richard</b>	Male endurance performance coach. Coaches seniors and had no educational background in sport and was an opinion leader.		✓		✓
<b>Rudi</b>	Performance orientated male endurance coach in his 60s. An opinion leader coaching endurance junior and seniors with no educational background in sport.		✓		✓
<b>Steve</b>	A gatekeeper, sprints coach in his 50s. Performance orientated and has an educational background due to his Masters in Human Resource Management studied psychology. Trains junior and senior athletes.		✓	✓	

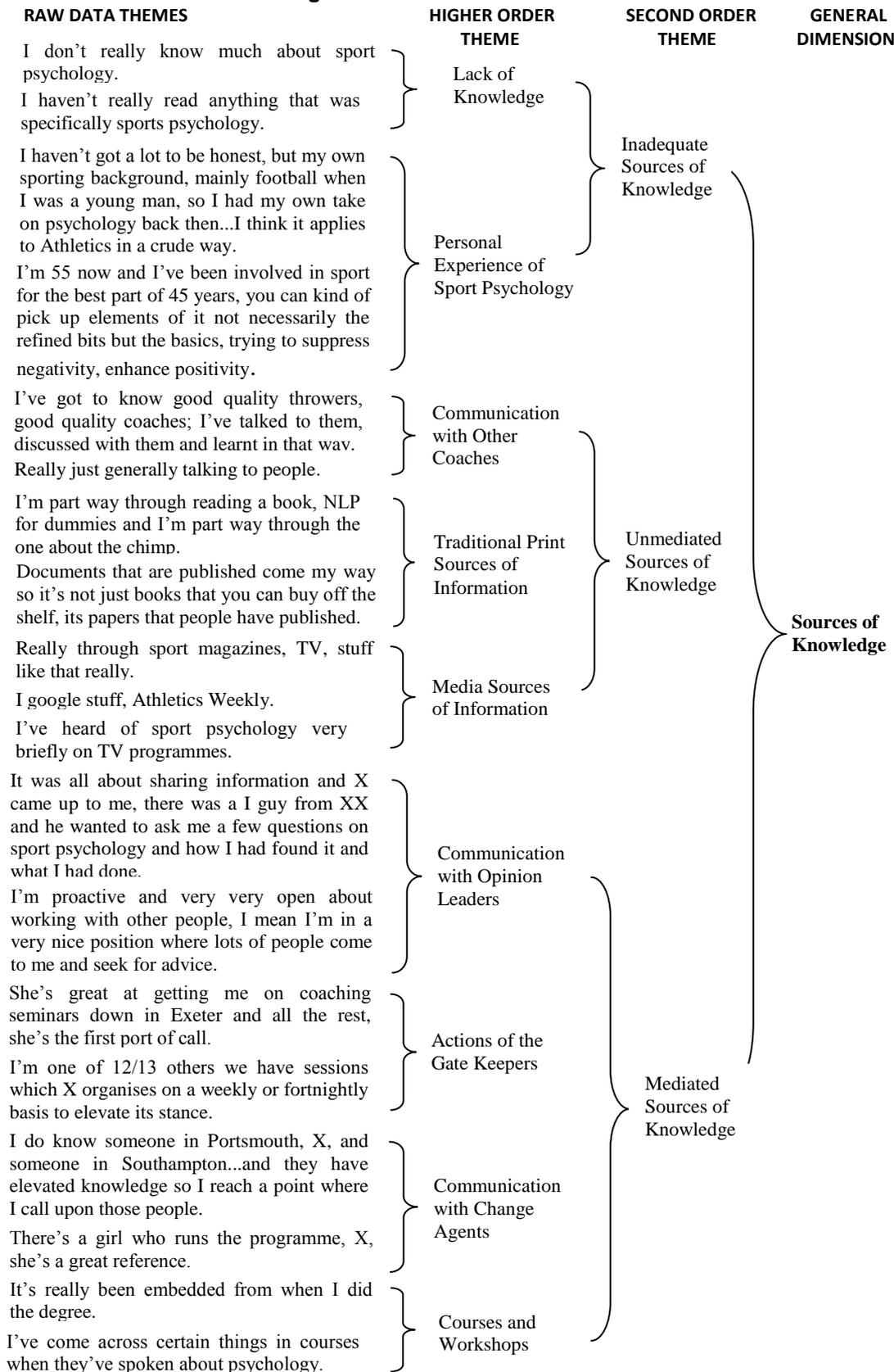
**Table B.** Amalgamated summary table of coach characteristics

<b>Athlete Age</b>	<b>Discipline Coached</b>	<b>Type of coach</b>	<b>Education background</b>	<b>Gender</b>	<b>Coach age band</b>	<b>Role in social system</b>
Junior =17 Senior = 8	Sprints = 5 Multi-Events = 5 Endurance = 7 Throws = 5 Jumps = 1	Participation = 7 Performance =16	Yes = 9 No = 15	Male =16 Female= 8	30s = 2 40s = 4 50s = 9 60s = 4 70s = 3	AC = 4 Coach=8 OL = 7 CA = 2 GK = 2

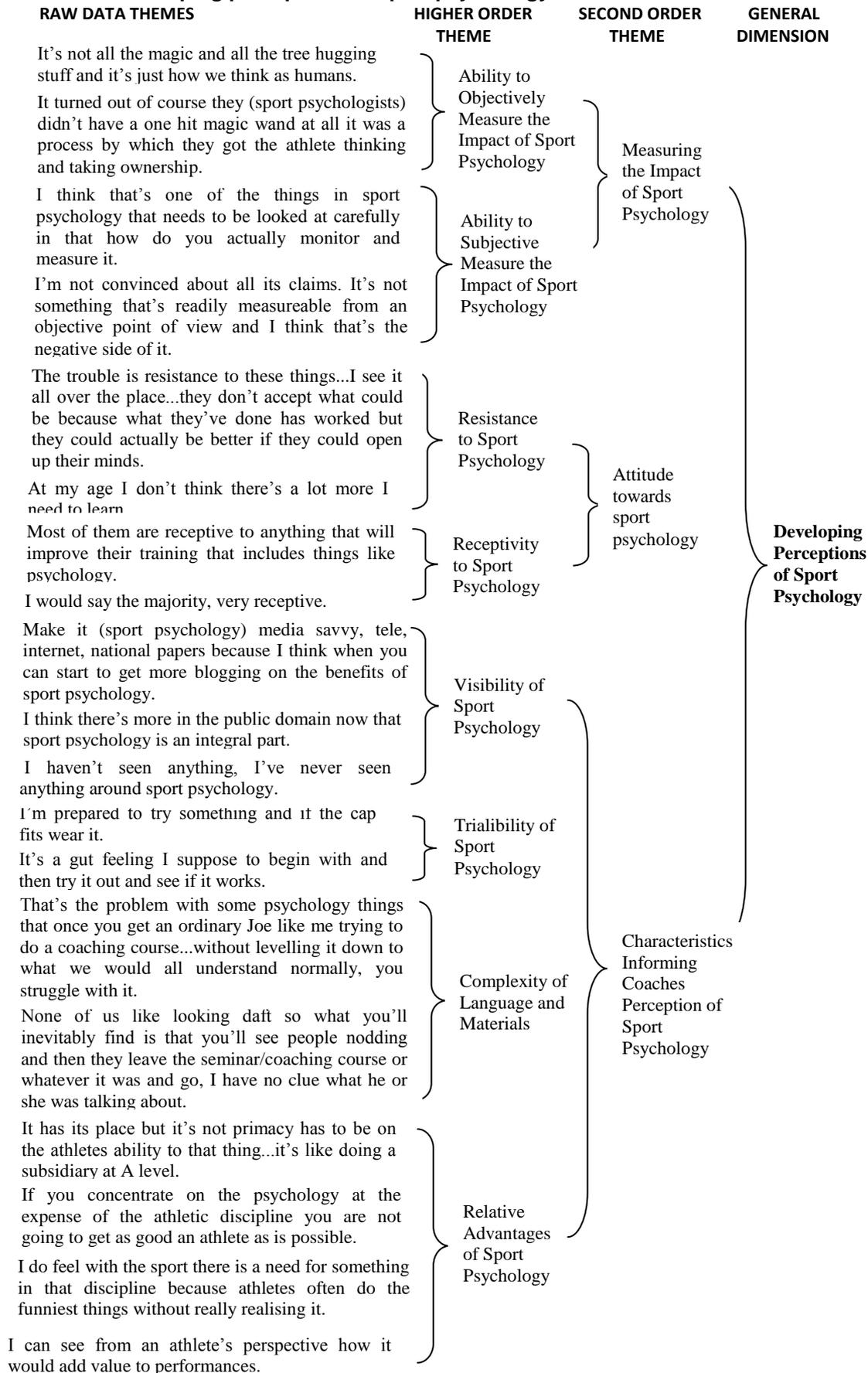
## Appendix 8

### Content Analysis Trees

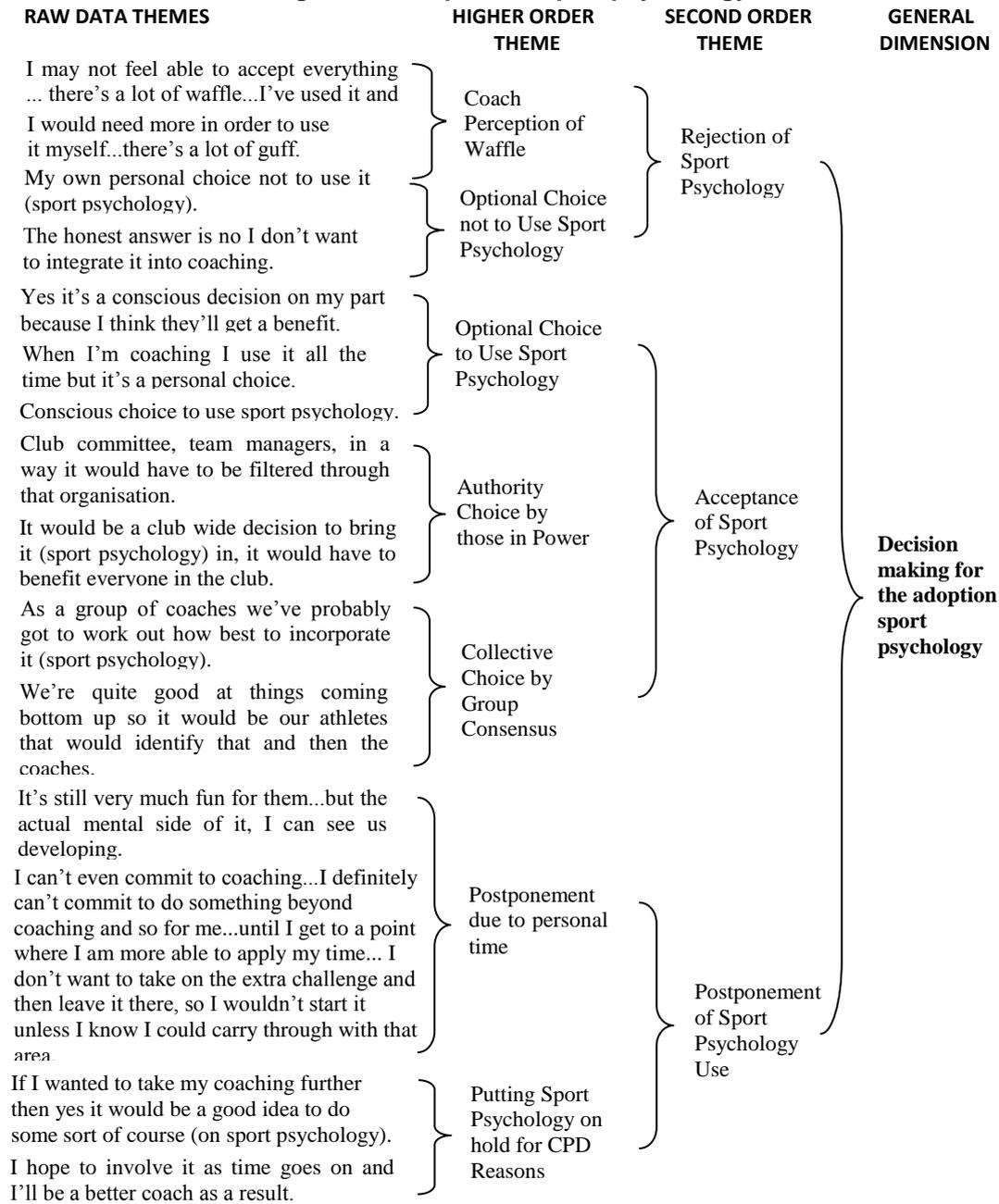
#### Tree 1. Sources of knowledge



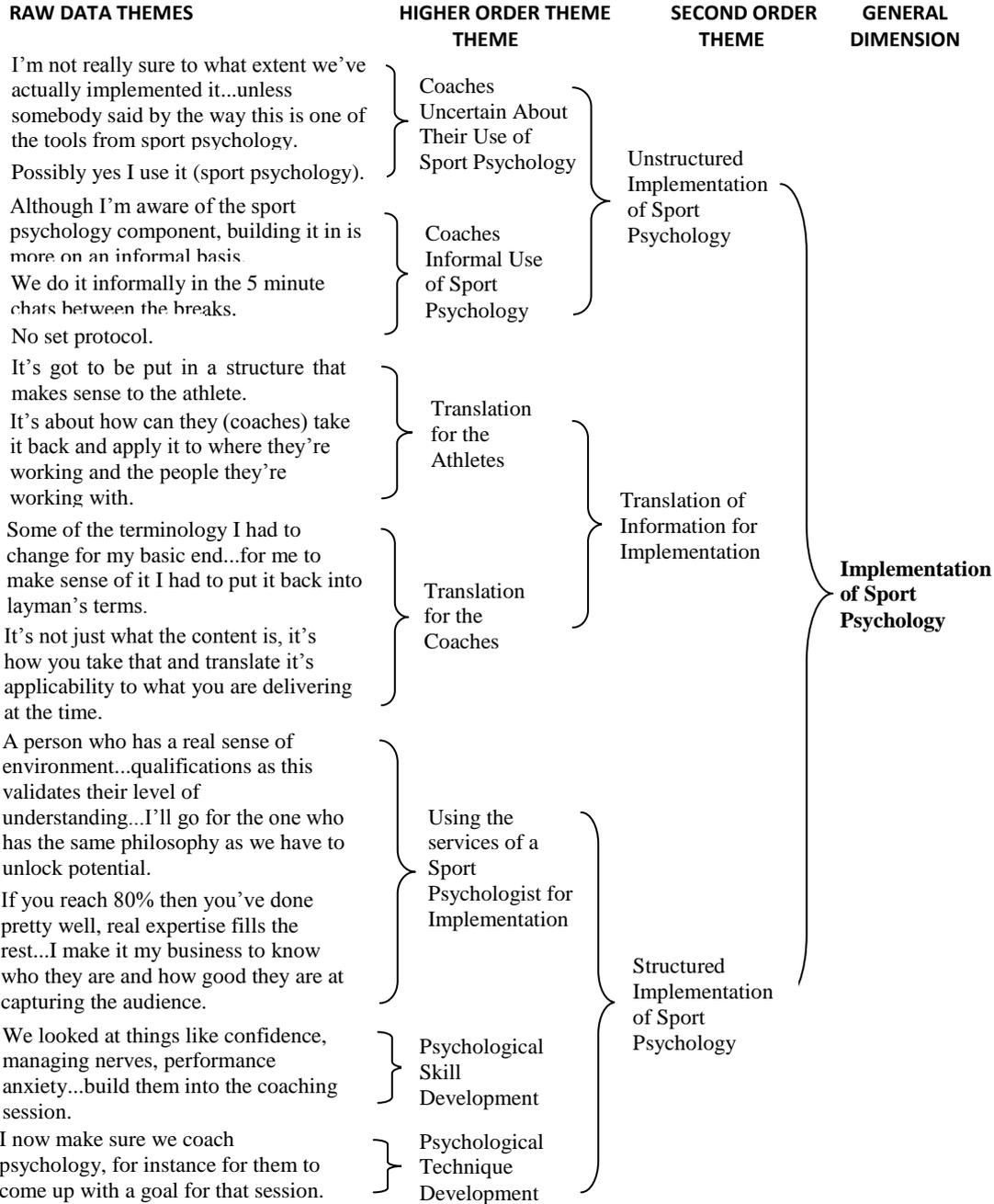
**Tree 2. Developing perceptions of sport psychology**



**Tree 3. Decision-making for the adoption of sport psychology**



**Tree 4. Implementation of sport psychology**



**Tree 5. Confirmation of the diffusion of sport psychology**

RAW DATA THEME	HIGHER ORDER THEME	SECOND ORDER THEME	GENERAL DIMENSION
I've used it and haven't found it works My instincts tell me it's not the best value on the market.	Negative Assessment of Sport Psychology	Assessment of the Benefits	Confirmation of Diffusion of Sport Psychology
It's been really good, I remember when we went to English Schools, positive self-talk and we were just saying 'I can do this' and then we changed it to the final 'I will do this', both of them won silver.			
There was one day...I said 'right we are going to do an imagery exercise' ...I thought it was good.	Positive Assessment of Sport Psychology	Assessment of the Benefits	
It's embedded it's not an add-on...it's when you see it as an add-on that problems occur.			
People are recognising it's not a separate thing anymore.	Embedded as Part of Coaching Practise	Integration into Coaching Practice	
There's no right or wrong way of doing it. People like to do different things with individuals.			
I now take an individual approach to try and work out why our athletes perform and don't perform.	Implementing Sport Psychology on an Individual Basis	Integration into Coaching Practice	
We were able to sneak up on him...the two that really mattered, the ones we targeted we got. I think that's largely down to his psychological preparation.			
It's definitely an area I think is very important ...as you become a better athlete it's very much a question of managing your emotions.	Positive Impact for Athletes	Positive Evaluation	
I do feel the psychology side of things has really developed me as a coach a lot more than if I hadn't done it.			
It (sport psychology) helps develop your coach.	Positive Impact for Coaching Practice	Positive Evaluation	
The book that has had the hugest impact on my career and my interest in sport in terms of psychology is the Steve Peters book.			
I need to finish that NLP book and get back to the Chimp paradox because I think they're very useful, they help explain a lot of things... athletes will have days when the wheels come off and they will be very hard on themselves.	Useful Sources of Information	Positive Evaluation	
We've certainly encouraged and supported our high performance athletes to get access to this (sport psychology).			
I try and get it across to quite a few of the other coaches.	Sharing Information Positively for Sharing Information in a Negative Manner	Promotion of Sport Psychology to Others	
If I didn't think it was right...I would I would say to my athlete, it's come in...I'm not convinced.			
my athletes may say they don't wish.			

**Tree 6. Barriers towards sport psychology**

RAW DATA THEME	HIGHER ORDER THEME	SECOND ORDER THEME	GENERAL DIMENSION
Home nations all have different set ups, Governance and structure.	Structure and Guidance from Governance	Structural Barriers to Sport Psychology	Barriers to Sport Psychology
On the negative side is I do think there is an aspect of lack of education or awareness from the top into the non-aware coaches.			
I think the stuff that England Athletics want is very heavy.	Demands of the National Governing Body		
I think they've got a one rule all across the board and I think they need to be a little flexible.			
You don't know what or who you're looking for or where to find it.	Difficulty in Accessing Resources		
I think probably accessing appropriate resources.			
All of the money...it is just too much for people and it puts people off. it really does.	Cost of Resources		
Cost is an issue.			
A lot of the people that volunteer are already busy people, you generally don't get lazy people that volunteer.	Volunteer culture of the athletic domain		
With a fairly limited and restricted amount of access time to the kids because of all their other activities, it's a question of how do we incorporate it when we get the opportunity?			
You get very little time with the athletes themselves on a volunteer coaching basis, we're down the track maybe for an hour, hour and a half session on two occasions and that's difficult to build in all the technical, the conditioning, the endurance, the techniques as well as the sports psychology aspect.	Limited Time with the Athletes	Inter-Personal Barriers to Sport Psychology	
One of the issues for me is primarily the athletes that I'm working with are 10 to 13 years old and I don't really think we would ever do anything.			
The barrier might be engaging with the athletes to persuade them that it's a useful tool as well as the physical aspects that their doing.	Dealing with athletes		
The obvious answer is. no I don't know what to do. I'm not the world's expert		Coaches' lack of personal knowledge to use sport psychology	Intra-Personal Barriers to Sport Psychology
There's still a lot of myth busting to do as people have misconceptions confusing psychology and psychiatry.			
I mean the negatives would be misunderstood or misrepresented psychology...there is a stigma attached to it (sport psychology) that can put some people off.	Myths, Misconceptions and Stigma of Sport Psychology		

### Tree 7. Facilitators for the use of Sport Psychology

