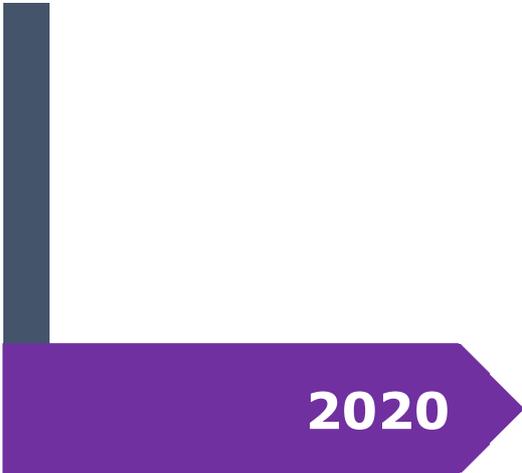


Coaches' naturalistic decision-making: injury prevention in youth elite soccer players.

SOMERS, S.

2020

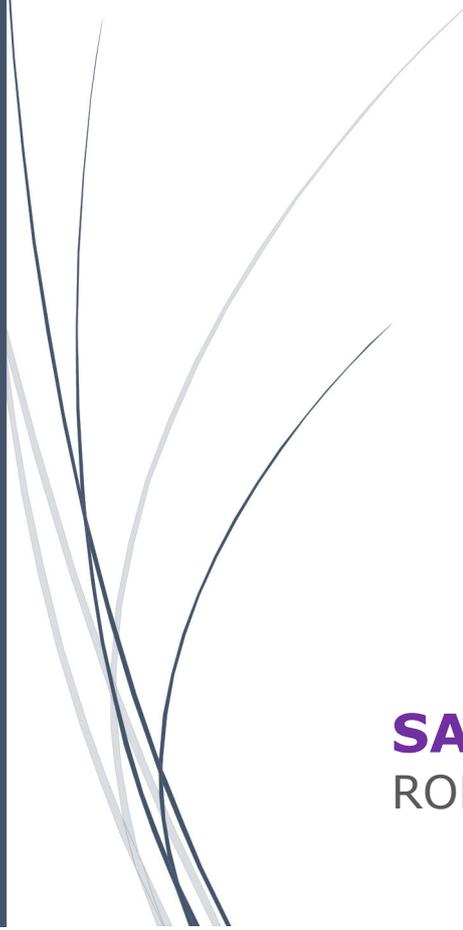
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2020

Coaches' Naturalistic Decision Making: Injury Prevention in Youth Elite Soccer Players

Masters by Research



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Coaches' Naturalistic Decision-Making: Injury Prevention in Youth Elite Soccer Players

Samantha Somers

A thesis submitted in partial fulfilment of the

Requirements of the

Robert Gordon University

For the degree of *Master of Research*

February 2020

Abstract

Researcher: Samantha Somers

Submitted in partial fulfilment of the requirements of Robert Gordon University for the Degree of Master of Research.

Title: Coaches' Naturalistic Decision-Making: Injury Prevention in Youth Elite Soccer Players.

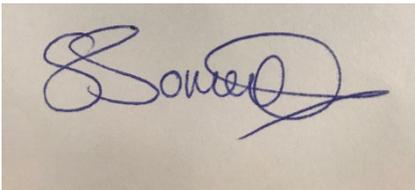
Background: The purpose of this study is to uncover and understand the naturalistic-decision-making process in youth academy soccer coaches, when making decisions for mitigating injury in youth soccer players. **Method:** Data were collected on seven youth academy soccer coaches, over two six-week data collection cycles. Coaches monitored and recorded individual injury risk incidents that occurred during each training and competition session, and reported these to the researcher. Following each cycle, Critical Decision Audit semi-structured interviews were conducted with each coach, to discuss in greater detail the incidences they each experienced, aiming to uncover and interpret the naturalistic decision-making process of each coach during high-pressured decision requirements. **Results:** Three General Dimensions were produced which captured the factors influencing decision-making: 'Problem Framing Via Past Experience', 'Smart Procedures' and 'Adapting Environment for Injury Prevention'. Coaches were able to scan and extract cues of injury risk from their immediate environment through the knowledge and expertise derived from their past experiences. Future considerations of the athletes' development and well-being was an important influencing factor. Once an incident was detected, smart procedures were employed by the coaches to successfully problem-frame the incident. A central finding suggests critical incidents often occur over extended timescales and are not exclusively defined through one discrete timeframe. Finally, in response to specific indicators of injury, coaches actively adapted the immediate environment of players at risk via a number of deliberate actions by consulting medical and sport science support staff, parents and other coaching colleagues.

Conclusion: Understanding coach naturalistic decision-making as a key resource for youth player injury management presents youth academy development systems a qualitative resource that is both immediate and complementary to more established sport science means of injury management. The current research makes initial strides toward greater insight of naturalistic decision mechanisms undertaken by coaches on how decisions emerge and manifest within the specific context of an elite youth football academy in Scotland. Applied implications are presented as guidelines for coach talent identification and development, these detail specific means for the integration of coach naturalistic decision-making as valid and credible methods of injury management in youth academies.

Keywords: naturalistic decision-making; injury; soccer performance; youth-elite; soccer coaches; injury prevention

Authors Declaration

I hereby declare that this thesis has been composed by myself and has not been presented or accepted in any previous application for a degree, and is a record of work carried out by myself unless otherwise stated; all quotations have been distinguished by quotation marks and all sources of information acknowledged.



Samantha Somers

Date 20/01/2020

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Oscar speech, finished.

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List of Abbreviations

Naturalistic Decision-making	NDM
Situational Awareness	SA
Critical Decision Audit	CDA
Critical Decision Method	CDM
Perceptual Cognitive Skills	PCS
Cognitive Task Analysis	CTA
Recognition Primed Decision-making	RPD

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Chapter One: Introduction

1.1. Background

In almost all human endeavours there are individuals that can perform at higher levels than others, people for whatever reason, that are distinct from the majority (Ericsson and Smith 1991). High-level performance in a sport environment has been identified to require superior levels of decision-making, alongside efficient execution of a skill. However, defining quality or competence of a decision is problematic as there are no standard objectives that exist within most 'real-world' performance environments. There are also many different decision-making theories that vary across the field of decision-making research. "*Experts are operationally defined as those who have been recognised within their profession as having the necessary skills and abilities to perform at the highest level*" (Shanteau 1992, pp. 255). Having sufficient comprehension of domain knowledge is evidently a prerequisite to being perceived as an expert in your field, which allows you to make informed, effective decisions. In contrast to experts, Shanteau (1992) suggests that a novice decision-maker has little to no skill in decision-making in a specific area, due to decreased levels of domain knowledge. Henceforth, successful decision-making is importantly within the heart of a high-performance environment, with the achievement of being classified as an expert requiring such high-level decision-making abilities.

Naturalistic decision-making (NDM) is a process and understanding whereby experts in a specific domain are required to make meaningful and familiar decisions in time restricted, real-world environments, with unknown outcomes (Lipshitz 2001). NDM has been researched in fields of aviation; engineering; military operations and cognitive-based games, with NDM research in the last decade venturing into sport. Literature exists on the use of NDM by athletes and coaches for intention of winning competitions, however, a paucity of research is available investigating the use of NDM around injury in athletes (Dawson et al 2017). Classical decision-making (CDM), assuming a normative approach, can be found in research as early as the sixteenth century, but more recently by von Neumann and Morgenstern (1947) and Savage (1954). CDM follows a normative model of

rational behaviour. This provides a one-rule-fits-all approach, regardless of the individual situation requiring a decision.

In the 1980's, decision-making research shifted focus from CDM to NDM theory, led by Klein, Calderwood and MacGregor (1989). This framework focused on decision-making with important themes such as: time pressure, uncertainty, ill-defined goals and high personal stakes, amongst additional complexities which shape decision-making in real-world settings (Lipshitz 2001). Orasanu and Connolly (1993) attempted to understand this research field further, concluding that a second theme of NDM theory was important to study people who had a degree of expertise. Klein et al., (1993) also added to the theory of NDM by stating that a third theme was the way in which these experts would 'size-up' situations appeared to be more integral than the process of selecting between courses of action. Since then, NDM interest and research has grown rapidly, concluding that NDM is an attempt to understand how experts make decisions in environments of the real-world that are meaningful and familiar to them (Klein et al., 1993; Klein 1998; Beach and Conolly 2005 and Lipshitz 2001).

Coaches can be perceived, through their construction of decisions, as a rational and knowledgeable figure, possessing the appropriate cognitive representations to take effective action for the enhancement of athletic performance, development of technical skills or indeed the management of injury (Macquet and Fleurance 2007). According to Johnson (2006), coaches proposed action and response upon experience of a situation are initially internally assessed around best possible behaviour and outcome. Research has shown, however that decisions can substantially vary between situations, and the same individual may not make the same decision each time they are presented with similar situations (Macquet and Fleurance 2007; Lipshitz et al 2001). This variation may be accountable to the subtle differences in environmental cues observed by each coach, and that their cognitive scanning and analysis process is injected with upgraded information derived from a similar situation which occurred in the past. With the aforementioned knowledge and understanding of the processes required for an NDM case and a coach decision requirement, there appears a CDM and NDM continuum upon which decisions will lie amongst, dependant on the time and frequency of the situation. Therefore, there exists a need to explore this NDM

process further, highlighting the environmental triggers which elicit a response across a variety of multiple coaches.

1.2. Problem Statement

Two thirds of soccer players obtain injuries at least once a season which cause them to have time out of competition or training (Hagglund, Walden, and Ekstrand, 2009). Injuries have also been shown to be associated with team performance (Ivarsson et al 2015). More specifically, Hagglund and colleagues (2013) showed that over an 11-year longitudinal study, higher injury rates correlate with lower team performances. Elite teams face significant financial burden through time-loss injuries, with some recorded costs generating a loss of approximately €500,000 for one player, injured for one month (Ekstrand 2013). Furthermore, earlier generic research on youth athletes (5-18 years old) showed that hospitalisation costs in the United States was an estimated \$485 million over a timeframe of four years (Yang et al., 2007). Sport science and load monitoring has been introduced into organisations for the purpose of injury prevention, with the aim to mitigate said injury rates across a season. Over the years this input has developed and progressed, making improvements to the performance of athletes (Reilly and Williams 2003). However, some organisations can become consumed with the process, with injuries evidently still occurring. The football coach plays a critical role around decision-making for injury prevention purposes, and at times there are aspects not uncovered by technical means but which coaches can potentially cite and apply objectively through decision-making, which has been primarily shown by researchers in concussion (Dawson et al, 2017). Thus, there is a need to explore this further in youth football, and implement an alternative means for mitigating injury, and what a holistic monitoring and action system presents as. Therefore, the purpose of this study is to uncover and understand the NDM process in youth academy soccer coaches, when making decisions for mitigating injury in youth soccer players.

1.3. Significance of Present Study

The significance of this study helps to better understand and uncover the coach decision-making process in the naturalistic setting of youth soccer for injury management around regulation of injury indicators. The research aims to elicit relevant cues to uncover the environmental triggers initiating the NDM process in youth coaches. The study explores the mechanisms of the naturalistic decision, the specific content derived from the mechanisms and then how these are used to moderate the environment accordingly. The research also determines whether approaches identified in other scenarios in the literature match and therefore what the unique elements of this study may be. Understanding the NDM process is essential in youth soccer coaches so injury management can be improved holistically across the structure, and for coaches to be confident in playing a key role in the process of their players' wellbeing.

The outcomes from this study will add to the current decision-making research through expanded knowledge and understanding of the NDM processes in injury prevention in sport, and the key characteristics that differ from original decision-making in sport expertise research. In the future with more understanding of this process, potentially tools could be developed that will aid in developing and training this process in the relevant stakeholders.

1.4. Definition of Terms

Due to the abundance of decision-making research to date, concepts in the field of sport and decision-making have different interpretations and connotations unique to a vast field of decision sciences, sporting terminologies and behavioural theory. Several terminologies that derive from decision science and research are core to this study, and therefore are defined as follows. To maintain consistency and to increase clarity within the context of the current thesis, a definition of terms section introduces key terminology and defines these in the context of the research as follows.

Expertise: Individuals exhibiting superior performance and specialising in tasks to successfully deal with challenging and non-routine cases, developed as a result of extended practice and exposure (Ericsson, 2006).

Naturalistic Decision-Making: An understanding of how experts make decisions in real-world contexts of which are meaningful and familiar to them. Appropriate real-world contexts have characteristics which define it through: time pressure, uncertainty, ill-defined goals and high personal stakes (Klein Calderwood and MacGregor, 1989).

Situation Awareness: The perception of factors and cues in the environment within a volume of time and space, the comprehension of their meaning and the future projections of status in the near future (Endsley 1995).

Recognition Primed Decision-Making: Rapid decision-making by decision-makers with the ability to generate a single option based on the recognition of their experiences (Klein Calderwood and MacGregor, 1989).

Elite Athlete: Highest level of dedication to their sport and where the amount of training and level of specialization is increased in substitute of personal and family sacrifices associated with increased work effort, intensity and commitment (Bloom 1985).

Factors: A fact, influence or circumstance, which contributes to an outcome (Dictionary, 2014)

Incident: An objective, distinct or definitive occurrence, also known as an event, with relative significance and possible serious consequences (Dictionary, 2014)

Incidents: A collective occurrence of incidents that indicate cues to the coach and are a result of (Dictionary, 2014).

1.5. Research Aims and Objectives

The research embraced a qualitative approach in order to establish coach decision-making processes toward the prevention of injury in an association football youth academy context. A qualitative research perspective afforded inductive investigation of multiple factors around this central issue. In particular, qualitative inquiry requires discovery, description, and a holistic understanding of activities and processes that, in the context of the current research, is believed will uncover the mechanisms and processes associated with coach decision-making toward the management of players around injury. This research therefore sought to use the underlying flexibility of qualitative research to study the aforementioned factors (Parkinson and Drislane, 2011).

This study aimed to:

1. Understand the interpretation of the internal NDM process by coaches in a youth soccer environment that allows them to monitor and adjust for injuries, through their expertise knowledge and experience.

To understand the NDM process for the management of injury within the research a number of objectives were constructed:

1. To explore coaches' subjective observations of players displaying signs of potential injuries during training and competitions.
2. Conduct a thematic analysis on coaches' decision-making in regards to injury risks and impaired performance, use Critical Decision Audit (CDA) (Borders and Klein, 2017) to explore meanings and decision processes undertaken by coaches.
3. Propose strategies to enhance coach's decision-making abilities for mitigating injury risk in youth elite football players.

Chapter Two: Literature Review

2.1. Naturalistic Decision-Making (NDM) Theory

Many perspectives within the literature exist around what is meant by the term 'decision'. Generally speaking, to define a decision is "the commitment to an action whose aim is producing satisfying outcomes. And decision-making is the process of solving a particular type of problem, arriving at a good decision" (Yates, 2001, p.17). Throughout the breadth of decision-making research, two methods have proved most popular, the traditional decision-making method (Pliske et al., 2001) and the naturalistic decision-making method (Klein et al., 1993).

Klein and colleagues (1989) first introduced NDM as a framework for understanding performance execution in real-world environments. NDM is a highlighted process of how people create and implement decisions in real world environments, which are significant and familiar (Lipshitz et al 2001). NDM has developed itself in psychological research over the last decade (Cannon-Bowers et al 1996; Flin et al 2017; Klein and Zsombok 1997; Montgomery et al 2004; Lyle 2010). NDM frames decision-making contexts as ill-defined where often standard solutions do not exist. Such contexts are dynamic, in flux, open to change and demand modification of goals, feed-back loops and cognitive problem frames (Lipshitz et al, 2001). This decision-making process has been proven most useful in scenarios shaped by uncertainty, complexity, goal conflict and time constraints.

2.1.1. Traditional Decision-Making Method

In contrast, the traditional method of decision-making is shaped by the decision-maker who by process, identifies the relevant information through an unbiased character, subsequently analyses each piece of information before arriving at a decision (Pliske et al., 2001). However, prior research on expertise decision-making, as originally initiated by the early work of Chase and Simon (1973), uncovers information processes and delineates cognitive knowledge structures as prerequisites experts rely on for taking decisions for expert performance.

Chase and Simon's (1973) work offers a conceptualization of decision-making distilled as a computer metaphor which relies on diagrams and algorithms

generated from the input of information and knowledge. They suggest a classical cognitive approach based upon a mechanistic approach that purports action is a direct result of cognitive 'rule' conditions ('if... then'). This questions the robustness and quality of decision-making still being made in sports teams to date due to the linearity and standard solutions provided by the mechanistic approach. It does not allow for an environment to be dynamic and emergent and therefore decisions would require similar characteristics.

2.1.2. Relationships between expertise and NDM

From an NDM perspective, an expert decision-maker beholds significant knowledge and experience in a professional domain, by which they bypass processing alternative options, appearing to operate at a tactic or sub-conscious level (Vergeer and Lyle 2009). In the field of decision-making, it is understood that much of coaches' decision-making presents as calculated, whilst drawing from personal knowledge (Vergeer and Lyle 2009).

Vergeer and Lyle (2009) also recognise that decision-making is a key element in sport coaches' expertise, however there has been a paucity of exploration to acknowledge the procedures taken by coaches to allow these decisions to be made. The role of a sports coach is to have the ability to function by making decisions, and Vergeer and Lyle (2009) continues to suggest that in fact, decision-making is a superior and integral part in the expertise of coaches. Abraham et al (2006, p.549) second this notion that "coaching is fundamentally a decision-making process", although they do fail to determine what this means for coaching expertise.

2.1.3. Non-Technical Skills

Research suggests that non-technical skills are essential for safe and effective performance in a multitude of domains such as surgery, anaesthesia and aviation (Fletcher et al., 2002 and Flin et al., 2003). Non-technical skills are a partnership of cognitive (decision-making, planning and situation awareness) and social skills (team working, communication and leadership), which integrate knowledge and technical skills and strengthen safe performance (Engel et al., 2008; Fletcher et al 2002). The underpinning requirements of non-technical skills relate to the characteristics of a coaches' role in a high-performance environment, allowing coaches to work with their colleagues (partner coach; sport scientist;

physiotherapist or Head of Academy) to allow discussion for making safe and effective decisions for the development of the player, particularly in succession planning, for example. Therefore, the author believes it to be necessary to review the role of non-technical skills in coaches' decision-making.

Research conducted in the 1990s (Seamster, Redding and Kaempf, 1997 and Freitag, 1997) found the causes of aeroplane crashes were not related to poor knowledge or technical problems, however failure in the pilot and crews' team work, communication and decision-making were at fault. Thereafter, inadequate use of these skills has been pinpointed as the key cause of many industrial disasters. Disasters such as the Chernobyl nuclear power plant (Yim, Kim and Seong 2013), the explosion on the Piper Alpha oil platform (Skriver and Flin 1997) and the Deepwater Horizon disaster (Reader and O'Connor 2014) and emergency care services, amongst a few, are all acclaimed incidents that have been investigated for non-technical skills to be at potential fault.

The evolution of non-technical skills has been apparent only recently in health-care literature. However non-technical skills in the sport environment are also worthy of investigation. It is clear that the coach requires communication, situational awareness, leadership and decision-making skills, to efficiently recognise and make decisions regarding the athlete's risk to injury and future development, both physiologically and psychologically.

2.1.4. Situational Awareness

Situational awareness (SA) is part of the cognitive skills required to generate non-technical skills for strengthening safe performance. SA is defined as the perception of components in the environment, the understanding of their significance and their future development trajectories, to an extent of time and space (Endsley 1997). Therefore, SA incorporates perceiving critical factors in the environment, understanding what those factors reflect, and at the most expert level, understanding what will be affected on the system in the near future (Endsley, 1997). In order to function at a timely and effective manner, enabling these expert levels of SA is necessary.

In 1996, Randel and colleagues used SA to identify differences that lie between expert and novice coaches. Their results show that experts dedicate more attention to situational analysis rather than the decision-taking part of an incident (Endsley

2000). It could be argued that this method has been developed due to higher volumes of exposure that the experts have benefited from feedback and hence they created a repertoire of solutions. Providing that analysis of the situation has been accurate, the solution or necessary action becomes 'obvious' to the expert. The characteristics of SA and its development highlight that NDM is established from real-world SA research, and not replicated from laboratory-based evidence.

2.2. Key Characteristics of NDM

To better understand the key tenants of NDM, it's important to gain understanding of its defining characteristics: process orientation; situation-action matching decision rules; context-bound informal modelling and empirical-based prescription (Lipshitz et al 2001).

Firstly, process orientation relates to the case of cognitive processes. Something which experts target in their decision-making pathways, instead of focusing on which option will be implemented, hence the reasoning for NDM models being less formal and abstract. In order for NDM models to be valid and reliable they ought to describe the information that decision-makers really need, how they interpret this and which decision rules are employed (Lipshitz et al, 2001). Original research investigating the process used by experts to make decisions has generated the next differentiating feature.

Matching is a collective term for decisions with the basic principle, 'do A because it is appropriate for situation X', and so this is NDM's next key characteristic: situation-action matching decision rules (Lipshitz, 1994). Various studies have persistently shown that efficient decision-makers generally make decisions by a variety of forms of matching and not by coexisting choice (Newell and Simon 1972; Beach 1993 and Montgomery 1988).

As previously mentioned, efficient decision-making is directed by experienced knowledge. This limits the applicability of abstract formal models because expert knowledge is domain as well as context specific. This avails to NDM's fourth characteristic of context-bound informal modelling (Lipshitz et al 2001; Ericsson and Lehman 1996).

Finally, empirical-based prescription is elicited by decision-makers in natural settings, using processes shaped by situational content to solve domain-specific problems by taking objective actions (Lipshitz et al 2001; Klein et al 1993). The key characteristics which distinguish the difference of NDM models in comparison to other theoretical models in decision-making research, prompts a review of models in NDM.

2.3 Review of General Models of NDM

Decision-making research is host to a range of decision-making models, which vary in characteristics from traditional decision-making to NDM. A review of the theoretical models in decision-making research is necessary to highlight the key distinguishing features that can be found in NDM and how its process is fluid and requires different aspects, with their progression over time. These complex models are beneficial to inform the context of this study and the content of the methods followed, this is why it is important to review them in this section of the thesis.

2.3.1. Experiential Learning Model (1984)

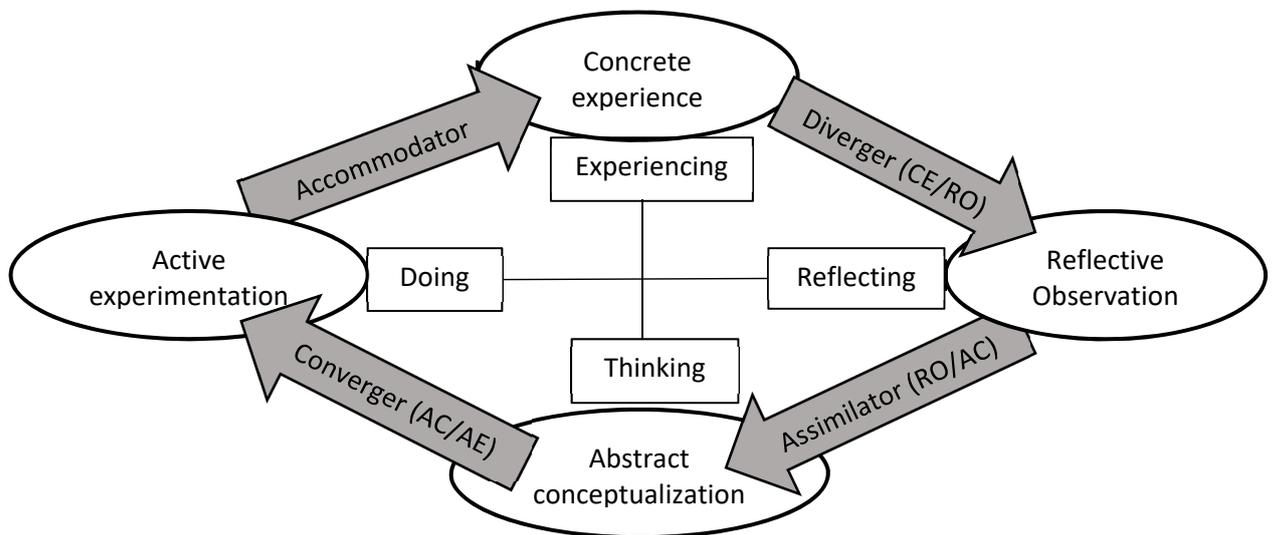


Figure 1. Adapted from Kolb's Experiential Learning Model (Kolb, 1984)

Kolb's (1984) Experiential Learning theory states that learning is a psychological process that requires continual adaptation and engagement within one's

environment. Individuals evolve their knowledge from experience instead of from instructions received. Kolb's model (Figure 1) demonstrates a sequential decision-making model through modes of action, reflection, thinking and doing. These four modes link closely to the characteristics of NDM and therefore is important to review due to the direction of the thesis aiming to understand the development of experience and decision-making processes which enables experts to make effective decisions. Kolb's (1984) model characterises the process of learning through a cyclical procedure, including four various learning styles, which emerged from the paradoxical dimensions: concrete-abstract and reflective-active.

Kolb's (1984) model allows the ability to reflect complex cognitive processes through its reflection and thinking phases. This allows individuals to learn and adapt for future similar scenarios which require actions and knowledge of a similar form to successfully manage. However, for the development of expertise there are some drawbacks to the model, it does not account for uncertainty and complexity. Due to its direct path for learning, there is little room for adaptation in situations which are not expected, due to relying on concrete experience. Therefore, this model can be used in experts to an extent, but should not be relied upon solely to develop and learn from situations. Kolb's (1984) Experiential Learning Model should be placed confidently within the CDM domain of the CDM-NDM decision continuum.

2.3.2. RAWFS Heuristic (1997)

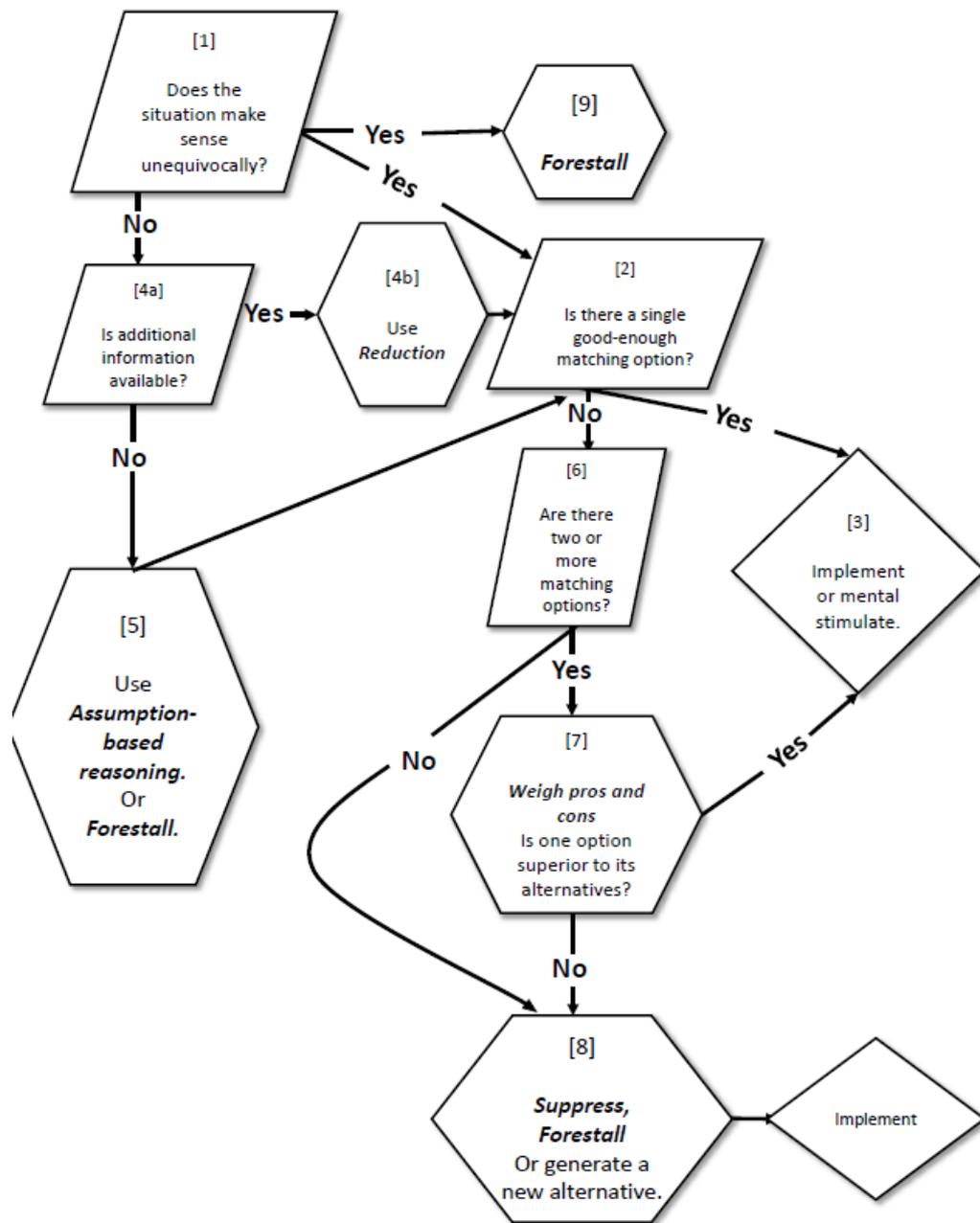


Figure 2. Adapted from RAWFS Heuristic (Lipshitz and Strauss 1997)

This model from Lipshitz and Strauss (1997) (Figure 2) is an elaboration of how decision-makers cope with uncertainty when decisions are required. The model offers a variety of paths which may need to be considered when dealing with an unexpected situation. According to Lipshitz and Strauss (1997), the model addresses three questions: 1) "How do decision-makers conceptualise uncertainty?" 2) "How do they cope with uncertainty?" and 3) "Are there

systematic relationships between different conceptualisations of uncertainty and methods of coping?" (Lipshitz and Strauss 1997, pp. 149). The authors define uncertainty in the parameters of action as delay of action due to a sense of doubt about the situation. The model shares some common characteristics to that of NDM. Being able to deal with uncertainty is one key ability in being considered an expert. However, one thing well-known about experts is that they will not rely on unwarranted rationalizations. This is where the RAWFS Heuristics model deviates from the strengths of NDM. Decisions are based upon grounded experience and knowledge, established over an elaborated period of time.

The RAWFS heuristic suggests a preferred NDM alternative in comparison to previous heuristics, and theoretical models before its time (Pennington and Hastie, 1988). The model details the transition from novice to expert coach as an ability to overcome uncertainty and complexity in various injury risk incidents. Lipshitz and Strauss' (1997) RAWFS Heuristic model should be considered marginally closer to NDM, however still strongly within the CDM domain of the CDM-NDM decision continuum in comparison to Kolb's (1984) model of Experiential Learning.

2.3.3. Recognition/Meta-Cognition Model (1998)

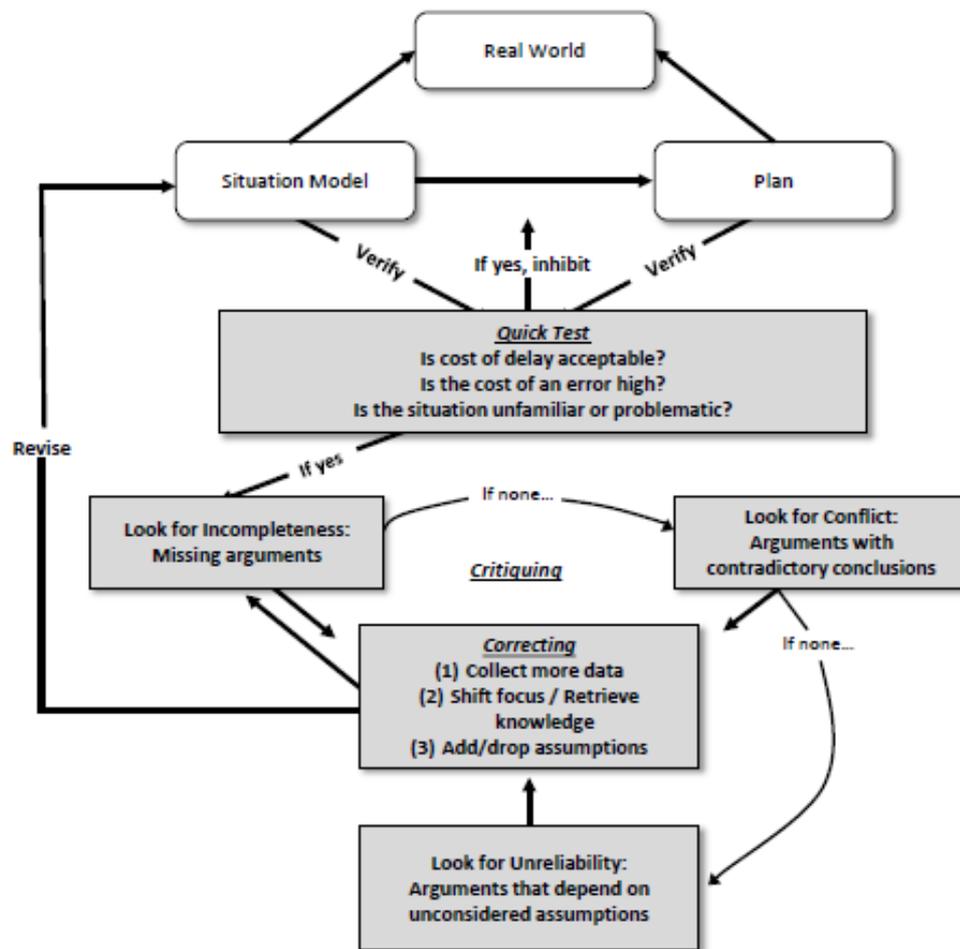


Figure 3. Adapted from Recognition/Meta-Cognition Model (Cohen et al, 1998)

Meta-cognition is an individuals' ability to control and understand their cognitive processes (Meichenbaum et al 1985) and is therefore important to consider how this links to the cognitive process of decision-making ability. Meta-cognition (Figure 3) can be defined as high-order thinking to enable understanding and analysis of a situation and control of one's psychological processes (Flavell, 1979). Metacognition is comprised of four key phenomena; metacognitive knowledge (stored knowledge on cognitive tasks and experiences); metacognitive experiences (conscious cognitive experiences that lead to intellectual knowledge); goals and actions or strategies. These four phenomena can assist an individual's ability in NDM through developing experiences and cognitive processes to arrive at a decision under the pressure of time in real-world environments.

Cohen et al's (1998) initial research on naval officers on their personal experiences in war, was used to create a training programme for decisions relating to hostile, uncertain situations in the real world that held very high stakes. The STEP (Construct a Story, Test, Evaluate, and Plan; Lipshitz 2001; Cohen and Freeman 1997) training programme shapes how a descriptive model of competent performance can be used for prescribed objectives. Similar to the previously mentioned RAWFS heuristic, STEP collars the tactics employed by decision-makers to cope with uncertainty, without having to rely on a normative model of traditional decision-making. Studies have tested this model's validity (Cohen et al, 1996; Cohen and Freeman 1997), showing statistically significant improvement in performance in the event of decisions, as a result of training. Cohen et al's (1998) model of Metacognition can be discovered in the middle of the CDM-NDM decision continuum, due to its ability to teach decision makers to cope with uncertainty, start the build of cognitive processes individually and develop experience within the field.

2.3.4. Recognition Primed Decision-making Model (1993)

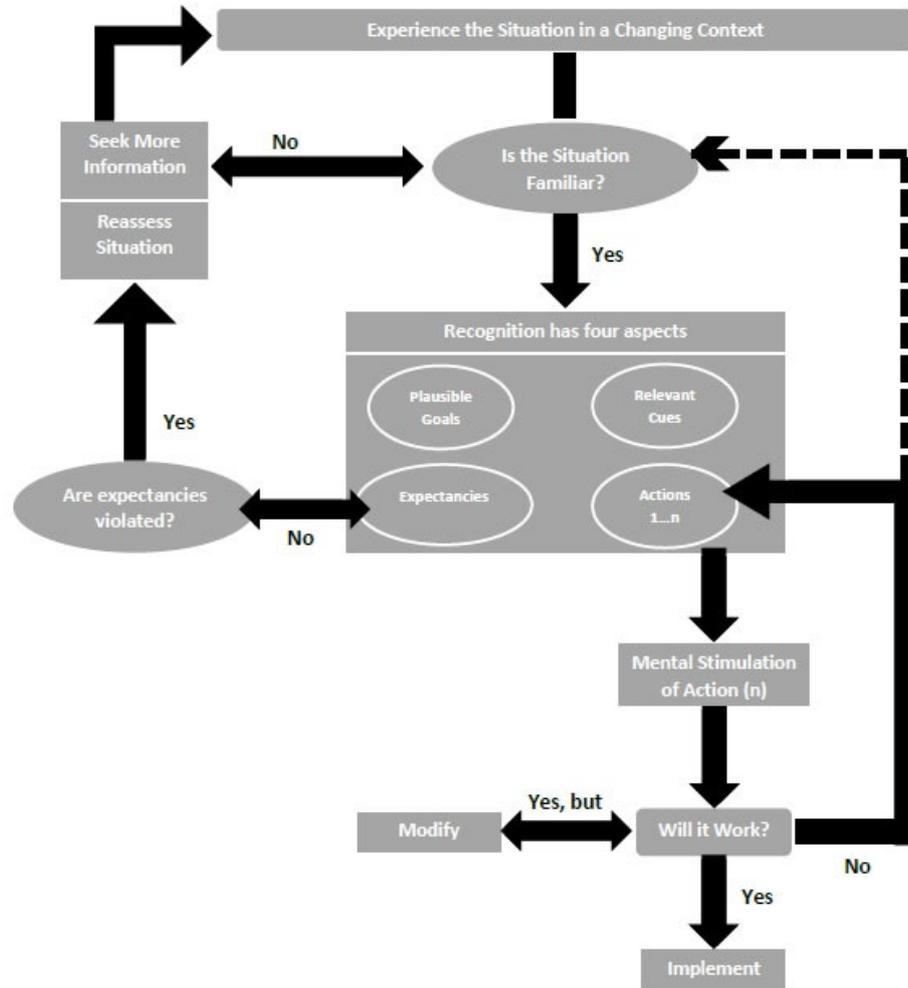


Figure 4. Adapted from Recognition Primed Decision-making Model (Klein et al., 1993)

The Recognition Primed Decision-Making Model (RPD) (Figure 4) outlines an experiential approach for transforming situational experience into feasible decisions for action (Klein, Calderwood and MacGregor 1989). The initial research completed by Klein and colleagues (1989) was a cognitive task analysis of firefighters. The research was shaped to establish understanding of how experienced commanders handled time pressures and uncertainty. To formulate the model, the descriptions from the firefighters were synthesised into a model. The model proposes the hypothesis that the skilled decision-maker will analyse a

situation and responds with the initial option that was identified in his process (Lipshitz et al, 2001).

The foundation from which the RPD model is structured varies significantly from other models in the decision-making literature. The fireground commanders' actions were more reactive, relative to their prior experience, where they would monitor and modify the plans to effectively meet the needs of their situations. This contrasts from previously mentioned models, which highlight the process of searching for the optimal choice through a pathway of created options. The strength of the RPD model is that it allows for adaptability and therefore experienced decision-makers can respond effectively to their situation. This model can be applied to only experts in the sporting field. As the model is built from the feedback of 'what' people do in situations, it cannot be taught to novice coaches to develop them into an expert. Although sport does not come with the same levels of risk, coaches when considering injury, are confronted with risk in often uncertain and time constrained circumstances.

There is a subtle progression through the abovementioned models in their ideas on traditional decision-making transitioning into NDM. As the models progress, so do their characteristics visible of NDM (uncertainty, experience, action etc.,) to identify them as more applicable for expert decision-makers. The Recognition Primed Decision-Making Model (Klein et al 1993), moves into the NDM region of the CDM-NDM decision continuum, due to its process of experts transforming situational experience into decisions for action quickly and effectively, and only experts being able to follow and use its specific process.

2.3.5. Dynamic Model of Situated-Cognition (2006)

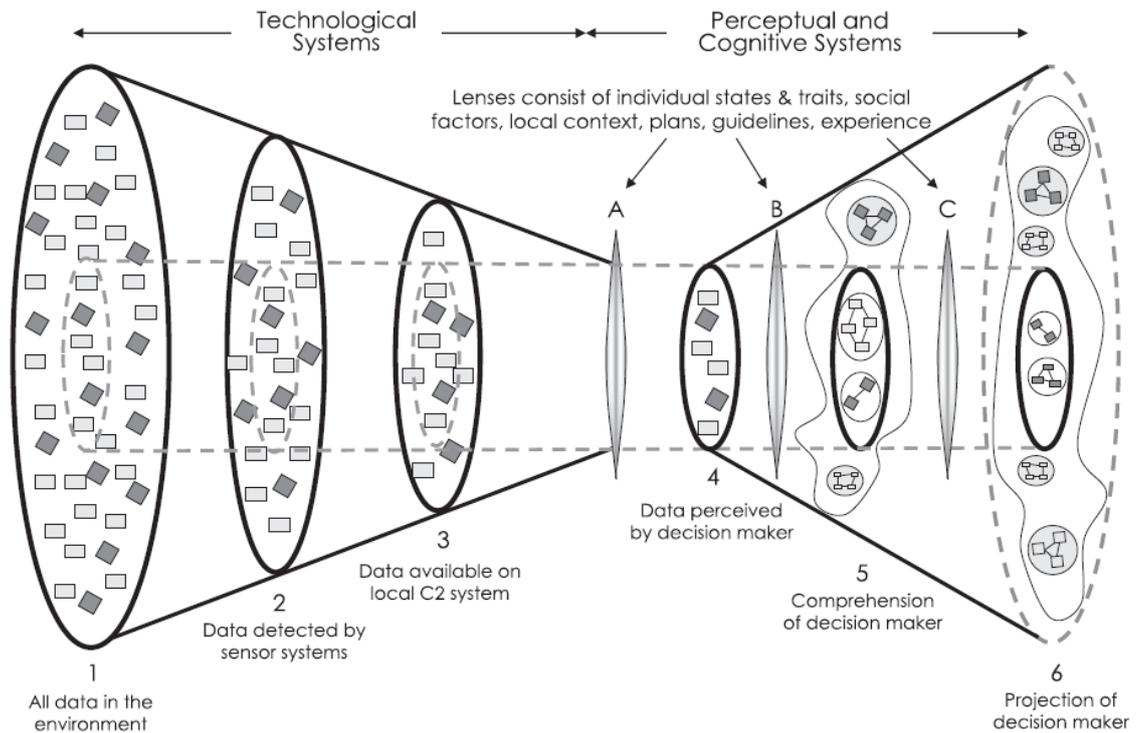


Figure 5. Adapted from Dynamic Model of Situated-Cognition (Shattuck and Miller, 2006)

Situated cognition is described by research as the interplay of various individuals and their environment (Lemke, 1997). The Dynamic Model of Situated Cognition (Figure 5), a complicated model, materialised as an attempt to highlight relationships between human perceptual and cognitive processes and technological systems (Shattuck and Miller, 2006), receiving only minimal recognition in NDM literature. However, it is important to review this model as it holds close connections to the characteristics of NDM due to its constant evolving and dynamic nature. To further elaborate, the model intends to combine human and machine parts and attempts to detail the functions in operational environments with experienced people who are engaged in goal-directed behaviour. Being engaged in this manner, means their actions and cognitive processes are fixed in a certain framework. Shattuck and Miller (2006) assume that this framework is constantly evolving or dynamic, therefore requires constant updates and psychological inputs on the situation from humans. To conclude the model, it evidently illustrates that situated cognition is a dynamic, ongoing process rather than an achieved state after a period of time (Shattuck and Miller, 2006).

2.4. Linking Decision-making to Sport Expertise

2.4.1. General Theory of Expertise

To be generic, expertise is understood and accounted for as what differentiates outstanding characters from less outstanding characters in a specific domain (Ericsson and Smith, 1991). To explore outstanding performance, various scientific approaches have been used. Within this, different types of personal characteristics have been suggested to explain the underlying outstanding performance abilities. These attributions include: intelligence and personality; music and artistic ability and body build; general knowledge and cognitive strategies and domain or task-specific knowledge (Ericsson and Smith, 1991). These attributions are derived from the belief that inherited qualities are predominantly influenced or are a function of learning and acquisition, which all characterise an individual's behaviour. The theoretical constructs which associate to these attributions reflect the following dimensions: inherited versus acquired and general versus specific. Therefore, when researching these domains, the researcher should focus on either general traits or specific abilities, as well as either general life and educational experience, or on practice and domain-specific training.

Initial research in this field looked at the expertise required to play chess (Chase and Simon, 1973). Despite the literature reviewed thus far revolving around experts in aviation, emergency services and educational learning, research does stand to exist in the sporting environment. Primarily, the research has been conducted through the domain of sport expertise. The core tenet is that the literature in sport expertise provides the vehicle for which to implement decision-making in a practical sport context. If there is more practice, then there are more refined decisions within the performance environment. The rationale for this investigation into expertise and expert sport performance is substantial. For instance, awareness of the factors that limit the highest levels of competitions due to decreased performance, expands understanding of the features that encroach upon human achievement across various other domains and fields (Williams and Ericsson, 2005). Furthermore, comprehension of the process underpinning expertise affords an established basis for distinguishing what types of practice are more favoured for performance enhancement (Ericsson, 2006).

2.4.2. Acquiring Skill for Attaining Sport Expertise

When conceptualising decision-making, one major theoretical perspective in sport that requires attention is the Theoretical Framework of Deliberate Practice. Deliberate practice first conceptualised by Ericsson et al (1993) explains differences in novice, intermediate and expert performers. The inception of the theory employed an analysis of violin players showing that for effective learning to take place, practice must be challenging in regard to its level of difficulty, explanatory from the level of feedback, and consistent with windows for error detection and amendment. A core tenet of the theory relies on the power law of practice, stated as an individual's level of attainment being directly proportional to the amount of practice hours accumulated within a domain (Williams and Ford, 2008). The authors continued to claim that hereditary factors were of far less value in achieving expertise than extensive exposure in appropriate practice activities. The limitation with this theory is it explicitly states expertise is acquired in practice, out of context. However, learning predominantly occurs in practice, in context (Handford et al 1997; Honeybourne 2006; Araujo and Davids 2011)

This engagement in deliberate practice that is domain-specific, alongside the unique constraints of the performance environment encourage relevant adaptations and improvements to the characteristics of a performer (Ford et al., 2015).

2.4.3. Perceptual Cognitive Skills (PCS)

In summary, decision-making in sport is largely characterised by decision training in laboratories where the emphasis is on development of specific perceptual-cognitive skills for replication in competition (Gray 2019). As NDM places importance on ill-defined goals and skills, high person stakes and the inherent uncertainty of the real world, replication in laboratory settings is problematic. Nevertheless, in situ investigation is required to better establish decision processes in this area (Cote and Gilbert 2009; Abraham and Collins 2011; Harvey, Lyle and Muir 2015; Vergeer and Lyle 2009).

Extensively applying the method of deliberate practice, inevitably leads to adaptations and the development of PCS, such as anticipation and decision-making. Williams et al (1999) confirm that these adaptations are essential because

the speed of play in multiple sports often goes beyond the primitive limitations imposed by the decision-maker's ability to process information.

Advanced cue utilisation is when a skilled performer can show an exceptional ability to notice advance visual information, such as postural position prior to a key event, such like a collision in football (Williams et al, 2002). This skill could allow an athlete to foresee the future trajectory of the game, therefore prompting a naturalistic decision to be made for the benefit of the outcome for the athlete.

To define a 'Job Smart' in NDM research, is an expert who can use the information resources around one-self and make a quick and effective decision without wasting any time (Borders and Klein, 2017). For the purpose of team ball games, in a competitive situation, this cognitive skill could be employed to significantly enhance the chance of success to the team in the competitive situation.

Experts are also unique in relation to visual search behaviours. Experts qualitatively extract information from their visual environment. This technique will highlight the ability levels between elite and sub-elite practitioners and athletes alike. Different sports require their own specific search behaviours, as well as the individual's positional stance within that sport (Williams, Ward and Smeeton 2004; Williams and Ericsson 2005). In partnership with visual search behaviours, experts are suggested to have the ability to assign accurate probabilities to each outcome which may or may not develop, therefore they are able to devote their attention passionately to the most essential contextual cue.

Vaeyens et al (2007) research concluded that experts are superior to novices for ensuing any given situation through strategic decision-making. According to McPherson and Kerondle (2003) 'action plan profiles' and 'current event profiles' memory structures are created to allow experts to create more appropriate decisions strategically. The framework follows an 'if X' (a certain condition happens), 'then do X' (respond with a certain action) approach. However, current event profiles are guided by tactical scripts and situation prototypes which shape the response given by the decision-maker. These provide access to recent information, retrieved from encoding, retrieval processes and specialised monitoring linking together previous experiences with actions occurring in the current match (Williams and Ford, 2008). This links to NDM behaviour by relying on past experiences to shape the decision taken to account for a future outcome.

However, these studies fail to acknowledge that NDM, as seen in the models above, conceptualised the action plan profile by valuing input from the real-world situation as continual modifiers for the decision-making process (Klein et al., 1993).

2.5. Recent Decision-Making Research in Sport

Examples in sport traditionally have embraced the linear stage wise decision models. Farrow and Raab (2008) offer a recipe for becoming an expert decision-maker and the perceptual cognitive competencies which an expert should possess. A linear decision-making-process model (Figure 6) is offered by Farrow and Raab to illustrate the stages experts complete to arrive at a decision.

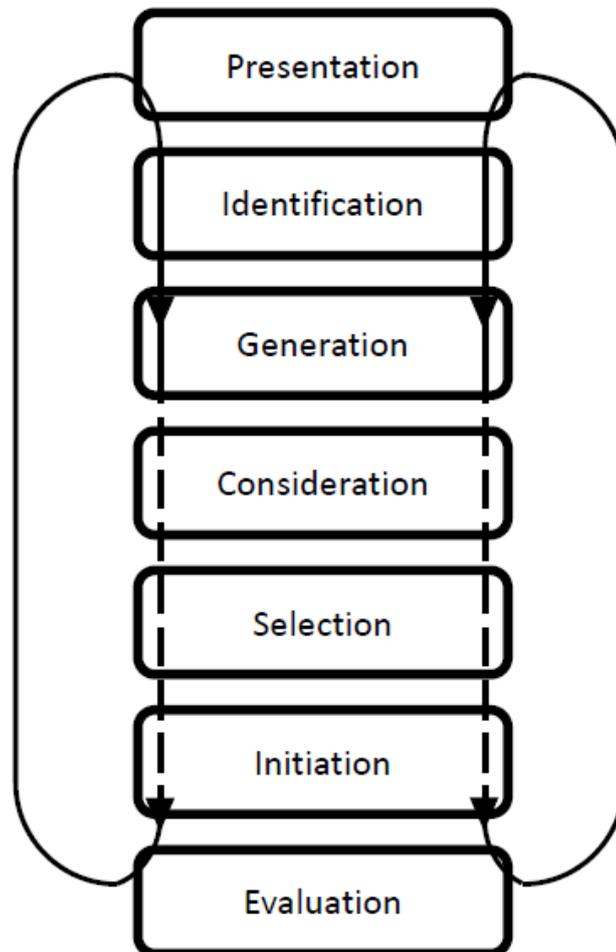


Figure 6. The route to decision-making skill in sport (Farrow and Raab, 2008)

Although this model is useful for coaches in the planning process, it does not accurately decipher what the true decision-making processes are within context. It provides a good framework for the phase of planning, before execution, however the essential cognitive mechanisms and processes that are operating in a complex environment, like football coaching, are not captured. These linear stage-wise models still exist in sport and contrast more nuanced approaches forwarded by mainstream NDM research. As an advancement for PCS and to gain greater insight into the complexity of the decision processes for performance in sport, NDM is the ideal progression as it goes a step further. NDM is more context relevant and offers a concentrated version of PCS, which can be viewed as quite decontextualized.

2.6. Naturalistic Decision-Making in Sport

Coaches operate a system of 'knowing in context' that orientates and informs the entire decision-making process and thus enables coaches to act in accordance with the constraints faced in order to appropriately guide athlete development. Many perspectives exist toward understanding the construction of expertise in sport, however one perspective commonly associated with sport performance in complex environments is that of NDM. NDM research offers insight towards the complexity of cognitive processes within real world environments. As these in sport are inherently complex and often unclear, the coaching process effectively aligns with the NDM research agenda as coaches' decisions primarily are not routine but rather often non-routine and emergent.

In sport coaching, few studies look at the process of decision-making in the context of injury management and prevention. This study aims to present a novel insight into this process. Other studies (reviewed below) although not in coaching, have investigated the decision-making process in athletes during competition.

The early research in NDM in the sporting context, was conducted by Macquet and Fleurance (2007) on expert badminton players. Their study aimed to establish how high-level performers make decisions during the course of specific actions. After each competition, verbal feedback was collected during a self-confrontation interview (Von Cranach and Harre, 1982). The process of the interview was to ask

the elite players to describe and explain their own behaviour and activity, and elaborate on the decisions behind the first four actions of each rally.

The conclusions of the study uncovered the mechanisms of decisions being created from knowledge of previous and current matches, assuring that decision-making evidently depends on previous, current and anticipated future events (Seve et al, 2003). However, it is arguable if the methods of the study holistically examined decision-making by only focusing on the first four actions of each rally, this limits the data to a narrowed view of decision-making in a competition setting. The method of self-confrontation interviews allowed rich and comprehensive extraction of the players' interpretation of action and decisions from the matches. Although it could be argued that there are more rigorous methods including the Critical Decision Method or the Critical Decision Audit.

Two years later Macquet (2009) studied expert volleyball players under time pressure conditions and tested results against the RPD model. Data was collected through observed and recorded competitive matches and also through self-confrontation interviews. Conclusively, results showed that players' decision-making was based on both a process of recognition of a typical situation and on the use of affiliations between a typical situation and a typical action. These results reinforced the RPD model in an emergent sporting context: a situation assessment followed by a choice of a course of action.

The study was limited in nature due to a narrow view through testing the RPD model in a sports context. The study would have benefited from a deeper exploration of some aspects included from the meta-cognition model (Cohen et al 1998). Such aspects like high-order thinking that enables understanding and analysis of a situation and control of one's psychological processes. Future research in this area should also consider collecting a larger, more robust cohort to employ similar research methods, pertaining to a deeper understanding and evidence base that the RPD model has a place in NDM in sport. Despite the limitation, a process driven, internal model of cognitions framework is provided by the results of the study that enables interesting insights into athlete's decision-making. Developmentally, it provides coaches and athletes a possibility for adapting their way of play and introducing reflexive practice in order to improve (Schon, 1983).

Kermarrec and Bossard (2014) suggest that soccer would be an interesting field of study for NDM due to the uncertainty and complexity involved not only in terms of performance but also around the holistic development of athletes. The aim of their study was to describe the decision-making of professional defensive football players according to the RPD model. Observational data was collected from video recordings of the players' actions during international matches, particularly from the start to the end of defensive sequences in the game. Secondly, data extracted from video-cued recall interviews were also collected.

The content analysis revealed findings in agreement with research conducted previously (Macquet and Fleurance, 2007; Macquet, 2009). In summary, results highlighted that decision-making of elite football defenders was based upon multiple salient features, associating with three types of recognition processes, of which could be related to the RPD model. Management of players' development is individually driven and dependent upon the players' future career goals, providing the degree of complexity to the role of coaches. Uncertainty rules within the unpredictable outcome of player development, with injury being a strong factor that would affect this. This is a dynamic and continual situation which requires NDM to achieve an optimum outcome for the players' successful development. Similar to the earlier research (Macquet and Fleurance, 2007; Macquet, 2009), this study is host to a very narrow view of NDM by associating the results to the RPD model, excluding any other processes which may be uncovered through more holistic methods of data collection. Despite the clear relevance of NDM for coaching in elite sport, a paucity of evidence exists relating to injury management.

2.7. NDM Model of Coach Decision-Making

Harvey, Lyle and Muir (2015) produced a landmark study detailing conclusions with their research and model of coaches' decision-making in sporting environments (Figure 7). The findings of previous work (Vergeer, 2013; Debanne and Fontayne 2009; Lyle 2003) discovered that decisions were generally influenced from reactive responses to scenario-based questionnaires. More recent research highlights the reactive and proactive policies of coaches, dependent upon a winning or losing situation. These empirical studies assisted in the construction

of Harvey, Lyle and Muir's (2015) study to produce a current and informative model of coach decision-making.

The model focuses on SA with transitional decision-making stages, appropriate for each complexity faced in a spontaneous situation that requires thought and potentially therefore, action. The normative model spans three phases that provide the concept of decision-making through an 'input' to 'output' regulatory process. Pattern recognition and feature matching marry together as the initial step in the model, which shows the ability to identify and observe an issue in the immediate environment. The coach links to previous 'cases' and compares the key issue to said previous 'cases' with a relevant rating of importance. Subsequent to this initial step, key attractors are also considered when rating the importance of the issue, such things like if goals are threatened, personal image is questioned, planned activity is not achieved and if the issue is a crisis event. These factors help to 'problem frame' the incident according Harvey and colleagues (2015) by identifying the future consequence of the immediate issue.

The phase entered next in the process is the 'triggering' phase of decision-making. Five features are contended with (catalytic features; thresholds; risk or threat; time pressure and forward reasoning and mental stimulation) in order to decide if the situation is severe enough to deserve action, and if so, what are the future implications of possible decisions. Once a decision has been implemented, it is suggested the coach evaluates and manages the effects of his decision based on the outcome of the environment. If the coach had a hypothesis as to what outcome his decision would provide, then this is the stage where it is referenced to his simulation in the previous stage and also what he would improve on in the process, should a similar issue arise in future.

It should be importantly noted that the original model produced from the authors was intended as a conceptual framework to aid in understanding. Therefore, the conceptual model serves as a useful framework from which to develop this study upon. The model can potentially be employed to help guide decision-making for coaches per se, in align with previous research (Macquet and Fleurance 2007; Kermarrec and Bossard 2014; Pope, Penny and Smith 2018; Collins and Collins 2013). Although the authors used interviews as a method in this study, potentially the results would have been further enhanced by adopting a central method in

NDM research, such as Cognitive Task Analysis or the Critical Decision Method or Critical Decision Audit. The employed method of Situational Recall has its limitations. The method doesn't allow the capturing of how decisions are continually adapted in an ongoing manner due to its incident approach prohibiting the authors to generate an informed awareness and understanding about the process of the decision-making (Vergeer 2013). To develop this limitation in future research, which this project tackles, greater attention to the heuristics which relate to coaches' decision-making as well as the evaluation of the decisions made would highlight a deeper insight into the management of the NDM process. However, it still leaves a gap in the research for the need of an injury prevention study in a naturalistic sporting context.

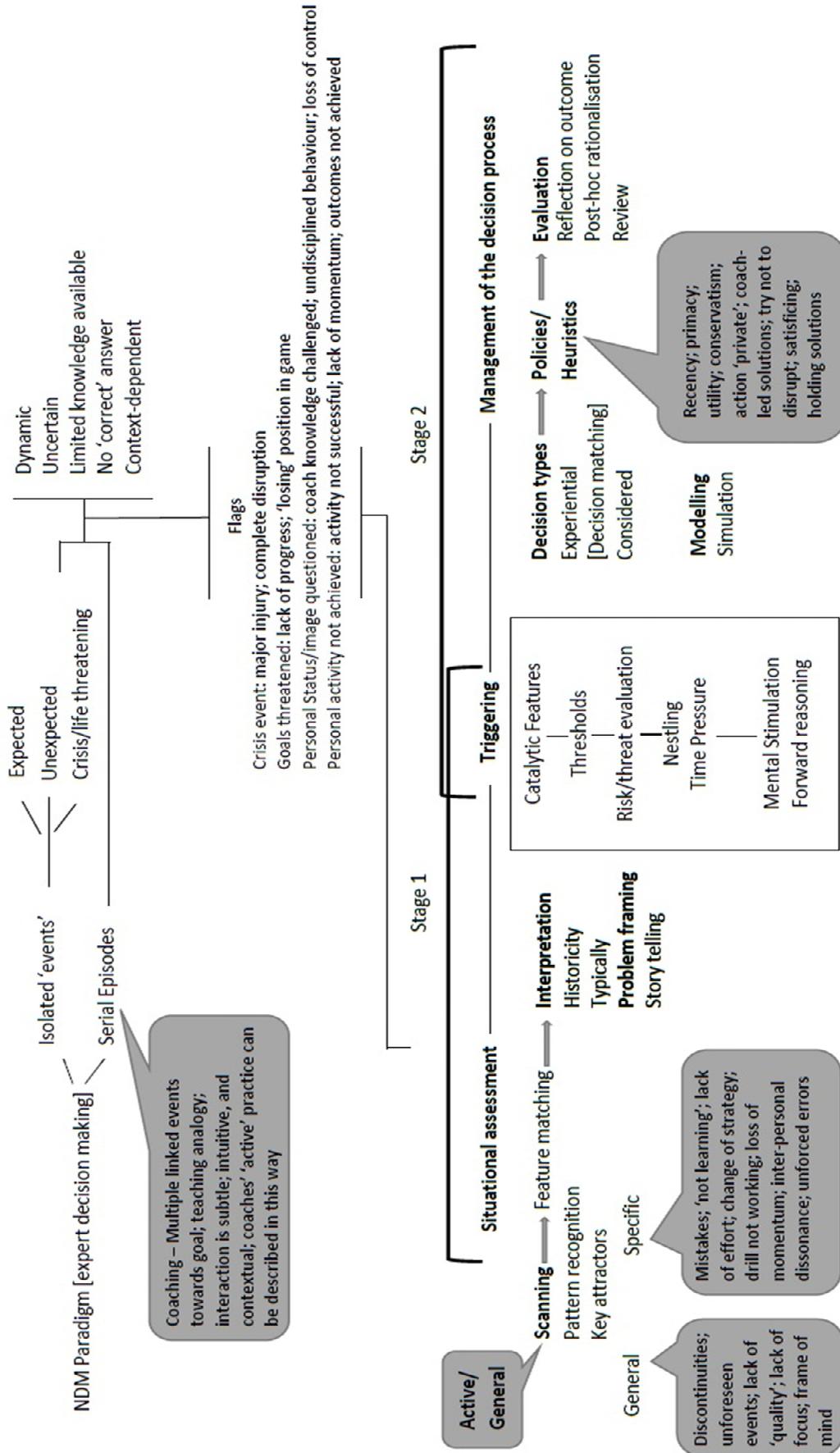


Figure 7. Adapted from Lyle et al., (2015) conceptual framework of coach decision-making.

2.8. NDM Coaching and Injury

The literature provides only one available study for review regarding NDM coaching and injury. The study was conducted in the Australian Football League (AFL) only recently. Dawson et al (2017) identified numerous factors influencing decision-making around concussion identification and management, the first study to tap into the realms of NDM use in medical situations in sports. Data collected on the participants' decision-making following an incident of concussion was structured through a Critical Decision Method (CDM) semi-structured interview (Klein Calderwood and MacGregor 1989), similar to the methods of this current thesis.

Results highlighted that players underestimated the consequences of concussion to play on during the game, alongside game significance and playing their role for the team as other contributing factors. Medical staff were influenced by the score provided in their concussion assessment tool during their decision-making process. Conversely, they felt subject to frequent pressure from both coaches and players for implementing courses of action related to returning an athlete to play. Lastly, coaches' were heavily dependent upon the medical team's decisions and advice. Findings support the importance of external influences on decision-making from key social agents as determinants in the successful management of player concussion.

The study failed to highlight the mechanisms but rather only detailed interaction between key agents within a system. A classic limitation of system approaches that look at social systems, is their inability to detail the actual mechanisms driving decisions, but rather map the landscape of the social system. Additional measures of questionnaires or medical reports could be implemented to produce more rigorous, objective and measurable data for the understanding of influences on decision-making, particularly when investigating medical staff.

Despite the limitations, positively the findings support decision-making in the prevention of injury and further confirm the importance of NDM in a high-risk, time constricted environments. Future research in similar environments is necessary to exploit the nature of club and any multi-disciplinary frameworks in use. Also, to highlight any cultural, and hierarchal discrepancies which appears to be problematic for effective decision-making, and in general the efficacy of understanding decision within a high-performance organisation.

2.9. Review of Literature Summary

The research conducted and literature available on domain-specific expertise is vast. There is an abundance of training methods and techniques that have been created to improve and develop the decision-making abilities from a novice through to an expert, but it is arguable if they are context relevant and trainable in a real-world environment. The review traces aspects of traditional versus naturalistic decision-making, theories of expertise, models of decision-making processes, skill acquisition and perceptual cognitive skills. Much of the models discussed and training methods suggested by researchers, all require laboratory-based training, and therefore don't consider the emergent, complex factors of naturalistic environments.

In athletes, PCS although useful have been derived from the laboratory. Therefore, although indicative and linked to NDM mechanisms of decision-making a need exists to understand whether links can be made between PCS and naturalistic decisions in the real-world context (coaching sessions). The context of the study seeks to establish this within a coaching context and in particular for the management of injury. So, while studies on injury exist (sport NDM and models of NDM), they do not embrace all these key elements around coach regulation of injury, therefore there is a need for the research.

Chapter Three: Methods

3.1. Research Design

The intrinsic case study design (Yin, 2003; Baxter and Jack, 2008) was chosen as its approach allows for the genuine interest of a unique topic to be explored in its case alone (Stake 1995). A case study methodology was deemed central for exploration of the academy context. Case study allowed for the generation of data via multiple sources and stakeholders, for example parents, coaches and sport science personal. It also allows for the variation in age group context across the whole academy structure to be acknowledge and investigated, highlighting any fundamental differences which may arise. Further, a case study methodology will allow the research to investigate individuals within the case, the academy, through interventions, relationships, communities or programs, installing a multidisciplinary framework model, which can be used to the benefit of the elite case for the purpose of injury prevention (Yin, 2003). It is also stated that this approach is applicable for sport and health science research due its flexibility and rigor (Baxter and Jack, 2008). The authors also state the benefit of a case study which allows the research to be conducted in a real-world environment, accepting that logistical adjustments may be necessary to still achieve an optimal result as the research progresses. Yin (2003) presents a strong argument for research pursuing "how" and "why" questions to employ case study design. In respect to decision-making research, case study design is common place in health and performance related domains, with the research by Baxter and Rideout (2006) demonstrating exemplary use of a case-based approach in nurse's decision-making performance.

The research aimed to embody a longitudinal, inductive approach designed to explore NDM through a variant of the tried and tested research method CDM first set out by Klein et al (1989). The thesis pursues a longitudinal, iterative design, allowing the researchers to visit a variety of information sources, and re-visit these more than once. More specifically, the CDA was used to streamline the strengths from the CDM and Knowledge Audit (KA) methods. Borders and Klein (2017) created the CDA and proposed the accessible hybrid for researchers to still collect critical incidents and discover the characteristic of expertise. The CDA blends

together the CDM and the KA (another cognitive task analysis strategy) and strives to accomplish the advantages of the CDM and the KA whilst improving the efficiency of the CDM and the impact of the KA (Klein and Hoffman, 2008). Within the demands of this study the CDA the author felt confident that the CDA would allow for effective and detailed data to be collected in a structured and recorded order, to best analyse and produce results relevant for decisions upon injury mitigation. The probing framework provided by Borders and Klein (2017), allowed for mini-cases to be discussed across the interview, which coaches may have been triggered into obtaining a memory of another incidence that may not have felt appropriate for recording at the time. This structure allowed for depth and clarity to be achieved on all data collection incidents, in which the author can record and therefore successfully analyse the true reflection of the coaches' decision-making process. For the purpose of this study, the CDA has been adapted to accommodate a sporting context to align with the coaches' terminology and understanding, this aims to promote richness in data (Appendix 5, pg. 108).

The flexible design of the study was broken down into two iterative phases (Yin 2003), allowing for extensive exploration into the qualitative indicators of injury, and the influencing factors on actions of coaches' decision-making to prevent these injuries from materialising. The rationale for completing data collection in two phases is due to the changing circumstances observed during the unfolding competitive season (LeGall et al., 2006). Typically, player fatigue plays more of a significant role in performance abilities as the season progresses, therefore the coaches are required to employ different decision-making processes and actions (Brink et al 2012). Another justification for a two-phase model approach is to allow for data saturation to occur. The number of participants was relatively low in this study, therefore there is a benefit to the longitudinal design as it avoids a snapshot approach.

Therefore, phase one monitored potential indicators of injury risk incidences. Phase two seen CDA interviews conducted to the individual coaches, to establish the factors that influenced decision-making. These interviews were held at two strategically organised points of the data collection process, one after each monitoring phase of injury indicators during training and match sessions. These interviews were led and informed by the data collection of the previously recorded incidences from phase one of the study.

3.2. Participants

Access to participants from Aberdeen Football Club (Aberdeen, Scotland) was achieved through gatekeeper permission from the Head of the Youth Academy and Head of Youth Academy Sport Science (Appendix 1). Gaining entry in to a hard to access elite academy was enabled by the relationship established by the researcher who was embedded in the club as a Graduate Academy Sport Scientist. The youth academy philosophy is based upon an ethos on successful transition of young players through the academy structure to professional (full-time) contracts with the aim of being successful in the first-team squad. The football club consistently ranks in the top two academies in the Scottish Premier League. The academy squads compete in and often win a range of youth elite international competitions. The level of elite performance and future planned trajectories of the football club's youth athletes, provides a requirement for coaches to have the ability to implement informed, effective decisions for the athletes' performance benefits.

Purposive sampling was used to recruit the participant sample. According to Acharya et al., (2013) purposively sampling has advantages in allowing the most effective participants to be recruited, with it being the most commonly used method, alongside it being a pragmatic and feasible method for gaining access to elite youth coaches. However, to avoid researcher selection bias, recruitment of participants was completed by the primary gatekeeper (Academy Head of Coaching). This mitigated coercion or pressure that may have been felt by the participants to take part in the research. Prior to participating in the study, participants were provided detailed information regarding the proceedings of the study (Appendix 2) and provided written informed consent (Appendix 3) to be included. The current study was approved by the School of Health Science Ethical Review group at Robert Gordon University.

In order to collect a sample of elite youth coaches for this study, which could display expertise in decision-making related to their domain in youth elite football, a group of seven male expert football coaches from the elite professional youth football academy volunteered to participate in this study. Coach selection criteria included that participants were required to hold a UEFA 'A' or UEFA 'B' License

coaching qualification and coached for a minimum of two seasons with development players. Coaches were also required to be a contractual employee of Aberdeen Football Club youth academy (Cote and Gilbert, 2009). This quantity of participants allowed the researcher to obtain a range of experiences within an elite sample of top tier UEFA qualified coaches, and gather conflicting opinions between coaches (Camic, Rhodes and Yardely, 2003). Additionally, it embarked upon an insight into the youth academy as a whole and encompassed a range of age groups and experience levels of coaches, instead of just one specific squad. This variety in experience levels of coaches ensures the case in this case study approach is unique to the research field.

3.3. Data Collection

3.3.1. Training and Match Data Collection

Coaches were provided with an induction session to the research project to raise awareness of specific indicators that could indicate injury risk or impaired performance. These indicators included, but were not limited to, players referencing pain in an area of the body, tiredness related to school/examinations, complications in personal life leading to psychological impact, stressors related to contract negotiations, and depleted motivation (Appendix 4). These events or indicators were highlighted as they have previously been identified as critical indicators in the context of sport and injury with youth athletes (Polito et al., 2017 and Lehnert et al., 2018). It was required of the coaches to have the ability to identify these injury risks correctly to form effectively informed decisions, which long-term helps achieve the aim of the youth academy philosophy to produce full-time, elite football players. With the view of the overall study design, it allows the questions of "how" and "why" to be answered in relation to the decision-making process for players at a risk of injury. The observational data were gathered by the seven youth academy coaches at each training session and competitive match over two six-week cycles until saturation was reached (Saunders et al. 2018). Replication of data from CDA interviews was used as a marker to determine saturation was reached.

The coaches were instructed to report, via a voice memo note, each incident observed on their mobile device and share these with each other and the primary researcher in a secure and dedicated chat server after every training session or competitive match (Stocker and Close, 2013). The voice memos followed a set structure which included: reporting coach's name; relevant squad; incident observed; frequency of incident; and coaches; action to incident, to ensure all relevant information was provided. The voice memos were also transcribed and collated in an online spreadsheet further detailing the coach reporting the incident, date of incident, the player involved, summary of the incident and who initially reported it, and the decision-making and or action taken by the coach in response. The purpose of this specific data collection strategy was to allow for a holistic, but detailed understanding of events which occur during training and match occasions, which require either acknowledgement or action. This then allowed for a detailed

and thorough interview process to be employed on each coach, to further understand the entire decision-making process they enacted for each incidence they faced.

3.3.2. Critical Decision Audit

The CDA was used to frame and guide the construction of the interview protocols and delivery during data collection (Borders and Klein, 2017). The audit was framed by core tenets within NDM, these are: 1) Past and Future; 2) Big Picture; 3) Noticing; 4) Job Smarts; 5) Opportunities/Improvisation; and 6) Self-Monitoring. All interviews were conducted by the researcher and began by the coach recounting the first incident recorded and being asked to explore how the situation arose and how the coach anticipated the outcome of the situation. Questions were then related to the six CDA topics with probes enabling greater detail relating to nuanced decision processes undertaken by participants. Additionally, probes were modified for a footballing context to gain further understanding of how decisions were made and what source of knowledge was used to make these informed, expert decisions. An example of a probe used in questioning the 'Big Picture' area of expertise was: "*Can you tell me why you think it's important to have a plan of attack in a situation?*" Further follow up probes to this question were: "*Do you have a plan B for the session?*", "*What do you need a player to do to be fit for play?*" and "*Is this player central to your team?*" (Appendix 5).

The interviewer ensured that for each incident discussed all six CDA topics were covered in depth to produce a holistic and rich understanding of each coaches' decision-making processes. However, interviews were also flexible to allow coaches to explore more than one incident at a time if they were related and then return to an earlier incident if necessary. Additionally, timelines were not generally followed in a linear sequence to encourage coaches to link instances where this provided greater insight into their decision-making processes. The duration of each interview was limited to 90 minutes, with the actual duration lasting a range between 40-65 minutes. The structure of these interviews was semi-structured, allowing the coaches to discuss in detail their own specific decision-making making process in relation to their recorded incidents. For the second round of interviews,

the same processes were followed with updated timelines detailing events from the most recent six-weeks of data collection, which coincided with the two months of the season.

3.4. Data Analysis

Data collected from the CDA interviews were analysed through thematic analysis (Braun and Clarke 2006). Thematic analysis has been employed extensively in sport NDM research, however to add structure to the current analysis of the CDA the Braun and Clarke (2006) method was specifically selected to enable a clear step-wise sequential protocol for establishing relevant themes and general dimensions relating to the coaches decision-making process (Table 1).

The process avoided centring themes on the core aspects of the audit, but rather opted for a deeper focus on underlying abstract themes that represent specifics of the coach decision processes within the injury context in youth football. This process was used effectively to analyse interviews from a related study investigating concussion management within a multi-level framework in elite rugby (Dawson et al 2017). Step one of the process involved transcribing (verbatim) the interviews recorded (by SS), using Microsoft Word, with transcripts sent back to the relevant coach for member checking (Appendix 6) (Podlog and Eklund 2009). As a second phase of the first step, to familiarise with the data, the interviewer read each transcript in their entirety on two more occasions to gain full familiarisation with the participants' recorded experiences and perceptions (Bertollo, Saltarelli and Robazza 2009). To begin the second step of the process to identify codes and themes, the researcher began with the transcript which was believed to hold the richest data and which provided the biggest length of transcription to analyse. Therefore, using NVivo 11 Pro software, participant 6's first interview was analysed for codes which were evident from the transcript. The researcher then completed the coding process, tactfully choosing the richest transcripts in order to complete, until all seven initial transcripts from the first data collection phase were complete. All individual codes were collated together on individual paper cards, and laid out for the researcher to observe. This then allowed for a thorough and comprehensive view of the codes to begin searching and

reviewing the themes appropriate. Each transcripts' codes were compared against each other to identify and confirm for the recurring and meaningful patterns that were visible throughout the data set. Raw data themes were identified and labelled from each interview transcript focusing on conversation topics, vocabulary, recurring activities, meanings, feelings and proverbs (Podlog and Eklund 2009). Raw themes were then further connected and categorised into Themes, Sub-themes, Higher-order themes, and then finally General Dimensions. Once all initial themes were highlighted, the researcher reviewed these by member-checking with the principal supervisor of this project to begin step four and five of the process. Some alternations were required in this stage to further categorise some themes in more detail, and collapse some themes into one relevant theme. This stage allowed for further engagement with the data set. Once all themes were confirmed and defined, a thematic map of the codes and themes and higher-order themes was created to comply with step six of analysis. This completed the first phase of the iterative data analysis procedure.

Once the second interviews were conducted and transcribed, following the procedure stated above, the same analysis procedure was then followed. The codes and themes found from the second interview transcripts were aimed to conform with the structure of confirmed themes from the first phase of data analysis. The second phase of the analysis was therefore informed by the first phase. The aim of the second phase of data analysis was to prove data saturation and confirm and finalise the overall analysis. Again, certain themes were changed and adapted to suit the data set and the story it was providing, as a result of the second data collection. Lastly, the data from the two analyses were integrated into an overarching analysis that were formatted into a branched matrix formation originating from Raw Themes through to General Dimensions to clearly visualise the results (Appendix 7). Importantly, the aim of the second phase was to track the progress of each critical incident stated in phase one, from the real-world setting. As these were being monitored in real-time the researcher required to enter back into the field to see how certain critical incidents materialised to their end.

The coding reliability procedure was assessed and discussed with the second and third authors to increase trustworthiness and credibility of the results. This process led to deep engagement and detailed reflection of the specifics of the data over

the timeframe both at the first iteration, to inform the second, and subsequently to arrive at concrete, overall themes for a complete analysis of the timeframe. The longitudinal timeframe was essential as the critical incidents (specific player cases around regulation of injury) lasted the entire period in many cases.

Phase	Description
1: Familiarising with data	Immersion in the data to the extent that researcher is familiar with the depth and breadth of the content. Usually involves repeated reading of the data – whilst also searching for patterns throughout etc,. At least one read through of data set, before coding begins. Transcription (verbatim) of verbal data is also completed in this phase (helps with familiarisation).
2: Generating Initial Codes	Producing initial codes from data set. Codes are accepted as data that is interesting and meaningful to the analyst (Boyatzis, 1998).
3: Searching for Themes	Once all data has been initially collated and coded, there is a list of codes generated. This list helps to 're-focus' the data set in a broader scale, in terms of 'themes'. This is sorting the codes into potential themes – analysing how different codes can amalgamate to form an overarching theme. Some codes may continue to form main themes in the data set, some may create sub-themes and others may be terminated. This phase is complete with a collection of themes, sub-themes and all other data extracts which have been coded in relation to those categories.
4: Reviewing Themes	This phase involves refining those created themes. Here, some themes may materialise into one collective theme, or some may establish no justification to be a theme and some may be required to be categorised further into separate themes. Using Patton's (1990) criteria for judging categories (internal homogeneity and external heterogeneity) ensuring clear and identifiable distinction between themes. Level 1: reviewing themes at the level of the coded data extracts. Level 2: Involves similar process, instead at a level with the entire data set. To complete phase there should be a coherent understanding of what the different themes are, how they link together and the overall message and story they produce about the data.
5: Defining and Naming Themes	Once a thematic map of the data is satisfactory, then the themes can be defined and further refined by considering what aspect and essence each theme captures. Names need to be concise, punchy and immediately allow the reader to understand what the theme is about.
6: Producing the Report	This involves the final analysis and write up of the report, whether that be for a research assessment or dissertation. The aim is to convince the reader of the validity and merit of the analysis process and outcome.

Table 1. Description of Braun and Clarke's (2006) Six-Step Thematic Analysis Procedure.

Chapter Four: Results

The analysis uncovered detailed accounts informing the environmental and individual factors influencing NDM in elite youth academy soccer coaches, for the prevention of injury in athletes. The thematic coding process resulted in 81 raw themes, 19 higher order themes and 3 general dimensions from the CDA interviews (Appendix 7). The thematic coding process of Braun and Clarke (2006) was an independent process to the CDA, therefore the results produced are in constraints of the methods followed. The following three general dimensions highlight the key factors which influence coach decision processes around injury regulation: 'Problem Framing via Past Experience', 'Smart Procedures' and 'Adapting Environment for Injury Prevention', all of which encompassed the environmental and individual factors to influence decision-making.

Coaches demonstrated an ability to scan the immediate environment in order to select and extract pertinent information from real-time situations. The ability to scan and detect derived from past experiences, which provided insight and meaning into the events occurring in their immediate environment for regulation purposes. In order for coaches to work at the speed of a real-time environment in soccer, they had built extensive knowledge of the game, which allowed them to read and project future outcomes of their situation.

Further findings identify decision-making as a continuous process, where availability of information on player status derived from the environment adapts and refines a cognitive problem-frame held by each coach over multiple timescales. Through the data collection, there was no critical incident such as an acute injury, which required immediate intervention by the coach. Rather a series of iterative incidents combined to structure decision-making at different timescales. The findings therefore reveal the critical incidents are a multi-phasic construct within the naturalistic setting observed. Decisions made at the micro phase determine the meso, and the meso phase determines the overall success of the injury regulation at the macro phase for the entire incident. 'Adapting Environment for Injury Prevention' related to actions and considerations that were used to make effective actions once a triggering threshold had been reached.

The following section of the thesis will explore with greater depth each of the general dimensions presented above in sequence, and highlight the key influencing factors that coaches allow to inform their decision-making process when regulating injury risk in their athletes. Each general dimension will present the relevant raw themes and higher order themes which pertained to that overarching theme. The link between the coach's behaviour and therefore the generated raw theme and higher order theme will be presented as the results of the research process.

4.1 Problem Framing via Past Experience

General dimension one, presented in (Figure 8) hosts all factors which relate to cognitive dimension informed abstract around relevant past and future events that allow a coach to detect qualitative cues from their environment, indicating a player displaying impaired performance levels. This step is the initial starting sequence for a coach to begin his NDM pathway.

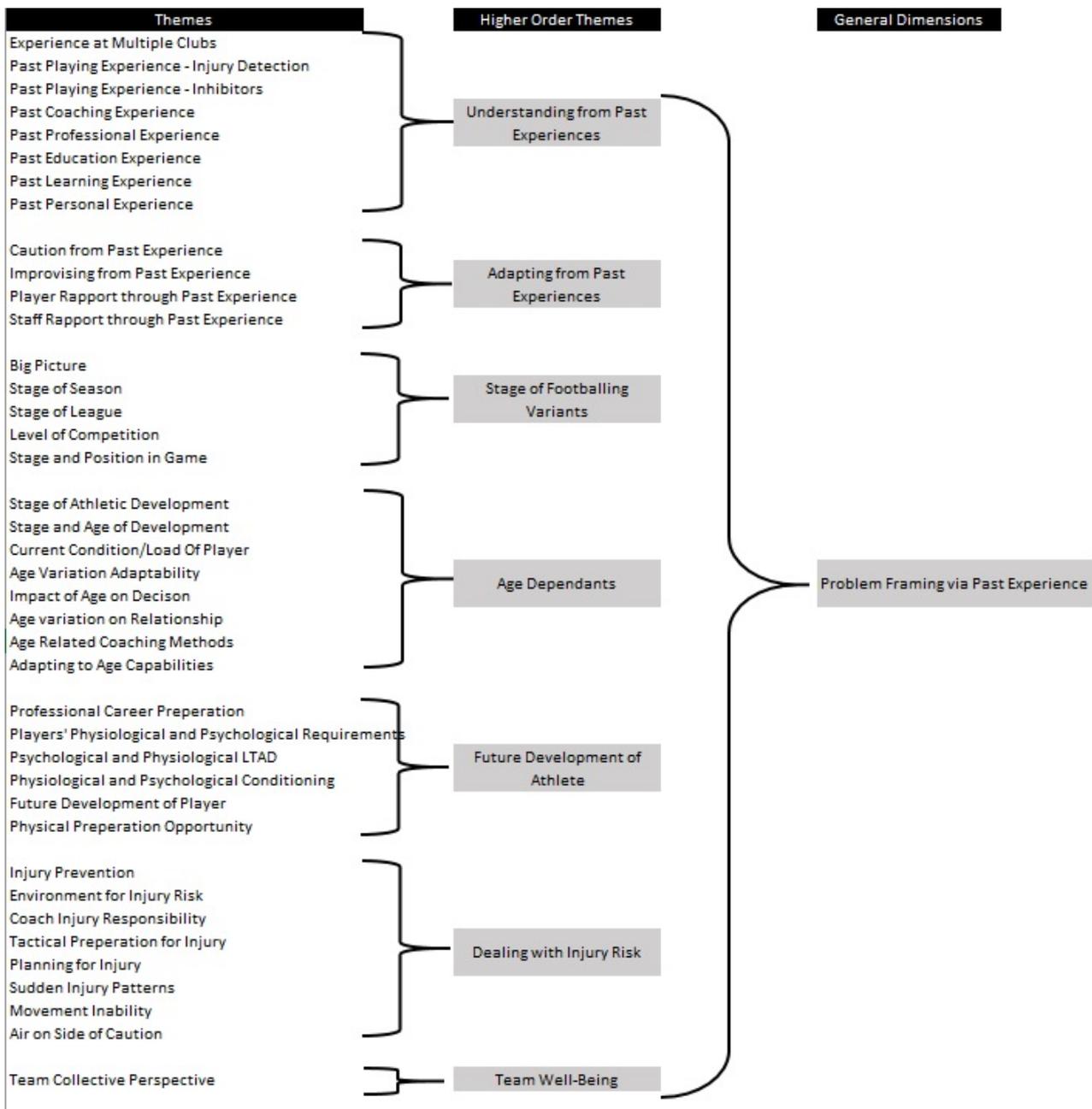


Figure 8. General Dimension 1 – Problem Framing via Past Experience

4.1.1. Understanding from Past Experiences

The findings identify coaches scanned the environment for cues. Coaches noticed relevant cues and extracted these in real time, often when experiencing significant time pressures. The thematic analysis categorised the extracted relevant cues noticed by coaches as 'Understanding from Past Experiences' and 'Adapting from Past Experiences'. These themes are centralised around experiences which coaches have endured throughout their professional career and personal life, which have an influence into their ability to scan and extract relevant cues for injury risk in their environment.

Further findings unearth that coaches are consistently entangled with their environment and the stream of information emerging from training, matches and interactions with other key stake holders in the athlete development environment. It was evident from the analysis that coaches captured key cues from the environment in-situ and then internally dissected the meaning of these cues in a sense-making exercise to arrive at an understanding of player status, which is in contrast to conventional forms of load regulation given by contemporary sport science practices. The thematic analysis uncovered the following factors which coaches highlighted as part of their scanning process: a decreased intensity or complete cessation of training by a player; direct complaints from players regarding a risk of injury; specific biomechanical movement patterns to individual players, or decreased psychological motivation or interest in training.

"Some of these lads that are here I've known since they were very very young, so you've seen them come through you sometimes see patterns but, you always got to air on caution first regardless of your knowledge of players. You know if they're down or if they've stopped or complained of something you know you've got to obviously think that erm, there's a possible injury first before you go any further." (Participant 2, Interview 1)

Results highlight the importance of caution to coaches when initially extracting cues from their environment. Before coaches begin the rest of the decision-making process, caution is first installed as a mediating factor to then base the rest of their decision-making on.

4.1.2. Adapting from Past Experiences

Thematic analysis discovered the next stage of the decision-making process for coaches, after being cautious of the situation, is to access a range of information sources to aid in their understanding of the problem frame, using their past experience (HOT 1). Coaches stated that this was learned through their experience of being a professional coach for an extended period of time; being an ex-professional football player or by gaining life experience as they have aged themselves as a parent or as an individual.

"As an ex-player that's played about for 20 years and you know yourself, Christ you've played with many, many injuries throughout your career. But you can still play through it, but you know for a fact you'll be sore when you come off." (Participant 1, Interview 1)

"I just think it comes from being mainly coaching experience. If you're at the game or at the training ground, nearly every day of your working life, and eh, you're constantly in match situations." (Participant 2, Interview 1)

"Bit of both, from being a player and learning, from bad managers and good managers." (Participant 6, Interview 1)

Obviously if you're playing at an older level age group, like I say with ours its, a lot of it is, is it bad? if the physio's told you he needs to come off, as an ex player do I think that injury is one you can just run about with, the other big one is, can that player cope with being injured?" (Participant 1, Interview 1)

Information collected through the CDA interviews highlighted that, coaches who had experience as an elite professional football player were confident in their past experience allowing them to notice events occurring before coaches that had been coaching longer than them potentially would. Knowledge gained from past experience ensured a deeper understanding and empathy towards players who were at a risk of injury. The coaches with a past history of injury as a player acknowledged a deeper resonance with specific informational constraints communicated from specific players at risk. The emergence therefore, of coach personal experiences linked closely with the context of injury to enhance sense

making around the problem frame construction, maintenance and the weighting in terms of the importance these cues played in informing the decision-making process. Results highlighted a clear ongoing refinement of the problem-frame by coaches over the time span. A range of experiences shaped the information received from the environment and assisted in the sense making process.

"You take him out [of training] and then it might be a bit more of you go and consult everybody, you might go and speak to sports science and say 'what are you saying about him?'...It's down to the workload, that's how you speak to sports science. 'How's he been? What are his RPEs coming in?' 'Oh, they're very high coming in'. So, take the night off all that type of stuff, you're just collecting information then but each situation is for the individual so you just have to take it as you as you go". (Participant 6, Interview 2)

"I think it is an age thing. Knowing if you get older, I've been involved in football since I was 5, I'm nearly 40 so, you will have a bit more awareness cause of your own past experiences, what you've seen before kinda, certain players as well you expect certain injuries." (Participant 3, Interview 1)

"I think we always go back to our past experiences. It wouldn't be just one thing that's driven that. you know, coaching at Banks O' Dee, Banks team were massive on physios, you could get one at the drop of a hat. So you would soon learn who was at it. So that was the past experience." (Participant 3, Interview 1)

Coaches made case by case decisions, thus the decision-making was highly contextual and naturalistic (not routine), using multiple sources of information searched for within the environment and then compared for confirmation with other sources of key information the environment provides (e.g., sport science load monitoring). This strengthens the problem frame as it's a form of triangulation used by the coaches. Once constructed, these problem frames underwent constant modification in order to adapt training through past experiences (HOT 2) and air on the side of caution for the future development of the youth athlete.

4.1.3. Future Development of Athlete

Coach's extrapolation of a current incidences' potential impact on unfolding future events directly influenced the coach decision-making process. Results identified future proofing and safeguarding athlete welfare arose as a central consideration. Coaches were not only mindful of the impact of decisions on immediate future events, such as player availability for forthcoming games, but also accounted for how decision may impact over longer time scales for example the negotiation of key transitions either in age group or from youth to senior status. The ability of coaches to think into the future; and employ future considerations within moment to moment sense-making; accounted for successful future development of players as injury avoidance was viewed as a high-priority consideration for ensuring future development.

"And then when you go into youth academy, I think for me, the switch, it's the same process but the switch is not about winning the league title, it's about that players' career. So why would I take a chance that, he has a tight hamstring and after sixty-five minutes he pulls the hamstring off the bone and he's off for nine months. Or his cruciate, he's feeling a bit of pain, he goes for a header and lands and his cruciate goes. That players' career is gone probably. So, I have to think about his league title is his professional contract now." (Participant 6, Interview 1)

"It's different at the youth academy, you think about your players' career, you know so that is probably the hardest bit. The individual development, team and tactical development. And then getting that individual through his career and getting him ready for a career in the game. You know I mean the individual bit is more important than the team thing." (Participant 6, Interview 1)

"But again if you're at senior level and there's a big game at the weekend and you need 3 points and you're a manager under pressure or you just need the three points – he trains! You know so, somewhere between that end and that end, you've got to find a balance for that particular age group that you're at. And that would always be the way I look at it. You know just look at it, you've got time on your side now." (Participant 6, Interview 2)

Coaches admit to adapting to the natural age difference in their athletes at this level (HOT 4), and therefore take into consideration the future career of their athlete. Participant six transitioned from managing senior professional players, to youth elite athletes. Therefore, the shift in age dynamics meant different factors from age, would influence his decision-making process. An interesting analogy, that was once the coaches' aim of winning the league title, has now become getting his player a professional contract as a marker of success and factor for decision-making in injury. Fundamental to this goal is the need to embrace this as a future consideration and act accordingly in order to manage and regulate any incidences of player fatigue or injury.

Coaches cited the collective goals of the team at particular critical moments throughout the competitive season, impart an impact on specific decisions made toward an identified individual squad player. As football performance is the result of collective endeavours, coaches made situational assessments of current team performance and player availability when evaluating information sources presented from individuals within each squad. Coaches were clearly involved in a dynamic tension between player safety and the requirements around performance goals of the collective team and their well-being (HOT 7). Again, the collective dimensions to individual player were shown to be powerful influencers and colour the decision-making process around the 'problem framing via past experience' general dimension. Coaches identified the clear importance of level or stage of competition, stage of season and stage of age that factors into decision-making in coaches in an elite youth academy structure. The coaches state very clear objectives for their season, along with the contexts (what and why) of their thought process when important factors are in jeopardy due to a risk in injury.

"But, there's a whole lot of factors, but like I said, if you're there on a Saturday, something happens, you're thinking 'Right, do we need to take him off? Has the physio said anything? How we doing in this game? Are we winning three or four nil? Twenty minutes to go you're not going to lose the game, can we put somebody on straight away?' So that, that sort of stuff, depending on the game and the score line and the type of player, it can all change your outcome and your decision." (Participant 1, Interview 1)

"Yeah has to be, cause game to game, you don't win leagues over a game to game, I mean that's my background like, I always, when I took over a team to manage, first thing I used to say to them 'here's the deal, the league is mine the cup is yours'." (Participant 6, Interview 1)

This factor looked at the stage of footballing variants (HOT 3) that the coaches had to contend with. Interestingly, coaches did not action a one rule fits all policy when considering individual status and team status in the decision-making around injury regulation. Each decision would be made on a case-by-case basis, considering the variety of higher order themes, shown in this general dimension, which were relevant to the individual incident. This finding clearly supports the importance of NDM as a highly contextual and nuanced process whereby coaches are immersed with not only information cues from the immediate situation but idiosyncratic information on value of particular player contribution to the overall team.

4.2. Smart Procedures

The second general dimension that was identified is known as 'Smart Procedures'. Smart procedures refer to explicit strategies and cognitive actions employed by coaches, to determine the severity and requirement of action regarding an incident that has been noticed. This allows coaches to gain more information on a cue that may provide insight into a potential threat to the fitness of the player. These findings highlight novel aspects of NDM, which elaborate on the current understanding of how NDM processes occur.

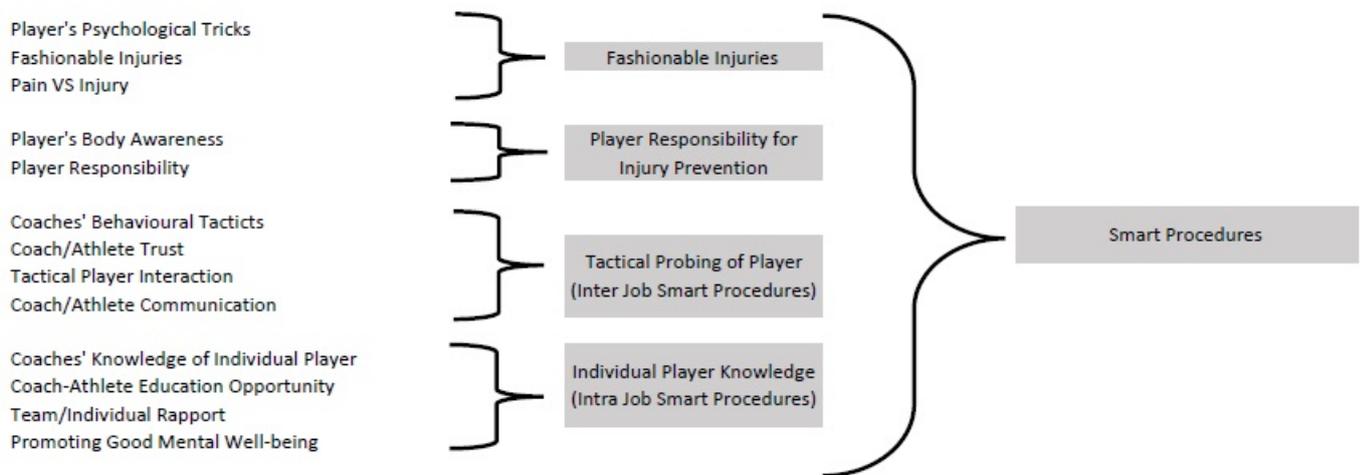


Figure 9. General Dimension 2 – Smart Procedures

The extraction of key environmental information and the comparison of this information with past experience and future considerations meant coaches could establish a problem frame to eventually act out decisions on how best to modify player behaviour. The cognitive action of gathering information from key environmental factors was classed by the analysis as smart procedures. This method was used to gain greater insight and clarity into the incidents' problem frame, as a precursor to adapting the environment for injury risk. From the analysis, a multitude of smart procedures were identified, which will be identified clearer in this section. However, it is important to note, the point in which these smart procedures are employed during the decision-making process. For youth elite soccer coaches dealing with a risk of injury, and due to the complex nature of the sport, there has to be a certainty in their understanding of the incident before

a decision will be acted upon. Once the initial problem-frame has been flagged, the coach then needs to gain an understanding about the severity of the incident. To gain this certainty, coaches will embark upon the incident using a variety of procedures to gain clarity from the player or their support staff. This will be employed as long as appropriate, until the coach is satisfied with his understanding of the incident and he feels there is a requirement to complete an action decision to regulate the risk of injury.

One particular smart procedure identified was player responsibility for injury prevention, it was cited by all coaches as a central smart procedure as a cognitive problem-solving event.

"You need to come to me and say, I'm fit to play'. I don't need to know the rest of what you decide is fit. Now if I look in the warm up and decide you're not fit, then I might change things round, reverse that decision. But you need to come to me, I can't make that decision for you."
(Participant 6, Interview 1)

To meet the competing goals, they held for the team and the player in question, coaches at times would consider the notion of the collective team.

"And it's putting the responsibility back onto the player again that it's not just about them it's about the bigger picture of the group as well so it is about them and their future." (Participant 6, Interview 2)

"Nobody wants to leave the academy, nobody wants to get binned nobody wants to get injured, its three/four weeks, somebody might come in and steal their position, and they might not get another game, they'll maybe sit on the bench until the end of the season, so that's a, and that's no just here, that's everywhere, that could be in the 1st team as well, if your contracts running out, you'll maybe hold back from telling somebody you're properly injured and then what happens is – you might get away with it, or you go and play last 20 minutes of a game and you're off and instead of maybe being out for a week, for sayings sake, you're maybe out for two or three months with something that's pulled or tore or whatever. It's a bit of a nightmare, being a football player [laughs]."
(Participant 1, Interview 1)

The formation of these decisions was classified in the results as smart procedures. Unlike traditional linear decision-making, derived from fixed inputs of information, coaches engaged in the dynamic construction of problem scenarios, known in decision-making literature as problem frames.

The longitudinal approach to this research project enabled exploration for how decision-making around a critical incident changed over time. Crucial incidents are known for being one-time occurrences, in a short period of time. However, due to the nature of football and injuries, these critical cases can occur over the course of a season, requiring injury regulation repeatedly. The iterative data collection method afforded insights into development of problem frames and the consequent actions that results from them. Findings indicate as time progresses and coaches begin to gain clearer insights into particular players an increase in complexity of smart procedures emerge as a means to moderate the environment. With an increase in complexity comes more clarity and insight from each problem frame. Problem frames never stood still but rather through modification from novel informational inputs, via encounters between coach and athlete, adapted and updated in order to provide a valid representational accounts of current player injury status.

In addition to the smart procedure above, two types of smart-procedures were implemented by coaches – ‘Intra’ and ‘Inter’ smart procedures. Intra pertain to individual tactical methods or decisions completed within the coaches themselves, with inter as social tactical methods conducted between themselves and the players to aid in decision-making. Findings demonstrate procedures taken both within themselves to problem frame an incident, and efficient ‘tricks’ used between themselves and the players to discover the players’ need for action. These smart procedures serve the objective for the coach to reach a triggering threshold to act on a decision requirement. Representative examples that demonstrate both intra and inter tactics for decision-making include:

4.2.1. Individual Player Knowledge

Participant three highlights his interpretation on the importance of intra smart procedures, through his individual knowledge of players and specifically promoting good mental wellbeing, which he employs at training.

"When I was at uni there was a big bit about people and organisation... obviously I use a lot of it on the kids. So, a lot of it is keeping them motivated is it, it's that needs, the pyramid of needs, so I've went through making sure I know how to satisfy them and myself mentally with stuff like that." (Participant 3, Interview 1)

"Everything I think here comes down to previous knowledge of the players. If you've got a previous knowledge of the players and you know that if, in the bigger games and the ones that are more important, the ones who are mentally tough, will play with that extra bit of pain." (Participant 2, Interview 1)

There is an awareness from coaches that in order to understand the requirements of that player and how to best modify their behaviour, a coach has to be satisfied within himself about his players' levels of ego and motivation to increase performance levels. Coaches believe that a lack of worthiness and motivation in a player can lead to injury risks, due to a lack in concentration, intensity and awareness during training or matches. Coaches highlighted the practice of continually screen their players' emotional state upon entry to the training ground to immediately gauge how likely that player would display a certain level of performance.

4.2.2. Tactical Probing of Player

Participant three highlights his interpretation on the differential between intra and inter smart procedures, by probing the player tactfully for information on psychological, emotional and physical status.

"I'm the type of coach that's always asking questions, in your face, they probably hate me. 'How was school? What subject was you doing?', so I'm

creating a better mood I think or a better mental well-being.” (Participant 3, Interview 1)

“Then the second part of the process is that you speak to the physio and say to the child or young adults first of all, then it’s the physio and then you would consult other peers, what’s your past with such and such. Especially with certain injuries.” (Participant 3, Interview 1)

“But there quite a lot of time when they spot that you’re like.. and it just allows you as a coach then to ask are you alright? And then listen to their answer, judge what their answer is, and also, you can see what you think yourself. Cause he might say yeah I’m fine, but you know fine well the way he’s answered that questions, he’s not fine!” (Participant 1, Interview 1)

“Yeah I think it does come down to that a bit, obviously the physios know best do they? so they know their intricate little things that I wouldn't notice. but generally that's how I would kind of assess - can he run? is he comfortable? was he unnatural running style? was he grimacing when moving or touching the ball? so just you go through a natural process in your own brain.” (Participant 5, Interview 1)

These examples place a higher emphasis on the requirement of opinion from a surrounding support network within the youth academy structure. For coaches, it was important to negotiate with their medical and sport science staff to gain a further understanding of the current state of a player. Due to the infrastructure in place throughout the academy squads, coaches would always have a second opinion available from their partnering coach in the same squad, whom they could share ideas and potentially gather missing information to help inform their decision-making process.

4.3 Adapting Environment for Injury Prevention

The third general dimension that was identified is known as 'Adapting Environment for Injury Prevention', which can be understood to represent the solution actions that coaches provide to regulate injury within their athletes. This section highlights the action taken by a coach to effectively apply an arrived at decision. Adapting the environment comes at the final stage of the NDM process in youth elite soccer coaches when mitigating injury risk.

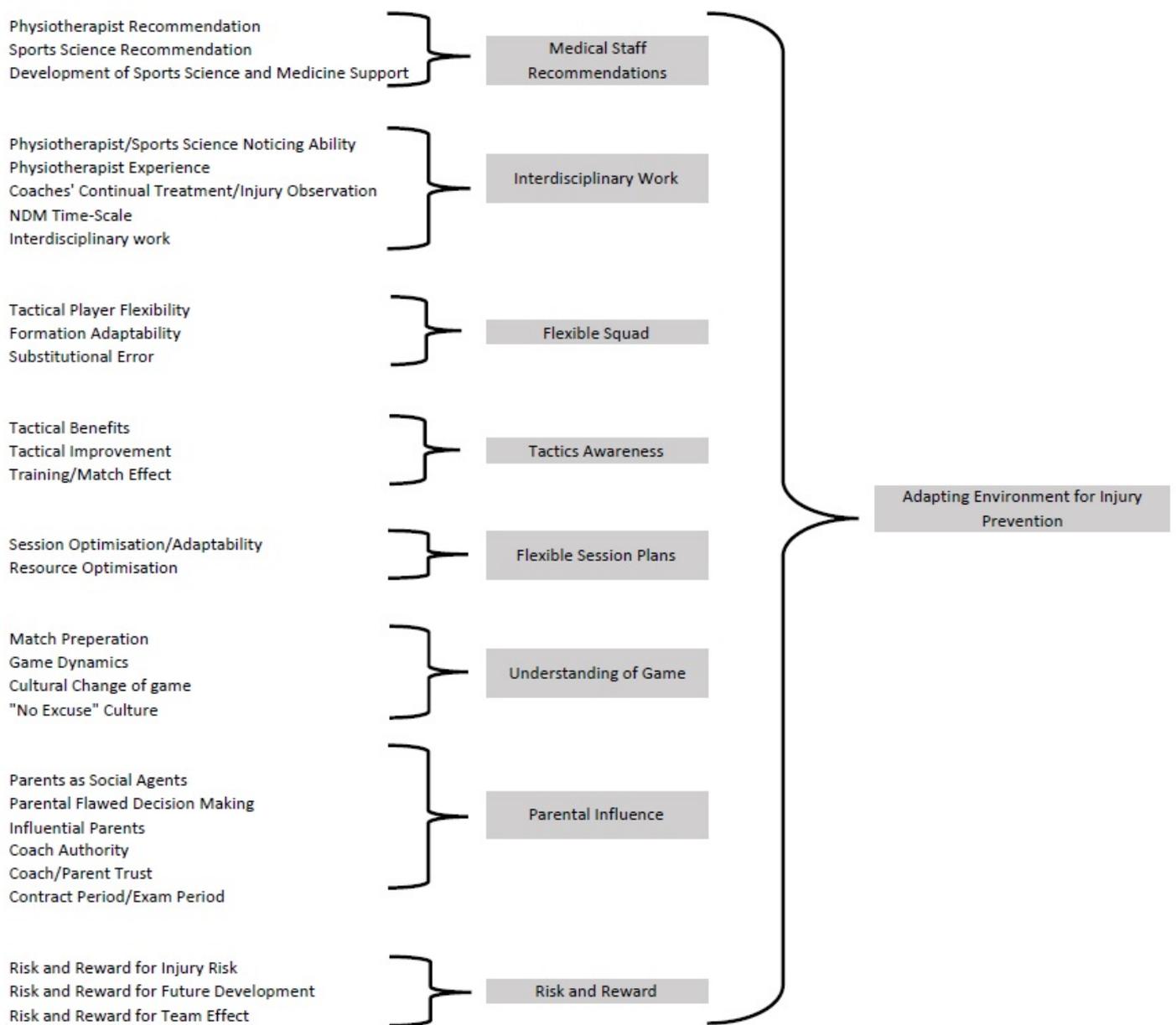


Figure 10. General Dimension 3 – Adapting Environment for Injury Prevention

Over the time-frame in which a coach will regularly inform and update their problem-frame from their environmental surroundings, the closer they become to reaching a threshold of monitoring, and transition into the phase decision-making outcomes. It has been evidenced from the findings that the decision actioning trigger point for a coach varies for each individual situation, however, an underlying finding points to action taken as a result of severity and frequency of the incident. The decision threshold bridges the gap between cognitive problem solving and information gathering, using smart procedures, and implementing decision actions by adapting the environment to prevent the injury risk developing. Some coaches have decisive thresholds for certain potential outcomes of injury incidences and almost prepare themselves for certain outcomes, based on their past experiences of similar situations.

"I sort of almost put injuries into three categories for me. Concussion/bang to the head - on you go out you get you're not training; the muscular ones - stop training and sit out of the rest of the training; and then an impact one would be - how you feeling are you ok are you happy to carry on carry on? That's the way I would treat them."
(Participant 6, Interview 2)

"My general approach to players being injured is, if I think it's of any reasonable grade of an injury, my preference is lose a night rather than a week. So rather than me saying 'just play on and see how it is', I'd rather say to them 'just step out'. And put the responsibility on the player, if I ask a player and they said well, 'yeah yeah I think I'm alright', 'well how bad is it like?' 'Ach it's pretty bad' 'step out', and I'll take that responsibility" (Participant 6, Interview 1)

For some coaches, it is very clear when an athlete's training should be modified based on their injury severity. The findings highlighted central themes which were critical to adapting the environment for mitigating injury risk, these were as follows: 'Risk and Reward', 'Parental Influence', 'Medical Staff Recommendations' and 'NDM Time-scale'. The following part of this results section will state these in greater detail.

4.3.1. Medical Staff Recommendations

On a decision being triggered, results show that a coach immediately switches to adapting the environmental factors within their control to regulate their athletes' exposure to stressors, by way of direct action. This was shown to be done through a variety of methods (medical staff recommendations; interdisciplinary work; parental influence; flexibility of squad and session plans, and risk and reward). The results highlight that the first internal factor a coach will manipulate in their immediate environment is the support staff. Coaches will laterally communicate with the physiotherapists and the sport science staff to gain insight and further understanding of how to adapt their environment effectively to reduce stress upon their athlete. This study views this decision-making behaviour as a micro-level action in the multi-phase process of injury management and decision-making process.

"I reckon, one of the advancements in having sports science in terms of having information like that, 'watch what he's doing now', 'maybe reduce the workload', that should help us because, before we might have just said, he's just going through a really bad spell, dunno what's wrong with him, you know..." (Participant 2, Interview 1)

"If they [physio] come over and say no that's it somebody's injured, we're no in a position to determine if somebody's medically injured, or whatever you want to call it. Erm, so if they turn around and say no I wouldn't recommend it, then that's what they get paid to do. Whoever it is, is sitting out the rest of the game, that's the reason they're there." (Participant 1, Interview 1)

"So say you're injured, you're coming off and then I think that's why we're paying physio, so I'd want them to go and assess them, there's no point me asking 20 questions, I'm not a specialist in that subject." (Participant 3, Interview 1)

Coaches can have control and an understanding of their environment to a deeper resonance with the aid of their medical support staff providing more elaborate and scientific meaning to scenarios. These internal factors help the coach adapt their environment appropriately to benefit the future outcome of mitigating injury in their athlete.

4.3.2. NDM Time-scale

Interestingly, a novel finding of this study has revealed a major difference in NDM in youth academy coaches involved in elite soccer, compared to other industries which NDM has been investigated in. Instances of injury decision-making can occur with immediate effect or be prolonged while smart procedures are employed to inform the decision (HOT – Interdisciplinary Work). Therefore, it's important to cite that NDM occurs across a continuum from immediate to longer term time-scales. The quote below states a coach discussing the standard timeline and procedure of how he would reach the decision to refer a player to see the physiotherapist.

"That would be my normal stance - let's just miss training Tuesday and Thursday, will speak to your parents and then the Friday, 'How is he getting on?' Then let's leave it this weekend and then we make our decision. Because clinic would be on the Thursday so you almost get to like, so what's that 9 days near enough you get to, and then you get to then referring him, so 9 days before you go oh we actually need to do something about this." (Participant 3, Interview 2)

This youth academy coach has cited the internal mechanistic process for reaching a decision-making output, along an extended timeframe of up to nine days. However, during this process there is clear input from external factors, in this instance, the parents, which fed back into the coaches internal process. This information provided new cue utilization, and ultimately updated the problem frame subsequently requiring refreshed decision-making, which highlights this NDM process for mitigating injury, as cyclical.

4.3.3. Parental Influence

An external factor for managing the immediate environment that a coach has to adapt on a macro-scale, is the effects of school, daily life and parental influence. Parental influence derives from the nature of a coach being involved in a youth academy structure. The importance for not allowing any flawed decision-making from the parental input was paramount to the coaches' decisions being optimal for their players' development back into full performance levels.

"I want always for any decision that I make to fall on me. I want that responsibility, I'm happy to take the blame and put me hand up and say – I made a balls of that. I made a wrong call, or the team was wrong last Saturday, or I should have made a substitution. But I'm not willing to allow any external influences to cloud me judgment and decision-making. And that's just the way I run things. I don't see any reason to have it any other way. And I think if you run that back, I think people will respect you more for it." (Participant 6, Interview 1)

"Yeah, every parent will, you got to shut them out. It's flawed decision-making if the parents are calling the shots." (Participant 6, Interview 1)

"I would be f&king raging with myself, if whatever the reason, if it was performance related in the youth academy or I was running a senior team, and somebody else had made me make a decision because they had pressured, which now I've been sacked for their decision and not mine. And that's a fatal flaw." (Participant 6, Interview 2)*

On a meso-level scale (over multiple months within the season) in the management and decision-making process for injury regulation, the coach can manipulate the clubs' framework in order to best provide assurance and care for their athletes' wellbeing and risk of injury. A coach can be educated on a variety of methods and principles in which to best regulate their athlete's exposure to injury risk, outside of medical staff support alone. Within the logistical set up of training sessions or competitive matches, coaches have learned (through their educational pathway to professional coaching provided by the club or governing body or from experience of on-field coaching) how to best adapt the environment to deal with an unpredictable scenario that has arisen.

"That's what I work by, what can go wrong in your session? Players not performing; having less players than expected; having less pitch size as expected, which has been a big problem. So, you're always as a coach you're looking at the potential outcomes. People will see it as a negative mind-set whereas I see it as responding to issues." (Participant 3, Interview 1)

Coaches work in the mindset of future outcome potentials when preparing and delivery sessions with an unpredictable nature. In order to deal with any

uncertainty that may arise during their delivery in their environment, coaches will mentally and physically prepare for a variety of potential scenarios so they can effectively and efficiently care for and protect their athletes' wellbeing whilst under their supervision.

4.3.4. Risk and Reward

The mediating factor for action in this general dimension, explores the threshold bar of a coach themed, 'risk and reward'. The coaches rely on this factor when they are in a position of final evaluation procedures of the incidence before they implement a solution. Coaches identified the importance of calculating their decision with all the environmental factors against the potential outcome. If the outcome was worth the risk of the decision and the actions which were linked with that, then the results showed that the coach would follow through and initiate that decision.

"It should always be a calculated decision, for me, I always see it as being a calculated decision. So, what's the risk? What's the reward? Is it worthwhile? If it's not well then, it's a stupid decision. So, all the resources should be taken into account and used otherwise it's just a waste of time." (Participant 6, Interview 1)

"So yeah, it's just each situation has to be analysed for what it is - what's our short term, long term benefit to it what's the negatives to it? What's the individuals long-term benefit? What's the teams short term long-term benefits to it? And you've got to find a balance of tips and if he's in favour of playing and if it's not then you don't play him so..." (Participant 6, Interview 2)

Every interviewed coach presented this analogy being the mediating factor that would take a coach past his threshold to act on his decision-process and implement a solution.

4.4 Summary of Results

In conjunction with higher order themes, this original research and analysis revealed novel findings that can be used to educate coaches on various factors including, role of their experiences; breadth of information sources to make decisions; and potential range of actions available. The research also identified the important role of parents and support staff as information sources and influencers of coach decision-making.

Chapter Five: Discussion

The thesis presented findings pertaining to naturalistic decision-making processes of youth academy soccer coaches, when regulating injury risk in youth footballers. This section offers discussion of the findings and relates these back to the aim of the study which was to explore the use of NDM by coaches in a youth soccer environment when regulating injury risk in both training and competitive environments.

5.1. Problem Framing via Past Experience

5.1.1. Understanding from Past Experience

The findings that emerged from this study highlight that a youth academy soccer environment is a non-linear and emergent periodization creating implications for how coaches formulate and ultimately enact decisions. Coaches frequently cited the rise of unexpected circumstances as relevant indicators a player may be at risk of incurring injury. Coaches highlighted a consistent need to monitor change in these indicators. Findings demonstrate environmental information as key informational sources necessary to inform successful decision-making. For example, coaches highlighted problematic environmental cues which vary dependent on individual player attitudes and professionalism. During training and matches, players would vary in their honesty and appearance of being at risk of injury, some players would highlight to the coach their concerns, and other players would attempt to withhold any visible appearance of injury risk from their coach. Thus, in the initial stages of the decision-making process, youth coaches must engage in a sense making process of continuous scanning, search and extraction of injury relevant cues from a myriad of environmental information. Cunningham et al., (2012) support the necessity for extraction of relevant information in similar contexts. Cunningham and colleagues (2012) confirm that elite rugby union referees anticipate behavioural actions of players, recognising patterns of game play and process alternative future game outcome expectancies. By using this pattern matching and recognition ability as an essential processing skill within their environment as an expert, the referees are able to make successful decisions in a real-world naturalistic environment. The environment therefore acts as the source

of informational cues in which coaches elicit key indicators of potential injury that are context relevant and thus in-situ.

The ability to promptly scan and understand the situation presented also corresponds with the ideology of situational awareness and the multiple resource theory (Wickens 2002 and Endsley 1995). 'Multiple Resource' theory potentially explains how coaches were able to predict performance decrements due to injury with the use of attention and workload. The theory shows that one can perform multi-tasking capabilities when scanning and processing information gathered on an incident, whilst also successfully observing the rest of the field. Current findings demonstrate coaches were engaged in similar sense making procedures employing a combination of both scanning with clear mapping of cues with personal experiences. Although this research was not originally conducted within a sport context, the underpinnings are arguably transferable and promote the correlation between scanning and interpretation for future outcome expectancies of injury risk.

However, interestingly, the coaches who were ex-professional players of the sport, lay claim to having the most efficient ability to scan, interpret and map the environmental cues to future outcome expectancies of injury risk, above other coaches' past experience. They believe they hold the most established cognitive scanning patterns, due to their greater sense making capability as their past experience relates and transfers better to the information extracted in the cues. They believed their greater capability, at times, would over-ride the experience built from coaches who developed over ten years in the professional coaching field. Schinke et al., (1995), suggested that alongside developing a coach through extensive experience, coach development could also occur if experienced significant time as an athlete themselves. Further, more recent research agrees with this finding, suggesting the difference between skilled and less-skilled athletes are components of perception, knowledge and decision-making and therefore, potentially play a role in 'creating' the expert coach (Grundel et al., 2013; Bar-Eli et al., 2011). Having the most recent experience of the game may pertain to situated knowledge and an enhanced sense-making ability, which is derived from playing experience, therefore is useful for the interpretations of player empathy and problem formation with greater meaning to the cues observed, allowing said

coaches to make effective naturalistic decisions in their environment around injury regulation (Gherardi, 2008).

5.1.2. Cue Utilization and Information Sources

Findings further confirm the necessity for the extraction and utilization of relevant cues around injury with coaches rejecting a one-rule-fits-all policy during the first and second phase of their decision-making strategies, employing job smart tactics. Each decision was individual to the players requirements, and to the benefit of the overall team wellbeing and health. For example, the coach had to consider the long-term injury effect, both physiological and psychological, that may be hindered upon the individual player and he could manage. Coaches specifically cited the longevity of the players' career still to occur, and therefore had to successfully mitigate the injury risk, so the player was not put at a severe risk of a time-loss injury, such like an ACL injury, regardless of the stage of season or competition that the overall team were involved within. Hence, coaches extract multiple information from an array of physical (limping), behavioural (emotional displays), and social (sports science or physiotherapist input) cues to regulate injury risk. Thus cue utilization is biopsychosocial. Shaw (1982) explores the use of decision-making from multiple sources of information through consideration of theoretical mechanisms and information processing models, and as such concludes that an individual will form separate decisions on the information from each source, subsequently amalgamating these decisions to then elicit an appropriate response. This is in contrast to popular belief that an individual will elicit a response, by deciding on the combination of information sources as a whole. This is suggested to be the case as processing and utilizing information from each source can have a different influence on each individual, in turn generating their response. Based on the results of this study, NDM appeared multidimensional and dependent upon multiple factors, which come under broad categories of physiological, psychological and social indicators.

The research intended to investigate what source of knowledge and experience the coach drew upon when making decisions and how that potentially varied across the structure of a youth academy. The findings show that the process discovered in youth academy coaches' decision-making, although executed rapidly, was a conscious process over a prolonged period of time. Coaches cited the importance

of monitoring and evaluating the progression of an incident due to the high training loads players would encounter across their week-to-week training schedule, within the academy system and school performance-based system, endangering their athlete and continually exposing them to a risk of repeated injuries, if not cared for appropriately long-term and within the moment. Therefore, this is contrasted with critical incidents in emergency situations, which occur rapidly in shorter time scales. Additionally, research conducted in sport (Williams et al 2002) shows that skilled performers spend more time utilising specific cues of the opponent players' body in comparison to less skilled performers who focused on less important cues, and the decisions required to respond to game situations were conducted rapidly, in a timeframe of 0.5 to 2 seconds per decision. However, the regulation of injury is somewhat different, in that the critical incident can span the life of the constraint on the player. Often this is not momentary, but rather over extended periods. The key essence of this finding, is that NDM is required in the moment to regulate the environment to ensure the player does not enter a 'red zone' where participation is terminated. The coach will re-engage with the issue again in future encounters, and thus the critical incident is extended, and a meta-process is employed.

5.1.3. Perceptual Cognitive Skills

In relation to this setting, the results identify coaches can detect key cues in their environment in-situ, and then successfully process these in a sense making exercise, to arrive at an understanding of player injury risk. Interestingly, results unearth, in order for a coach to make any sense of the cues they detect during training or competitive matches, they must relate their scanning information to their past experiences. A higher order theme derived from the analysis identified coaches employ a range of auxiliary information in order to enhance the sense making process of the information derived from players in momentary context. Backgrounds of inhabited past experiences (some highlighted from their past professional playing experience) identified that coaches also endured, for example, debilitating hamstring injuries forcing them into participation termination, which ultimately propelled the fast interpretation movement within the environment. Owing to these particular past experiences, informing the current experiences in-situ which require a decision-making process, coaches rely on their own unique experience and understanding to detect similar incidents in their immediate and

emergent environment. This procedure was initially introduced in literature by Marteniuk (1976) and is known as PCS. Marteniuk (1976) defines PCS as an individual with the ability to scan their environment and locate, identify and process relevant information, whilst subsequently amalgamating it with current existing knowledge, allowing the individual to select and act on appropriate actions. In the context of regulating injury, coaches are able to complete this process efficiently to obtain the most beneficial outcome for their specific situation.

The relationship between PCS and sport expertise has been investigated in an athlete's competitive environment, although the research is limited (Alves et al., 2013). This specific study by Alves et al (2013) contained a high sample size, varying in levels of expertise (measured by training age), by which they put their participants through a thorough battery of cognitive tests in laboratory settings, albeit a controversial setting. These tests covered PCS in the areas of executive control, memory and visuo-spatial attentional processing. The goal of the study was to highlight any evident variance of PCS in volleyball athletes, compared to non-athlete controls. The results of the cognitive testing battery showed that the athlete group produced significantly better results in their ability of task switching; inhibitory control in the stopping task and were faster at detecting changes in the change detection task, compared to the non-athlete control group. Similarly away from the laboratory setting, handball coaches in the naturalistic setting displayed significantly higher levels of perceptual cognitive expertise, when compared to novices, in the same domain (Fischer et al., 2016). As stated in the review of literature in this study, Williams and Ericsson (2005) agree with this consensus that PCS can be trained and developed through training interventions which recreate the performance environment that the skilled performer is routinely exposed to. Although there are shortcomings of laboratory-based settings, these experimental environments can provide information that elicits an adaptive learning response that can replicate expert performance on relevant tasks and situations. This agreement in research highlights the transferable principle with PCS, that an increased exposure to hours of training and competition is linked to sport expertise and more effective use when compared to non-experts. Therefore, to link this to the current study under investigation, previous research can assist in confirming that experts, possessing greater exposure to coaching and training, are able to efficiently scan their environment for relevant information and process

and act on it rapidly, to make safe and appropriate decisions for the regulation of injury risk, in comparison to coaches possessing a lower volume of exposure and experience.

5.2. Smart Procedures

5.2.1. Inter and Intra Job Smarts

An essential relationship between general dimensions one and two exists which importantly shows the regulating actions taken by coaches to act out decisions on how best to modify player behaviour and mitigate injury. Through the analysis process, the data gathered from the CDA interviews indicates nuanced behaviour from coaches to aid in problem framing the incident and reaching a cognitive action point. Specifically, the analysis uncovered two categories of coaches' job smart. In accordance with Klein and Borders' knowledge audit (2016), job smarts feature as a key tool employed by coaches. Job smarts enable coaches to use the resourceful information around them to understand the severity of the incident taking place, by using tactical methods to shape the problem-frame and decide whether action needs taken immediately or not. Initially Borders and Klein (2017) state that experts learn how to combine procedures and work in the most efficient way possible, time is not wasted and resources around them are used to aid decision-making. Similarly, in achieving this end coaches cited approaches they employed to investigate the behaviours within their players, allowing this probe to be further sub-categorised into 'intra' (coaches' internal tactical movement) and 'inter' (between coach and athlete tactical movement) job smart tactics. An example of inter job smart tactics, cited as specific behavioural conversations including personal questions, used to engage with their players at the beginning of training sessions, investigating how they react, respond and sound, allowing the opportunity to detect any indicators of psychological, emotional or physiological risk of injury. Intra job smarts were confirmed as collecting resourceful information from support staff or parental carers of the players, to build a story internally regarding the incident, which would aid in decision-making. Specifically, coaches opted for a combination of these two procedures or one in isolation, in order to reach a 'threshold' for acting and making a decision.

As some of the sub-themes suggest in this general dimension, there is a variety of tactics displayed by every coach, individualised to their experiences. It became evident through the analysis process that there was a clear distinction between tactics used in coaches for problem framing the incident. An explanation highlighted directly from the coaches, discusses his background through a higher education pathway, learning about the management and emotional requirements of the human psychology. From this awareness, materialised the tactical methods in problem-framing incidents. Practical implications of this finding would suggest a coach education tool beneficial to regular meetings amongst coaches of the youth academy to share experiences and methods, and develop further decision options for similar incidents in the future.

5.2.2. Thresholds for Action

Results show that the ultimate goal for the coach in this general dimension is to reach a threshold through the culmination of decision processes to pursue cognitive action on a decision. Due to varying injury potentials, it was highlighted that thresholds will fluctuate dependant on coach and player specifics, alongside stage of the season and the possibility of any external influences upon the coach. Thus, due to this complexity, the integration of multiple sources as such confirms the requirement for NDM. Each coach highlighted varying thresholds at which they concluded was an appropriate point for action. This result helps prove the non-deliberate nature of NDM in coaching as there is no linear process and the coach cannot fully 'pre-plan' for any athlete during training or competitive settings. Hence, there is justification for the situational assessment to begin around problem frame construction and the time invested in this, rather than an automated procedure of 'if', 'then' (Lyle 2010). Research conducted by Collins, Collins and Carson (2016) used similar participant methods to investigate this approach of NDM in high-level British rugby and adventure sport coaches. Following a similar methodology to this current research project, by interviewing coaches about previous incidences they were involved in making a decision, results showed that participants appeared tactic in decision-making behaviour, but also based decision-making on refined reflective practice of long and varied experience. Ultimately Collins, Collins and Howie's (2016) research shows that experience plays an important role as criteria for greater naturalistic practice, closely followed by

deliberate decision-making for allowing coaches to validate and check the accuracy of their decision.

5.2.3. The Model of Coach Decision-Making

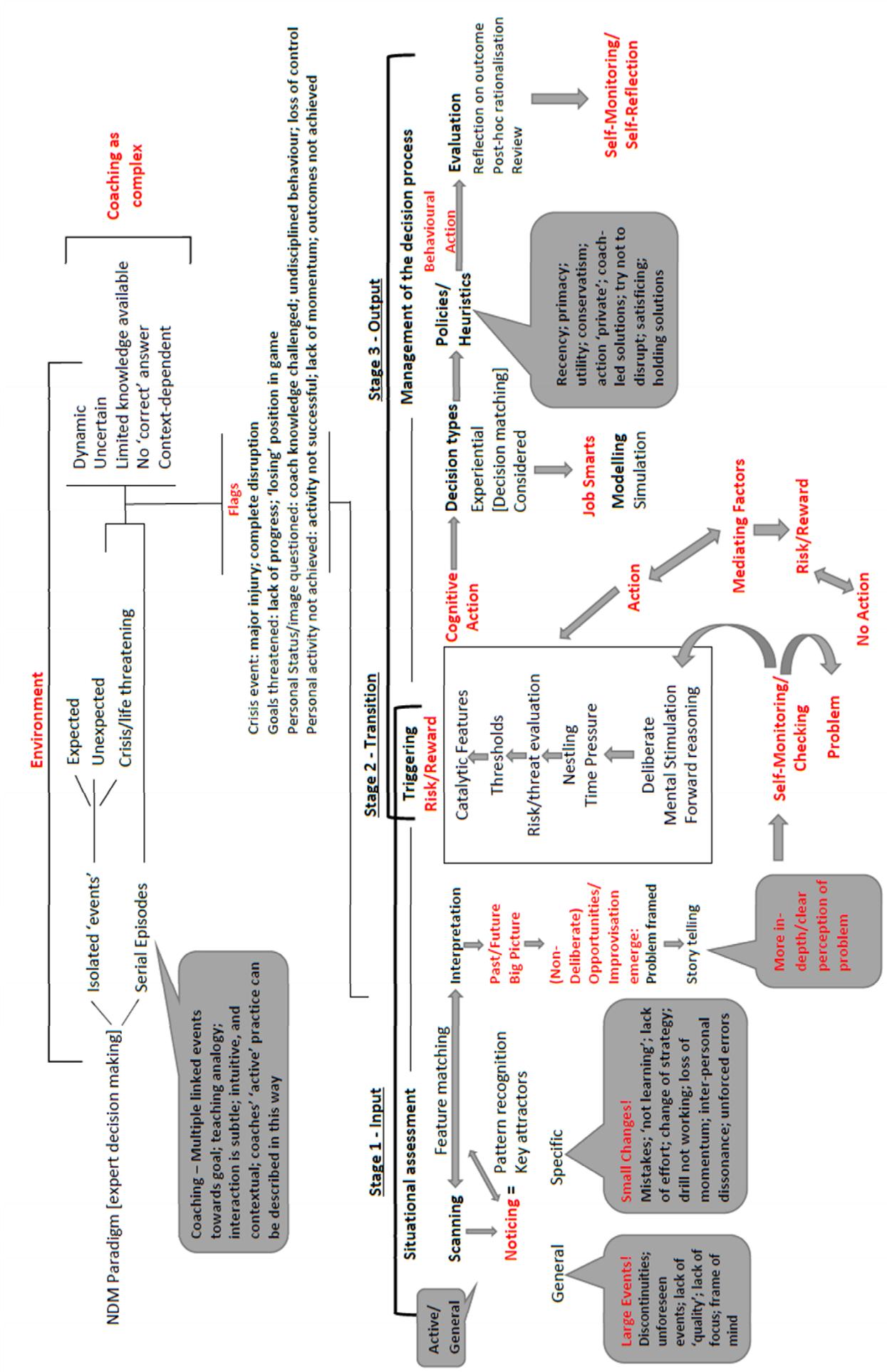
The data gathered in the interviews was cross-checked against Harvey, Lyle and Muir's (2015) coaches' decision-making model. Through the data analysis procedure in this study, it highlighted the areas which the model related to the probes of the Critical Decision Audit used in this study, therefore promoting the gaps in which the model could be enhanced in context regarding injury decision-making. The findings specifically related to the model by displaying points where coaches can notice, interpret, improvise, and importantly self-monitor and cognitively act on a continual, repeating process, allowing them to update their problem frame. Something that Harvey, Lyle and Muir's (2015) original model did not account for, and potentially rendering it as over-simplistic. However interestingly, Harvey, Lyle and Muir's (2015) model represents similar phases of the NDM process that coaches employ when making decisions in sport. There are distinct phases which are endured (situational assessment, triggering and management of the decision process) which has also been similarly identified in this research project. However, the coach decision-making model fails to understand the multi-level approach NDM holds in injury management and the continuous feed-back and monitoring loop essential for effective decision-making in this environment. This provided opportunity to adapt the model attune to the environment of NDM in youth academy coaches with the purpose of injury prevention (Figure 11).

From the results of this study linking themes of 'Future Development of the Athlete' in general dimension one, and general dimension two encompassing 'Smart Procedures', it was prevalent that coaches build a problem-frame for an incident in order to understand and calculate future outcomes dependent upon decisions made. An essential key finding in this study is the extension of NDM in a sporting context, in that due to an ongoing incident, coaches are continuously scanning and receiving cues in their environment, in order to constantly update the problem frame, and make effective decisions appropriate to the current time. This extension of the problem frame, highlighted by this study, is conclusion to the outcome of the previously discussed theories in decision-making research, namely

encompassing perceptual cognitive processing with immediate information and experiences. Harvey, Lyle and Muir (2015) also refers to this as a 'mental model' formed either consciously or subconsciously of expectations with knowledge of variability and unforeseen circumstances.

From this research project, all but one coach made it known that a significant factor of their decision-making process was structured around the future potential of their players' career. Due to the young age of their athletes, coaches always felt it necessary to be cautious when it came to risk of injury, with the only acceptance being important cup games or stage of the season. Coaches felt responsibility would be placed on them if an athlete's future playing career had been limited or terminated, due to a wrong decision regarding injury risk. They also felt this was important as they had to prepare and develop their athletes appropriately for what they believed to be the changing dynamics of the game in five to ten years' time. Previous literature found similar results in relation to pressures of cup games or stage of the season (Dawson et al 2017). Dawson et al (2017) discovered when investigating factors influencing decision-making around concussion management, the medical team felt a weight of pressure from coaches to return athletes to play, regardless of governing body guidelines. Although this study is in alignment with the pressures found regarding cup games and stage of the season, additionally to some extent, there were contrasting results regarding the height of respect and understanding that coaches have for the expertise and knowledge of injury management, from their support staff. The abovementioned results in this research study could suggest that decision-making outcomes, are highly influenced by said external factors.

Figure 11. Adapted Model of Harvey Muir and Lyle (2015) Coach Decision Making Model.



5.3 Adapting Environment for Injury Prevention

5.3.1. Interdisciplinary Framework

The results established a deliberate action phase deemed by the analysis as adapting the environment. There are a number of final considerations for the coach to take before a decision can be fully implemented. The nature of an elite team sport environment offers multiple sources of expert information available to the coach. Results identify medical staff recommendations were highly influential on the coaches' final decision. Between coaches, sport scientists, physiotherapists and parents, there is a strong interdisciplinary element to the environment which requires acknowledgement. Coaches considered their medical support staff the 'experts' in injury prevention and management, therefore they directly act as a source of information within the decision-making process, becoming a key stakeholder and amongst the micro-incidents that occurred. Points at which a coach felt safe to override the suggestions received, would be in the lead up to important cup or league games in the latter stage of the season, or if the physiotherapist was not part of the club and instead externally contracted to cover weekend games. Dawson et al (2017) present similar finding citing coaches' decisions impact and are informed at multiple structures within an organisation. Specifically, Dawson et al (2017) found all departments (from players to medical staff) within the Australian Rules Football club were interviewed analysing their decision-making processes, specifically investigating concussion management. Using the CDA, the author conducted semi-structured interviews with all participants to gain insight into their decision-making process following a concussion incident that they had previously experienced. In line with current findings Dawson et al's (2017) study reveals coaches rely heavily upon information from medical team's decisions around player monitoring and thus actions around a player in an attempt to sense-check directly results in coaches consulting medical teams to orientate the environment in terms of load in order to manage concussion.

Coaches were considered in a balancing act with accounting for potential injury, winning and their own personal experiences with concussion were the next factors considered most influential on their decision-making. Henceforth, it can be highlighted in the paucity of research that does exist in NDM for injury

management, that coaches respond well to the interdisciplinary framework within their club environment in order to make decisions that will benefit the health and safety of their players.

Previous research conducted by Harvey Lyle and Muir (2015), suggested future research take into consideration coaches' heuristics and evaluation processes of their decisions as this will allow for examination of management of the decision-making process in more detail. The authors feel that this study improved on that framework by implementing the CDA, which dedicates an area of expertise decision-making to 'self-monitoring'. When probed on this subject during the interviews, the coaches highlighted two forms of self-monitoring. The first form through evaluation of one's coaching performance and ability and suggesting improvements, when questioned against an injury risk incident. The second form shaped by objectives they use to effectively monitor an on-going, dynamic injury risk incident and relate it to the decisions they make throughout that period of time. These two distinctive forms of self-monitoring were frequently used in conjunction at the latter point of the decision process to adapt the environment for managing injury risk. A coach would use the self-evaluation outcome of previous experiences to improve his performance upon for future decision requirements. Whilst combining this with the new knowledge of objectives relevant to the current on-going incident that will produce the most effective decision outcome for their athlete. Research on self-regulation in sport, in particular basketball experts (Clearly and Zimmerman 2001), highlighted that experts engage in more self-regulating practices such as goal setting, technique orientated strategies and displayed high levels of self-efficacy than non-experts displayed. The important finding in this research shows that the last phase in self-regulation for basketball experts was to reflect and use the information to improve their future performances. This links closely with the findings in this current project, where coaches highlight their use of self-monitoring for the purposes of suggesting improvements in their performance for future potential incidences, showing high levels of motivation and skill (Kitsantas and Zimmerman 1998). Coaches' heuristics are here displayed, and it presents as an opportunity for future research to consider an educational intervention that aims to increase awareness of coaching performance and outcome in relation to injury risk in athletes.

5.3.2. NDM Timescale

The final key finding from this study, and arguably the most interesting and novel, is the extension of the NDM timeline that is apparent in coaches' decision-making processes. In comparison to previous fields researched in NDM, youth academy coaches in elite soccer display a variety in nature. Critical incidents of injury decision-making may last a much longer timescale than that of aviation pilots in a plane crash, for example (Simpson, 2001; Klein, 2000 and Orasanu, 1995). Previous research contrasts the novel critical incident timeframe through a variety of focused areas in NDM. Denihan (2007) highlights this contrast with research exploring the use of NDM in military pilots, who have further limited time to make decisions, as their time is divided between carrying out missions whilst also deciding the best way to fly, subsequently overcoming difficulty. However, with the youth soccer coaches, it is important to note that the decisions are still happening rapidly, but instead consciously over a prolonged period of time. The nature of injury incidences could project a requirement for decisions with immediate effect, or prolonged whilst the previously mentioned process of 'smart procedures' are employed to problem frame and inform the decision. Uniquely, in youth soccer coaches, these smart procedures can be employed multiple times over a timescale, with varying outcomes that are relevant and up to date for the changing dynamics of the injury state.

Multiple incidents can be accumulated as a big picture decision over the length of a season. However, in immediate form, decision-making is inherently emergent based on dynamic and fluctuating context which are not predictable, but which require naturalistic decision for such incidents. To briefly contrast this point, sport research in NDM has identified serial decision-making to occur during a single training session or match, instead of the continuous nature this study suggests (Macquet and Fleurance, 2007 and McPherson and Kernodle, 2003). This study suggests phrasing this phenomenon as micro-naturalistic decisions, which form more planned meso and macro decisions on players in relation to injury. With regards to standard NDM contexts, the current research highlights the multidimensional nature of sport coaching and potential for events to span extended timescales, particularly with recurring injuries.

5.4. Summary

Finally, in the context of elite youth academy soccer, the results of this study can define a unit of analysis as an entire season, with the goal being to transfer the athlete successfully, devoid of injury, from one age group to the next. It has been shown that coach decision-making is dynamic, emergent and clearly non-linear, with no fixed end outcome. Therefore, it requires continual assessment, problem-framing and action once a triggering threshold has been reached. In order to successfully achieve such an objective, the coach is not required solely to make one-off decisions over extended periods of time, but rather continuously enact NDM within much shorter timescales in order to monitor and control successful negotiation of indicators observed in multiple micro incidents. Such knowledge places this research on the CDM-NDM decision continuum favouring towards the NDM domain. However, some CDM decisions are required when injuries are long-standing and therefore not requiring critical, time-restricted decisions, adding to the complexity and skill required to be an expert decision-maker in a high-performance field.

Chapter Six: Practical Implications and Future Research

The findings generated by the research point to a number of practical implications toward the particular context of elite coaches' decisions around injury regulation.

6.1. Developing Perceptual Cognitive Skills

As the results suggest, perceptual cognitive skills that underpin naturalistic decision-making capacity play an impactful role in the expert coach, when scanning his environment for relevant information to process and help understand player status. Coaches stated their belief that hours of exposure to training and competition will develop their ability to make more naturalistic decisions for their players. The researchers of this study believe that scenario training (from previously experienced incidents), will help develop perceptual cognitive skills in a field setting and allow a coach to become comfortable dealing with uncertainty during training and competition. Due to the importance placed on managing injury as evident from extensive load monitoring programs in professional football, a clear implication derived from the current research is that of the importance of noticing. Thus, an implication of this findings points toward the development of education programs, as is already seen with sport science, whereby coaches are upskilled and developed in working with the often-ambiguous nature of 'noticing' indicators of injury in context. An example may be to employ experienced coaches who have graduated through youth academies to oversee the development of less experienced coaches in order to instil and hone the key perceptual cognitive skills demanded for successful noticing in the field of competition and training. Means of doing this, concurrent with the paradigm of NDM, is to ensure coaches are exposed to 'live' real world experiences to ensure the context and the learning specified to the highest degree. With any complex endeavour of decision-making decontextualizing training and developmental programs could lead to a lack of authenticity in the development programs. Having additional exposure to scenarios in a training setting, would rapidly increase their hours of exposure to various incidents, therefore accelerating their capacity to a level of expertise, but still effectively out-with laboratory settings.

6.2. Thresholds for Action

Threshold for action is potentially a critical barometer of successful decision-making in naturalistic environments in consideration to player injury management. The findings derived threshold for action as an important juncture between the construction of the problem frame decision formulation and action. Thus, common thresholds for action within a particular age group or level of youth player must be formulated in order to provide a common benchmark within academy coaches as a measure of protecting youth players against injury. To establish this, coaches should consider methods to record, monitor and share events to increase likelihood of making effective and up-to-date decisions (Palmer, Burns and Bulman 1994). The limitation found to suggest this improvement for future research was evident in the recalling patterns of some coaches during their CDA semi-structured interviews. Whilst recalling the recorded incident from their data collection timeline, some coaches would then be triggered into remembering additional incidents in which they hadn't recorded, or in some cases, hadn't thought significant enough to report at all. Therefore, if some incidences were then noted for a coach to consider, this may alter the threshold for which he would then take appropriate action.

6.3. Individualising NDM Process

As some of the sub-themes suggest in this general dimension, there is a variety of smart procedures displayed by every coach, individualised to their experiences. Again, for coach development in context smart procedures must be shared across in order to build and share as a method of education. Such means are often cited as informal and can be framed through the theoretical notion of 'Communities of Practice. Practical implications of this finding would suggest a coach education tool beneficial to regular meetings amongst coaches of the youth academy to share experiences and methods and develop further decision options for similar incidents in the future. It would benefit coaches across the age group squads within the academy, to learn from coaches with a varied experience to each other. This would

promote story-building and learning to deal with uncertainty in any future incidents which may occur.

6.4. Securing an Interdisciplinary Framework

The findings ascertain that the NDM process although individual has a communal aspect whereby coaches consult and adapt the stressors within the environment in order to negate indicators seen in incidences. One key tool the coach can use is the medical team. For decisions actions to gain traction in the talent development system a clearing within the system is required in order for coaches to communicate the role their past experiences play; breadth of information sources to make decisions; and potential range of actions available. The research also identified the important role of parents and support staff as information sources and influencers of coach decision-making. Future research should evaluate interventions based on the findings in this current study, again focussing on developing communities of practice (transparency, mutual engagement and shared repertoire (Wenger, 1998)) where coaches can share experiences and considerations in their decision-making and actions. Knowles et al (2010) suggest through their investigation of early years coach practitioners, that reflective practice via oral communication amongst experienced colleagues promotes self-reflection and dual-staged analysis on actions, breaking down anticipated psychology barriers.

6.5. Building a Recruitment/Coach Education Model

Using NDM as a skill to orientate the environment for the purpose of safeguarding players against injury is often not deemed a core skill of the aspiring elite youth coach. These findings clearly indicate however, that injury regulation through NDM is a core skill employed by coaches with youth players. This research also suggests formalising and objectifying the cognitive decision-making process highlighted, as a recruitment and educational tool for future potential employees. From direct transcripts of interviews and the thematic map of resultant themes from this study,

that portray the story of how the internal cognitive mechanisms are conducted, the football club could mirror this cognitive pathway into a visual model of decision-making to match coaches against, in either currently employed or future potential employees. Scenario building and storytelling could promote the strengths and weaknesses within candidates for their ability to successfully accumulate information and process naturalistic decisions under pressurised, emergent environments. Coach education literature has suggested that coach education should indeed incorporate sources of first-hand experience instead of coaching manuals from textbook sources (Lyle, 2002).

Chapter Seven: Study Limitations

This study, like many, was not without its limitations.

Firstly, while retrospective interviews in the form of the CDA gave valuable insights into subjective decision processes, alternative methods could be employed to verify by means of triangulation the 'Adapting the Environment' process. Longitudinal observation methods or field methods such as ethnography may afford even greater clarity, in addition a whole system analysis, which was not afforded in this study, due to time and resource constraints. This method could give valuable perspective to the actions coaches take and the success of these. This would further verify the authenticity of the quality of decisions made by coaches. Although, the methods of this study are strong as it directly targets in a systematic manner the cognitive mechanisms of decision-making that observation would not get insight into. However, immediate informal interviewing may be possible from being on the ground and conducting future research through ethnography.

Secondly, this research study only focused on retrieving the coaches' perceptions of the decision-making process and their reflection of that based on the outcome. Further studies could explore athlete, sport science, medical staff and other key stakeholders' perceptions around the coaches' impact on managing injury through decision-making, and the procedures in that decision-making process that are effective. This could promote a stronger interdisciplinary working relationship within systems to produce decisions and methods that best protect and develop their youth players, on a stronger multi-level framework.

Thirdly, as has been previously mentioned, due to the structure of the football club's youth academy, and in conjunction with the timing of the data collection cycles, one participant missed a significant proportion of data collection cycle number two, due to family commitments. This meant he was unable to contribute to the majority of the decision-making requirements at training or competitions, therefore his second CDA semi-structured interview did not reveal as rich data in comparison to the other participants. This limitation could have been due to the nature of the method used in comparison to other data collection options.

Another limitation that should be considered was the lack of decisions made in context to psychological indicators to injury risk, during the first round of data collection and CDA interviews. Some coaches stated that it was not something they were in routine of doing previous to the research, therefore felt 'out of practice' in scanning for this in their environments. Once they were re-introduced to the importance of this by the main researcher of this study, prior to the second round of data collection, they felt much more comfortable and confident in detecting these risks. Therefore, the second round of CDA interviews engaged in more psychological injury risks that coaches were required to employ NDM for.

Finally, the study is host to a limitation of study transferability within various sports and levels of competition. This study has been uniquely conducted to afford the infrastructure of the football club in situ. However, other sporting organisations will have individual structures which differ from the current academy, and which will also vary in level of competing athletes. Therefore, future studies need to consider this factor when structuring and conducting research in the real-world environment of a sporting organisation.

Chapter Eight: Conclusion

The purpose of this study was to unearth and understand the process of NDM in youth academy soccer coaches when decisions are required to mitigate for injury risk in youth soccer players. Through coaches expertise knowledge and experience, the aim of the study was to interpret the internal NDM process in the youth soccer environment, allowing coaches to monitor and adjust for injuries, a novel domain in NDM research to date. Key findings highlighted a variety of past experiences which allow coaches to detect and extract vital cues from their immediate environment to notice athletes at risks of injuries. The tactical procedures used to then understand the problem were combined between methods within the coach himself, and then contrastingly between himself and athlete. Once a threshold for action was reached, the coach then manipulated his environment to prevent the risk of injury developing, or limiting any further materialisation. Said findings identified NDM when used successfully, provides a rich consistent stream of information that informs decisions around player injury. This information is instantaneously available to the coach and thus immediately relevant to the specific demands and risks of the context on the player. This therefore, unlike sports science data, does not ascribe to retrospective reflection but is a rather direct perception of key factors enabling moment to moment nuanced decision-making. In order to problem-frame and provide decision action on an incident, coaches have the ability to scan and detect cues in their immediate environment, and employ smart procedures to arrive at a threshold for action. Specifically to injury, coaches are able to continuously update and monitor this problem-frame, as the length of injury and therefore requirement for NDM is extensive in comparison to previously researched fields in NDM.

Within the structure and delivery of an elite academy system, technical coaches alone can be responsible and impactful in making effective, initial injury management decisions for their youth elite players. Coaches have a unique direct relationship to their players and therefore have an underpinning knowledge that can allow them to make naturalistic decisions in the moment, saving the system potential time, cost and ultimately players in the hands of injury. With the understanding of the internal processes of this decision-making process,

academies can upskill novice coaches to reach the level required to read, detect and respond to these uncertain incidences. As this study has explored the decisions made for particular incidences, further research would benefit from investigating the effectiveness of the decision outcome. Ethnographic methods would allow measurement for the quality of decisions and their effectiveness in relation to the outcome of player injury prevention. Longitudinally, youth elite academies could adopt a culture, before the contemporary load monitoring tools of sports science and medical staff, that coaches can be skilled at the forefront of monitoring and adapting the training environment for their athletes, with interdisciplinary efforts with sports science and medical staff to then optimise and extend their performance levels and injury-free status.

References

1. ABRAHAM, A. and COLLINS, D., 2011. Taking the next step: Ways forward for coaching science. *Quest*, 63(4), pp. 366-384
2. ABRAHAM, A., COLLINS, D. and MARTINDALE, R., 2006. The coaching schematic: Validation through expert coach consensus. *Journal of sports sciences*, 24(06), pp. 549-564
3. ACHARYA, A.S., PRAKASH, A., SAXENA, P. and NIGAM, A., 2013. Sampling: Why and how of it. *Indian Journal of Medical Specialties*, 4(2), pp.330-333.
4. ALVES, H. et al., 2013. Perceptual-cognitive expertise in elite volleyball players. *Frontiers in psychology*, 4, pp. 36
5. ARAÚJO, D. and DAVIDS, K., 2011. What exactly is acquired during skill acquisition? *Journal of Consciousness Studies*, 18(3-4), pp. 7-23
6. ARAUJO, D. et al., 2009. The development of decision-making skill in sport: an ecological dynamics perspective. *Perspectives on cognition and action in sport*. Nova Science Publishers, Inc. pp. 157-169
7. ARAUJO, D., DAVIDS, K. and HRISTOVSKI, R., 2006. The ecological dynamics of decision-making in sport. *Psychology of Sport and Exercise*, 7(6), pp. 653-676
8. ARAÚJO, D. et al., 2019. Ecological cognition: expert decision-making behaviour in sport. *International Review of Sport and Exercise Psychology*, 12(1), pp. 1-25
9. BAKER, J., COTE, J. and ABERNETHY, B., 2003. Sport-specific practice and the development of expert decision-making in team ball sports. *Journal of applied sport psychology*, 15(1), pp. 12-25
10. BAR-ELI, M., PLESSNER, H. and RAAB, M., 2011. *Judgment, decision-making and success in sport*. John Wiley & Sons.
11. BAXTER, P. and RIDEOUT, E., 2006. Second-year baccalaureate nursing students' decision-making in the clinical setting. *Journal of Nursing Education*, 45(4).
12. BAXTER, P. and JACK, S., 2008. Qualitative case study methodology: Study design and implementation for novice researchers. *The qualitative report*, 13(4), pp. 544-559

13. BEACH, L.R. and CONNOLLY, T., 2005. *The psychology of decision-making: People in organizations*. Sage.
14. BEACH, L.R., 1993. Broadening the definition of decision-making: The role of prechoice screening of options. *Psychological Science*, 4(4), pp. 215-220
15. BERGSTEINER, H., AVERY, G.C. and NEUMANN, R., 2010. Kolb's experiential learning model: critique from a modelling perspective. *Studies in Continuing Education*, 32(1), pp. 29-46
16. BERTOLLO, M., SALTARELLI, B. and ROBAZZA, C., 2009. Mental preparation strategies of elite modern pentathletes. *Psychology of Sport and Exercise*, 10(2), pp. 244-254
17. BLOOM, B.S. and SOSNIAK, L.A., 1985. *Developing talent in young people*. Ballantine Books.
18. BORDERS, J. and KLEIN, G., 2017. The critical decision audit: Blending the critical decision method & the knowledge audit. *Naturalistic Decision-making and Uncertainty.*, pp. 33
19. BOYATZIS, R.E., 1998. *Transforming qualitative information: Thematic analysis and code development*. sage.
20. BRAUN, V. and CLARKE, V., 2006. Using thematic analysis in psychology. *Qualitative research in psychology*, 3(2), pp. 77-101
21. BRINK, M. et al., 2012. Changes in perceived stress and recovery in overreached young elite soccer players. *Scandinavian Journal of Medicine & Science in Sports*, 22(2), pp. 285-292
22. BRUNER, M.W., MUNROE-CHANDLER, K. and SPINK, K.S., 2008. Entry into Elite Sport: A Preliminary Investigation into the Transition Experiences of Rookie Athletes. *Journal of Applied Sport Psychology*, 20(2), pp. 236-252
23. CAMIC, P.M., RHODES, J.E. and YARDLEY, L.E., 2003. *Qualitative research in psychology: Expanding perspectives in methodology and design*. American Psychological Association.
24. CANNON-BOWERS, J.A., SALAS, E. and PRUITT, J.S., 1996. Establishing the boundaries of a paradigm for decision-making research. *Human factors*, 38(2), pp. 193-205
25. CHASE, W.G. and SIMON, H.A., 1973. Perception in chess. *Cognitive psychology*, 4(1), pp. 55-81

26. CLEARY, T.J. and ZIMMERMAN, B.J., 2001. Self-regulation differences during athletic practice by experts, non-experts, and novices. *Journal of Applied Sport Psychology*, 13(2), pp.185-206.
27. COHEN, M.S. and FREEMAN, J.T., 1997. Improving critical thinking. *Decision-making under stress: Emerging themes and applications*. Brookfield, VT: Ashgate Publishing Co,
28. COHEN, M.S., FREEMAN, J.T. and THOMPSON, B., 1998. Critical thinking skills in tactical decision-making: A model and a training strategy. *Making decisions under stress: Implications for individual and team training*, pp. 155-189
29. COHEN, M.S., FREEMAN, J.T. and THOMPSON, B.B., 1997. Integrated critical thinking training and decision support for tactical anti-air warfare. *Proceedings of the 1997 Command and Control Research and Technology Symposium, Washington, DC*.
30. COHEN, M.S., FREEMAN, J.T. and WOLF, S., 1996. Metarecognition in time-stressed decision-making: Recognizing, critiquing, and correcting. *Human factors*, 38(2), pp. 206-219
31. COLLINS, D., COLLINS, L. and CARSON, H.J., 2016. "If it feels right, do it": Intuitive decision-making in a sample of high-level sport coaches. *Frontiers in psychology*, 7, pp. 504
32. COLLINS, L. and COLLINS, D., 2013. Decision-making and risk management in adventure sports coaching. *Quest*, 65(1), pp. 72-82
33. CÔTÉ, J. and GILBERT, W., 2009. An integrative definition of coaching effectiveness and expertise. *International journal of sports science & coaching*, 4(3), pp. 307-323
34. CUNNINGHAM, I. et al., 2012. Decision-making and decision communications in elite rugby union referees: an inductive investigation. *Sport & Exercise Psychology Review*, 8(2), pp. 23-32
35. DAWSON, K., SALMON, P.M., READ, G.J., NEVILLE, T., GOODE, N. and CLACY, A., 2017. Removing concussed players from the field: the factors influencing decision-making around concussion identification and management in Australian Rules Football. *Proceedings of the 13th International Conference on Naturalistic Decision-making*. University of Bath. pp. 48-55

36. DEBANNE, T. and FONTAYNE, P., 2009. A study of a successful experienced elite handball coach's cognitive processes in competition situations. *International Journal of Sports Science & Coaching*, 4(1), pp. 1-16
37. DENIHAN, M.B., 2007. Decision-making in naval aviation: contextual factors influencing cue and factor saliency. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*. SAGE Publications Sage CA: Los Angeles, CA. pp. 333-337
38. Dictionary, C.E., 2014. Dictionary. com. Retrieved December, 15, p.2014.
39. DRISLANE, R. and PARKINSON, G., 2011. *Qualitative research. Online dictionary of the social sciences*,
40. EKSTRAND, J., 2013. *Keeping your top players on the pitch: the key to football medicine at a professional level*,
41. ELLIOTT, T., 2005. *Expert decision-making in naturalistic environments: A summary of research*,
42. ENDSLEY, M.R., 1995. Toward a theory of situation awareness in dynamic systems. *Human factors*, 37(1), pp. 32-64
43. ENDSLEY, M.R., 1997. The role of situation awareness in naturalistic decision-making. *Naturalistic decision-making*, 269, pp. 284
44. ENDSLEY, M.R., 2000. Situation models: An avenue to the modelling of mental models. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*. SAGE Publications Sage CA: Los Angeles, CA. pp. 61-64
45. ENDSLEY, M.R. et al., 1998. *Situation awareness information requirements for commercial airline pilots*,
46. ENDSLEY, M.R. and GARLAND, D.J., 2000. Theoretical underpinnings of situation awareness: A critical review. *Situation awareness analysis and measurement*, 1, pp. 24
47. ENGEL, N. et al., 2008. Non-technical skills. *BMJ*, 337, pp. 0812454
48. ERICSSON, K.A., 2005. Recent advances in expertise research: A commentary on the contributions to the special issue. *Applied cognitive psychology*, 19(2), pp. 233-241
49. ERICSSON, K.A., 2006. The influence of experience and deliberate practice on the development of superior expert performance. *The Cambridge handbook of expertise and expert performance*, 38, pp. 685-705

50. ERICSSON, K.A. and LEHMANN, A.C., 1996. Expert and exceptional performance: Evidence of maximal adaptation to task constraints. *Annual Review of Psychology*, 47(1), pp. 273-305
51. ERICSSON, K.A., KRAMPE, R.T. and TESCH-RÖMER, C., 1993. The role of deliberate practice in the acquisition of expert performance. *Psychological review*, 100(3), p.363.
52. ERICSSON, K.A. and SMITH, J., 1991. Prospects and limits of the empirical study of expertise: An introduction. *Toward a general theory of expertise: Prospects and limits*, 344, pp. 1-38
53. FARROW, D. and RAAB, M., 2008. A recipe for expert decision-making. *Developing Sport Expertise*, pp. 137-159
54. FISCHER, L. et al., 2016. Perceptual-cognitive expertise of handball coaches in their young and middle adult years. *Journal of sports sciences*, 34(17), pp. 1637-1642
55. FLAVELL, J.H., 1979. Metacognition and cognitive monitoring: A new area of cognitive-developmental inquiry. *American psychologist*, 34(10), pp. 906
56. FLETCHER, G. et al., 2002. The role of non-technical skills in anaesthesia: a review of current literature. *British journal of anaesthesia*, 88(3), pp. 418-429
57. FLIN, R. et al., 2003. Development of the NOTECHS (non-technical skills) system for assessing pilots' CRM skills. *Human Factors and Aerospace Safety*, 3, pp. 97-120
58. FLIN, R. et al., 2010. Anaesthetists' non-technical skills. *British journal of anaesthesia*, 105(1), pp. 38-44
59. FLIN, R. et al., 2017. *Decision-making under stress: Emerging themes and applications*. Routledge.
60. FORD, P.R. et al., 2015. Deliberate practice in sport. *Routledge Handbook of Sport Expertise*. Routledge. pp. 373-388
61. FREITAG, M., 1997. Structure of event analysis In Hale A, Wilpert B, Freitag M After the event. From accident to organizational learning.
62. GHERARDI, S., 2008. Situated knowledge and situated action: What do practice-based studies promise. *The SAGE handbook of new approaches in management and organization*, pp. 516-525
63. GLÖCKNER, A. et al., 2012. Network approaches for expert decisions in sports. *Human Movement Science*, 31(2), pp. 318-333

- 64.GORE, J. et al., 2015. *Applications of Naturalistic Decision-making*. British Psychological Soc.
- 65.GRAY, R., 2019. Virtual environments and their role in developing perceptual-cognitive skills in sports. *Anticipation and Decision-making in Sport*. Routledge. pp. 342-358
- 66.GRUNDEL, A. et al., 2013. Does playing experience improve coaching? An exploratory study of perceptual-cognitive skill in soccer coaches. *Frontiers in psychology*, 4, pp. 129
- 67.HÄGGLUND, M., WALDÉN, M. and EKSTRAND, J., 2009. Injuries among male and female elite football players. *Scandinavian Journal of Medicine & Science in Sports*, 19(6), pp. 819-827
- 68.HAGGLUND, M. et al., 2013. Injuries affect team performance negatively in professional football: an 11-year follow-up of the UEFA Champions League injury study. *British journal of sports medicine*, 47(12), pp. 738-742
- 69.HANDFORD, C. et al., 1997. Skill acquisition in sport: Some applications of an evolving practice ecology. *Journal of sports sciences*, 15(6), pp. 621-640
- 70.HARVEY, S., LYLE, J.W.B. and MUIR, B., 2015. Naturalistic decision-making in high performance team sport coaching. *International Sport Coaching Journal*, 2(2), pp. 152-168
- 71.HONEYBOURNE, J., 2006. *Acquiring skill in sport: an introduction*. Routledge.
- 72.IVARSSON, A. et al., 2013. To adjust or not adjust: nonparametric effect sizes, confidence intervals, and real-world meaning. *Psychology of Sport and Exercise*, 14(1), pp. 97-102
- 73.JOHNSON, J.G., 2006. Cognitive modelling of decision-making in sports. *Psychology of Sport and Exercise*, 7(6), pp. 631-652
- 74.JOHNSTON, R.B., 2001. Situated action, structuration and actor-network theory: an integrative theoretical perspective. *ECIS 2001 Proceedings*, pp. 73
- 75.KAYA, A., 2014. *Decision-making by Coaches and Athletes in Sport*.
- 76.KERMARREC, G., 2015. Enhancing tactical skills in soccer: Advances from the Naturalistic Decision-Making approach. *Procedia Manufacturing*, 3, pp. 1148-1156

77. KERMARREC, G. and BOSSARD, C., 2014. Defensive soccer players' decision-making: A naturalistic study. *Journal of Cognitive Engineering and Decision-making*, 8(2), pp. 187-199
78. KITSANTAS, A. and ZIMMERMAN, B.J., 1998. Self-regulation of motoric learning: A strategic cycle view. *Journal of Applied Sport Psychology*, 10(2), pp.220-239.
79. KLEIN, G., 1998. Sources of Power: How people make decisions. 1998. MIT Press, ISBN, 13, pp. 978-970
80. KLEIN, G., 2000. Decision skills training for the aviation community.
81. KLEIN, G.A., CALDERWOOD, R. and MACGREGOR, D., 1989. Critical decision method for eliciting knowledge. *IEEE transactions on systems, man, and cybernetics*, 19(3), pp. 462-472
82. KLEIN, G.A., ORASANU, J.E., CALDERWOOD, R.E. and ZSAMBOK, C.E., 1993. Decision-making in action: Models and methods. *This book is an outcome of a workshop held in Dayton, OH, Sep 25-27, 1989*. Ablex Publishing.
83. KLEIN, G.A. and ZSAMBOK, C.E., 1997. *Naturalistic decision-making*. L. Erlbaum Associates.
84. KLEIN, G. and BORDERS, J., 2016. The ShadowBox approach to cognitive skills training: An empirical evaluation. *Journal of Cognitive Engineering and Decision-making*, 10(3), pp. 268-280
85. KLEIN, G. and HOFFMAN, R.R., 2008. Macrocognition, mental models, and cognitive task analysis methodology. *Naturalistic decision-making and macrocognition*, pp. 57-80
86. KLEIN, G., 2008. Naturalistic Decision-making. *Hum Factors*, 50(3), pp. 456-460
87. KOLB, D.A., 1984. Experiential learning: Experience as the source of. *Learning and Develop,*
88. LE GALL, F. et al., 2006. Incidence of injuries in elite French youth soccer players: a 10-season study. *The American Journal of Sports Medicine*, 34(6), pp. 928-938
89. LEHNERT, M. et al., 2018. Changes in injury risk mechanisms after soccer-specific fatigue in male youth soccer players. *Journal of human kinetics*, 62(1), pp. 33-42

90. LEMKE, J.L., 1997. Cognition, context, and learning: A social semiotic perspective. *Situated cognition: Social, semiotic, and psychological perspectives*, pp. 37-56
91. LIPSHITZ, R., 1994. Decision-making in three modes. *Journal for the theory of social behaviour*, 24(1), pp. 47-65
92. LIPSHITZ, R., 1996. How decision-makers cope with uncertainty. *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*. SAGE Publications Sage CA: Los Angeles, CA. pp. 189-193
93. LIPSHITZ, R., KLEIN, G. and CARROLL, J.S., 2006. Introduction to the special issue. Naturalistic decision-making and organizational decision-making: Exploring the intersections. *Organization Studies*, 27(7), pp. 917-923
94. LIPSHITZ, R. et al., 2001. Taking stock of naturalistic decision-making. *Journal of Behavioral Decision-making*, 14(5), pp. 331-352
95. LIPSHITZ, R. and STRAUSS, O., 1997. Coping with uncertainty: A naturalistic decision-making analysis. *Organizational behavior and human decision processes*, 69(2), pp. 149-163
96. LYLE, J., 2002. *Sports Coaching Concepts [electronic Resource]*. Routledge.
97. LYLE, J., 2003. Stimulated recall: A report on its use in naturalistic research. *British educational research journal*, 29(6), pp. 861-878
98. LYLE, J., 2010. Coaches' decision-making: A naturalistic decision-making analysis. *Sports coaching: Professionalisation and practice*, pp. 27-41
99. MACQUET, A., 2009. Recognition within the decision-making process: A case study of expert volleyball players. *Journal of Applied sport psychology*, 21(1), pp. 64-79
100. MACQUET, A. and FLEURANCE, P., 2007. Naturalistic decision-making in expert badminton players. *Ergonomics*, 50(9), pp. 1433-1450
101. MANN, D.T. et al., 2007. Perceptual-cognitive expertise in sport: A meta-analysis. *Journal of Sport and Exercise Psychology*, 29(4), pp. 457-478
102. MARTENIUK, R.G., 1976. *Information processing in motor skills*. Holt, Rinehart and Winston.
103. MASCARENHAS, D.R. et al., 2005. Training accurate and coherent decision-making in rugby union referees. *The Sport Psychologist*, 19(2), pp. 131-147

104. MCPHERSON, S. and KERNODLE, M., 2003. Tactics, the neglected attribute of expertise: Problem representations and performance skills in tennis. *Expert performance in sports: Advances in research on sport expertise*, pp. 137-167
105. MCPHERSON, S. and KERNODLE, M., 2003. Tactics, the neglected attribute of expertise: Problem representations and performance skills in tennis. *Expert performance in sports: Advances in research on sport expertise*, pp. 137-167
106. MEICHENBAUM, D., BURLAND, S., GRUSON, L. and CAMERON, R., 1985. Metacognitive assessment. *The growth of reflection in children*, pp.3-30.
107. MONTGOMERY, H., LIPSHITZ, R. and BREHMER, B., 2004. *How professionals make decisions*. CRC Press.
108. MONTGOMERY, J., 1988. Power/knowledge/consent: medical decision-making. *The Modern Law Review*, 51(2), pp. 245-251
109. NARDI, B.A., 1996. Studying context: A comparison of activity theory, situated action models, and distributed cognition. *Context and consciousness: Activity theory and human-computer interaction*, 69102
110. NEWELL, A. and SIMON, H.A., 1972. *Human problem solving*. Prentice-Hall Englewood Cliffs, NJ.
111. NIBBELINK, C.W. and REED, P.G., 2019. Deriving the Practice-Primed Decision Model from a naturalistic decision-making perspective for acute care nursing research. *Applied Nursing Research*, 46, pp. 20-23
112. NORMAN, D.A., 1993. Cognition in the head and in the world: An introduction to the special issue on situated action. *Cognitive science*, 17(1), pp. 1-6
113. ORASANU, J., 1995, October. Training for aviation decision-making: The naturalistic decision-making perspective. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting* (Vol. 39, No. 20, pp. 1258-1262). Sage CA: Los Angeles, CA: SAGE Publications.
114. ORASANU, J. and CONNOLLY, T., 1993. The reinvention of decision-making. *Decision-making in action: Models and methods*, 1, pp. 3-20
115. PALMER, A.M., BURNS, S. and BULMAN, C., 1994. Reflective Practice in Nursing the Growth of the Professional Practitioner.

116. PATTON, M.Q., 1990. *Qualitative evaluation and research methods*. SAGE Publications, inc.
117. PARKINSON, G. and DRISLANE, R., 2011. Qualitative research. *Online dictionary of the social sciences*.
118. PENNINGTON, N. and HASTIE, R., 1988. Explanation-based decision-making: Effects of memory structure on judgment. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 14(3), pp. 521
119. PLISKE, R.M., MCCLOSKEY, M.J. and KLEIN, G., 2001. Decision skills training: Facilitating learning from experience. *Naturalistic Decision-making, 4th, May, 1998, Airlie Center, Warrenton, VA, US*. Lawrence Erlbaum Associates Publishers.
120. PODLOG, L. and EKLUND, R.C., 2009. High-level athletes' perceptions of success in returning to sport following injury. *Psychology of Sport and Exercise*, 10(5), pp. 535-544
121. POLITO, L. et al., 2017. Psychophysiological indicators of fatigue in soccer players: A systematic review. *Science & Sports*, 32(1), pp. 1-13
122. POPE, C.C., PENNEY, D. and SMITH, T.B., 2018. Overtraining and the complexities of coaches' decision-making: managing elite athletes on the training cusp. *Reflective Practice*, 19(2), pp. 145-166
123. RAAB, M. and LABORDE, S., 2011. When to blink and when to think: preference for intuitive decisions results in faster and better tactical choices. *Research quarterly for exercise and sport*, 82(1), pp. 89-98
124. RANDEL, J.M., PUGH, H.L. and REED, S.K., 1996. Differences in expert and novice situation awareness in naturalistic decision-making. *International Journal of Human-Computer Studies*, 45(5), pp. 579-597
125. READER, T.W. AND O'CONNOR, P., 2014. The Deepwater Horizon explosion: non-technical skills, safety culture, and system complexity. *Journal of Risk Research*, 17(3), pp.405-424.
126. REILLY, T. and WILLIAMS, A.M., 2003. Introduction to science and soccer. In *Science and soccer* (pp. 9-14). Routledge.
127. ROBERTSON, S., BARTLETT, J.D. and GASTIN, P.B., 2017. Red, amber, or green? Athlete monitoring in team sport: the need for decision-support systems. *International journal of sports physiology and performance*, 12(s2), pp. S2-73-S2-79

128. ROSS, K.G. et al., 2004. *The recognition-primed decision model*,
129. SALAS, E., ROSEN, M.A. and DIAZGRANADOS, D., 2010. Expertise-based intuition and decision-making in organizations. *Journal of management*, 36(4), pp. 941-973
130. SAUNDERS, B. et al., 2018. Saturation in qualitative research: exploring its conceptualization and operationalization. *Quality & quantity*, 52(4), pp. 1893-1907
131. SAVAGE, L.J., 1954. *The Foundations of Statistics* John Wiley and Sons New York.
132. SCHINKE, R.J., BLOOM, G.A. and SALMELA, J.H., 1995. The career stages of elite Canadian basketball coaches. *Avante*, 1(1), pp. 48-62
133. SCHON, D., 1983. 1983, *The reflective practitioner: How professionals think in action*. New York: Basic Books.
134. SEAMSTER, D., REDDING, V. and KAEMPF, D., 1997. *Cognitive Task Analysis*. Dayton: Wright State University, 386
135. SEVE, C., SAURY, J., RIA, L. and DURAND, M., 2003. Structure of Expert Players' Activity during Competitive Interaction in Table Tennis. *Research Quarterly for Exercise and Sport*, 74(1), pp.71-83.
136. SHANTEAU, J., 1992. Competence in experts: The role of task characteristics. *Organizational behaviour and human decision processes*, 53(2), pp. 252-266
137. SHATTUCK, L.G. and MILLER, N.L., 2006. Extending naturalistic decision-making to complex organizations: A dynamic model of situated cognition. *Organization Studies*, 27(7), pp. 989-1009
138. SHAW, M.L., 1982. Attending to multiple sources of information: I. The integration of information in decision-making. *Cognitive Psychology*, 14(3), pp.353-409.
139. SIMPSON, P.A., 2001. *Naturalistic decision-making in aviation environments*,
140. SKRIVER, J. AND FLIN, R., 1997. Emergency decision-making on offshore installations.
141. SMITH, M.R. et al., 2016. Mental fatigue impairs soccer-specific decision-making skill. *Journal of sports sciences*, 34(14), pp. 1297-1304
142. STAKE, R. E. (1995). *The art of case study research*. Thousand Oaks, CA: Sage.

143. STOCKER, R. and CLOSE, H., 2013. A Novel Method of Enhancing Grounded Theory Memos with Voice Recording. *The Qualitative Report*, 18(1), pp. 1-14
144. TAMMINEN, K.A. and HOLT, N.L., 2012. Adolescent athletes' learning about coping and the roles of parents and coaches. *Psychology of Sport and Exercise*, 13(1), pp. 69-79
145. VAEYENS, R. et al., 2007. The effects of task constraints on visual search behavior and decision-making skill in youth soccer players. *Journal of Sport and Exercise Psychology*, 29(2), pp. 147-169
146. VAUGHAN, D., 1998. Rational choice, situated action, and the social control of organizations. *Law & Soc'y Rev.*, 32, pp. 23
147. VERA, A.H. and SIMON, H.A., 1993. Situated action: A symbolic interpretation. *Cognitive science*, 17(1), pp. 7-48
148. VERGEER, I., 2013. John Lyle. *Routledge Handbook of Sports Coaching*, pp. 121
149. VERGEER, I. and LYLE, J., 2009. Coaching experience: Examining its role in coaches' decision-making. *International journal of sport and exercise psychology*, 7(4), pp. 431-449
150. VON CRANACH, M. and HARRÉ, R., 1982. *The analysis of action: Recent theoretical and empirical advances*. CUP Archive.
151. VON NEUMANN, J. and MORGENSTERN, O., 1947. Theory of games and economic behavior, 2nd rev.
152. WENGER, E., 1998. Communities of practice: Learning as a social system. *Systems thinker*, 9(5), pp. 2-3
153. WICKENS, C.D., 2002. Multiple resources and performance prediction. *Theoretical issues in ergonomics science*, 3(2), pp. 159-177
154. WILLIAMS, A.M. and ERICSSON, K.A., 2005. Perceptual-cognitive expertise in sport: Some considerations when applying the expert performance approach. *Human movement science*, 24(3), pp. 283-307
155. WILLIAMS, A.M. and FORD, P.R., 2008. Expertise and expert performance in sport. *International Review of Sport and Exercise Psychology*, 1(1), pp. 4-18
156. WILLIAMS, A.M., WARD, P. and SMEETON, N., 2004. Perceptual and cognitive expertise in sport: implications for skill acquisition and performance enhancement.

157. WILLIAMS, A. et al., 1999. Visual search strategy, recall ability, and expertise in field hockey. *Journal of Sport and Exercise Psychology*, 21, pp. S123
158. WILLIAMS, A. et al., 2002. Perceptual skill in a real-world task: Training, instruction, and transfer in tennis. *Journal of Experimental Psychology: Applied*, 8(4), pp. 259-270
159. WILLIAMS, A.M. and ERICSSON, K.A., 2005. *Perceptual-cognitive expertise in sport: Some considerations when applying the expert performance approach.*
160. YANG, J., PEEK-ASA, C., ALLAREDDY, V., PHILLIPS, G., ZHANG, Y. and CHENG, G., 2007. Patient and hospital characteristics associated with length of stay and hospital charges for pediatric sports-related injury hospitalizations in the United States, 2000–2003. *Pediatrics*, 119(4), pp.e813-e820.
161. YARROW, K., BROWN, P. and KRAKAUER, J.W., 2009. Inside the brain of an elite athlete: the neural processes that support high achievement in sports. *Nature Reviews Neuroscience*, 10(8), pp. 585
162. YATES, J.F., 2001. "Outsider:" Impressions of naturalistic decision-making. *Naturalistic Decision-making*, 4th, May, 1998, Airlie Center, Warrenton, VA, US. Lawrence Erlbaum Associates Publishers.
163. YIM, H.B., KIM, A.R. and SEONG, P.H., 2013. Development of a quantitative evaluation method for non-technical skills preparedness of operation teams in nuclear power plants to deal with emergency conditions. *Nuclear Engineering and Design*, 255, pp.212-225.
164. YIN, R., 2003. Case Study Research: Design and Methods (rd edition).

Appendix 1: Gatekeeper Permission Granted

"Gatekeepers Permission"

PM Patrick Maughan <[REDACTED]> Mon 25/06/2018, 16:14

You; ▾

Good Afternoon Sam,

I am happy to confirm on behalf of Aberdeen Football Club that we are comfortable with you carrying out research on youth academy players contracted to the club.

Many Thanks,

Patrick Maughan MSc ASCC
Youth Academy Sports Scientist



Aberdeen Football Club plc
Pittodrie Stadium
Pittodrie Street
Aberdeen
AB24 5QH

Tel: [REDACTED]
Email: [REDACTED]
Web: www.afc.co.uk

Like us on Facebook facebook.com/AberdeenFootballClub

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Appendix 2: Coach Participant Information Sheet



School of Health Sciences

School Research Review Group (SRRG)

Participant Information Sheet for Competent Adult (PISCA) – Coach

<i>SRRG Ref No:</i>	SHS/18/18.
<i>Title (short):</i>	Factors Influencing Coaches Decision-making
<i>Name of Researcher:</i>	Samantha Somers
<i>Date:</i>	26/06/18.

Introduction:
My name is Sam Somers and I am a student completing a Masters by Research, at the School of Health Sciences at Robert Gordon University, Aberdeen. I am doing some research which looks into the decisions made by coaches when a player is at risk of injury.
The study:
The aim of the research will be to highlight risk of injury quicker within players and to make sure coaches are making the correct decisions that allows players to be on the pitch, playing for longer. I am going to be doing the research at Aberdeen Football Club (AFC). Therefore as one of AFC's youth coaches you are being asked to participate. Your participation is voluntary throughout the study, and you have the right to withdraw anytime, without giving reason.
Taking part:
As the coach, you will be asked to keep a voice memo recording of any qualitative indicator (sore muscle/body part; noted tiredness; exam/contract period; family complication etc..) that arises during a training session or match game. This should be done immediately as the incident happens or immediately after the training/match game ceases – this is to target accurate recall. There will be a set structure to follow and complete to ensure all essential information is recorded and provided. The voice memo(s) will be sent into an encrypted WhatsApp group (for data protection purposes) along with all other age group coaches' memos. The researcher will collect this data and review it as the study progresses.
Expenses and payment:
There will be no expenses or payment offered for this research project.

Advantages and disadvantages of taking part:

There will be no direct advantage to you for participating in this research. The findings however will add to the robustness of the team as a whole and will potentially decrease the number of injuries occurring within each squad. This will be achieved by using athlete diaries, voice memos, RPE and Wellness Questionnaires to match information and numbers provided by yourself to notice a lower level of performance quicker. The club will hopefully have an established and novel athlete monitoring system to put them ahead in their elite status against other teams within the country. There will be no disadvantages to taking part in this research study.

Confidentiality, data protection and anonymity:

All the information you share including your name and other details personal to yourself will be kept confidential. The recording of data will be kept on a password secured laptop and encrypted message group – allowing no access to unauthorised personnel. It will not be shared with anyone else. Your name will not appear in any research papers produced as a result of this research. Individual anonymised quotes from voice memos may be used to illustrate the research findings in research papers and reports. All information collection will be collected and stored within the requirements of the General Data Protection Regulation (2018).

What happens if there is a problem?

Please discuss any problems with me or my supervisors. Our contact details are given at the bottom of this letter. If you have a complaint please send details of this to the convenor, School of Health Sciences Research Review Group, Robert Gordon University, Garthdee Road, Aberdeen AB10 7QG Professor Kay Cooper, k.cooper@rgu.ac.uk or Mrs Elizabeth Hancock, Head of School of Health Sciences, Robert Gordon University, Garthdee Road, Aberdeen AB10 7QG l.hancock@rgu.ac.uk

What will happen to my research data?

A research report and paper will be written as part of my course work and may be more widely disseminated in academic and professional journals and conferences. The data we collect from you will be destroyed at the end of the research study once all the reporting is complete.

Assurance of research rigour:

This research has been approved by the School Research Review Group at the School of Health Sciences, Robert Gordon University, Aberdeen. It is self-funded by the research student.

What happens now?

Please feel free to discuss this letter with your family and friends. If, after consideration, you would like to take part in this study please contact me, Sam Somers, using one of the contact routes listed below.

Further information and contacts:	
<i>Researcher: Sam Somers</i>	<i>Supervisor: Neil Buchanan</i>
<p>Applied Sport and Exercise Student</p> <p>School of Health Sciences</p> <p>Robert Gordon University</p> <p>Garthdee Road</p> <p>Aberdeen AB10 7QG</p> <p>Email: 1205877@rgu.ac.uk</p>	<p>Applied Sport and Exercise Student</p> <p>School of Health Sciences</p> <p>Robert Gordon University</p> <p>Garthdee Road</p> <p>Aberdeen AB10 7QG</p> <p>Email: n.buchanan@rgu.ac.uk</p>

Appendix 3: Signed Informed Consent Forms



School of Health Sciences

School Research Review Group (SRRG)

Informed Consent Form – Coach

SRRG Ref No:	SHS/18/18.
Title (short):	Factors Influencing Coaches Decision Making
Name of Researcher:	Samantha Somers

	Please Initial each box
1. I confirm that I have read and understand the participant information sheet dated 26/06/18 for the aforementioned study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	DY
2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason.	DY
3. I understand that data collected during the study will be looked at by individuals from Robert Gordon University and Aberdeen Football Club where it is relevant to my taking part in this research. I give permission for these individuals to have access to the data.	DY
4. I will provide all necessary information truthfully and of the best reflection of the qualitative incident as possible, without any contradicting statements.	DY
5. I will fill out voice memos appropriately and accurately to give the best possible view of my perceptions.	DY
6. I agree to my interview being audio recorded for research purposes.	DY
7. I agree to anonymised quotes from my interview being used in any research output (e.g. academic articles, professional papers, conference presentations) from this study.	DY
8. I agree to take part in the above study.	DY

Participant Name:	[Redacted]
Signature:	<i>[Handwritten Signature]</i>
Date:	16/8/18
Person taking consent (Name):	Sam Somers
Signature:	<i>[Handwritten Signature]</i>
Date:	28/08/18

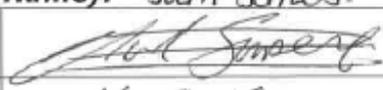
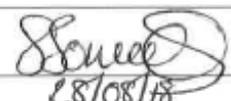
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Informed Consent Form – Coach

SRRG Ref No:	SHS/18/18.
Title (short):	Factors Influencing Coaches Decision Making
Name of Researcher:	Samantha Somers

	Please initial each box
1. I confirm that I have read and understand the participant information sheet dated 26/06/18 for the aforementioned study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	NS
2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason.	NS
3. I understand that data collected during the study will be looked at by individuals from Robert Gordon University and Aberdeen Football Club where it is relevant to my taking part in this research. I give permission for these individuals to have access to the data.	NS
4. I will provide all necessary information truthfully and of the best reflection of the qualitative incident as possible, without any contradicting statements.	NS
5. I will fill out voice memos appropriately and accurately to give the best possible view of my perceptions.	NS
6. I agree to my interview being audio recorded for research purposes.	NS
7. I agree to anonymised quotes from my interview being used in any research output (e.g. academic articles, professional papers, conference presentations) from this study.	NS
8. I agree to take part in the above study.	NS

Participant Name:

Signature:	 
Date:	16.8.18
Person taking consent (Name):	Sam Somers.
Signature:	 
Date:	16.8.18 28/08/18

Informed Consent Form – Coach

<i>SRRG Ref No:</i>	SHS/18/18.
<i>Title (short):</i>	Factors Influencing Coaches Decision Making
<i>Name of Researcher:</i>	Samantha Somers

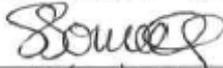
	Please initial each box
1. I confirm that I have read and understand the participant information sheet dated 26/06/18 for the aforementioned study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	Me
2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason.	Me
3. I understand that data collected during the study will be looked at by individuals from Robert Gordon University and Aberdeen Football Club where it is relevant to my taking part in this research. I give permission for these individuals to have access to the data.	Me
4. I will provide all necessary information truthfully and of the best reflection of the qualitative incident as possible, without any contradicting statements.	Me
5. I will fill out voice memos appropriately and accurately to give the best possible view of my perceptions.	Me
6. I agree to my interview being audio recorded for research purposes.	Me
7. I agree to anonymised quotes from my interview being used in any research output (e.g. academic articles, professional papers, conference presentations) from this study.	Me
8. I agree to take part in the above study.	Me

Participant Name:	[Redacted]
<i>Signature:</i>	<i>[Handwritten Signature]</i>
<i>Date:</i>	16/8/18
Person taking consent (Name):	SAM SOMERS
<i>Signature:</i>	<i>[Handwritten Signature]</i>
<i>Date:</i>	16/8/18

Informed Consent Form – Coach

<i>SRRG Ref No:</i>	SHS/18/18.
<i>Title (short):</i>	Factors Influencing Coaches Decision Making
<i>Name of Researcher:</i>	Samantha Somers

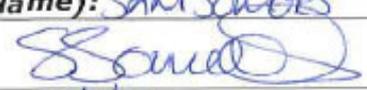
	Please initial each box
1. I confirm that I have read and understand the participant information sheet dated 26/06/18 for the aforementioned study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	Cm
2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason.	Cm
3. I understand that data collected during the study will be looked at by individuals from Robert Gordon University and Aberdeen Football Club where it is relevant to my taking part in this research. I give permission for these individuals to have access to the data.	Cm
4. I will provide all necessary information truthfully and of the best reflection of the qualitative incident as possible, without any contradicting statements.	Cm
5. I will fill out voice memos appropriately and accurately to give the best possible view of my perceptions.	Cm
6. I agree to my interview being audio recorded for research purposes.	Cm
7. I agree to anonymised quotes from my interview being used in any research output (e.g. academic articles, professional papers, conference presentations) from this study.	Cm
8. I agree to take part in the above study.	

Participant Name:	[REDACTED]
<i>Signature:</i>	
<i>Date:</i>	16/08/18
Person taking consent (Name):	Sam Somers
<i>Signature:</i>	
<i>Date:</i>	28/08/18

Informed Consent Form – Coach

<i>SRRG Ref No:</i>	SHS/18/18.
<i>Title (short):</i>	Factors Influencing Coaches Decision Making
<i>Name of Researcher:</i>	Samantha Somers

	Please Initial each box
1. I confirm that I have read and understand the participant information sheet dated 26/06/18 for the aforementioned study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	RH
2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason.	RH
3. I understand that data collected during the study will be looked at by individuals from Robert Gordon University and Aberdeen Football Club where it is relevant to my taking part in this research. I give permission for these individuals to have access to the data.	RH
4. I will provide all necessary information truthfully and of the best reflection of the qualitative incident as possible, without any contradicting statements.	RH
5. I will fill out voice memos appropriately and accurately to give the best possible view of my perceptions.	RH
6. I agree to my interview being audio recorded for research purposes.	RH
7. I agree to anonymised quotes from my interview being used in any research output (e.g. academic articles, professional papers, conference presentations) from this study.	RH
8. I agree to take part in the above study.	

Participant Name:	[REDACTED]
<i>Signature:</i>	
<i>Date:</i>	16/8/18
Person taking consent (Name):	SAM SOMERS
<i>Signature:</i>	
<i>Date:</i>	16/8/18

"1 copy for participant & 1 copy for researcher"

Informed Consent Form – Coach

<i>SRRG Ref No:</i>	SHS/18/18.
<i>Title (short):</i>	Factors Influencing Coaches Decision Making
<i>Name of Researcher:</i>	Samantha Somers

	Please initial each box
1. I confirm that I have read and understand the participant information sheet dated 26/06/18 for the aforementioned study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	✓
2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason.	✓
3. I understand that data collected during the study will be looked at by individuals from Robert Gordon University and Aberdeen Football Club where it is relevant to my taking part in this research. I give permission for these individuals to have access to the data.	✓
4. I will provide all necessary information truthfully and of the best reflection of the qualitative incident as possible, without any contradicting statements.	✓
5. I will fill out voice memos appropriately and accurately to give the best possible view of my perceptions.	✓
6. I agree to my interview being audio recorded for research purposes.	✓
7. I agree to anonymised quotes from my interview being used in any research output (e.g. academic articles, professional papers, conference presentations) from this study.	✓
8. I agree to take part in the above study.	✓

Participant Name:

Signature: 

Date: 16/8/18

Person taking consent (Name):

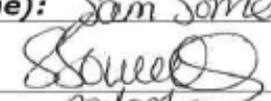
Signature: 

Date: 16/8/18 28/08/18

Informed Consent Form – Coach

SRRG Ref No:	SHS/18/18.
Title (short):	Factors Influencing Coaches Decision Making
Name of Researcher:	Samantha Somers

	Please initial each box
1. I confirm that I have read and understand the participant information sheet dated 26/06/18 for the aforementioned study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	GL
2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason.	GL
3. I understand that data collected during the study will be looked at by individuals from Robert Gordon University and Aberdeen Football Club where it is relevant to my taking part in this research. I give permission for these individuals to have access to the data.	GL
4. I will provide all necessary information truthfully and of the best reflection of the qualitative incident as possible, without any contradicting statements.	GL
5. I will fill out voice memos appropriately and accurately to give the best possible view of my perceptions.	GL
6. I agree to my interview being audio recorded for research purposes.	GL
7. I agree to anonymised quotes from my interview being used in any research output (e.g. academic articles, professional papers, conference presentations) from this study.	GL
8. I agree to take part in the above study.	

Participant Name:	[REDACTED]
Signature:	
Date:	16.08.18
Person taking consent (Name):	Sam Somers.
Signature:	
Date:	28/08/18

Appendix 4: Coaches Induction Session

**Please note – this documentation was given via an educational power point presentation meeting with all relevant coaches taking part prior to the pilot **

What is my research?

- Qualitative Indicators that identify 'down-regulation'
- What is down-regulation?
 - *"the process of reducing or suppressing a response to a stimulus"*
- Qualitative Indicators:
 - Sore body part
 - Tired from schools/exams
 - Family issues at home
 - Contract time of year
 - Lack of motivation
- Coaches Decision Making



What do you need to do?

1st Part – Voice Memo

- **Every training session and every match game**

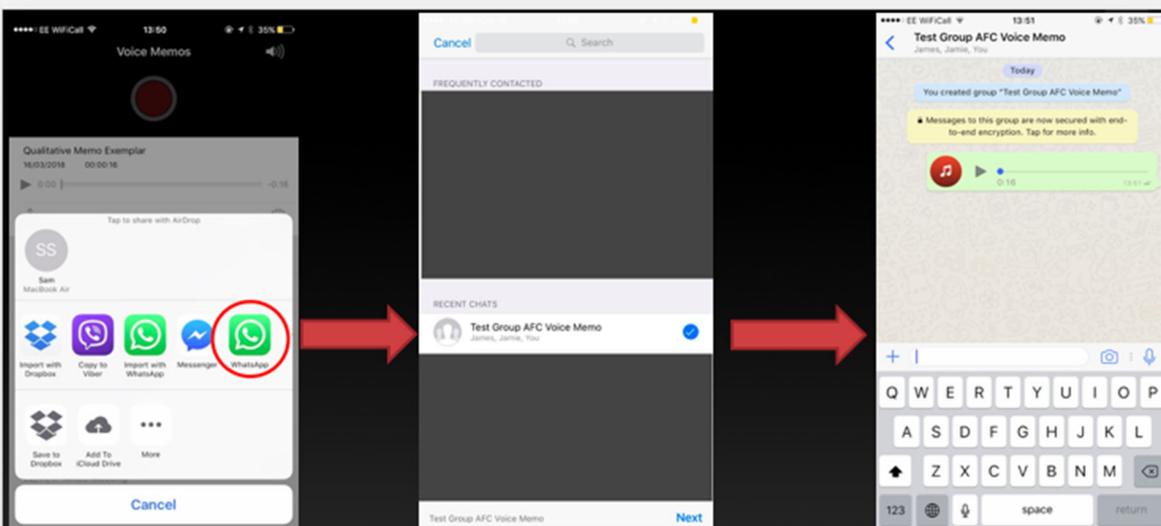
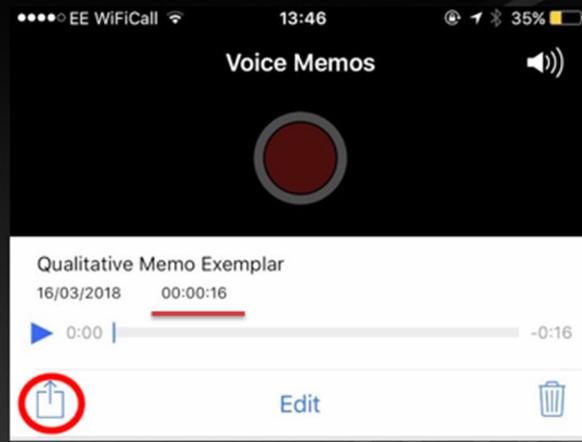
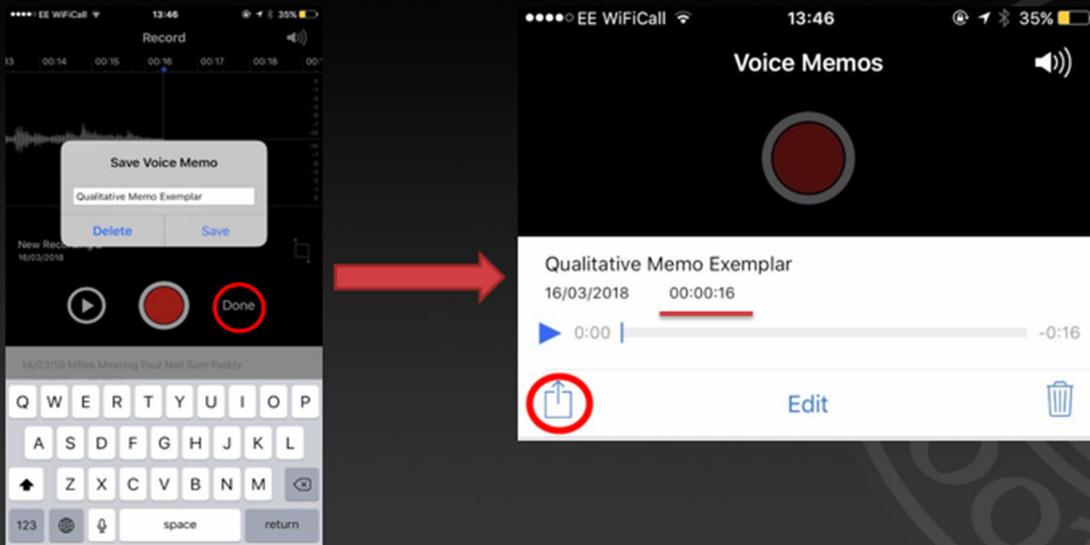
Structure:

- *Coaches name*
- *Squad and players' name*
- *Qualitative Indicator highlighted AND frequency*
- *Who raised the issue (coach, player, sport scientist, parent etc)*
- *What decision was made to deal with that?*



2nd Part – Send into Encrypted WhatsApp Group

AFTER EVERY SESSION!!

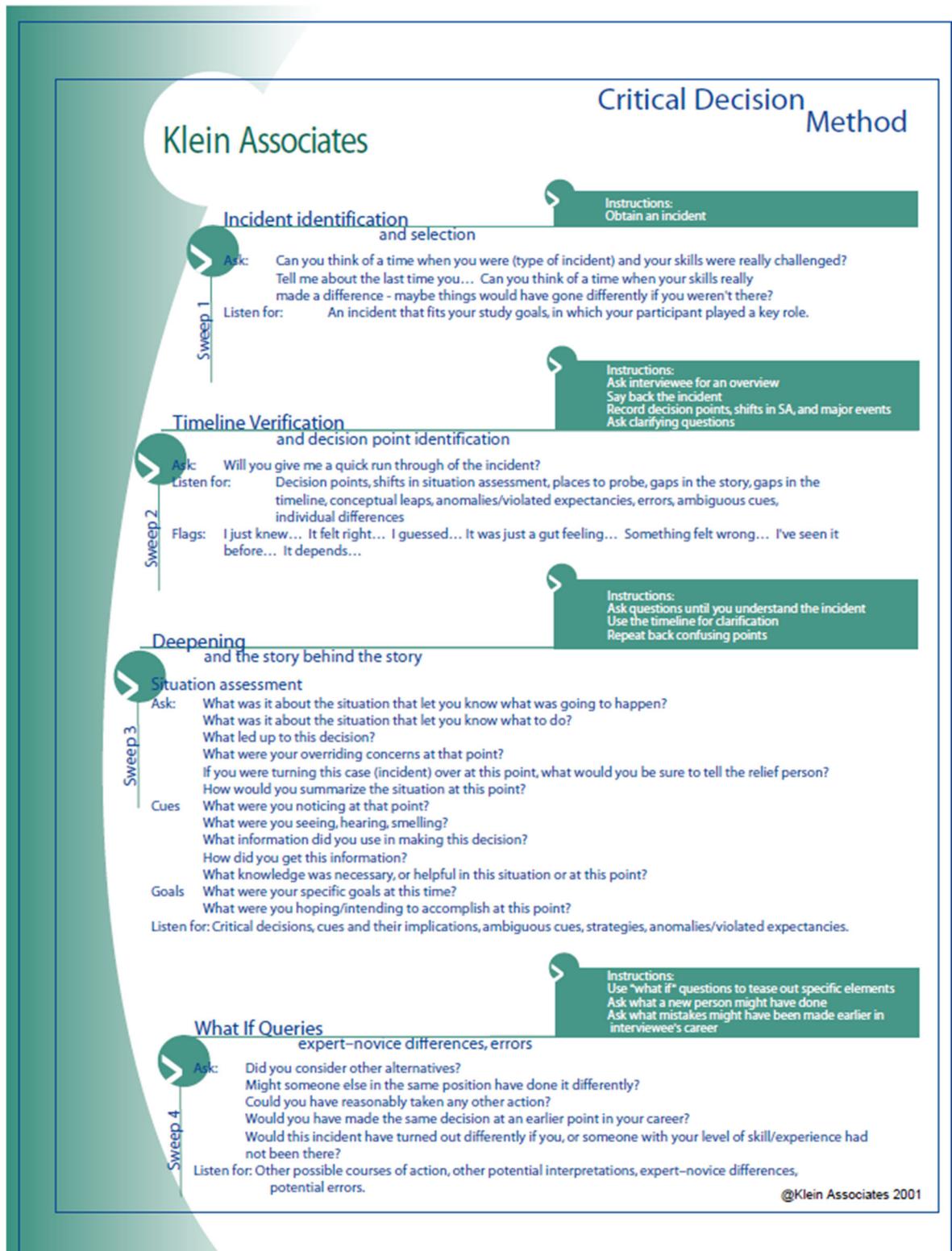


- Individual Interviews to highlight decision making process

SHORT AND SWEET! 😊

Appendix 5: CDA Interview Probes

NB - The first two picture documents represent the original methods of interview techniques (The CDM and the Knowledge Audit), which Borders and Klein used and adapted to create the Critical Decision Audit – the final picture document inserted below.



ELICITING INFORMATION WITH THE KNOWLEDGE AUDIT

Provide an explanation of the type of information you want; then ask the probe questions. You can read the definitions below or paraphrase them.

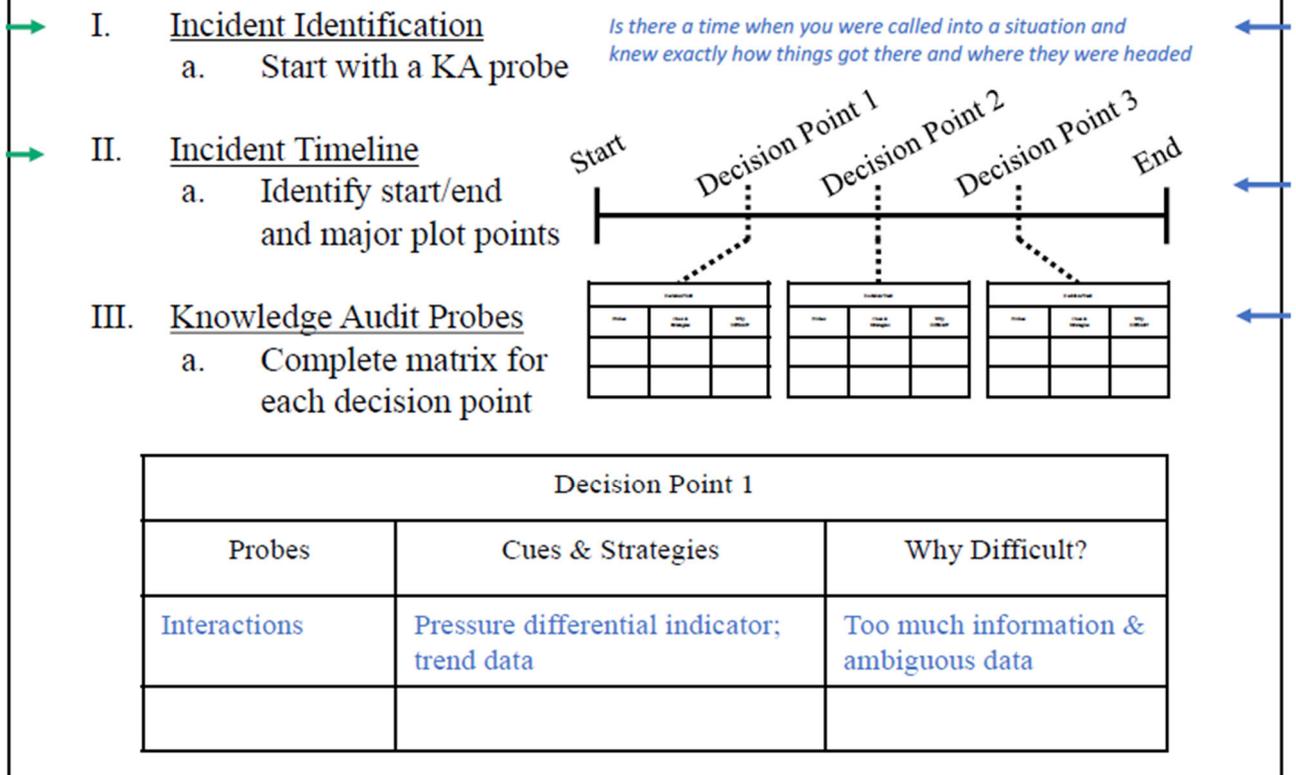
BASIC PROBES:

- Past & Future** Experts can figure out how a situation developed, and they can think into the future to see where the situation is going. Among other things, this can allow experts to head off problems before they develop.
Is there a time when you walked into the middle of a situation and knew exactly how things got there and where they were headed?
- Big Picture** Novices may only see bits and pieces. Experts are able to quickly build an understanding of the whole situation—the Big Picture view. This allows the expert to think about how different elements fit together and affect each other.
Can you give me an example of what is important about the Big Picture for this task? What are the major elements you have to know and keep track of?
- Noticing** Experts are able to detect cues and see meaningful patterns that less-experienced personnel may miss altogether.
Have you had experiences where part of a situation just “popped” out at you; where you noticed things going on that others didn’t catch? What is an example?
- Job Smarts** Experts learn how to combine procedures and work the task in the most efficient way possible. They don’t cut corners, but they don’t waste time and resources either.
When you do this task, are there ways of working smart or accomplishing more with less—that you have found especially useful?
- Opportunities/Improvising** Experts are comfortable improvising—seeing what will work in this particular situation; they are able to shift directions to take advantage of opportunities.
Can you think of an example when you have improvised in this task or noticed an opportunity to do something better?
- Self Monitoring** Experts are aware of their performance; they check how they are doing and make adjustments. Experts notice when their performance is not what it should be (this could be due to stress, fatigue, high workload, etc.) and are able to adjust so that the job gets done.
Can you think of a time when you realized that you would need to change the way you were performing in order to get the job done?

OPTIONAL PROBES:

- Anomalies** Novices don’t know what is typical, so they have a hard time identifying what is atypical. Experts can quickly spot unusual events and detect deviations. And, they are able to notice when something ought to happen, doesn’t.
Can you describe an instance when you spotted a deviation from the norm, or knew something was amiss?
- Equipment Difficulties** Equipment can sometimes mislead. Novices usually believe whatever the equipment tells them; they don’t know when to be skeptical.
Have there been times when the equipment pointed in one direction, but your own judgment told you to do something else? Or when you had to rely on experience to avoid being led astray by the equipment?

Critical Decision Audit



KA Probes (adapted for sporting environment)

Past & Future: *"Is there a time where you've seen a situation, knew exactly how it happened, and where it was going to end up?"*

Big Picture: *"Can you tell me why you think it's important to have a plan of action in a challenging situation? What are the major factors you must know and keep track of?"*

Noticing: *"Is there a time where a situation has stood out to you, where you noticed things that others didn't? What is an example?"*

Job Smarts: *"When you are making decisions, are there ways of being efficient and time-saving that you have found useful for the situation?"*

Opportunities/Improvising: *"Can you think of a time when you have been caught off-hand to adapt to a new environment, or noticed an opportunity to do something better?"*

Self-monitoring: *"Has there been a time when you noticed that you would need to change the way you were coaching in order to get the most out of your players?"*

Appendix 6: Interview Transcriptions

Participant 1: MRes Interview Transcription Phase One

Researcher: How do you feel the 6-weeks have went with voice memo collection and stuff? Considering you've put in a lot...

Participant 1: Well [participant X] has been there putting them in, but there's been two different things with the 14s and it's been after training. [Player], got up there on Friday walking to school or something and had a sore groin, he missed... I think [participant x] had text you that? [Researcher: Yeah [participant x] was saying as well that somebody came off with a black eye?] Aye (player x), erm see to be honest, I don't actually know. See this wee guy, he bounces all over the pitch and he's just injured, back up, injured back up, you know what I mean, and he comes off as if nothing's happened. [Researcher: aye but he's actually hurt himself?] Well we're saying to him "you alright?", "aye I'm fine", and I'm going "yino look..." he's one of these wee guys – he's a (player x) type wee guy, professional and all the rest of it, doesn't want to seem hurt, doesn't want to come off, wants to play every minute, every game, wants to thingy training all the time. So, he's getting some hard tackles, and he's rolling about. But it's got to the stage now with the physio we're like "look don't move, because he will get back up", and he is in pain and all the rest of it but we're saying to him, get back up and wait the now, cause obviously if they go on, and he's alright, because the physio's on, he needs to come off and all the rest of it. So, we're a man down and we're like woah, and 19 times out of 20 he gets back up. So...

Researcher: But that's part of your job as a coach, noticing that and having that ability to look....

Participant 1: There is that and there's me telling him if you're injured, you need to tell us, and properly tell us, don't be leaving here and going home and piling ice into yourself and you don't tell us. If you need to come off, you can come off I said. These daft games you can come off and back on anyway, cause its rolling subs, don't worry if you're coming off 20 minutes in, you're no missing much. He's playing a lot of the... he's playing 2 games quite a lot, erm, every weekend so. He's no missing out on a hell of a lot of football. Like I said he's only, he should only be, right if you're injured quick, come off, 20 minutes, and then we'll swap the subs again.

Researcher: Why do you think that's a good decision to make?

Participant 1: For me? [Researcher: Yeah as a coach?] Erm, looking after them. So, he doesn't, his attitude is spot on – he doesn't want to miss anything, but he could end up doing himself in if he has got a proper injury. But he's, like I said he ended up with a black eye, but you wouldn't have known if there was anything wrong with him after the game, just, I said to him: "Are you fine? Is it sore?", (Player) "Nope" So...

Researcher: But what do you do at that point, do you know that there's something wrong if you know that player?

Participant 1: He knows, and we know, that's how I think it is. I've done it myself, 'I'm fine, I'm no injured, it's just a bruise or whatever it is, it's nothing serious'. But he needs to realise that sometimes it can be serious, and he doesn't say something, especially if he's had a cracking head knock. We're not allowed to do much nowadays, especially with all the stuff... you maybe you need to get looked at properly, because I don't think he recognises that alone, cause he's only 12/13, whatever he is.

Researcher: That's kind of you looking ahead as well, for him long term, and thinking right, he's younger but he's probably got good potential, he's doing this a lot, so how can this impact him long term. Do you think you have those kind of thought processes when you're making decisions?

Participant 1: Myself or him? [Researcher: you] A lot of stuff, I've been and done, so I know. When I'm watching him and if he's injured, you can kind of tell. I was similar to him, where I'd maybe get kicked all about the park, and get back up and keep going on kind of thing, but you sort of learn as you get older. But he could be running about with a dead leg or something else, you can't actually see it, but it's causing him trouble, a bit of trouble to get about, but like I said he's, he needs to get it in his head, even though he's playing up, it's fine if he's injured he can come off and come back on, he's no missing out. It's a case of maybe, if it gets to the stage where he's limping about, then just pull him off for his own good. But we've done it with other players, so we have. We done it with erm... erm, let me think. Somebody was in my head, was it's big Ross? Aye, the other, last week. Kilmarnock, erm, big Ross and went in there for a big challenge and he's hobbling about, erm, and we took him off before the end of the final third. Erm, and we were just gonna keep him off, but he kept saying he was fine, erm, and he was running about, warming up. I went over and says to him, look if we don't put you on, it's best if you don't go on. But if you're telling me you're ok, and you're no injured and it was just a collision, I say, then we need to take your word for it. I says, there's obviously nothing bleeding, or anything along those lines, I says but, if you're telling us you're okay, then it's kinda on your head. And that's maybe hard saying that to an under 14 or whatever, but they need to learn to tell you these things. And he says he was gonna be okay, so I put him on for the last 10/15 minutes or something. He did seem ok at the end of it. But the tackle that he'd went in you could see he was slightly injured, so it was enough for us to take him off and look after him. Its... there's loads of different types of injuries. As a coach now, your kind of just need to think ahead and it looks sore, he's hobbling about, get him off, he can recover at the side, there's a physio there. They can take it from there.

Researcher: Apart from thinking that he's obviously looking sore, he's hurting or whatever, what else, there must be other things that go through your mind at that point, like this is why we're doing this, or this is why we need to protect him?

Participant 1: You're protect.... As a football coach you're protecting him so he's no injured. There nothing else there to... there's different ways maybe if you're in a cup final or something along those lines and you're maybe needing that guy to stay on the park for a reason, but, when you're playing at that level and there's

things, depending on the score line, and maybe how well he's playing, if he's been having a shocker, and gets injured, then it gives you an excuse to take him off. Realistically as a coach that's what happens. And there's your excuse as why he's came off and you don't need to embarrass him and tell him he was so bad. But I think that's more or less, that's covering it. There're certain situations that you get put in and depending on the game, time of the game, erm, how he's been playing, what type of game it is, like I said we've got the rolling subs, it does help at that age, you go 'quickly come off, see how you are, struggling, right you're no going back on'. Physio see's you, somebody else goes on, you'll maybe go back on with about 20 minutes left so... it works well.

Researcher: Do you take a lot of influence from the physios at games to make decisions or do you feel it's you guys that say no...

Participant 1: No, if they come over and say no that's it somebody's injured, we're no in a position to determine if somebody's medically injured, or whatever you want to call it. Erm, so if they turn around and say no I wouldn't recommend it, then that's what they get paid to do, whoever it is, it's sitting out the rest of the game, that's the reason they're there.

Researcher: You were talking there a couple of minutes ago about the things factors that influence your decision (depending on the score line, if the players playing good or bad, what type of game it is), do you think there's any other kind of factors that influence your decisions along that kind of lines?

Participant 1: Erm, the only thing is, if you know yourself it's a hell of a bad injury then they ned to come off. As an ex-player that's played about for 20 years and you know yourself, Christ you've played with many, many injuries throughout your career. But you can still play through it, but you know for a fact you'll be sore when you come off. Cause it can be daft things like, you might get injured in the first half, for settings sake, it's a 90-minute game, you're maybe getting injured in the 35th minute, there's 10 minutes to go before half time, so you'll maybe see it out to half time, see how, whoever it was, the physio would see them at half time, see if they're alright and if they need to come off it's a different story. But at least they've got to half time, they've had 15 minutes with the physio, and the physio might strap something up, give something a rub, crack a back, something that might ease the pain of the injury or whatever, but they'll get through the next 45 minutes, and then that's obviously left up to the physio to do that. Obviously if you're playing at an older level age group, like I say with ours its, a lot of it is it bad, if the physio's told you he needs to come off, as an ex player do I think that injury is one you can just run about with, the other big one is, can that player cope with being injured? Now we've got certain players that once they're injured, they're coming off, because maybe they're just no mentally strong enough to get through it. Finlay Marshall for instance, he gets kicked about all over the park, and just gets on with it, everybody else – you're obviously wishing the other 13 players on the park are the same. But, there's a whole lot of factors, but like I said, if you're there on a Saturday, something happens, you're thinking right – do we need to take him off? Has the physio said anything? How we doing in this game? Are we winning 3 or 4 nil? 20 minutes to go you're not going to lose the game, can we put somebody on straight away? So that, that sort of stuff, depending on the game and the score line and the type of player – it can all change your outcome and your decision.

Researcher: It's really interesting you said there about the mentality of some of the players and you know what players can maybe mentally cope with certain things, do you think over like, even past 6 weeks, or just in general as well, do you think the players that you have just now, do you see a change in mentality within them?

Participant 1: No, I think maybe, we noticed a big coming together at the Dublin tournament, boys were, going in for bad challenges and getting on with it, and I think it's because the tournament is, tournament football is, 'do or die' sort of idea, you need to keep yourself good for the team, you're not just making changes for the sake of making changes cause, there's a team there that needs to go out and win. So, boys, might change their attitude of, whether that's 'really a sore dead leg', or 'I'm gonna get through it dead-leg' or something else but... and the other thing was, after the first game I said to the boys, straight after the game, if you boys need to see a physio, tell us, we're in competitive games, we need everybody 100% fit, don't be trying to hide anything, trying to fight through the next game, I says, cause there's a physio here and you can see him right through the night and tomorrow morning before the game starts, cause you might need a rub, you might need this, you might need that.. and the boys aren't obviously used to that, erm, so there was like two or three of them put their hand up, straight away, 'oh well I'm feeling this a bit sore, that's a bit sore', [Participant 1 to players] 'well this is the kinda stuff you should be telling us about', so it's a wee eye opener for them. [player] 'oh right so I can go and see the physio, it doesn't necessarily mean I'm going to miss any games', 'doesn't necessarily mean I'm gonna be out for the tournament, it might just be a quick fix from the physio'. Cause it did happen in the, what game was that? In fact that was the Saturday; the second game, erm, played Liverpool and there was a full boys struggling at the end in the changing room, some of the team, cause we were more or less in the final, the other team got beat 3-0, erm so we were more or less in there, so we made the decision to leave that boys out, stick the other boys that were fit and ready to and desperate to try and get a game in the final. So that was another one where we had to explain to the boys 'this is how it works', sometimes you maybe need to miss a game, you've done well, 2 great games, struggling with an injury, play on with that and you might not play in the final and you'll be struggling, so that's the kinda decision as us, coaches, for the sake of the team and the sake of the player, cause if it's a couple of their top players, we definitely want every player there at the final, so if there's a chance of risking them through a maybe not so important game, we'll maybe leave them on the bench, and you're kinda prepared to maybe not put them on. Thankfully that's what ended up happening and we won the game 1-0 and the boys that missed out, were able to play the semi-final.

Researcher: Did you factor that in thinking of a big picture of whether you're thinking of the whole weekend or maybe just that day, you're obviously trying to factor on what players you're wanting for certain games, do you think that's really important to have as part of a coach to be able to make that decisions at the right time?

Participant 1: you need to be wise, of what you're trying to do. The thing you've got there is boys trying to, boys that are injured and a big group of boys that you're trying to keep together and you're trying to give them game time, so, in a way if somebody's injured, it gives another boy opportunity to come in and like I

said, we're maybe beating Swansea 2-0, 3-0 so we can maybe take off 2 or 3 boys that have taken knocks and it gives them a rest for the games the following day, so there's lots of different ways of working it so it works through, obviously you're not expecting nobody to be injured right through a tournament erm, but like I said, we done well. It was the physio that says to us, erm, he took the boys and said he wouldn't recommend putting the two of them on the park, erm, for the full 90 minutes anyway, one of them's struggling, one of them is tight, depending on what you're thinking, so we spoke about it and came to the decision that we don't really need to risk him, we've got so and so that can play, they're desperate to play, and that's the reason why we're making that decision, and we're more or less in the final anyway, so we kinda planned ahead, but you make sure you're teams no gonna get beat and also make sure that everybody that needs to be fit for the final is gonna be fit, hoping that nobody gets injured in the game.

Researcher: it's quite interesting, I want to go back to that mentality bit, when you were saying to them in the changing room that they could see the physio whenever they wanted and then you've got the hands going up after you say that... because a lot of the 15s and 16s that are putting in their diaries have been saying that they've felt this and that but haven't wanted to say because they don't want to be pulled off, and that's kind of been a recurring theme that I've found the past 6 weeks...

Participant 1: But that's maybe a bad thing about, well I'm saying bad thing, its... about the academy, its nobody wants to leave the academy, oddly wants to get binned nobody wants to get injured, its three/four weeks, somebody might come in and steal their position, and they might not get another game, they'll maybe sit on the bench until the end of the season, so that's a, and that's no just here, that's everywhere, that could be in the 1st team as well, if your contracts running out, you'll maybe hold back from telling somebody you're properly injured and then what happens is - you might get away with it, or you go and play last 20 minutes of a game and you're off and instead of maybe being out for a week, for sayings sake, you're maybe out for two or three months with something that's pulled or tore or whatever. It's a bit of a nightmare, being a football player [laughs].

Researcher: I suppose in a way that's one thing that the aim is to try and stop that from happening with the players, is for them to feel confident to come up to a coach and say 'look I'm feeling this but I'm okay to go on', and not be scared to just be pulled straight away. Do you think there's maybe decisions that go on within coaches that perhaps yourself as well, that you've thought 'oh I didn't need to do that, maybe that was a bit too much, and that player could have gone on'. Do you think...

Participant 1: That's a mentality thing as well, like I said. I could, say to [player x] come out and take a rest, but he'll no be happy with it and all the rest of it, or I could say to another boy come out and take a rest and see a physio and that'll be no problem and he'll be desperate to get back on and he'll be fine just sitting there. Which is kind of, like I said, you can't make them, well you can try mentally to say, get yourself back on, or whatever, but erm, we've been quite lucky with our lot, most of our boys have been quite fit and come back at it. I think, with myself knowing how it is, it's a case of saying, I know where you've been, I've been through it myself, just get yourself fit, see a physio, come back to training as quick as you can. We know exactly how well you can play, we see you in training

for so long, you might just need to see physio for whatever, 2 or 3 days through the week, get yourself back for the following weekend, but it's hard to explain that to a 12/13-year-old kid that, you're no gonna get a game this weekend, cause the physio's told you so. The physio doesn't think you're alright and he's the boss so. That was [player x] last year, he took three attempts to come back from whatever it was he had, he couldn't remember what it was he had whether it was his ankle or his knee....

Researcher: You've come from last season being with the 17s, being at a higher level with these guys getting contracts, and now you've come down to a lower level with the 14s, do you feel there's been a change in your decision-making processes you go through due to the difference in age groups?

Participant 1: There is a change with the boys yeah. Cause there is a contract thing there, the other thing with us, a mental thing with us will be, there on an 18-game unbeaten run, so all the boys think the sunshine's out their bum. They all think they're great, and you can't knock them, they have been great but there's things, like I'm saying I'll notice, and [participant x] does notice, fair play big [player x] is scoring the big goals, but he could do so much better this that and the next thing. But, he'll no be worried about that, cause he's scoring a lot of goals, but I know as a coach, that's gonna need to get so much better, if he's gonna go up the way. And maybe there's other ones on the pitch, I mean I could tear every one of them to bits, but because there winning and the teams there playing against, maybe whether it's, we've beat rangers, we've beat Celtic, we've beat hearts. So, we've beat everybody and it's very.... But because we're beating them, it doesn't necessarily mean we're a bunch of right good players, or that we've got the best players in Scotland by any mean, because that isn't true. So, they've got the difference of that as well. But mentally these wee guys, 'we're winning, I'm playing, contract will be alright', which probably will be, but if [participant x] came up to me as says there's your starting 11 for the weekend, what do you think of them, be honest... there're contracts next year, you would need to say yes to them all cause they've no done anything wrong and there isn't actually anybody out there any better than them. But I cannae go well wee [player] there's the quickest guy in Scotland but, quite a lot of time when he gets the ball he doesn't know what the hell he's doing. Big [player] up front, blah blah blah; [player], looks like he wouldn't get a game in the school team, he's all over the place. Or [player] in the middle of the park, sometimes looks great but doesn't necessarily know what he's going or where he's going. Or, [player], out on the left-hand side, if he doesn't tackle the boy first time, the boys gone cause he's too slow to catch up with him. But we're winning every week, so it looks good. But I know for a fact, going up the way, they'll hit a wall at some point. Because see him, the guy up against him knows he's rubbish at running back so, as you get older the boys get a wee bit wiser, the boys just gonna knock it by him. Anytime he's got the ball he doesn't know what he's doing with it, so the left back or left midfielder will just come right up and stop him from running and that will just kill his game because they know he can't run. They'll just go sit on [player] and kind of no let him move, because he's rubbish on the ball, and big [player], well we'll let him take a touch and give him it back. So that's what happens the higher up you go, so like I said, the boys will not be worried as much as the 17s boys because they think they're all flying. And you can imagine [player] walking about in Elgin or wherever it is he stays 'I've scored 30 odd goals in 4 games' strolling about. Folk are saying to me 'how's the big guy?', I'm going, 'ooof, one of the worst players in the team', and that's the

truth! But I think maybe that's, that's what's, I know it doesn't happen with [coach] and [coach] because, [coach] especially, [coach] obviously been there and done it, and he's going 'what? They're all raving about him?' and I go 'yup, he's rubbish', 'him? yeah, he's really good running with the ball, but apart from that he's all over the place. So, we see, and this comes down to whether, and I don't know if this goes right off track or no, but we see a hell of a lot of stuff, that the other coaches don't see, that have maybe been coaching for ages and that's because you've been an ex-player. And I've had a good discussion with [participant x] about this, now, [participant x's] a great coach, very good, gets on well with the boys and all the rest of it, but, if [participant x'] s doing a session or something or setting things up, ill spot a lot of things, and stop things and all the rest of it blah blah blah, but when it comes to maybe sticking on a certain session I'm now trying to get my coaching head on. So, if my, if me and [participant x] put the same coaching thing on, his would be better than mine, as in, the way it flowed and all the rest of it. Erm, because I'm too busy trying to think, right I've been told to do this, I've been told to do that. If I'm watching his, I'm going 'nope, nope, nope, nope' but I'm now at the thingy, I'm in the middle of this coaching thingy and I'm going 'right you, you're no meant to be there blah blah blah', but because I'm standing watching his, there's always fine there's nothing wrong with it, but I see stuff that I know wouldn't happen out in the game, and I'm stopping things saying 'if you're standing there, you're no gonna get on the ball', 'if there's a cross there and it kinda looks like it's gonna be coming over this side, for sayings sake, erm [player], you already need to get running this way to kinda get the third pass', and [participant x's] saying, 'that's mad you saying that, he says because, we were speaking about it last week, he says, he was doing his A license and [coach] (boy used to play here), erm, would come and speak to him about his session and all the rest of it blah blah blah, and he spoke great and all the rest of it, but then [coach] went and one of his sessions, he said it was torture! He's obviously no used to it, blah blah blah he says but everybody said about my session and the session before it and the session before that, 100% percent made sense, but he went and tried to do it, his own session, and because your no used to it, he was all over the place he says, he was, he says he just absolutely bombed, he came over to [participant x] and he was like 'aw that was f**king awful, he says I dunno what happened in there I just panicked.'

Researcher: So, it's a shift in two minds sets almost...

Participant 1: I think it is, I think maybe you're heads just maybe racing at times, erm I know myself here at times, you go, I mean the sessions have been fine, the thing you're trying to do now, especially with me, coming down levels, you're trying to do something you don't know if the boys are going be able to do or not. Now I've done passing sessions and drills the past three times I've had them, different ones you're thinking you've no done before, but it's taking them ages to get it, and it's easy, it's just a pass in and somebody else running before the other pass comes, but getting them to think that far ahead, ooof.

Researcher: That's good though as well, cause that's a position where you need to learn to adapt and learn to change to the environment....

Participant 1: It's good for me, but then I'm going, as a coach, why do they not know that? Or is that just all under 14s, is that what happens? Am I expecting too much of these boys? But the I do is, the session gets going, before it breaks down

again, but it'll flow before it breaks down again for maybe a minute or so, and I'll stand there and I'll go, look, you have just done it, dodgy at the start I says, but now you have done it now, you have seen you have done it, I've just watched you do it, every one of you. We've went around that way, one touch, two touch, blah blah, then we went around the other way, you have done it, you know you can do that. So, don't worry about the start of that, that's just you. You'll get used to it and we'll do it again. erm so that's, they get used to it. But back the question [laughs]... that's the differences, that's...

Researcher: The other thing I wanted to speak about as well was, whether you've got a session planned for these guys, or you've got a tactic planned for the weekend, and then either sports science or physio comes into you and says this player is not 100% fit, how do you change and adapt to that?

Participant 1: If somebody says to you... I'm not qualified to do a sports science job or do a physio job, so if somebody comes in and tells me that yourself done last year a few times, [player] has maybe come in, [player] has to come out, (it'll be) warm up, passing drill, come out.

Researcher: There must be plenty of times this year, and even the past 6-weeks where a player has maybe not come to a session due to not feeling right, and you didn't know that was the case, how do you adapt to that? On a caught off-guard situation...

Participant 1: Sometimes when you set up a coaching drill, you need to sometimes have a certain amount of bodies, you just need to quickly change it...

Researcher: So where does that information come from? Cause you're obviously able to quite quickly make the change?

Participant 1: So, what I'm good at is, I could set up a shooting drill, and I can maybe change it, four or five different ways, straight off my head, no problem. If it set out, no problem. Erm but then it's when, like you're saying, maybe you've got a certain thing you're maybe doing erm, passing from the back or something and you need the certain bodies and a few don't appear, it can kinda kill it, cause you haven't got the bodies and they're meant to have so many against you, so it can be a bit realistic, so then I have to, before you know it you're maybe involved yourself, the two coaches are in, just to make numbers up, erm but its, that's a big thing for me. What I done on Friday erm, I was training with [participant x] on Thursday, after training he says, you've obviously got 13 bodies, two of them will be playing up on Saturday with the 15s so they won't be there, so you're down to 11, right that's no problem, he got back to me later on that day, after I had wrote some stuff down, and said you're two down again, so what I done was because [participant x] has got half a pitch as well, and we've done it before at Balgownie a we times, text him and says 'look how many players you got?', and especially with it being a Friday, Tuesday and Thursday you've done your themes.. I phoned [participant x] to see how many players he had thinking we could go right well, if he's got so many then maybe we could make it one big session, we could use all the players and maybe it's a bit more game like. We can set a session like that. He text me back later saying he's got 15! I'm like just leave it, and I'll just deal with my 9. But he got back to me and what we done was we set half an hour at the end where we mixed the boys together and played a big game and we could

try different stuff. Maybe put certain boys against other certain boys, so that was fine. It was good for our boys because they were playing up two levels, and you noticed it. You noticed a massive difference, we played against the 15s on the Thursday night for a wee while, and we weren't great. We played a mix with the 26s and the 16s when they got on the ball kinda knew they could run past the wee guys, going up against them. But the 4s were actually miles better against and with the 16s. every one of them didn't matter, were miles better against the 16s than they were with the 15s.

Researcher: Why do you think that is?

Participant 1: I dunno, I dunno if they thought oh we've got 16s in our team as well, we're alright. But I'm watching the 16s boys skipping past a few of our boys, knowing fine well they're not going to catch them cause they're not strong or fast enough. That's just how it is. But when we did, I'm saying we as my 14 boys wherever, if we had my defence, 14s defence versus the 16s attackers and they're defence versus our attackers and we kind of mixed it up. But they done great against the two boys screaming for the ball and.... Obviously, you can use your other team to help you. And how do you adapt to that? That was me adapting to the session cause if there's just 9 of yous, you can get through the session, but you've got an hour and a half, one goalie, you don't want it to be repetitive and all the rest of it.

Researcher: Have you found a situation where, you've been in a game at the weekend and a boy got injured, and again maybe a central player, and you've thought 'oh now what we going to do?' and you've had to totally change plan?

Participant 1: We've not had to totally change plan. We've got a kind of front three that... plus, well we've got one, two, three, plus maybe another, one, two, three that we can... so, a front three plus maybe another two that we can all change. Two boys in the middle of the park, plus another sub, that can all kind of rotate. Erm, so we've not had, it's no, we've not been caught short.

Researcher: It's almost as if you have a backup plan then?

Participant 1: Aye, that's what it is. Were lucky for that, if, obviously big [player] got injured, we're snookered because we've not got a sub goalie, big ross sits in the middle of the park, if he injured we might lose his, and like I said there's been games where he's looked good and been really great on the ball, exactly what you wanted, but a lot of games he's not. But his presence in the middle of the park is bigger than a lot of folk and he can block things and all the rest of it. Sometimes, depending how the other teams set up, you'd maybe be reluctant to take him off cause the rest of the boys are in the middle of the park.

Researcher: So, somebody like him that you'd maybe be reluctant to take off, but you're told maybe his loads too high for the week or physio is saying his no right, how do you deal with that situation, what information do you use to make that decision?

Participant 1: That's yours, that's sports science and physio where they take over. It's a different story, I think if we're in a cup final you can take the risk with the player, and I think the player would want to take the risk, [coach to player] 'do

you want to play, do you think you'll make it through?' [player] 'yup I'm good'. Physio is maybe saying it's up to ourselves, we think this, we think that, you think well, we take the risk its cup final and start him, hopefully he gets through it. You stick him on the bench and then maybe bring him on, but then you've got the 'he comes on, he breaks down', that's you a sub down. So, I would, if it was left up to me, somebodies telling me there's an under 14, 'I'm fine, I feel alright, physios saying he's struggling a wee bit, the two coaches are going, 'well, it's a cup final, he's played well in the build-up to this, he's telling us he's fit, we're gonna play him'. I would anyway, definitely play him. But knowing fine well, there's your back up plan, as soon as this, hopefully it doesn't, but if it goes side-ways then off you come, at least you tried it, erm, then you go to your plan B.

Researcher: So, do you think that's why you'd be confident to take that risk because you've always got a plan in the background to fall back on if needs be?

Participant 1: That's, I think most people have got the same idea. Like I said if its maybe not a cup final, if we're playing (for saying sake) Ayr united who aren't a very good team but it is one of the teams who we play in our fixtures erm, you would just leave him out completely. Cause it's not worth the hassle, it's not worth the, it's not a game that means anything, it's just a game. Like I said they're not a very good side, never have been a very good side, so you would just be 'right no problem', somebody else gets a game instead of him. And, you don't even need to bother putting him on the bench, cause like I said its, he's not going to get anything out of the game. Semi-final, cup-final – different story. Erm, and, like I said once again it's what, what age group, age level you're at. We play rangers and Celtic but they're meaningless games, we're not in a league. That might sound bad, but they're meaningless games. But like I said its, the good thing for us is through our 18-game unbeaten run, most of them a good load of them have been meaningless games, but most of them have gone hard at it and got the points and been 100% honest and said if they were injured, because we have had a few boys that said they were... it's a, it depends obviously on the situation you're put into, and you need to kind of know right sports scientist thinks so so, physio says not sure, going to ask the boy, he's going to want to play in a cup final, he's not going to tell me, unless you can see it when he's running he's trying to get a bit about training and all the rest of it. And once again it depends on what kind of injury it is as well. If it's been a head knock and he's all over the place then obviously it's a, we'll take that right out your hands. If it's been something tight, like a hamstring, then, you can see them struggling running about, maybe the physio knows that that can maybe go, it's a non-starter. Like I said it's to do with the situation - how bad the injury is, if the sport scientist/physio at the time is telling you to really watch what you're doing, then you just need to realise that kind of decision is taken out your hands.

Researcher: That's tying in all your resources and making smart and quick decisions, do you think there's other factors that influence ways you can be effective if you know there's a guy that's been feeling a hammy for two or three days, if he comes into a session is there a way that you can assess that?

Participant 1: I think everybody that's been injured, or seen the physio, we'll always ask them before they train how you feeling? What did you do with the physio? Have you actually tried any running? You need to be really honest with us, do the warm up and you need to tell us if anything's sore, if you're fine train, if

you're struggling tell us and we'll assess it again. But if you obviously join in knowing that you're struggling then you can't carry on cause you've, we'll obviously not be so happy with that cause that's no great, you should have mentioned to us that its obviously been hurting. But that's the good thing of having a sport scientist there, having the physio here, the boys are getting seen. Within at least two days of being injured it's no do you want them seen to every two seconds, that's obviously no going to happen, but there's a pile of other clubs outside of Aberdeen that don't have anywhere near our facilities so for the boys to quickly get to see a physio at Pittodrie, whether its two days after game on the Sunday, he's maybe seen the physio on the Tuesday, which is ideal for kids at 14. So, there's, the good thing from my point of view, we've got a sport scientist there who knows a bit about injuries and rehab, and everything else that needs to come with it to get them back. If they've been to the physio, the physio might say right go and see [sport scientist], she will give you some stretches, give you some runs, and she can assess you and then take the warm up and take it from there, which takes it all out of our hands.

Researcher: So, makes it a bit easier for you and a bit less hassle?

Participant 1: But obviously I think it is changing now, but we've obviously got [sport science intern] coming in, erm and he seems to be fine and the boys get on with him and seem to trust him, so that's quite big as well for us that it's no somebody that isn't too bothered. [sport science intern] obviously seems to want to be there and mad enough to come and join us. So, the boys know that as soon as they've seen the physio the boys can pass that message on to [sport science intern], he can take it from there. But if [sport science intern] is no there that's a case of we're no qualified sports scientists of physios but my point of view from 'been there, done it, got the t-shirt' I know how you're feeling, 'is it tight when you do this, is it tight when you do that?' because I know how it's been for me. It might not be exactly the same as me, but I know in my head I kinda know, how it should be feeling. Cause there's injuries where it will be tight, but you can get through it, erm, and certain things. There's other ones, where if the boys' telling you something, I'll say no that's above my head and so there's no point pushing that. Most of it needs to be trust, we said 5 minutes ago, it's how much can you trust the young boys to tell you. And like I said most of the young boys have been telling you and been honest enough. Most of them just want to get back and play. Which I think most kids at that age should be. I mean it making decisions where the sports scientist has said this, the physio's said that you've done a warm up, right there you go you're fine, you can carry on. And that's as much as we can do anyway. But no-one will every just come in to training and train without us speaking to him first and taking him aside and speak to them and make sure they're ok. And we'll also get feedback from the performance school for the boys that are up there, from [coach] or [coach]. And maybe there's boys like big [player] the other couple of weeks ago, we done something on the Friday and he was knackered at the end of it and I thought 'why are you so knackered? boy said he was fine. His dad said to me as we were walking out, I said 'aye big man was knackered there I think we managed to get a bit of sweat out of him', he said' aye he will be he had the bleep test at school today'..... I said to him 'are you kidding me on?' he said, 'aye, bleep test the day'. So, I said to him [player], 'come here, what were you up to at school the day?', and I think he was trying to tell me about English lessons and all that. I said no no no, what were you doing in P.E? this was in front of his dad, he said 'aw, I've been doing this and I've been doing that', I

said 'right if you're doing that you need to tell us, we can pull you out half way through training, cause you've got a game on Sunday, blah blah blah'. So just reminding them all the time of, what they've done in school to come tell us. Performance school, we kind of know what's going on. If anything's out the ordinary, [coach] would email [participant x] or [participant x] or somebody, keeps everyone up to date with everything, so we don't need to worry about that. but that's another one as I've said, if somebody's been injured, but then they've been fine enough to go and train at the performance school. They'll be alright to come and train with us. But that's, you're trusting them that they are fine. But that's the same with everyone, it's the same with 1st team players, 'can I trust that guy?' 'can't trust that guy, he just wants his money'. It is, it's what happens. And that does come down to us getting to know them as a person individually, it's the good things about [participant x] being in here for a while, he knows the boys inside out.

Researcher: Must be hard coming to a new squad and getting to know players and making decisions on them. Do you think looking back you've maybe made decisions where you could have changed a certain decision now that you know them better?

Participant 1: Erm, no I think I've been alright. Like I said, at this age level you can see the physio, if you're fine you can come straight back on the pitch, if they are injured, proper injured they can just sit there, and you don't need to put yourself under any pressure cause there's another two halves of 30 minutes to go. So that's all there is too it really.

Researcher: Brilliant thanks very much for your time!

Participant 2: MRes Interview Transcription Phase One

Researcher: So, this is your timeline that you have set up over the 6-weeks, just have a read through and make sure you're happy with everything there and you remember all the incidences that happened, and we'll talk through them.

[reads through and traces back games and training sessions, and verifies all the incidences to the games]

Researcher: So, during the 6-weeks in training and matches situations have obviously arisen in terms of injury risk where you have obviously seen how they've got there, you've either seen them before or happened with other players. So, can you talk me through the decisions you make at those times, whether it's been [player] kick in the calf, or the cramp incidences at the match...

Participant 2: I can't remember that one that well [reminiscing the incidences out loud], yep okay... I think erm with that then, it is very much based on knowing your players. I think, erm, knowing your players, if you've seen the injuries that obviously helps you as you've seen the impact they've received, and then when I say knowing the players I don't just mean knowing the players if they still down and get up, I mean knowing if they'll speak to you about it as well. If its common, I mean, you know, some of those boys in there, [player] tends to not be a boy who would erm, stay down or, I would say he reacts well to knocks. Erm, who when he sort of goes you are a bit more concerned. I think it's just about knowing, the boys unfortunately, you know for, some of these lads that are here I've known since they were very young, so you've seen them come through you sometimes see patterns but, you always got to air on caution first regardless of your knowledge of players. You know if they're down or if they've stopped or complained of something you know you've got to obviously think that erm, there's a possible injury first before you go any further.

Researcher: So where has that come from coaching experience or playing experience. Where have you taken that information from, where have you learned that?

Participant 2: I just think it comes from being mainly coaching experience. If you're at the game or at the training ground, nearly every day of your working life, and eh, you constantly in match situations. I was in the younger, with the younger players you tend to find that mentally they're not as developed. So, because they're not mentally developed sometimes having a bad game, the easy answer is to get off the pitch and say 'I'm feeling something', a lot of time then, unless its visual, they're the only ones, the kids are the only ones who can actually, they're the only ones who can feel their body, unless it's something you can go in and say there was an injury there. I just think it comes from experience and also from trying to develop, a balance of trying to develop mental toughness as well as erm, making sure that their injury is not going to worseness. And that's what's tough at this level is performance environment. It'll say sometimes you have to play with pain it doesn't necessarily mean you're injured. I think some players, kicks and knocks and whatever else will think its gonna do further damage, sometimes you've just gotta get through it.

Researcher: Quite interesting as [participant x] was speaking about that yesterday its having that difference between knowing you're fine and just getting on with it. Or knowing when to pull. So, have you had any experiences where you've maybe thought you maybe shouldn't have pulled that player, or you should have pulled him earlier?

Participant 2: With the examples I've given here?

Researcher: Here, or just in general as well.

Participant 2: Erm, they'll have been, yeah there would have been plenty of times, again, it's really strange in Club Academy Scotland, because Club Academy Scotland you have, players can roll on and roll off... so until you hit 16s cup or, erm, I guess tournaments, you tend to find that players know, especially when they're younger and with the age group we're working with here at 16s, you tend to find that, it's easy to come off knowing that you can go back on. Whereas you see a different reaction completely when you see the mental side being questioned you know, if they're off, they're off. So you have to try and get that balance, but I mean, no you, I think if you look here [points at timeline] erm, the big one well, there's, the big one in terms of maybe should have been a bit firmer was [player x] one of 20th September, because he's coming to training and said he can't move, he's tried to do a warm up, said he just feels tight, was his words. One side he initially said then both seem to be a bit tighter. So, he tried to do a warm up, then said no he doesn't feel right, and that wasn't a session I was taking either, so I said to sit out. So, I did air on the side of caution there. He didn't train the following night, but then again, he's not a player I've known a long time. This is the first year I've known him, he's come in the academy late, having sent his mum a message to say, 'how is he?' on the Saturday, she says 'just spoke to him' (she wasn't with him), 'I've just spoke to him and he's good to go for tomorrow, feels good.' So, we play him, and he comes through the game and he doesn't complain about it, at all, but then obviously after the game then he's complaining that the hamstring. And we've got him in to be seen so, I wouldn't say he's the type of player who, you know, is every really complained of injury before so, I dunno, maybe he plays the game and gets through no bother and he's fine all of the next week, so you probably are leaning on the parents there. If you look at [Player X] booth within here, erm, he's one that is coming back from an injury that because I've known him, I know the family, I've known him since he was 8 years old, erm, for me he was fighting to get bac lot the Scotland squad, and I've had to pull him out of the Scotland squad, again because I know that playing... even though the family said that they wanted him to go and I know it's a big thing to do but. So I think every situation is unique there erm, there's a friendly match where we've got yino four incidences here which is half of them is from one game but the same time there, when I look at it you know whereas it's a friendly and [player] complains of tightness in his hamstrings, I kinda guess its... erm the situation in the game where he's saying he feels a wee bit of tightness, we didn't even have a conversation with him – just come off, we'll play with 10 men, just cause of the situation, it gives us another challenge to deal with 10 men. Again, with [player x], he did studs in the hand, he said he was fine, erm, it looked a sore one to be fair, but because again he previously broken one of his bones in his hand we just took him off just because of the situation. Again, there was no arguments from the players there. [Player] with the cramp, again it's not a situation, it's a friendly game, we know what we want to try and get out of it, so yeah....

Researcher: So, when you're talking about the friendly games, as it's a theme that's appeared a lot, that when you're looking at the bigger picture of a player being at risk of injury, it comes down to your decisions between if you have any important games coming up or if he's an important player. Do you think that factors within your decision-making?

Participant 2: Yeah yeah, I do, erm, aye I think you probably, again it comes, everything I think here comes down to previous knowledge of the players. If you've got a previous knowledge of the players and you know that if, in the bigger games and the ones that are more important, the ones who are mentally tough, will play with that extra bit of pain. And when, if it's the one that are, if its friendly games, it's easier to say 'look I'm feeling this, I'll just come off'. I do think the game factors into it thought as well. I think even the players as well they've had a couple of big cup games we've had this year, I do think the week leading up to it, sometimes a bit of apprehension, a little knock or whatever [player]: 'ooh I'm feeling this, I want to be fresh for the weekend', and so I do think that plays on their mind, I think that'll be across the board on any sport. It's the same when we got to tournaments in the academy that the week prior to the academy, or two weeks prior, everyone's on tenterhooks, you'll get a couple kids won't play in the match the week before, just to make sure they're alright to go to the tournament. So yeah it, I think there's an element of that. and if you're doing it right, I believe, erm, when you start getting to the games that do mean a little bit more to them – cup competitions and tournaments – erm, the resilience and the mental toughness you hope kicks in a bit more, you know.

Researcher: You said you bounce about age groups quite a lot, do you feel you change your processes depending on what age you're at?

Participant 2: Aye definitely, I think at the sort of young, your styles got to change, you know, the younger ones again have been in less time, so you've had less sort of knowledge of them. Erm, I know myself that the younger ones tend to be if they are having a bad game, they've got to have a reason why they're having a bad game in their head now-a-days. It's the culture we're in. erm, and sometimes you can, boy comes off saying 'oh I'm feeling this I'm feeling this' whatever, and he's got tears on – go and sit there a minute and stop crying. You know, just go and sit and take your breather. And again, you can't do that with every player, but you need to just balance it up who it is. And then I think it does, it gets tougher, but the other thing is you've got to watch because, at the very young ages, you're probably not gonna get (I'm talking primary school), you're gonna get far less risk of hamstrings or soft tissue damage. So, I think with that, erm, you know, when the kids nowadays, they see a premier league player who done his hamstring or his groin, and they're all coming out 'ohhh I've just popped my hamstring' and then they're running about the side of the pitch telling you they've popped their hamstring. So, when they're older through and going through the growth they have, they're more prone to injury so like, I always think when you drop down to the 15s age from where we are now. They have quite a bit at the moment cause they're all hitting that peak growth. And I wasn't always like that, I think that's come from education, and the other thing I would say is, I reckon, one of the advancements in having sports science in terms of having information like that, watch what he's doing now; maybe reduce the workload, that should help us

because, before we might have just send, he's just growing through a really bad spell, dunno what's wrong with him, you know...

Researcher: And that comes down to you being Job smart and thinking of the resources that you have around you that can help you make quick time-effective decisions and you don't waste any time with a player's recovery, or a player getting to this level or performance. Do you feel that you use that a lot, do you have any examples where you've used that information around you to make decisions?

Participant 2: Erm, probably with [player], going to the Scotland one. Erm you know, for him to be here to be here since he was 8 years old, and to get to the 16s and for the first opportunity to be in the Scotland squad, which is something I know is one of his targets. You know, he's been, his ambition is to play in the, in that youth national team, and erm, yeah, I think he was just in a rat race to get back and make sure he was available for selection. And when we got the fitness for duty form, erm, that went in saying yeah, he's just getting a bit of treatment and he should be alright, and again you've got to take that information as it is, but then you're watching him, and you just don't feel comfortable with him. And I think then just with the regular physio, you know and the mum saying to me 'yeah he's fine, he's gonna go' and then speaking to the physio again, just using everything around you. One of the games for example, he said he wanted minutes, this is before the last Scotland camp, so this isn't even the first time, and this was 13th of eh, September I think, he was just coming back then he done the, he was a sub and he didn't play in the first game, he was sub in the second game and he said he wanted minutes. I said to [sport science intern] to warm him up he said he was fine, and then [sport science intern] said to me no, I don't think he's alright, and again based on the situation, based on the boy, and based on listening to [sport science intern] who's the one the doing the running, change of direction with him, it was like fine... it's a no brainer. You don't go on, there no debate there. No, but then the flip side of that [sport scientist] is, you know, a few weeks later, he comes to playing a game, we're told by the physio erm, he's to get err, 30 minutes he was to get and after 30 minutes he's running well he is looking, and for me he looked like he was getting stronger and confident and physically on the day. and then we pushed that to I think it was 40 minute or 45 minutes I can't remember to be honest. So again, it goes down to that again, knowing the player, I thought that day pulling him at the time it was erm, I thought we were getting more out of him and I just thought he grew into the game, so yeah you take all the information around you that's there erm, but again I used to take everything in literally. If they said that I've got to do this, you've got to look as if you're taking the advice.

Researcher: And have you done that before where you've thought 'right I need to do this because I've been told' and it's just not worked out completely?

Participant 2: Yeah, I've done that a lot over time, since it all started coming in, I, you respect everyone's decision, I mean they're in a job to advise so I think, maybe the last year or so if someone's said, 'they can only do this, they can only do that bit', that's all we've done. Prior to this season, you know physio rehab from an injury tended to be, he can join in 15 minutes of this session, half an hour of that session, 45 minutes of that session and the same with game time. Erm, which was fine but you, a physio advice when they're not seeing on the pitch, it's difficult to do so I think what we've found there is again, you know I used to take that literally.

And I think I could have said 'no he's alright to do more, or I could have said he could be doing less'. Dunno if that answers your question there...

Researcher: Yeah definitely, so something that links quite closely to this is that you're able to notice things on the pitch that maybe a coach next to you that was brand new to the job wouldn't. So, can you talk to me about these incidences you've mentioned or others that have arisen where you've noticed things so easily on the pitch that stand out to you?

Participant 2: I don't know it's funny because when you're in a game sometimes you get caught up in a game you know, the ones who I find erm, if you've got a physio that you've worked with for a wee while or they're getting to know the players or someone who's involved in, bearing in mind some of our match day physio aren't necessarily football or team sport so if you take more of a broad, and we've got [participant x] who was with us, [participant x] comes in, he's had a look at everyone he knows what he's working with. And then as... he's got his key players he would focus on there, and then we he go into the game, he's naturally gonna spend a bit more time focussing on these players. He's watching a bit more like, when things have happened and developed he's watching for people struggling or, how people are moving. So, I think then, like, even though you've said about experience, it's the physio. Some of the physios from Spear here have 'have you seen your number 6?' or... and then you can look at him and say it's a dead leg or something, and that again goes back to your knowledge of the player. But there quite a lot of time when they spot that you're like... and it just allows you as a coach then to ask are you alright? And then listen to their answer, judge what their answer is, and also, you can see what you think yourself. Cause he might say yeah, I'm fine, but you find well the way he's answered that questions, he's not fine! Erm, it does help erm, it does help even looking at having experience to see how boys are moving and running. I suppose the ones that are a bit trickier and the fresh injuries, the ones they have on the day. because if someone's playing through it again, it's that question - is it pain or is it injury? So, I don't know, if you've got someone new in, erm, again I think it just depends on personality. They might be the total 'aw you need to get him off, he's injured' and whatever else. And I think when you work with the younger age groups, you'll see it even more. You'll see it after they're a state nowadays, they'll start limping and they'll look (to you to take them off). The problem with the primary age group in particular, they'll look to the dugout and that's like 'get me out of here, I'm wanting out of here' so, and then you tend to find that the best way to find out if they're alright is to leave them at the side, speak to them, if they need physio great. But what you'll find is, give them 5 minutes they'll be bored, and they'll be kicking a ball and you know they're fine.

Researcher: And have you just learned that through trial and error?

Participant 2: Yeah, it's just being in it, yeah. It's just being in around it. But you've got to watch though, because then, you can go down with a younger coach or someone who's erm, still quite new in the academy system and you know a player who you know is, and I can think of one just now in the 11s who plays up at 12s, you know he mentally, physically he's quite strong, but mentally he's quite weak, erm, and its only times when he's not getting his own way. He's a quick player so when he's out paced he's got to do something else. So when you see him at the older age and he doesn't get away from someone, he's got to think more, there's

a lot of time he will look to the technical area as if to say 'get me out of here' and the tears will come on whatever else, and you've just got to, and it sounds harsh ay, but boys like that sometimes you've just got to give them that tough love. Let them cry it out a minute then go over and say right come on, what's up with here? And you've got to have the arm round the shoulder and look. You've got to watch then and look, you're not being treated as a role for younger guys who think everyone's got to be like that. you know it's the same with everything, it's about coaches and players and people, it's just about how you manage. There can't be a rule for one and not for another.

Researcher: Speaking about mental toughness, I know there's been one situation it was a Friday session, and [player], [player] and [player] came in with bad moods and angry moods and I think you noticed it and picked up on it at the end and spoke to them. They were being a bit rough with each other. Can you talk about that how you've noticed that mental side there where they're acting different in training so it's not necessarily a physical injury but there's the mental side that effects their training?

Participant 2: That one in particular, probably what helps at this age groups with these players. The ones who go to the performance school, I'll speak to Stuart Glennie erm if he's had a day where there's been something on the training pitch or there's been a couple ones in class who've not been behaving or there's just been general mood swings, he'll tee me up and say by the way, they've had this. Because Aberdeen's still, it's different, it's the club environment, you can come in and actually have no problem. You've still got to keep an open mind to it. If you go in and think aw he's gonna be moody, he's been moody at school and Aberdeen's their release. It can work the other way, completely, they can be great at school and think they're still gonna be great when they get here at night but they're in a mood, they're teenagers. Erm, no I think part of that, that week in particular, I think there was a bit of anxiety building in amongst the group as to who was gonna start in the quarter final against rangers. And I think, that's what I would put it down to. Because I think, I noticed it on the Thursday I thought, mmm its sorting of creeping in here. And on the Friday, jeez, aye they were absolutely at each other for anything. And

Researcher: And how do you deal with that situation?

Participant 2: Well that one, we actually stopped everything. And it wasn't like that effort was lacking or anything in the session. We just actually stopped it and we said, 'it might be because of this,' and we were really firm with them that night, that there's cracks. It looked like there was cracks within the group, it wasn't the ideal preparation going into the game, and to be honest I still don't think we done well in the game even though we won in the end. But you know there was these little cracks in this particular group, there was a lot of individuals within them team, that you want, you want to have individuals within the team, but at the same time there's a lot of personalities and there's a lot of erm, I dunno, I dunno what the world I'm looking for is... erm, emotions I guess within the group and this has always been the group that you've got to be on top of. You give his group an inch they'll take a mile. I think just with that it's how you handle that night is, what they need, do they need the soft approach, or do you think no they need the hard approach now and, on that occasion, I thought they needed the hard approach?

Researcher: Is that something you've dealt with a lot throughout the years that players have come in with low moods and you've had to deal with it?

Participant 2: Honestly, you can get groups that are an absolute, like really easy. The 2001s, which is like [player] age group, [players], who was here at the time. I mean they're all international players, there's 4 international players in that group. The group 2003's of 16s, there's 4 international players in the group, but the 4 internationals in the 2001s were role models, were hard working, were good characters, were the best trainers. You didn't get any problems off them, at all. You can have a little moan of course, but they were literally setting an example for everyone. So, in training if you asked them to do something, it was done you know so, you'd never, I mean twice a year you had to be firm with them, if that. I mean I can remember a time, and to be honest [researcher] one of the times was erm, we were actually winning the game, we were beating Dundee and we're up 2-0 at half time but the performance was slack, and I thought the effort and attitude was slack. And they walk in at half time and it was just like the routine 'aw we're winning two nil' and I just thought no, that was one of the times. So, I think, again it just depends on personalities. This groups a real, I mean you've got 4 in the international squad, but it doesn't mean they're the best role models. And the ones behind it sometimes don't rub off in the most positive way. Erm, this group here whether it's just because its, the kids are younger now, this group here if you say right we're training at half 5 and the pitch happens to be empty, the same few will sit in the changing room and not come out till half 5, whereas a couple of them will come out early. But I also think the few that go out early, the ones still sitting there will be saying 'oh why are you going out early?' and try to make them feel bad. Whereas the group two years before that, which was strong, they would have all been out. They would have all been 'can we start now? We're ready to go!', it just depends...

Researcher: And what do you think makes that change in players mentally?

Participant 2: I don't know, I think if, the example I Participant 2: e there was just a two years age gap. So, the younger ones coming in, the younger ones coming in, and the ones I'm just saying about, you've just got to be on top of them constantly. I don't know, I don't know if it's due to their cultures getting a wee bit softer. you've got you know... I don't know.

Researcher: Because I guess the reasons for that might come into how you make your decisions any why if you know there's maybe things going on in their home life that maybe affects them or?

Participant 2: You can, it can't be viewed as an excuse. And whilst it could be a genuine reason, it can't always be used as an excuse. And I don't think you can let the player think you're letting them use it as an excuse either. I think you've got to be erm, aye you've got to be compassionate, we understand its maybe not the easiest for you at times, but you've just got to go to, you try and get to the point where this whole thing is a 'no-excuse' culture and we, hence the reason try and go the extra mile with everything we can, to not take away excuses, so nobody can say 'ah well we didn't do this, or we didn't do that. erm, I was gonna say something about why it could be as well... it can just be sometimes as well, the good personalities or the best players are the biggest personalities sorry, are more

role model types. If you've got one of your top players who is just dedicating himself and your captains a real leader and towing the line – that can change the dressing room too. So, I'm not sure, but I think definitely you know it's just been around your environment your challenging. And in terms of erm, even though as a coach you, you get as much out of having worked with a really good group, where they do everything you say, and you pass them on at the end of the year and go woah I really enjoyed working with them. But then you get a lot of out having to deal with the crap and the, the getting on at boys all at time, so moving them on at the end of that and you're thinking 'who I've done the best I can with that' and you see where it takes you. See, you get the same kind of satisfaction in a different way.

Researcher: That's kind of looking at the bigger picture as well of maybe a season long, and you're building these players up for a career. Do you think it's important to have a plan of attack when you're going into a season as well as when you're looking at injuries? What kind of factors come into play when you're thinking of things like that?

Participant 2: First of all, I mean nowadays everything's logged within the sports office system, so I mean, this groups we've got now at 03s, I also had them three years ago at under 12s, so I had a year of them. And see they Participant 2: e me no problems then. They were a really easy group to work with, all the wanted to do was play football and whatever else. And over the years you see them change because they get older and whatever else and they've got other interests and what have you. Erm, so I think it comes from yeah, getting previous experience, knowledge of players, erm. Aye so the plan again it goes down to knowing if they've had anything (injury), knowing what their character is like, knowing if they're, what sort of stage they're at physically, emotionally, and you know seeing if there might be that kind of pattern. This year we expected probably erm [player] to have a bit more, which he has, which he has. You know, [player] when he stopped, and he stopped in previous years and he's come back and maybe started with a bit more niggly stuff, so that was that. but then erm, another thing, my kind of plan of attack, doesn't always go to plan but I always think, in terms of being hard on them, I try and do it less and I think you get more out of it, and I always say, I always go into a season thinking if they ever need to try and drive that mental toughness or they ever need to see a side of you that's bit more firm, no more than 3. No more than three times a season. and that was just down to, you want it to have a reaction, so you pick and choose your times. I said to you that time they were 2-0 up, they were slack and didn't expect to go in at two nil and have a blast but then all of a sudden, it's like 'woah, wait a minute, it must mean something cause coaches are not happy'. So, you know, cause otherwise it just becomes a bit, it just becomes repetitive and they're like 'oh here you go again'. So, and it's difficult with this group cause I think the ones that are 2003s, the ones who go to school together, because of themselves, because sometimes their behaviours and their attitudes, they're not a bad group of kids. They're just around each other all the time, it's the first group that have erm, been put in the same class at school as well. Whereas the other groups over the years have been split. This is the only time where they've ever done it where they're in together. And that's why you can imagine they're not coming into training at night and erm, seeing someone they've not seen all day, and trying to get arise out of them. Whereas you can imagine when they're together the whole time is like that jail culture. You can see them all trying to get a rise out of someone, you can see them

all pushing buttons. So that what, its similar to that a bit, big brother type. Erm, but yeah if you came in totally fresh here with none of that knowledge, cause you wouldn't know which ones are acting like they do. And you've also got to think you've got to pick and choose your times, as management, when you take down your big characters as well.

Researcher: Do you think life skills come into it at all?

Participant 2: Everything that, everything's life skills. And you only, you only develop that by being in the thick of it and making heaps of mistakes and erm, it's the same with injuries, you only if you made a decision on that player, and you then think oh no he needs to go to rehab or whatever and you find its actually worse, you're like wait a minute, I need to think twice about that next time. It's just about being in it, you can every qualification in the world, but until you're actually in the thick of it, doing it, living it. It's the same as another language, you go to every uni course to learn a second language, but unless you go and live in Spain here you're forced to use it, you don't develop it the best. And it's like this, you need to be right in the thick of it all the time.

Researcher: When you said there you'll have a plan of attack, but it won't always go to plan, so you're caught off guard and you have to adapt to it, how do you deal with that and use your knowledge to change decisions?

Participant 2: You don't just, you judge the staff that's telling you that as well. You know you do, you think of who the staff are first and what they're like and about pre-empting a plan of attack, you should know your staff, and you know I think, again, you'll only develop the real trust and relationships in staff by being around them longer. So, I, I mean we're in a youth where were not dealing with full time staff on a day to day basis, so it's a little bit broken cause of the set up here at Aberdeen. You know if you had a full-time sports scientist that you were working with at a squad and you had an analyst or whatever and you were you know working that squad then, when they say to you, by the way that's... you're like 'yeah' you get it, and again its you've got to balance of your experience the staffs experience, how much time your spending on that player. I think it just comes down to people knowledge and life experience, it just comes down to that.

Researcher: Situations where you've maybe set up for a session and then you've not had said a couple of players turn up saying they're not feeling great... how do you deal with that situation?

Participant 2: If you've got a theme, and you've got a point that you need to get across? Then the biggest thing there is you just adapt your session and make sure you get that theme across. Again that's not particularly difficult, if you've delivered sessions most days of your life. If you're a youth coach and you're not working at the professional level, you're, you can never bank on having 16 or 18 players. You've always been working in an environment where erm, you'll adapt, you've got to be flexible. And you should plan your sessions always that you can adapt. So for example, when I go on a course myself, erm, I'll always go in and ill plan a session, if it's quite detailed, I'll always write (you're told on the course you must work with 18), so you plan your session, but I never plan it around a number. Because if you plan it around a number, and if something happens like you say, you're knackered. So I plan it, and then I right on it, 18 players or whatever, and

then in my notes I'll say, 'if 16, this, if 17, this, if 19, this'. So you've got two either side. Now I don't do that when I go into here, but if you're being assessed on a course it's a bit different so you don't panic so you can react to it. But you've already thought who can you miss out, who'd you add? Because that happens and that's just the nature. So I think when you go to your sessions and stuff, there is times when you can go to the sessions and you have that plan and this one far more common, and you'll look at it and you'll think 'looks like they've had a long week' and you're gonna struggle to get quality information into them. And you do sometimes have to say right it's about getting intensity up. Some of the best things to do that is get a game. Cause the minute you play a game, they then drive the intensity more. You know if you've put balls round the side of the pitch where you're feeding them in, it naturally gets them up, so that's the excitable part. And you do kind of have to balance that, but if you are working in preparation for a same and you've got a same plan and you need to work out times where to get that. And sometimes when I said to you about the school environment, on Thursday nights when we have 2 hours at Cove, we've also got the full pitch at cove right now, that is the best time facilities wise to get match preparation because we've always got boys away at 18s on Fridays.

Researcher: And why do you think somebody that's less experienced would struggle to deal with that?

Participant 2: I mean I think it's just cause they've done it less, is the obvious answers. I mean I see young coaches come in here now and when I say young I don't mean young in terms of age I mean in terms of experience. I mean I see them coming here now and some of them have really really good ideas. And some of them are trained now, they've been trained to adapt. I would erm, I would probably say if you went to the youngest age groups, and you see how those coaches, I think they would be more prone to adapt. Because they're not trying to get the perfect session. I think they would be more skilled to adapt and they wouldn't panic. Cause it's what they do.

Researcher: and do you think that's because there at a younger age group?

Participant 2: Yeah I do, because the nature of the kids, you're more likely to have ones walking off the pitch screaming, or tears come on, you know what like, we've had one here who's had the ball in the face, and only because there's blood on the face that he's wanted to come off and get treated. But you know a ball in the face at 16s, it's like how do you take it? Where a ball in the face at the young ones, you've lost the boy for a good while, he's got to come down, calm down. So coaches are always willing to adapt but I also think it's because the older you get and the older age groups you get you tend to think, what you need for the session, so you work to make sure you've got that perfect number. Last year and erm, we had times and whenever the 17s wanted to prepare for a session, they needed four of our boys up, so no problem it gets them challenged, and then we'll be down to whatever. But you just, you just work with that.

Researcher: so just to summarise the main factors you feel overall that contribute to your decision-making would be you: knowing the player; coaches experience; life experience. Can you just summarise that up for me?

Participant 2: I don't want this to sound like I think I've got lots of life experience more than other coaches, cause I don't have by any means [laughs], erm, I am just, when I'm giving a lot of answers I am generalising in terms of someone that hasn't got a lot of experience wouldn't be able to deal with it in this way. I just think if you're, I would go back and say it is that, but I think if you calculated erm, the number of games that you've coached in and the number of training sessions you've coached in, and the game hours you've done and training hours you've done in your career, it would be an interesting thing to do. Because then you reflect on that, and you reflect on that by, let's just say for example, well I've definitely done more than 1000 games right, let's just say 1000 games as a base figure. That's 1000 games where you've 1000 chances to make mistakes, right, so, within those 1000 games I will have made mistakes when it was my first game and ill have made mistakes at my 1000th game and that's where you'll learn. That's how kids learn, and that's how players learn.

Researcher: How do you go away and reflect on a game?

Participant 2: Well circumstances sometimes are good, because, well definitely at home games you've got that walk to the changing rooms to reflect. And that's where its often best to say, right we'll go into the changing room unless you need it to be different for any reason. And then you've got the time to reflect a little bit. I think, me and [participant x], it can be different. Some coaches like to do it straight after and whatever else, me and [participant x] would tend to reflect, you go in you do your bit with the players and then, after the players you go and get a cup of coffee, talking about it switching off a little bit, and then later than night, like Sunday nights will be back and forth about,, normally when the kids are in beds at both sides. So we're about half 8, there's been a few times we've met like that night as well and we've sat for 3 hours just chewing over the game. So, I think that, again comes down to who you're working with and how you want to work. Aye, much of that, much reflection is about, see if you have, if you're passionate about it, at training, see if it doesn't go well, it might not look good. But it might have gone well. So you might think that drill looked messy, but your theme might have good across. So sometimes it's good to look messy but sometimes you're games are messy so it's good. So erm, I think that comes down to.. if it had looked messy before id have been like 'poor session tonight, I didn't like that at all..' whereas now, I sometimes see messy sessions, and go 'I think the boys got that', again that just comes down from being in delivered session and seeing the games. Cause that will be the time where you realise if they have got it. If its if it's in a game, if it's something specific. Erm, yeah so I think reflection on that. but I am quite critical on myself. I think erm, but I think as a coach you have to be, I think you've got to be critical of yourself. And you've always gone to say, before you go and say to anyone else 'oh they did this, they did that', you should always say, look at yourself first, before any of them. I'm not saying I do that every time, cause I'm human, but I'd say that's what I try and do. At the weekend there, we played crap and I'm the first to say our midfield was outplayed. Right it was a draw, but the midfield was outplayed. Erm, I'm not gonna go 1-1 aye we stuck in, we hung in there, no - the midfield was outplayed. By saying that, I'm saying my session this week needs to be better to deal with that. cause if it's not then, and we're going in next week and our midfields outplayed again, is it the players or is it the coaching? So your midfield is out played and the next week a lot around it is just to have a look it and why it was.

Researcher: and just to link this is with injuries and down-regulations we've had, do you think any self-monitoring with long term injuries with [Player X] or [Player X] maybe something could have been done different through their injury risk or rehab situation?

Participant 2: I think we've got there with [player]. I think that one was more than over the course of this. I mean I know it's only one injury we've reported, he was very much coming back in, but I think the circumstances where he was racing to get back in. erm, it was quite obvious. I actually think that was handled quite well, and I look at him now and erm, I think, its worked, I think we, the rehab he's had, and the physio has been excellent over the last week while. Erm, the bit that probably sticks out with this is and the groin you know wasn't actually to do with Den[participant] as such, but he went from finishing his season to having what we said 'go and get your freshness back' now he's a fit boy anyway, but he seems to do his growing when he gets a break, and he's gone straight in there and I don't know how much he's done before he's gone to Den[participant], but you would think again, he's an overage player going down with the younger squad, you thought he would have cruised it really. But he's had all these kinds of niggles, probably cause he's gone from nothing and then straight into a game. So that maybe needed to be managed different. But what was tried with that was that he came in for the training, but he couldn't cause he was on holiday. So he was asked to go and then he was asked to go to the training camp, but he couldn't. so it was almost like well why wasn't he fit anyway, he needs to be getting fresh again a then go in. Erm, [player], could we have handled that one better? Like I said earlier on I think I've gone on the mum, and you know in hindsight he turns up for the game and he comes through it no bother and you think, aye that was the right thing to do, but it wasn't until the day after, and the had his hamstrings tight. And that's more strain, and tightness aye. So, then you lose him for a few weeks as well, so you kinda, but then I think whilst I'm getting an education about his parents, he's getting an education about his body. So I think there has to be that learning, that conversations that we had...

Researcher: So I think obviously there's that things have been out with your control, and you wished maybe back in [player] would have been back in Den[participant] with a bit of training behind him, but he was on holiday so how do you deal with that decisions?

Participant 2: The [player] one, and the only thing there was, and I wasn't in Den[participant], you know they trained, and I don't, again, the coaches would rely on in Den[participant], would have been, and [participant] would have known [player] with working with him last year, think that would just be down to seeing how he trained early on, and maybe just getting into him a bit more. That might have happened, so I don't know. But I think that would be something you'd have to check and see how it improved for example, or how he was feeling prior to going into the game. There might have been an assumption – oh well its [player], he'll fly through this game. You're starting your captain, which is what kind of did happen, but yeah there could have been a bit of that. the other thing is the groin that's kept him out has been from going into a park and kicking a ball with Tom. It wasn't like something really obvious. But I don't think there's been, not the ones we've talked about are fine. But as a said to you, there at an age their fighting for a place in the team. There's no guaranteed game time either, so they don't want to lose their spot. It's a small squad, so it's not like there's 5 or 6 of them sitting

on the bench every week and this is what's happening, so there's no acceptance to being on the bench so it's quite good it's what we want.

Researcher: Do you notice a difference in their training abilities at the stage of the season when they know contract are coming up?

Participant 2: Yeah you see them erm, you do, you also before the cup competitions, I worked with them the week before last, and that was leading up to the Kilmarnock game. Now going into that game there I us thought it was possession, they were almost like we know the semi is coming up, so we need to start pressing now and it was on the back of a loss, so I think they were probably thinking, we need to get out heads down now cause we could fall out of the squad. And then the tournament as well, before a tournament cause they want to do well. Cause its natural. As well as a coach, you do that too. You, when we're playing a cup match, you do go into more detail. Cause there's something at stake at the end of the game at the end of the result. Your results are important at the weekend of course, but it's still development. Like at the weekend there, we go, and play hears - 1 all - we go with a small squad cause we want minutes, so we make a conscious decision to go and do that. whereas if that's a game with points on the line or a cup, you do it different. You go there to try and win the game, but of course you want to develop at the same time.

Researcher: Perfect, thank you very much for today.

Participant 2: No worries!

Participant 3: MRes Interview Transcription Phase One

Researcher: With the incidences that you've sent in and (if there's anything else that's happened) just speak to me about a time that a situation has arisen that you've seen a risk on injury or an injury has actually happened, how you know it came about and what you do from that point onwards.

Participant 3: Erm, I can't think of too many times I've had situations like that, I think [player] is one actually. That was way way back. He's kind of like, it was actually at Celtic and he was saying his hamstring was quite tight and erm, and on that basis we actually took him off, basically instantly, he went down, he actually won a pen, got up, took the pen, scored, we were up 3-0, he scored every goal. He said he had discomfort, and then, for me especially with something like a hamstring the, the bell starts ringing particularly if its somebody quick paced and they're gonna be using a different kinda, different muscles is it? So erm, previously [player] being a good example, we've just taken him right out the fire kinda thing. In terms of [player]'s one we said to rest up, as it turned out he actually, he was going through a process of maybe signing or not signing, so indirectly he had two weeks off anyway, so didn't monitor him much. I certainly think if it's something like a hamstring as an example, that would be one that I would probably be reluctant, well would be saying to them, right miss training Tuesday, but will need an update by Monday/Tuesday later at latest to then refer you to physio to get treatment.

Researcher: So what goes through your head when you make that decisions to take him off, why do you think you make that decision as such?

Participant 3: I think you have to base it on how he feels, so probably the first one is, how painful is it? If I [participant]e you of 1-10 how sore is it? Erm, can you run? Is it really in discomfort? Was it sudden? Or was it something that was, has been done over a period of time? So it could be a period of time within the game or period of time that started Monday, they've never really mentioned it before. So I suppose that's my thought process. But like I say certain injuries, make you more aware, I think if they say stuff like 'oh it feel like I've strained something'. That makes you worry, where if its more impact, you know so, they've went into a 50/50 tackle, and its 'oh that's sore' you tend to find with that one, that the guys it's that impact isn't it, the sudden pain and then it goes, it subsides. So you think okay, you do tend to make them do a little couple runs first, I certainly wouldn't take a kid and just chuck him back into the fire. I would need some reassurances. Then the second part of the process is that you speak to the physio and say to the child or young adults first of all, then it's the physio and then you would consult other peers, what's your past with... especially with certain injuries, if they've got a history before with certain guys like [participant] has played at a level that maybe he relates to it, not that I relate less, [participant] has played as well, erm, so past experiences say come into it as well. I think a lot of it as well, sometimes as stupid as this sounds, sometimes past stories, and past experiences watching as well. You know so erm, if somebodies says hamstring you think, so I relate it to Michael Owen, Michael Owen really quick, speedy, different fibres used, and you think 'phoaw'. So I think if somebody like [player] who is very very quick, and he says hamstring, you think 'oh no, we know where this is going'. Or [player],

whereas maybe if you've got someone that's a bit more cumbersome and doesn't get about the pitch as well, you're like 'oh go try and run it off a little bit'.

Researcher: You're speaking there about the past being a big thing that you relate to. What about the future, do you take that into considerations when you're making your decisions?

Participant 3: Aye, 100%! And I think that comes from sports science and loads and cause its more past experience of just run through it, where is the science now or the stuff that we get fed back or the stuff you read on Twitter and stuff like that, does certainly make you think a bit more. Especially like loads probably that's driven by yourself and [sport scientist] when yous speak about loads or speak about erm, kinda erm, not the effort, what's the wording you use when you ask them afterwards [Researcher: Their RPE], aye, yeah, so like its more in the forefront of your mind now. I think about 5 years, well when I first joined the club it wasn't so much kind of thing. So that is taken into account. Cause a lot of things start building in your mind, did they play for the school recently?, did we play a tournament recently? Kind of thing so..

Researcher: Do you think as well the fact that maybe depending on where you are within the season, is that taken into consideration if you have a big game coming up at the weekend?

Participant 3: Stage of the season definitely, definitely. I think when you come back July/August from summer break or come back in February after winter break I think you are, because I think, I'm not sure, I would imagine there's a trend that tells you this, but I think they pick up injuries more cause they've not trained as much. I mean certainly from our own lifestyles if you go to the gym four times a week for 6 weeks and you have a massive drop off, for me you do tend to feel things a little bit more.

Researcher: I think as well having a younger age group you have to think about their career long-term as well. Does that come into your thought and decision-making process?

Participant 3: Possibly, I wouldn't lie to you, I wouldn't be major, it wouldn't be on the forefront of my mind. Erm, again cause of the age group. Erm, because I've basically been doing 13/14s since the day I came in here. So in my mind there's never been a (touch wood) there's never been a trend in certain injuries. The only ones have been that Osgood's Schlatters, pains in the knees kinda, but I haven't seen a trend of problems with hamstrings. Have they got hamstrings at that age [laughs]?... But I don't see a trend in that, so it probably doesn't, so I probably don't take their future careers into consideration that much. Cause I remember we had a long-term, I canna, I honestly canna tell you, I canna think of a single person that's had a long-term injury.

Researcher: So when there is a player at risk of injury, why do you think it's important to have a plan of attack with that player and what kind of factors influence your decision-making around that player?

Participant 3: I think my plan and process would be pretty simple to be honest with you – they've got a risk of injury, you take away the risk by taking away the

situation, especially the age group we're at winning possibly isn't the biggest factor. So you would take him out, kill the risk right away and ultimately you would take him. Where I could imagine at the older age groups where it's a bit more results driven you think well, he's one of my better players. so first thing you would take him out the risk, take him out of that, depending on the injury, erm, so I've got a tendency that I wouldn't want to communicate with them much. So say you're injured, you're coming off and then I think that's why we're paying physio, so I'd want them to go and assess them, there's no point me asking 20 questions, I'm not a specialist in that subject. So I would ultimately I would say to them look, speak to physio, physio would probably know more about it and that point as they would probably know more about it at that point than I would as ultimately they're on the pitch. how are they? What's your first, well what's the prognosis, right away. Leave them with them and then it just goes through a timeline of, what does the physio think? Is it worth taking a risk on? So if I look at this one for example, Time's had a tight calf and he's had little strain in it before, we just take him off. You just dinna play kinda thing erm, and then the priority for me is then (if it's a home game) is I need to speak to your parent, if it's an away game I text the parent and let them know. Ask them which is important for me is that I want feedback. If it's happened on the Sunday, I want to know on the Monday how he is, erm, usually cause our physio submission day is Wednesday, on the Monday/Tuesday id want to know does physio... you'll also, well for me, I'd also take into account the mental stability of the child as well. Erm, cause some of them think tis quite fashionable to get an injury. So, sometimes I take that into account, sometimes it's a lot of game playing. Erm cause the parent can be as bad as the child, cause ultimately they, sometimes the parent can be 'oh he needs to come out and see the physio' well in actual fact he won't play this Sunday, I want to give him 7 days to rest up and the kid gets back on Monday and its miraculously gone. The recoveries you go through that kind of method, but if that is the case and they come back to the training on the Tuesday for example its again about working the loads, so we usually speak to (not so much [sport science intern]) it's usually [sport science intern], we'll say to [sport science intern] so he's had a knock, to be fair [sport science intern] would be pretty committed he would go to most games, he would be there so he's obviously taken a knock and I think it would be beneficial to take him out the session away from everybody else to work on him. And that's probably inspired from people like yourself it's what you observe is it. So I've seen you taking [player] out, so it it's a trick in your mind then, well in actual fact what's different at 14s to 16s. for me, erm, maybe more so down the line, but the likes of [sport science intern]) and [sport science intern]) I think they're quite receptive, I think sometimes you've got to tell them. So like [sport science intern] will do his 20-minutes and sit at the side of the pitch which is not good for me, I want him involved whether its involved in a session, taking one person out cause, I think it's critically the job that you do. [Sport scientist] will tell you I go on about it all the time, it erks me a bit in seeing them seeing on the side-line, I know that you do stuff, so don't take offence. So that's the process I would go through, he goes to the physio, he's in the physio's hands then they give us advise us or recommend where we go kind of thing so, that's basically the process I go, personally.

Researcher: So that process that you've chosen to use where have you learned that process to be your best practice? Has that come from coaching education or playing ability or where else?

Participant 3: I think we always go back to our past experiences. It wouldn't be just one thing that's driven that. you know, coaching at banks o dee, banks team were massive on physios, you could get one at the drop of a hat. So you would soon learn who was at it. So that was the past experience. Erm, playing I dislocated my ankle, that's why I stopped playing, so that was only 5 years ago so I was due to stop, so my experience of that and how that process went for me. Erm, and then driven by erm, to be fair to them [participant x] and [sport scientist]. So when I first started [sport scientist] came in as well, so [sport scientist] kinda kept you in the process of, and [physio] was quite good as well cause she was a bit of a 'bite-backer' as I would call it, so they shaped the process. [Researcher: So the time you've come in here together and they helped you shape your process to?] aye, I think, especially when I, like, I would, how folk describe me as a keen bean he's always on at you for stuff, top of everything, so I think that shaped it as well. So like, me coming in to I think you get coaches that 'oh he needs physio' and he would never do anything about it; out of sight out of mind. Whereas if you messaged me and said I need this done, I'm not the type to ignore, I want things done. Erm, so that probably shaped it as well, I probably went through the first 6-months of pissing [physio] off, pissing [sport scientist] off pissing [participant x] off, and them needing to manage me a little bit in the process, erm, which probably gets you indirectly getting them best practice. But personally I'll ask questions, and I know folk see me like that, I've got a self-awareness, of like even in the running stuff, probably pissed [sport scientist] off for like over a year for this now, but he knows I'm not that type of person so... and it's not best for me, it's best for the squad.

Researcher: Yeah totally. So when you're talking about seeing things happening, you're noticing these things happen and you're able to notice them because of experience, why do you think it's harder for someone with less experience to be able to do the same?

Participant 3: I think it, I'm beginning to sound like my mum, but I think it is an age thing. Knowing if you get older, I've been involved in football since I was 5, I'm nearly 40 so, you will have a bit more awareness cause of your own past experiences, what you've seen before kinda, certain players as well you expect certain injuries. So [player] and [player] I'm like high alert. If you wanted to put them in alert levels, I'm high alert with them cause they're runners and sprinters and move quick. And then you've got the more tenacious ones like [player] I think he's a centre back who would kick his grandma, so you've got an awareness to these certain players that are, are maybe cutting themselves at certain risk. It hasn't been unusual to speak to one of your centre halves, or especially in my case, you go like calm it down a bit, you're gonna end up hurting yourself. Kinda, it is, it's just past experiences.

Researcher: I don't know if any of these two here relate on the timeline but, have you had another experience out with that where a situation has just arisen out of the blue you noticed it and thought I need to action here?

Participant 3: Probably two, but it wasn't within games, it was two in Dublin actually. So we played the Friday we played, erm, we played Saturday morning and we had one player that was saying he was feeling erm tight but he's really mentally weak. So we said we would just take him out, you know it was getting to huge games, it was getting to the final erm and then there was another side to

that, which was [player], who's not very flexible. He actually reminds me, if there's ever a kid I've met that reminds me of myself its him. He's so tight in the hamstrings, and he was paying he was tight erm, although I kinda noticed it with both during the game, 1 was mentally weak, the other 1 is not mentally weak at all, but has really good awareness about things. So in both cases I've said well you're not playing. And they both wore tracksuits to the game, didn't kick a ball. It was more like I think it gives out a message to the rest of the squad as well. I think if you set that standard right away that helps you with less injuries as well, in a weird sort of well, but it could actually be the opposite, and you would get more injuries cause they wouldn't tell you? But certainly with me it's been very little injuries and that's because it's a sort of punishment, no it's not a punishment, I'm just looking after them. But it sets a precedence so the rest of them go, 'it's not really that bad'.

Researcher: Do you think at that age group it's a bit of a fashionable thing to be injured?

Participant 3: No I don't think there is, I think we've got a group, an honest group, we've got three or four of them, that are highly intelligent. So we have the likes of [player]'s home schooled, [player]'s really really academically bright, so I think in terms of that two for instance, they've got a really good self-awareness and they know they're body. And I think [player]'s background has really helped our group. I'm not sure if you've noticed but [player]'s obsessed with stretching. So he won't come into training and kick a ball, he'll spend 25 minutes doing stretches, you know it's that athletic mentality and I've noticed cause he's done so well, you see the other boys trying to do the same. Which kinda helps as well. But the winning mentality thing, we haven't lost in 18 games which is quite re[participant]able in academy football so that's helped as well. Cause absolutely like none of them want to miss a game. I've never had a squad, [player] got injured on Sunday there with that [points] he's the only one, and there was [player], who was out injured at the start of this 19-game run, and suddenly he was like 'oh I can play', and he was wanting to play every minute if the tournament and it's like 190 minutes in one day. He played every minute.

Researcher: Do you notice anything, or are you able to notice when you've got a player that's coming in that seems a bit mentally lower than normal, a bit quieter? Has there been a situation that has arisen in that sense, so not a physical risk of injury but more a mental or psychological?

Participant 3: Erm, I'm not sure. Maybe [participant] and that has touched on it, but I think that sometimes comes from the approach of the coach. I'm the type of coach that's always asking questions, in your face they probably hate me, 'how was school?, what subject was you doing?' so I'm creating a better mood I think or a better mental well-being. But because they know you care, kinda mentality and if you look at, certainly from me and [participant x], but me and [participant x] are quite the outgoing types so, none of that kids have really come across the door without me or [participant x] saying 'how was school, what's happening with this?' kinda thing. So I think, like, mentally wise I am, but again they've been winning games and we've got good players and we have two playing up all the time. So there's a bit of elitist about our group in terms of so, none of them are on borderlines, good feeling, good life, they're all running on a high. Whereas if you asked me that question last season with the group I had, probably there was

a lot of one to one conversation. I do one to ones with them every week, I do one to ones with, I try to roughly erm 6 one week and 7 the following week. It was the gaffer that inspired me to do that, he said you need to speak to your players, like you NEED to speak to them constantly, ask them how they are, it doesn't need to be about football either. So I took a bit of mantra from [psychologist] as well the psychologist, but I think coaches are on the same page, you probably don't realise it, but I probably know a lot about the players that you wouldn't expect, you know animals, what kind of food they like. [player] loves salmon! So that promotes good mental well-being does it?

Researcher: Definitely, and I think that's a good tactic to have. Is there any other kind of tactics that you would maybe use to get the job done efficiently?

Participant 3: I don't think there's much other than that. When I was at uni there was a big bit about people and organisation so like I'm a bit of a book worm, so like Stephen Owens books, the orange revolution, the 7 habits of highly effective people – I'm a reader so much. So the only people I can use that stuff on is the staff at work, so obviously I've got a big pool of staff at work, but obviously I use a lot of it on the kids. So a lot of it is keeping them motivated is it, it's that needs, the pyramid of needs, I've went through that making sure they're satisfied mentally with stuff like that I use.

Researcher: That's really interesting as it's a different approach from everyone else so far...

Participant 3: Cause I can even remember the very first year I started at Aberdeen, I mean I only graduated last year and now I'm doing my masters so I'm totally into people and organisations and how to motivate people, so I tend to find, not that I've ever written an assignment, but I do use it on the kids a lot, so looking at their needs and musts.

Researcher: you did mention earlier about using sports science and the information they give you and the stuff on sports office, so do you think that helps influence the decisions and stuff?

Participant 3: erm, a little bit, especially the sports science team. Like I, I just speak so highly, I'm probably the opposite to some folk, I think some people see them as time out their session. Whereas I'm the opposite, especially the relationship I've got with [sport science intern] last year and [sport science intern] the season before, the two of them were fantastic. So you do, I think sometimes you ask a question and you think, 'why the f*&ks he is asking me?' but it's just the different opinion. [Sport science intern] will tell you, the amount of times I've asked him 'what do you think about that kind of injury?' or 'what do you think about that kinda' 'do you know anything about that?'. yous are studying it yous are living it so yous are gonna be in a better place than me to try and judge stuff. And I think it's actually back to the people thing. It's you want to keep them self-motivated and kinda and... the last thing you want is them to basically laugh at you. So if you embrace them and embrace their information. Absolutely, sports office, nae so much. The only thing I would use that in terms of sports science is I would look at their testing. I use it for a lot of that.

Researcher: Another thing I want to talk about which I think every coach is used to daily is being able to improvise/see opportunities to do something a bit different, tell me about a situation that you've been caught off guard and you've had to improvise (in regard to a player's injury or injury risk).

Participant 3: That's every session. Cause you never know your numbers, cause as much as you go with 13, it's not unusual to find out one kids running late, or this kids so.... Without being very specific you do that every session. [Participant] phoned me before we went, and we were speaking about how much numbers we had. You've just got to adapt, I use the sports science a lot, I'll say to them I might need you, and that's I common thing I'll say, if someone gets injured 'could you step in?'. or you just adapt your session, you know if you're working on back four defending, then fine we'll change it to back three defending cause it's just manipulating how you do things. Attacking in one area, with one defender is always gonna be out the game, so okay you defend with three. So you do that all the time to be honest.

Researcher: So where do you think you've learned that from?

Participant 3: That's just absolutely experience. Aye definitely through trial and error through experience because you've been caught with your pants down at the very start and you go into a training session and think oh this is gonna be some session this, and then 'ohhh no' somethings happened, and probably the embarrassment that's came with, or feeling stressed. So no, all the time, I never go into a session I've got 12, I always go into a session thinking cause every coach works like this. Cause you go into a session and all you do is look at what could go wrong within your session. That's what I work by, what can go wrong in your session? Players not performing; having less players than expected; having less pitch size as expected which has been a big problem. So you're always as a coach you're looking at the.. people will see it as a negative mindset where as I see it as responding to issues. I definitely wouldn't be, they'll just be aside or wall player. If thought it was something as static as throwing a ball, but I don't even think it would happen then.

Researcher: How do you deal with a game situation that somebody that might be quite important and then they've had to pull out...

Participant 3: That's why you're coaching, that's the best thing about coaching, cause you, it's up to you then, its problem solving and there's nothing better. Like Sunday there, we won 19 games in a row, [player]'s suspended[player]'s injured - buzzing. Because you get the '[player] scores all the time' so this makes you think, well how good a coach am I? so it's a challenge, so it's actually the exciting bit. And somebody's out that's our main player, that's the excitement of it. And, the second things is obviously, you should have no excuses, but it's just the best challenge that moments that you're coaching for.

Researcher: How do you think somebody with less experience would deal with that?

Participant 3: Erm, not sure, could only harp back when I first went into the club and I was taking the team against hibs. And its weird cause over the weekend I done a game on the Saturday and Sunday and on the Saturday I was with [coach]

and he was very new as well. And then on the Sunday I was with [coach] who was brand new and both situations we had, so in the Saturday, [participant] was running the pitch which was 7aside and he had two players injured and [coach] was in panic stricken and I was like how goods this? So actual fact we're winning 3-1 and this is a different challenge. And then on the Sunday we had a kid called [player] big centre back, awful. He's doing really poorly in the game and [coach] and his feelings were just take him off. I was like no no, let's not take him off, let's put him in a different position. Maybe he's somebody that's just not that impactful there, and the performance and the results so that'd probably be two times of experience I've influenced somebody less experienced. But I think they do find it hard cause its stressful, but that's a lot to do with self-confidence, which I have my own-self-confidence with myself with I think is a good thing. And then I think the second element of that is if you're inexperienced of bracing a challenge you know so, so it's kinda like painting that different picture and saying to them well you can really embrace this challenge and challenge yourself here and just that learn in the bad time more than you learn in the good times.

Researcher: Do you think that comes and reflects from your working life or home life? Where do you think you've been able to learn to embrace challenges and see them as a positive?

Participant 3: Erm, probably my parents have been quite influential in my life. Dad being a very positive person, my mum being very academic and high-powered job in the police. So they've, they've given me that grounded and that foundations to start with and then it's been really important, I've always since I was about 16/17, looked to make sure that I have a mentor in my life. So like just now, I see Sweeny as a big mentor of mine. Erm, but I've always done that, from a young age so it was actually somebody that teaches me at school said, 'always make sure someone can teach you and mentor you'. Sweeny knows this, I've always shared, something that I've always said, so I've someone's my mentor, I want them to know that they're my mentor in life. So I've got them in my working life, so my director at work, he's my mentor there, and [coach]'s my mentor there. I think in life skills, my mums my mentor there like she's, you're mum and dad's your hero aren't they? So you learn off of them. So I think between them that's kinda been a big thing, mentoring. And plus I've came from boys' club, so boys club you're dealing with everything. Aberdeen's a luxury, you know boys club its parents, referees, so you've got to learn quickly.

Researcher: And do you let parents influence your decision on stuff?

Participant 3: No, no!

Researcher: How do you deal with that if they ever try to?

Participant 3: Erm, black and white to be honest with you. Cause the minute you say, 'it's in the best interests for your son', you know it's the terminology you use then and say 'well I think it's in the best interests for yourself, your son, myself. I want a fully fit [player], I don't want a [player] that's gonna be judged on a poor performance'. Terminology you use to the parents especially. I've got quite a good relationship with parents I think as well. [Researcher: Have you ever had a time where they've tried to really influence you though?] Aye you do, [scoffs], back at Banks of Dee all the time, and probably the first year I started at Aberdeen. Cause

you know everybody's wanting their bit aren't they, especially at this level. Parents want to know everything. Erm, you kinda got to not play them, you've got to manage them a bit as well. Certainly don't get into a conversation, I don't have massive conversations with them. I know them well enough that there needs to be a relationship with them, it has to be professional has it? You canna be 'coming out for a pint?'. But it's hard, because of the age of me, a lot of the parents are now people I've played with, been friends with. There's certainly been, there's a couple of them in just now, like I'm mates with them...?

Researcher: So the last thing I want to chat about is self-monitoring in, and how you feel you do that on yourself. Is there a situation that you've ever been in, with these injuries or other injuries, that you feel you could have done something better to provide a better outcome?

Participant 3: Not quite sure, I genuinely think the process is so tight, or the process I use is so tight that, I'm not sure if there's, its more the other way. Its more the, 'oh maybe I over-reacted', its more about that like, 'ugh, he actually could have played', erm, or 'maybe I should have let him train' kinda thing. Erm, probably [player], probably him to be honest with you.. Whereby I've been like 'no he doesn't train' and it's probably impacted on his mentality a bit, cause he is weaker. Erm, aye I would imagine there's only been one contributor to the overall goal, but because he was new to me at the time (aye this was a while ago, the first incident), cause he was new to me I didn't know the personality and the character. So sometimes you feel like if you're tougher with them, but you've also gone to think if he does get an injury they've got the physio, the club, the parents, they've got the actual individual let you down. So the risk and reward doesn't measure up at times. So you're better to be over-cautious than under cautious. That's probably the one thing I would say.

Researcher: Do you reflect on a day-to-day basis after a session, or after a week? And if you have noticed anything that you think you could have done a bit different, what do you then do?

Participant 3: Not very often, because it's not very often you've got an injury. Erm, and you do, you do, if you do get an injury its usually one of your best players at this age group because they play so many minutes. So you probably do self-reflect without sitting there going 'I'm self-reflecting' but you do probably go okay, well I probably need to, like [player] recently has been, his body is changing, it's not that he's got an injury, it's just that his body is changing so there's been times we've been like 'well he won't play for the 13s this weekend' or so that's probably times there's been a bit of self-reflection, 'we need to help this kid here', or 'we need to reduce his times' probably is the only kinda ones I've been involved.

Researcher: Nice, I think I'll let you go to training now!

Participant 3: [laughs] aye no bother, thanks very much!

Participant 4: MRes Interview Transcription Phase One

Researcher: So over the 6-weeks, this is your timeline with all the incidences you have put in, erm you've been very busy!

Participant 4: Aye! Speaking of which, [player] is off school today, and [player]'s mum has been in touch regards to where he is with his rehab. [Player], he's been fine, he's getting a bit of confidence cause he's laying quite well as well.

Researcher: So that timeline from when we started putting in the voice memos, until yesterday, does that all seem all right for you?

Participant 4: Aye that's all good, I put in a text one, now where the hell was it? Aye, [Edinburgh] so I was! Hampden for the graduation of the performance school lot. [proceeds to read over the timeline] ... aye so is that the second page?

Researcher: No, that's someone else's, so just make sure you're happy with it and everything's in correctly.

Participant 4: I tell you, if anything it is something now that you think 'och you alright, get up!', far you think, 'oh right hold on', having you guys there [sports science] was it last week? [player], phone call from [participant] – [player] is going to be at training tonight and then he'll decide from there if he is needing treatment on Thursday with the physio or not. I'm thinking – he's either injured or he's not injured you know? He came to training, and you know how kids think, he wasn't even managing [sport science intern]'s stuff, so I said the most you will do with me tonight is play in the wall of possession, that is the most you will do. And erm, ...

Researcher: so where do you make that decision from? What comes through your head when you're thinking?

Participant 4: Well I'm thinking, if he's not going to do that, the game's contact, if it's a drill there's no contact, but is he going to be able to move properly, cause in the drill, the intensity of the drill might be quicker than the intensity of the game, so although he's not under contact, there are other players, or he could be moving quicker and he won't be comfortable with that because, it was his ankle. So what had happened was the week before we had, he's came off, aye no [injury], he's just come off, he was actually playing quite well but we had to take two off, he came off, 15 minutes into the second half we put him back on, within 5 minutes he's signalling to us, and I'm going 'oh, what's wrong with him?'. He said 'vie rolled my ankle, aye just rolled it. So, wasn't a pull or anything, so I said to him straight away, well that's the Saturday DO NOT come on Monday, come on Tuesday IF, by that time we'll have booked erm, treatment. And, no he's definitely coming to training, and I'm thinking oh well he maybe he is feeling better, but I saw with his lack of movement and he pulled out of some of the stuff [sport science intern] was doing, [sports science intern] was doing something where they were racing each other through cones and back through so, I said no, that's all I'm thinking – you're not going to be able to do half the stuff. And I think we were quite, pressing high or something so they need to be snapping and I'm thinking that's not going to do him any good at all. And he did go on a wall cause we played a, that was the

theme, we had our games, it was two teams on and one team off he was a wall player, but it was very limited, and I felt, I actually said to him, you need to see the physio. I'm making your mind up kind of for you, as in you need to see the physio to tell your mum and dad that as well.

Researcher: And why did you do make that decision for him?

Participant 4: because I think they're kids at that age and they'll just roll it onto the next day, cause its now Monday/Tuesday, so he had a day's rest Wednesday, but I thought its two weeks the physio is saying so, I think I was right [laughs]. We've got one with [player] that's a hard one, it's a hip flexor problem, and we're at the stage with the physio, and ay, you guys, that he just stops when he feels it, but that doesn't mean to say he's pulled up again or he's injured, or he needs treatment again. Eh, I haven't said this, it could be actor? Because he's playing 90 minutes on the grass, you know our games have been on grass, no Hamilton was actor, but the last Hibs....? Hibs was his first game back, so we really couldn't count that, but we've been on grass more, so he seems to be playing 90 minutes and managing that, but sometimes at training enough enough and he just comes off and you're always 'you alright?', and he's like 'no I'm fine, I'm just feeling it'....

Researcher: And what do you do in that situation?

Participant 4: Just leave him, aye. Erm, I think you just judge if they're at it or if they're not at it. He wouldn't be, they're not the strongest of squads, and they've gotten better, and training intensity has been great for the last month. Now the first week of that [participant] wasn't there, I phoned [participant] - 'trainings been great' - now of course we're beat on the Saturday from inverness, and I said I canna praise yous enough for how hard yous have worked at training. So the following week, training again, temp was great, and we've went on a run since then. So training's been good, everybody's on the ball and 'at it'. Erm, which we, we're now getting our rewards on the pitch in the games so everybody's wanting to play, everybody's wanting to train. I mean, Saturday we beat Hearts 6-1, no [player], no big [player], no [player], no [player], no [player], 5 out! Erm, even, not out as in [player]'s playing up, he's playing 16s; [player]'s broke his elbow; erm, [player] is under the physio's.. That was a I can't think if it was his knee or ankle. That's, he's, we're well up to date his mum and dad are very good, so we're in the loop we're well up to date, we know exactly what's happening with Owen. Erm, so no, they're all desperate to play, so that's a healthy week as well.

Researcher: Do you feel as well you have a number of players are injured or playing up, how you do you look at that situation and think I need to adapt to this? Do you think differently?

Participant 4: There's a thing there right, [player] been up the last two weeks, now it's our centre back that out, right, so we've switched [player] to the other side so play [player], (there's an ending to this story) to play [player] and put [player] from right back so he's in there with [player]. None of the two of them are centre backs, [player]'s a right back, [player]'s been a striker, so we've just moved him back there. Now, we had a situation on Saturday where the subs are [player], and [player] - two strikers. [player] tells us, [player] comes off at half time, tight quads, and he's also got Sunday to play as well. Right so, that is 'right okay', cause [player] wasn't coming off, someone else was coming off, so we're originally plan

was [player] knows where he's going, but we've to change it on that spot so let [participant] speak to them, I'll now think out in my head. [participant]'s quite comfortable with that, I'll make changes and think out in my head. And to keep it simple all we did was play [player] right back and play him on there. If it was a problem we would have just adjusted it, so that was a split second: we've got an injury or a tightness in one of their muscles, we've got to get him off cause he's due to play tomorrow, so we didn't even consult the physio at that point. We didn't even go to the physio – off, cause you're due to play tomorrow. He played 90 minutes yesterday, so it obviously loosened off and he didn't look too bad.

Researcher: So do you feel like that's what a main 'why' factor as to why you make that decisions?

Participant 4: Because they're playing the next day aye, because you're putting pressure on [participant] and [participant] cause they're down to bare bones as well. Erm, they had two subs [player] saying he's tight, [player]'s yet to go on, if he pulls up, they're then on the phone to the younger ones who are playing the Saturday as well so, there's a bit of juggling, I think you just go with your, I don't like using the word experience but you go with your head and say right, [player]'s got to come off and then we just said [player] you go and play there.

Researcher: When do you think is the best time to make those decisions?

Participant 4: well we never got time there, we never got a chance. That just had to be done, that was half time it was walking off the pitch, [player] comes to me 'oh my quads are tight', 'oh f*&k, you're due to be playing tomorrow', if it hadn't been he was due to play tomorrow it would have been seen the physio, what does the physio think? You've got that option, but I, we weren't doing that because of the situation. Would you do that with different situations? You probably would, I had one game when we were here on a Saturday, physio had a look is he okay or is he not okay to go on? I don't know how they work to tightness; do they take them off for that or do they stretch it out first and see if it feels any.. so... [player]'s been a delicate one because it's been a heel injury, ken he gets pain in his heels cause we're training on actor three times a week. So it doesn't matter what padding you've got, again you're trusting him. Which you sometimes can't, so you're shouting at him at Balgownie cause he's wellying balls all over the park. Then when it comes to do the warm up to get us going for the night (cause they're there at half 5 cause they've come off the bus) he now can't train...

Researcher: And how do you deal with that?

Participant 4: I was going absolutely mental [laughs] that was a telling off! That was you and [player] have been kicking balls for 30 minutes, you must have been in some sort of discomfort because it's a pain, it's not a pull. You haven't gone and pulled something two seconds ago, you've been kicking that ball cause I was watching as I was setting up. So again it's trying to be a responsible...

Researcher: But that's actually part of expertise, that's looking into the past and the future and using your knowledge...

Participant 4: See their age, see the younger ones? Their muscles are not developed, so there's a difference when you're 10-year-old between a knock and

an injury. Cause they may have a cry and it's a knock, an injury could be, is there muscle not developed... Dublin in the final against Celtic. [player] and the boy go for the boy and its shin on shin and the boys' a sturdy kinda.. and they both go down. And I know what's going through both their minds – they don't want to come off as it's the final – and its, it's not a leg breaker but its shin on shin, BANG and they both go down. So he gets up, off to the side of the pitch, physio treats him, back on and the first thing he's got to do is go and close somebody down and he goes and sprints 100mph and closes him down and the next thing you see on the camera is he's flat out on the ground again in absolute agony. Emotion, tears everything. Err, so that was to me that was adrenaline that was going there 'I'm not coming off', and the impact of the injury after the sprint was like 'half on a minute here, this is not right here', so again I mean that was [participant] and that's job, he had to come off. So that was just me watching erm...

Researcher: but you must notice things like that, you've seen various....

Participant 4: Aye you know what's a.. you probably if you watch games it's a, sometimes you know, sometimes you've got it wrong, I thought a boy hurt his knee and his arm was like that, snapped his arm. He ran off the pitch, mind I told you, what do you do with that? I'm trying to get in amongst the parents to see him. Its buckled, erm, who else...

Researcher: Yeah so, basically you can take this as a whole [timeline], when you look at a player and you one is in pain or tightness and you've put him to sport scientist, you must have a process you go through in your mind to think that you've either seen this player before or not having that same injury do if I do this how will it impact the future?

Participant 4: I would say size of the person, I'm thinking to myself what's sore? How is it sore? Right okay, is that you haven't warmed up properly, or is that you're feeling everything at the moment. I think as well, it's well documented in injuries if you get injured and you're on your way back how many times does something else go wrong? I think it's your body hasn't been used for a while and now it's going back in to something it's not been doing. And I think there's a good chance the injury you've had that bits perfect cause you've done so much rehab that bits right..

Researcher: Do you think there's a point where you have to think, 'I need to think of this player long term future'?

Participant 4: Aye! Not so much, we went through a crazy spell, probably cause it was just coming out at the time of Osgoods, players with one leg, two legs, parents standing with ice packs at the side of training waiting for them to come on and get them both on. Kids that, [physio] at the time was along the lines of 'keep going as long as you can go'. Erm, some kids could, some kids couldn't, couldn't erm, and that was you thinking long-term there. I spoke to Ryan jack actually at the Christmas party one year and he just came back from injury. He's broke both feet, bones in both feet and it was an interesting thing he said, the surgeon said to him he'd never seen bones so worn in somebody of his age and that, do you think then, is that actor? Wear and tear, probably the astro Ryan Jack was playing on certainly won't be the astro we're playing on now. Keith Park where it was the hockey style kind of pitches so it solid all the time. I'm parked in that car park over there and

it's absolutely slogging and soft and I played over there and that's okay. Where these pitches maybe didn't.]

Researcher: So do you think having all that experience back then with the physios coming through and saying, 'I'll use this method or that method', do you use that knowledge to make decisions now?

Participant 4: aye probably, probably think back the way rather than... I'm trying to think what I did back then. It's very difficult, see trying to and I don't mean push a kid, but we've got a nature that the players are soft right so, how do you, your judgement of what's a knock and what's an injury... its hardy, it's really really hard that question. I do think I look back, I do think, right to me when the kids injured, I know he's not going back on, that's impos... he is not... I remember we had a boy [player], we played him in the festival final, we lost to actually Seaton park and he has, there was no fracture, but he has stubbed the big toe and we've said to him... only chance you've got is to have your foot in a bucket of ice for the next whatever and he followed that to a tee. Played in the final, [participant]e the penalty away and we lost in the final! But that was watching a 14/15-year-old that would come into my mind actually. We've said to him to do something, the physio's said to him to do something and he followed that to the tee, and to his credit he made that final without doing any more damage and you know I dunno, if people take that different and think that's irresponsible, you shouldn't have put him in that positions.

Researcher: That's your decisions based on what you know with your experience.

Participant 4: I would say everything on there [timeline] has been pretty straight forward. Is there one you've thought 'oh how's he dealt with that?'

Researcher: I think it depends, there you've got a head knock, and especially when it's the first incidence for that player of an injury. So the players come up to you the first time...

Participant 4: [player]'s one is a wee bit like that, cause [player]'s quiet, he can be sulky, he needs an arm round the shoulder at times. Mum and dads' split up so it's a bit a bit of a hard last 6-month.

Researcher: But that kind of things is what we want to be recording as well. So if there is emotional issues that are going on at home that can impact their training...

Participant 4: To be honest [researcher], it was maybe just before this started. I mean he's never not been able to train because of... now, I've been got a wee advantage here cause I'm at Hazlehead, so a lot of that issues I knew through being at Hazlehead with [coach], who's obviously dealing with his mum. We've never had to deal with his mum about that. erm, so if I wasn't at Hazlehead I wouldn't know these things. Erm...

Researcher: But what do you do when you are told that? How do you deal with that situation?

Participant 4: Aye that's what I was thinking... we had a kid years and years ago and then his mum died... but fortunately his dad was a really really proper gentleman, erm, you know the kid was going through enough without putting that on top. Erm, I've had two sets of parents swap over [laughs]... I've had a parent who I knew things were happening, and I knew that the staff was full time staff, knew about another set of parents so when he started telling me about his lot it wasn't until the punchline at the end and I thought oh I'm not speaking about the same person as you... and he was like 'oh!' so there was obviously two..... couldn't get a hold of a parent for three days. [Coach] finally got a hold of him, phoned me, you know why you haven't been able to get a hold of him for three days? Cause he's been with another parent! And that kid went on to make it so I'm not going to name names! Erm, so how do you deal with kids emotions with that? it's hard... basic things like grandparents dying and things like that, you'll find an arm around the shoulder with that definitely! Erm...

Researcher: When something like that does come about do you feel there's a way you have of dealing with that?

Participant 4: Speak to parents, speak to parents. How do you think, do you want to go in just as though nothing is wrong? Do you want us to say 'look we do know'? Erm, I think again that's just the parent...

Researcher: So you just drive it off of what the parent says?

Participant 4: Aye... if something like that definitely. Emotional ones aye, are you saying to the parent 'this is the way I'm thinking of approaching this cause I think he's strong enough'... somebody could be having a bad game, and if you go in heavy he is gonna crumble, and he's as well standing beside you were. If he's okay, speak with us, you could probably go over the line in those days, you knew. You knew who you would get that kind of response. There hasn't been much I'm trying to think. [player] obviously, his dads drunk for a while so there's a been a few... well obviously the goal keepers went from being a left back to a goal keeper. Erm, he's been okay, I think he's quite strong, aye nae saying anything about his ability, but I'm saying I think he's, he's managed that, aye mentally. [player], this could be one, sometimes [participant] gives [player] a hard time, but his date of birth shows up and that's always in the back of my mind. His month of birth is the twelve month. So he's actually days away from being [player]'s age, but he's playing 16s. but everybody's just saying 'ah but he's a 15 playing 16s', he is! But you're speaking about days here! We've got the scope to put a player back down cause of growth and development, we're putting a 12month up and I would think he would be a thinker. [player], oh tough, tough, tough is not, he came to Ireland with us last year, but again it's a psychology thing that is me getting a hard time playing with us but he's playing up. Eh, the one that we could have included in there is [player]. [player]'s dad is going through treatment for cancer. Now, [player] was absolutely flying at the beginning of the season, I don't think you could call that a dip, because I think he was so good, he just levelled out more than anything else. Eh, his dads now came to the last few games, we weren't at the rangers game cause we were in Dublin, but his dad was there, didn't look very well, but we've seen him the last two weekends and, ach I went in with two feet on Saturday. I'd obviously taken [player], and [player] arrives, and erm, I had said to the two of them were speaking, and I had a word with [player], 'how's your dad coming on?', and he said 'oh he had a setback this week', and of course my

heart dropped! He says he went to a rock concert on Wednesday night and I don't think he should have! Down in Glasgow, so we just tried to make humour of it, but at that point I was like 'for god sake' what have I just said then? But he's been very good, he's showed no signs of bother, he's done really well. [Participant] said on Saturday on the touchline, he was so good he scored three and our day, if that had been, if Alex Ferguson he would have said take him off and put him on the bench, just because of how good he'd been. Erm, so that's one that maybe, but he's been fine, so you know there's been no, we have got 5 boys we've got in with [psychologist]. That's away from that? Right okay...

Researcher: Yeah they might be going to him and opening up to him about stuff that might be affecting their training which is fine, which hopefully at the end all these things can tie in together.

Participant 4: Here's a question, [player]'s played up a few times the last couple of weeks as well, I'm trying to think if our injuries.... No [player] with the hip flexor, [player] no, [player]'s been up and down a few times and [player]'s been up and down a few times. [player]'s been up and down, [player] did have both... [player] had a lot of football. He must be on minutes because we obviously had the tournament in Den[participant], where you were lucky if you were getting him off. He's a very fit boy don't get me wrong. But he would be a, I think his minutes will be very high because he sometimes played up cause he tends to come off in games.

Researcher: So what do you do in that situation and why do you make that decision?

Participant 4: well he's travelling quite a bit so we'll give him time off. Sometimes we'll say to him not to come in to save mum and dads' petrol as well and it will give them a wee rest from it as well. Especially if he's played Saturday and Sunday, there would definitely be a night off during the week. And I know people will think 'ah but they're kids', but it's the travelling! I think Fraserburgh, Peterhead, old Meldrum, three nights a week sitting in the car, yes getting their getting exercise when they get out there, but by the third night if he's mentally drained and drained [physically] I think, going on his bike with his mates it will be the same exercise or the same intensity of what he would... so again when they're going through a purple patch, they feel as though they can fly. Doesn't matter how many nights they come in. erm, I'm trying to think about [player]'s, I'm sure [player]'s said to me... is there a pattern here, a week later tight quads. Then it was to his groin. So it was the quad first...

Researcher: So with you looking at that timeline, what are you doing in your head, noticing a pattern there?

Participant 4: Aye aye, I'm trying to thinking, quad – groin, well this is somewhere high, is that movement with the hips and eh, a bit of yoga? Loosen him off a bit. I don't know if it's cause you've got kids yourself, I sometimes think do we over think its cause they're growing but at the same time it feels as though it maybe is. How much do you think like that?

Researcher: Again it comes down to the knowledge of the player. We've obviously got the data to show us, but then you can also match up and say... cause you

know what symptoms you should be looking for, so maybe his player should be feeling potential pain around knee joints or heels etc, but we measure so we can visibly see a difference. So it's a lot easier for us to see that injuries and maybe why that injuries are occurring. But it's to find out where you guys take your information from and notice things. Cause you guys are the experts, you guys know these players, you coach all the time...

Participant 4: Aye we're seeing them the most... [Researcher: seeing them the most yeah, you know you have seen other things in the past in your career when you've coached other players and seen other things so, my purpose here is to try and find out why you're making the decisions, what decisions you're making and why you're making them, when you're making them, Is it the most beneficial times? Are you...

Participant 4: see the other coaches you've spoke to, [Researcher: just dew just now], will there be a pattern.. Right this is just a question... will there be a pattern if they're a parent?

Researcher: this is the thing, so a lot of things dew was coming from is because he's been an ex-player, so he feels he's seeing different things. I remembered when I interviewed you before you spoke about life skills through being a parent. There will be different patterns from everyone but that's the point is to find those different patterns, to say right [participant] has been an ex-player, so he's taken a lot of his decisions cause he's been through a lot of these things physically as well. You're taking your decisions, you're knowledge pool up here that you're pulling decisions from is because you've maybe seen it happen with your kids, and again you've got that experience and that knowledge that that's how this turns out, that's what happened with my kid and he turned out ok so if I do it with this player he's gonna turn out alright as well. And that's where I want to find out is that why you're making that decision, you know what's influencing what you do with your players. Do you feel that that comes from, a lot of your decision-making?

Participant 4: Aye, aye, I wouldn't say, I mean I've been stopped playing for far too long now, so I wouldn't think anything of mine comes from there. I mean it's completely changed now. The dynamics of playing football has completely changed, so, I would take it all from... I always remember when I first came in, I think I said this to you the last time, that I think I've got a great grounding, cause there wasn't so many teams, and I picked up cones and bibs for six months, on trial sort of thing. You just watch, and I just watched both Drew and Chick who had played for Aberdeen, Aberdeen's second top scorer of all time. Erm, and at first team level management, then became in charge of the 20s, then became the academy, chick was there as well. The coach I worked with had been a junior manager at a young age, think he was 26/27 cause of injury when he stopped playing, so I had watched and listened, aye footballing wise as well, nothing to do with thinking injury or anything. Erm, or growth or, we really didn't know anything about it. So my kids were born then, Lucy was probably born round about then. But I think I had got, nae so much recently, but maybe 8/10 years ago, you'd come in as a go, address your team and go. Whereas I always thought I was quite lucky and I just watched everything, and occasionally during that 6 months I would take a session. And dew as well to be fair, I think, players that have come from the highest level, are quite open about it and they're saying 'I'm starting from

absolute scratch here' cause its completely different now you're on this side. You're giving the bibs out, you're giving the balls out, you're having to have it all organised. So mine would definitely come from whether its right or wrong, it would be, you make mistakes as well, Jesus Christ, erm, nae recently, but I hope we didn't get it in the next couple of weeks- hypothermia ones. So took parent into the changing room, and sometimes I've been there with the kid and it makes them feel a bit better. [long pause] ... what are you thinking when I make a decision about a 12-year-old and a 15-year-old, and I've made the same decision.

Researcher: I'm not making judgement on it, I'm not making judgment on it at all, I just want to know why you're making those decisions. There will be different patterns, and I want to see different patterns from everyone, because everyone's all come from different backgrounds. So it's finding out where that information comes from.

Participant 4: So you've got a situation with two coaches, I'm thinking here me and [participant] are roughly the same age, probably 5 year between us. Would my decision be different with being a younger coach, but he's maybe got a better view than me, and I'm thinking back the way and its maybe not right.

Researcher: but it's not necessarily to say it's not right, it's what you feel is the best decision for your players at that time and that incident when its happened. And its where that information's coming from. There's always a reason why you've made a decision, so it's what reason that you've made that decision?

Participant 4: I'm thinking have I changed my mind after I've thought about something? The day I'm texting [player]'s mum back and forth, texting her back and forth, [looks through texts] you see I think I changed my mind during this. [Reads out text] ... so I'm sitting in my car being a taxi driver, but I've now switched on the coaches head. The first thing I've done is went back to his report from the physio. [Reads out further texts] ... and this is where I think I've got confused [reads out another text] ... now, I think I shouldn't have text her back then and went right to the physio, because I've said do one session a day blah blab blah, and the physio was 'he's doing really well, he's made a plan for him, sports science team are doing running with him, if he's doing well he can train'. Now to me forget Hazlehead, all he's doing is going with sports science until he's ready for the next stage. Now I maybe should have went to the physio in the first place when I got the first text. So that was this morning. Instinct....

Researcher: so the next thing I want to chat about it opportunities and improvisation, being caught off guard, now what do I do? What's my next move, how do I make a decision to protect that player... [Participant 4: see in that situation (points to [player]'s incident on timeline), he made that decision] yeah sometimes that will also happen, so it's then its why did you let that happen, did you agree or disagree and why?

Participant 4: again, I would say there's a bit of personality with the kid [player] would not come off with a rolled ankle unless he thought he thought it was a problem so bad he couldn't go on. I tell you, again this is something else, you dinna think at the time that this has happened on the couple of occasions, I would ask the player themselves how they are feeling. We have a player that's sometimes sick before the games... pure water. Don't think if he, don't know if he takes intake

before the start of the game, aye it's at the side of the game and its [mimics sickness], and it's all water, there is no food at all coming up.

Researcher: do you think that's a nervous thing?

Participant 4: could be. it just happened, cause the week before I had come to the bus and he was eating a chicken pie, aye a pastry one and I was like [double takes], [player]? Is that a chicken pie? I would be very surprised if it was something like that (eating disorder), but it's happened more than on one occasion. And then in saying that you do get people that don't travel well. His brother [player] was horrendous. When we used to use the mini-buses we used to have boys that would sit on the front that were poor travelled.

Researcher: and that's another thing, being able to use the resources around you to make quick and effective decisions so you don't waste time... so you're thinking you know you've got [player] on a growth spurt right now, so what am I gonna do to make quick ad effective decisions?

Participant 4: see, sometimes that can be hard as well cause sometimes that's taken out of your control. And you're down to 11 players and you're sitting there with a player on there that you know is also going to struggle for the last 20 minutes or whatever... so looking at the big picture here, thinking 'what the hell am I going to do here?', erm, two games in one day. you know when you go to tournaments (Dublin), they had a problem, [player] was tight and [player], they both had a bit of a.. but to be fair to them they had two injuries and I mean it at that point with a parents head on, I thought he would have maybe got a rest that afternoon, cause it's pretty tough going playing all day and he'd been on pretty much all game. But eh, they're priority there would be that there was somebody actually feeling tight there, the boy that was playing, wasn't grumbling or anything so you're letting the kid erm, you're letting the kid really lead. He's playing, he's happy let him get on with it sort of thing. We've got players like that as well.

Researcher: Do you feel that you use things around you, physio information or information from sports science? And do you think that influences the decisions you make?

Participant 4: aye I would take that on board. I wouldn't squeeze any more out (of the player) of what they recommend? I don't agree with that. I think that's going against the, I think you would be selfish there, thinking of the game or whatever Which you do, you do get caught up on it. You want to, especially with tournaments, which we probably don't do enough of. You might get a surprise when you play against other teams in other countries that eh, that you think they do everything by the book and they don't. They do everything in their power to make sure they win the game at the end of the day, we've been guilty of that. We try and do things proper. Erm, again the question being long-term is it affecting the player or the kid or whatever. I'm old school sometimes and I think it doesn't. I think it doesn't harm them any to, play that extra bit. I'm just thinking of inhalers and things like that. Just cause recently, we've had a lot of different physios. We've just said to him, we're quite happy if they're happy, they dinna tend to give you their inhaler. They tend to want it beside their water bottles so they know exactly where it is if they've got a problem. And I'm happy with that, I think it saves us worrying about in our pockets trying to find it when you're trying to do a million

things at once. The majority, cause they're so use to, it'll change as they get older, but putting their bottle down and their jumper down and they know the comfort of the inhaler being there and [player] can use it at times, [player]'s got one, [player]'s got one. There's a few at the minute. So my decision there is, I'm happy that they're happy. They're not going to change that. It's a mental thing for them that allows them to still conform.

Researcher: okay I think that's everything we need to cover for today! Thank you very much for your time today.

Participant 4: No problem at all, thanks for that!

Participant 5: MRes Interview Transcription Phase One

Researcher: How did you find the 6-weeks? Did you enjoy putting in the memos?

Participant 5: Aye, it was good, it was no problem, it was good that your prompted, I think you need to do that.

Researcher: definitely...

Participant 5: it would be interesting to see if there's any trends or anything coming out..

Researcher: Yeah well that's the thing, the sheet that I've got on my excel on my laptop for recording it all, you can filter to see the different injuries you've got coming through, you can see the amount of times a certain athlete has had the same sort of, or different injuries. You can see how many a certain squad has got each, injury wise, you can see a lot of different variables from it which is good. And then I'm kinda hoping that it will tie into what we do with our RPE etc, and the wellness and stuff. Its worked really well so far, I think people putting in the voice memos, apart from 14s have had hardly anything, the 14s have had three things throughout the whole 6-weeks [laughs]. So [participant] and.... [Participant 5: is that definite that there's not anything?] no well they haven't put anything else in, but when I spoke to [participant] yesterday little things would come up, I would tell him 'that's what you could have put in', yeah so... like in the tournament they were away to, that they won where they beat Celtic, [participant] said at one point in the changing rooms, right remember we have a physio here, if anyone's feeling anything it doesn't mean that you're not playing tomorrow, you have all of tonight and tomorrow morning to see the physio and a few of them started coming out with things, and I think that's what you're finding as well. Cause the diaries that the 15s and 16s are doing the weekend are coming back and they're saying, oh this was sore, but I didn't say because I didn't want to be pulled cause I want to play at the weekend. Or they didn't think it would be bad enough it say. So it's getting that education and that confidence into the players at the same time to be able to turn round... [Participant 5: I suppose that the player needs to know their body and what work... 'I can just get on with it and what is, this could maybe do something]. Yeah definitely, and I think sometimes as well it can go the other way, some players might just think 'no its fine, I'll play through, I'll play through' where actually they should sit out...

Participant 5: [player] is one of that boys..

Researcher: yeah he's been into S&C, but I think now he's seen the physio has he? And he's been pulled for a couple of weeks so, but yeah that's everything that we'll talk about today, so how, why and what factors like that that influence your decision-making and stuff. So there's obviously been things, this is your timeline from over the 6-weeks collated. Erm, so just have a read through and make sure you remember all the incidences. So make sure you're happy with them all, as we'll talk about them, and if anything else has popped up during that 6-weeks or around that [participant] let me know and we can add that in and talk about that too.

[Reads through to verify timeline].

Participant 5: Do we have [player]? Cause he's done something else now...

Researcher: Unless that it was [participant] that put it in, cause if it was him that's put it in, then it will be on his timeline not yours. But yeah we can chat about that too if you're involved in that.

[searches for [player] incidence on other coaches' timeline to verify with Participant 5]

Researcher: Erm, yeah [player] there 'tight calf'...

Participant 5: He seems to have more than me now, is that because a lot of injuries are at Cove, or are they happy to go to [participant] and say, 'I've got a something' and not me?

Researcher: That is completely dependent, I think there'll be a mix... cause do you guys take training together all the time, or do you take them individually sometimes? Cause that could be it too, it could be happening when [participant] is there himself so obviously he'll be putting them in.

Participant 5: We might be together on a Monday, might be together on a Thursday, but maybe not. It just depends.

Researcher: So that could be a factor yeah, so they've went more to [participant] just because he's maybe there on his own at the times they have happened. Yeah so, I just want to chat to you about the decisions you're making around these injuries or risks of injury throughout training and matches, and if there's anything that pops up in your head that's also happened then just chat away about that. But I want to find out where the information is coming from and why you're making those sorts of decisions around the players. So obviously there's been situations here that have popped up throughout the 6-weeks so, tell me about one of the situations that have happened, what goes through your head making those decisions and what do you think about when you see these things happen.

Participant 5: [player] was limping a little bit, erm, and then he'd just came to myself and said, 'my calf's sore' and then his mum came up to me after and said 'oh, he hasn't wanted to tell you, he's had it for ages. Erm he's just carried on with it', and and eh then he hadn't played at the weekend, now, it's September, just trying to think when [participant] was, so obviously he'd seen [participant], [verifies on [participant]'s timeline and compares to his] aye so I dunno where, cause [player]'s he was out, I dunno if it was the tight calf or the thigh, or was that prior to that? [Researcher: Could have been prior if it's not there] ...

Researcher: So do you take that information, so if he's been out before, do you think about what's happened in the past?

Participant 5: I think you need to, just, you know it could be you could see the impact at training, it could have been you seen him limping and you know, you need to find out if he's done something, has it been a knock, has it been a kick in the back of the calf, or is it something that's came on, or is it something that's

bothering you? Erm, I think you need, it's not just one scenario, I don't think you would actually look at a kid and think... I mean if it was younger ones and there was somebody down injured for example, I, I never go on right away. I almost ignore them, if I'm being honest, erm, because I've seen so many times, erm, nobodies been, and then the next minute there, the ball comes to then and they're up and they're running about, and they don't even mention that they've had a knock or anything. So I think we need to be careful that we're not just, everything that's an injury, especially with the young kids, erm but I think that as a they're getting older their bodies are developing I think we need to be aware of, erm, growth, development, [player] – aches and pains, managing him you know when he's going through growth spurt. You know [player]'s had a spell, but I think we've managed him very well since, sort of January time when he was getting his heels, 'oh it's my knees are really sore I can't train, oh it's my heels', coming out of the training, getting him back slowly, he even come to me on eh, what day was it? 'I feel the knee a bit, but it's not as bad as it was' so he just [participant]e a sort of heap of information. So I think it's, I think every case is individual, and its, I think every injury as though its maybe, you can tell it's a pulled muscle or a something. I don't think...

Researcher: Do you take into account the future of that potential player, and again it's probably depends on age, but do you think, this player has got good potential we need to be more careful of him?

Participant 5: I would say so yeah... [Researcher: have you had any experiences of that within the academy recently?] not recently, but I'm sure there was some where again it was growth and stuff like that, aches and pains, you're almost managing this player to you know. In fact, yeah I know exactly who it was – Connor McLennan – there was so many times where he had to come out, 'my knees', 'sore legs', sore everything, and it was just a case of well, right back to two nights a week training just to get you back into it, manage your game time. There was a lot of that going on for about 2 years with Connor McLennan, and then when he came in it didn't stop.

Researcher: At that point, you know experts can be seen to look at the bigger picture of something. Do you think it's important to have a plan of attack? What factors influence that?

Participant 5: Definitely, 100%. Well I eh, I'm glad that the club have seen sense with Connor, erm, because he was up, sore hamstring, sore hamstring, sore... you know. And then they actually decided to investigate and manage and have a plan for this player, rather than 'oh he's f*&king injured again, ache waste of time, soft as s*\$e, instead they noticed 'oh he's actually got a disc problem here' a bulging disc. You know his nerve root problem, they've [participant]e him an injection into that area. Touch wood apart from, you ca help it, if you break your collar bone, but now it's, 'oh no wonder he was feeling that, and feeling less' rather than just blank it. Typical coaches 'just soft, there's nothing wrong with him', so I'm hopeful with the new eh, physio team and medical team that they are more modern thinking. And will have a plan and also because things are better in the academy in terms, well the physio is different class now. I'm not saying anything against [former physio], but, you know it's more professional, you know his input, aye the input he has with the people and then the information you're getting about how his injury, how we'll manage it, how long he'll be, how long he'll be doing the

exercises. I mean that's there forever. So when you come a professional.. 'let's look, ah a wee bit of ankle problem before, maybe we didn't build that up enough at times.' So I think going forward we'll be in a better position, and if any of these boys go full time, to know their medical history. How we managed it and obviously some of your input as well I'm sure. You know, how we could stop some of the potential injuries. See I'm also wondering now whether the load is a bit more now. Because we always used to train on a third of a pitch, or a quarter of a pitch. Distances are littler, there's no the same intensity. Maybe there is short and sharp, but the bigger area you're actually, there's maybe different muscles now, you've to open up your legs a bit further. Erm, from a coaching perspective, and a development perspective the half pitches now I think are helping so much.

Researcher: do you think that actually having a new facility is something you take into consideration when you're looking at a plan for a certain player?

Participant 5: In terms of? Coaching or? Yeah.. well I think [player] has been the perfect cause where right 'you be the wall player' right come in for this session, right come in for 20 minutes, right come out, right or, just you're doing the warm up then a bit of technical then you'll maybe get a wee 10 minutes of the game or. That was managed well.

Researcher: where has that sort of learned, where has that come from?

Participant 5: Erm, a bit of everything, I mean again you're getting information from the physio, its filtering down, you know we need to manage this player. Erm, and yeah, I think you just manage your session accordingly, you know if you're one down, you just have a floating player. It's not a double up, next players a floater, and you just manage it.

Researcher: and I guess that comes from you coaching that for years and you; earning and adapting to what works best?

Participant 5: It's pretty, for example last Thursday, I had, a session ready for 12, and then ended up with 9.. so it was like right that can go, right I need to do something else. I then tell the goalies 'could you get the curtain up' for the next bit of the session. Then realising this curtain not coming up, so now I couldn't do the next part of the session, so I said to.. [sport science intern] it might have been or [sport science intern]. Could you look after them for 5 minutes cause I need to go and get this curtain up. You know silly wee things like that.

Researcher: So that's another thing I want to chat about is the ability to adapt and improvise in environments like that and seeing an opportunity to do something different. I'm sure you've come across a lot of that, so just chat to me about that and why you think you're able to do that.

Participant 5: again just experience, I think being able to quickly move into another activity erm, with the players you've got, a boy goes down, so you go into a floating player; take the area in a bit, you're maybe going both ways for an exercise – right we just go one way now cause we just add in maybe an extra pass to a player you know so you're adapting that. it's just I'm not saying, it's just cause I've done it for so long you can just go in and change it at the last minute. You've got a something up your sleeve that you can just throw in.

Researcher: How do you deal with a situation where you've maybe been in a game and someone maybe central to your team maybe pulls up with an injury and you're caught off guard a bit?

Participant 5: I mean you just have to utilise, for example at the weekend the front 6 was doing so well you're looking at [player] on the bench, who's a midfielder/front player, and then [player], at half time said 'I'm not going to be able to participate', so right off you come, [player] you go to right back and see how you get on there. And you just give them that you know, look it's an opportunity for you, see how you do, it's something new for you, go and do your best. And you just give them a bit of information, or you just have to move players about. Change your formation if you have to.

Researcher: How do you know that that was the right decision to take [player] off, is that due to knowing your players or?

Participant 5: We knew that he had a game, he would have been playing 90 minutes the next day, so we were always taking him off after 60, erm, it just happened that he came off at half time and for that situation, but at his, It is extremely difficult when you're prompting your players at 45 minutes and it's been an exceptional performance and you've got to take somebody off and you know but we managed it, I thought we managed that bit well erm, who's the other ones [looks at timeline]... [player] who come on, he was just out we explained that 'you're here as cover, you might get a bit of game time' erm, fully explained before it wasn't like come long and what a waste of time. And I think he got 25 minutes and he had a very good, he made an impact. He came away from there feeling really good about himself and at the game on the Sunday, and that's how you're trying to promote the young players, make them feel part of it and hopefully they've had a decent experience.

Researcher: do you think that comes back to looking at the bigger picture, as well a lot of the other coaches were saying they'll maybe factor in the chance there's maybe a semi-final coming up in a couple weeks' time or they're thinking about their season, depending where they are in the season. Do you think that influences your decision at all as well?

Participant 5: yeah, I mean you take everything into account as well. I mean obviously the 16s as well, a number of the 15s have went up and participated. [player] recently, and again its managing his time, he's no playing 90 and then, he could have to come on after the 1st minute. On Sunday erm, and you know manage these types of players cause it's a fair old shift if you're playing in the Saturday and playing in the Sunday. Erm, I don't think we play enough games but two in two days is quite a heavy, erm I think we just need to be careful of our, no burn them out but make sure we are getting games. And I think when we get our new facility we'll have that opportunity to have bounce games, games against local opposition, you know so that again, we can do a lot and it allows you to promote players. Maybe somebody that has been injured can come down and get a game that night as well.

Researcher: So that's being a bit job smart as well, being able to take the information resources you've got around you and making quick effective decisions,

do you think you have to do a lot of that with injuries using the resources you've got?

Participant 5: I think, well, we've, we can utilise a number of things. If there's a number of injuries in a group, you we can put the groups together. We can erm, promote from underneath we've got our head of recruitment in the office, we can say Jim we're really struggling, anybody that's looking good out there? We can maybe utilise things to get a game outside somewhere, erm, you know but there's, we'll always have a team especially now, you know three age groups play on a Saturday and three on a Sunday. So we should never be short of players in terms of of managing players injuries and making sure that they're getting a full recovery and coming back into their respective eh, age groups.

Researcher: Is there anything you do maybe in terms of players coming to training and he's feeling a bit sore. Is there anything you do to make a decision to how that player is feeling? Any smart kind of tactics you use to try and get a bit of information from them?

Participant 5: Yeah I think you need to, I think you need to get the boys buzzed up, I think you need to give them a bit of light-heartedness at the start. You know give them a wee boost. You know maybe in front of the group or just say well done, you know it's looking as though you're fitness is getting better. And you maybe ask 'is everything okay? Are you feeling a lot better?' you know you're almost putting words into their mouth really. Erm, and I suppose the negative of that is that they're going 'yeah yeah yeah' when maybe it's 'no no no', and maybe it's a bit again, whether they're still a bit shy. I mean [player]'s mum is not going to be shy, she'll just come and tell you as it is.

Researcher: And do you let the parents influence any of your decisions?

Participant 5: Ehhh... 15s parents are ok. There isn't hasn't been any... I mean if somebody's ill, they're ill, there's nothing you can do about that. I think we work quite well together. Especially now we've got the physio there and then obviously with yourselves (sports science), managing players like [player], erm, and [player] who's always got his, you know he's feeling his hip or his knees or something. Well aye, you know so there's wee things like that you just have to think we just have to manage.

Researcher: So you maybe notice that a player might be coming and saying to you he's fine, but you are having experience you'll know. So how do you think its maybe more difficult with someone else with less experience be able to notice those things?

Participant 5: I think it is difficult, I mean I was at the under 12s game on Saturd.. Sunday. And I could see [player] had done something to his hand before the game. And a couple of times the ball, there was a save to make and this hand he should have saved it with, he took away and went like that [gestures], and I'm going he's not right. I think if there was that coaches they would have noticed there was something no right there, and maybe everything - how is it? But there again, maybe their experience with [player] is that he might be drama queen, and he's just got to get on with it and there's nothing wrong with him but, at the end of the

first period and he came off and he was shaking his hand and everything and he couldn't participate anymore. And he's actually broke his finger.

Researcher: so what did you do in that situation?

Participant 5: I was just there as a parent, I just kept away. But again...

Researcher: so hypothetically say you were there as a coach, what would have done in that position?

Participant 5: I would have said, '[player] are you okay? Why are, you should be saving that'. he was limping when it was his sore hand. You know so it was, I would definitely have found out, cause you've got another keeper anyway, so it's not like anything. And I would have I would have definitely enquired what was the situation here, cause you're obviously not a 100%. Cause a goalkeeper especially, cause you're one down if he's no diving or running about. I think it, it is difficult cause some coaches will feel that they're there to coach, they're not there to be erm, a physio or anything like that.

Researcher: it's interesting you say that, cause [participant] said sometimes you're watching a game and but you're not noticing something until maybe the physio comes and points it out or sports science points something out. Do you think that's quite heavily a factor?

Participant 5: I would know if, I think I would notice. I would notice if they're running, or he's not running right, there's something up there. I think I would personally I would, I would probably notice.

Researcher: And do you think you manage to notice that? Is that coming down to knowing your players?

Participant 5: just seeing the game, you know just looking, no just looking at the ball all the time. You know just looking at the big picture and being able to see the, you know, how's people running, how they are interacting with each other. What's the moves that they're making? You know is he not, you know is he not running forward so much, you know is there, what, you know, whys he not doing that, whys he not getting forward? Whys he not getting on the ball? Like there's a lot of things. [player], he used to, he shuffles you know when he's, somethings up with him, or he's no confident and you can just tell. You can see that with kids.

Researcher: That's another thing that can obviously influence their training – their mentality, their mental toughness, maybe there's things going on at home that can dampen their spirits for training. How do you do notice that within the team? How do you manage that?

Participant 5: [player]'s a disaster. You just don't know what to do with him really. Cause he's had a few issues at home. And if he couldn't be bothered, if he's in that deep depression or whatever he gets into, you just know he might as well just stand at the side but you're trying to get him 'c'mon [player], c'mon'. you know we've always encouraged when at times you just say sit down there if that's your attitude. But with, I suppose just being sensitive to the fact that there's been stuff

happening at home. You're sort of almost giving a little bit of an exception to. We would be with him I think.

Researcher: Have you noticed anything within the player where you haven't been told anything from the outside and you've noticed a slump in their training?

Participant 5: Need to think... No I haven't. I haven't noticed, although I have, I've been made aware of eh, [player]'s grandad that died. But the mum is a bit over protective, you know 'just keep things natural', erm, I've been made aware that [player]'s dad has got cancer and a lot of stuff. So it wasn't as though it was a surprise on some nights it just doesn't work for him. So you're, you are informed about that but, you know I've, I mean I've said to [player] 'football is a great release for you', 'come here and work hard and enjoy it, try and enjoy it', you know don't have it as a sort of, a burden, but a 'come and see us' is a great way to just come and just express yourself and eh, and my god he's been excellent the last few weeks.

Me: And do you see that as an opportunity to take to him as 'this is how we get round this'?

Participant 5: Aye definitely, 100% and it's you know the arm round the shoulder with [player] and that as well. But knowing that just when he gets into that fuzz in his head that there's just nothing, you canna wangle him back out of it. And it's a worry for him now, because he's been out injured the team has been doing so well. You know he'll need to come back and step up the play, its nothing to do with how you.. it's how you are performing on the pitch now. All, you know I'll decide if you're gonna make a name for yourself.

Researcher: I suppose you've seen that quite a lot throughout the years with different age groups and stuff. Do you find a change in training when there's contracts coming about, and how do you deal with that in the players?

Participant 5: Erm, I do think we need to look at our, when we're telling the players about contracts cause they've got exams coming up. It's a stressful time and we've been told this many time by the parents. But there's some situations where it's out with our control unfortunately. You know, the first team are still haggling or deciding who's going to be staying and who's going, and you know you think well there's this other boy I quite like, but we canna tell him, you know but we don't know if this under 20 player is moving on or they're staying or. You know and it's just like, look, 'I'm sorry', but it's just nothing that can be done, that's just the professional side of it, when we want to speak to them. I think there is a general tiredness from the players when you get to exams and it could be down to the stress of you know, it's a big time doing the big exams isn't it? And also your know you're wondering if you're going to be a full time professional or are you going to get bumped. It's a lot of families and nervousness about it, 'we dinna ken fits happening', you know... its, yeah.. it wouldn't, it must be a hell of a stressful, and I.. I dunno what. Well I know what we should do, sometimes it's out of our control.

Researcher: I think that's a really important thing that, especially with my stuff, we need to try and control and monitor that cause it definitely has an impact on the training. They'll either be training too hard and too far to try and impress to make sure they try and get that contract. Or they'll be so nervous and they're not

concentrating, their minds away so I think that's something that we need to try and record and monitor a bit better along with our RPE stuff just, so we can adapt things for them. And it's also a bit of past and future as well. Taking things from the past into account and importantly in this topic the future of their contracts etc, so we need to think right we need to keep him for the season, he's got a good career ahead of him. The other thing I want to talk about is self-monitoring, so being able to reflect on a player return from injury for example, have you noticed a time when you could have maybe changed something and got a better outcome?

Participant 5: Erm, [long pause], [player]... who again I hadn't really got facts, but I assume he was on holiday for two weeks and came on the flight to Den[participant] with us [15s] and was a disaster. Aye fitness and everything. I think from that experience, I think if anybody is going they need a training programme even when they're on holiday. Regardless of who they are, regardless of 'he's fit as a fiddle', they need something that they've got.. they're not going to be absolutely sharp, but a reasonable fitness, where they can go and participate in that pre-season tournament. Rather than, I thought, you know that start this year has actually knackered him completely. It's been one thing after another, after another. And suppose a player has to have his own responsibility, but I think we from now on, we [participant]e it to the, to the players aye at the 15s, but this was, but then they come back 10 days before they actually went. So I think we had four sessions before they actually went away – [Player X] didn't have any of that. he would have been on the beach, having an ice cream, chilling out, doing f*&k all. And I think we need to, that's a lesson we need to learn. That they need to be doing, keeping a level of fitness. he might have still had all the wee things, niggles and that, cause hey you can have that when you come back. But I think we need to do everything we can to ensure that a kid is, for their own. I mean he might miss out on Scotland unless he gets started and getting a run of games.

Researcher: So just to summarise where you feel the majority of the factors that influence your decision-making comes from, do you think it's the coaching experience you've had an education. Do you think being an ex-player comes into it at all? Life skills; parent skills?

Participant 5: Bit of everything, a bit of everything. Cause you know, you've had kids. You know the, you're kidding them on a lot of the times. Its eh, what's the word, tell me what the word I'm looking for.. not gamesman ship, not.. interaction and eh, I think you, you know how kids are. I think you're experience of just being involved you know. I suppose a bit of a player knowing what's a sore one. Which one you can get up from that. knowing 'ooh that's a bad one, that's sore one', you know you can. But I also think the, from when the physio has come in and also yourselves being involved, I think its.. not 100 times better.. but it's a lot better than what we've had in the past. There's now injured erm, getting their physio appointment, the appointment, the what's required to get fit, aye to get that better. Then what you need to do when you come back to training and then the eventual training and then back to a game. I think there is a, it's much better now. But then obviously you're getting to see, you know get all that bits of information as well, so you can lead on, right he can only play this for 20 minutes, or we'll do a wee bit with them. So I think it's a mix of everybody doing their jobs better. And I suppose more of a team working rather than just guessing. But even in my day you just said right, its looking a bit better now, just out you go for a run, you know

what type of run? Had you to go fast, was it three quarters, half paced? You just sometimes had to do that yourself!

Researcher: So do you think you'd take a lot of the information from the support group and colleagues around you to influence your decision?

Participant 5: Yeah, yeah. I think you've, it's important that the experts are given the information and then we just have to help the back into the, the fray of the youth academy [laughs], and get them playing.

Researcher: Brilliant, thank you very much!

Participant 5: All done!

Participant 6: MRes Interview Transcription Phase One

Researcher: How did you find the last 6-weeks?

Participant 6: In general, my general approach to players being injured is, if I think it's of any reasonable grade of an injury and, my preference is loose a night rather than a week. So rather than me saying to you, just play on and see how it is, I'd rather say to them just step out. And put the responsibility no the player, if I ask a player and they said well, yeah yeah I think I'm alright; well how bad is it like? Ach it's pretty bad; step out, and I'll take that responsibility. So just go and ice it and rest it for today, and we'll review it again tomorrow. Erm that would always be my approach rather than play on. Erm, but they've got to know their body as well, they have to be able to tell you, like, time you flagged that head knock to me with [player], now I obviously hadn't seen it, but when I said to him, 'how are you feeling?', I suppose its fortunate for me, I've had a few head knocks when I played, so I'd probably be able to tell pretty early doors – he's all over the f*&king shop' and say right, look come here you, he needs to be looked at or whatever, but erm he wasn't, he was more rubbing his head, and I said 'are you sure you're alright?', he said 'yeah I'm grand, it was just a bang', someone's, back of someone's foot or something, it wasn't a kick it was just a collision. So erm, anything like that usually fits like [player], couple times probably prior to this 6-weeks, feeling tight – step out, no I want to train, no you're not training – step out. Especially if it's a reoccurring thing and then it's a case of, look we need to get you looked at if it's re-occurring. Spoke to him that time as well about, erm, his general preparation away from the game. If you are having a recurring thing, just going away and resting it, you know if you're constantly tight, or whether your back is needing re-aligned in my experience, or you're not stretching and doing your mobility work. Or your injury prevention. So, for me even the night I said to you, go and stretch him and show him what he should be doing. Erm, I think you were saying in the end the mam was on giving it 'oh you've injured', which is complete and utter nonsense, in fact you've probably f*&king helped him! Erm, but they're a bit out there anyway the two of them. But in general that's just the way I would call it. If a player gets injured, I would just assess it through my own experience and then it's always on the side of caution – step out that'll be fine.

Researcher: First thing I'll touch on is the fact you've said you've seen something happen within a player before that influences your decisions. Do you think you do that a lot?

Participant 6: Yeah, you'll always rely on your own experience, your own personal experience but, again, it's a, I was always of the, of the type that will just step out because if you push a player, well then you've basically taken on that full responsibility if he pulls up, and its 6-weeks and it's your fault. Now I was always the type that you got away with the risk. So if we were playing, if [player] was carrying a tight hamstring, and you came to me and said 'pff, I wouldn't risk him' but it was the cup final, I'd tell you he's playing! Why? Because he's gonna be off for three months afterwards. So that's worth the risk, but if you said to me that erm, [player] has a tight hamstring and the semi-final is next week – then he doesn't play. I'd rather put him on ice for a week just to make sure he's there for the big game and preparing properly for that. Go and speak to [player] and say 'look it's not worth the risk' – so I would always weigh it that way. You know

bearing in mind obviously, taking into the account the players, you know cause he's naturally gonna say he'll play and the same time you're saying to me 'he's more than a risk, he's injured', well that's different he's injured, he's injured – he doesn't play so. So it's getting for me, you know, where's the boundary where the line? So if he's carrying a tight hamstring, and we think he can get through it but it's a risk and it's the last game of the season, then we take the risk and play him and see how long we can get out of him and manage it. If it's a case where it's the start of the season, and you're only kicking off first game of the season, second, third, fourth game of the season, then I'm saying well, if we were saying in a league table and we're sitting with [player] with a tight hamstring, then I'd say leave him out, we'll recover them three points later in the season.

Researcher: That's really interesting cause that's again tying in the past and future and thinking what have we got coming up that could potentially be affected. So I'm assuming a lot of your decisions are based around what you've got coming up as well.

Participant 6: Yeah bigger picture all the time.

Researcher: perfect! [Laughs] cause that's the next thing I wanted to talk to you about! The big picture is being able to look at all the little pieces of information you have and understanding the big picture... Would you always try and think?

Participant 6: Yeah has to be, cause game to game, you don't win leagues over a game to game, I mean that's my background like, I always, when I took over a team to manage, first thing I used to say to them 'here's the deal, the league is mine the cup is yours'. So if you want the cup run, you can go on the cup run, I'll give players a game in the cup run. But I want either promotion or win the league with the group that I have. That league is mine, and I'll manage our way through the league, but the cup games I'm just gonna give you, like a little free week, try different system whatever or, I might give the boys, might change the goalkeeper, might do whatever. That was always my way of being because your players think anybody can win cup, so, because some cups are 4 games, you play four games and you win a cup – it doesn't make you the best team in the country. Over a period of 32 games, you've got to be the best team to win the league over 32/33 games. So you're thinking and your thought process starts to be around week 8/9 is not as crucial as week 33/34 when you're on in the run in. and that's where your management, you can take your risks in the early weeks, but in the later weeks, it, it's very much you've got to get over the line, its gets really, you've got to really drill into your decisions at that stage. That would be the way id manage a team, not only tactically but with injuries I would look and say well, don't play him, it's the 8th game of the season. If we lose now, we can navigate our way and maybe pull another big result out somewhere else for the sake of losing 6-weeks and maybe having 6-bad weeks. Cause he could be our best player. He could be just, brings a lot of balance to the team, he's not your best your player but he brings a lot of balance and when he's not there's a loss in your team, the rhythm goes, so erm, all those things would be factored into the decision-making, as in – 2whats the effect going to be on the team? And do you just keep it to the short-term effect just try to paper the cracks for one day. Or do you have to carry it for 6-weeks, or do you have to roll the dice and say do you know what I don't have a choice, you could be 9 points off the leaders and with 4 games to go, or its your game in hand to close the gap and you're saying – we need to close the gap, he needs to play,

we need to win today. We take that risk and he need stop take that risk. So that would be the way I've always viewed managing players from the top end. And then we you go into youth academy, I think for me, the switch, it's the same process but the switch is not about winning the league title, it's about that players' career/ so why would I take a chance that, he has a tight hamstring and after 65 minutes he pulls the hamstring off the bone and he's off for 9months. Or his cruciate, he's feeling a bit of pain, he goes for a header and lands and his cruciate goes. That players' career is gone probably. So I have to think about his league title is his professional contract now. And it took me a while to adjust to that when I went back into youth football. I had to think, well do I, do I have to change everything that I do, or is it relative to the way I've always operated and I found a way to adapt it to the way I've always operated.

Researcher: So that's self-monitoring and thinking this is now a change in dynamics to what you're used to, [Participant 6: Yeah]. So have you found that, looking back, you've made any mistakes when you first came in and thought you could have done something better?

Participant 6: erm, probably not when I first came here because I had moved to youth football eh, probably 2 years before, but that was definitely a shift for me 2 years before. I had managed before I came here obviously, still in Dublin where I had to manage younger players, the language had to be different. You're probably wondering 'what have you changed' [laughs] the way I speak to them sometimes but it is the main concept compared to what I would do if it was a grown man I was speaking too. But not too sensitive that it's a shock to them when they get to the first team and get shocked! So and it's the same just with sort of injuries I suppose. Looking at with the younger they are the more cautious I would be. Erm, and its longevity for them as well. I don't remember coming as a younger player having too many injuries. I was never really that injury prone. But then as I did get into me later teens, problems of tight hamstrings, bits and pieces. But I always played a lot of games, then went through a period when I went through a problem with my hamstrings then overcame that and had a good run again, but then played a lot of games. But when I was younger never really had a major issues with injuries. And even, I do genuinely believe a lot of the kids now-a-days, it's a little bit fashionable to go and see the physio. Some of them I do think that, I think that if there was no physio in the club, you'd probably cut your injuries in half. I do, I do think that, I think some of them 'oh my ankle's a bit sore, I need to go and see my physio'. It's kind of cool like, go off and see the physio, whereas erm, if you didn't have one it'd be sort of like 'oh I took a bang in the ankle but its grand' and your mum and dad will look after you. But for me as a coach it's always air on the side of the caution. They have time on their side, so why rush it? Why being them back a week early? Why you know, why not integrate them back in properly like if you don't win the U13 or U14 CUP who gives a s*&te like you know? So, I think it's every year that goes by, that shifts the balance goes towards the more how would you deal with a senior player. But from for the younger ones you know, you're way off you say, nah nah he's injured he's fine, or he's a carrying a head cold – miss training. Ach he's smothered, he shouldn't be a training then, send him home, stop kids passing it about. But again if you're at senior level and there's a big game at the weekend and you need 3 points and you're a manager under pressure or you just need the three points – he trains! You know so, somewhere between that end and that end, you've got to find a

balance for that particular age group that you're at. And that would always be the way I look at it. You know just look at it, you've got time on your side now.

Researcher: You're describing all these methods you use, but where has that understanding come from? Is that being an ex-player or is that learning from the coaches you've had or?

Participant 6: Bit of both, from being a player and learning, from bad managers and good managers. Erm, I was the type of player that would play with injuries. So I would just take a couple of tablets and play and worry about it the next day but that was at senior level like. Erm, where there was weeks obviously where maybe I would say look 'am I gonna do more damage to the team playing, or do the team actually need me to play?' And if there was a big enough game and I had to play they'd say look 'take the tablets and play'. There was one game I think I played at, I just really shouldn't have played. And it was a playoff game, and I think it was the second leg of it, and eh, to be promoted and I just shouldn't have played the game, but I managed it managed to get through it. It was me quad was gone, just it was the case of putting the supportive shorts on and probably took more tablets that I should have took and just grinned through the game and eh, I'm not saying that that's right, but that has an effect on your experience. You think to yourself, would I encourage a player to do that? Never, no! It's that player's choice. If I was managing a senior player and he came to me and said look I really want to play in that game. I would have to say to him, 'I can't tell you to play in this game, I want you to play, I want you fit to play, but I can't tell you. You need to come to me and say, I'm fit to play'. I don't need to know the rest of what you decide is fit. Now if I look in the warm up and decide you're not fit, then I might change things round, reverse that decision. But you need to come to me, I can't make that decision for you. So there'll be all that different experiences of managers, some that would say, 'look you've got to play', some that would have you know, would have managed that way, he can't tell how I feel, if you're not right then fine I'll have to pick someone else/ and then I suppose, life experience, being a father to two kids and you start to reflect on, week how would I like my son or daughter to be looked after as your team player? So those things would definitely soften you and change you as well/ I would of, before I had kids I would have been the one out there working for the SFA battering parents over the heads in disgrace that they won't let their kids out in the street to play football, but when my little girl was born I wouldn't let her outside the f*&king front door [laughs], you know what I mean? So now I'm like woaaah, hold on a minute, I take back everything I said before. The Xbox is not so bad now you know. So, its, you know just society has just changed and there's a lot of scaremongering that goes on. So all those things have an impact on the type of coach and individual you are and how you deal with certain situations but, injuries to young players, they, you know, you need to look on the safer side and say look, it's cool, you're injured you're injured like. A lot of kids, we had [player] at the weekend, eh, had tonsillitis. Erm, so we got a text on Sunday morning, [participant] got a text from his mother saying 'oh he's tonsillitis he won't be able to play. Will this affect him in the Scotland squad?', so clearly there's a domestic going on over whether he'd be in... then his dad's text me cause I have a relationship with his dad through we were involved in a grassroots club, so his dad's text me saying he's been up all night he'll not be able to play. So [participant] had cross text me and said there's a domestic over breakfast - check this out. So I went back to the dad, cause I knew the dad would be the driving force and just text him back and said 'it's no problem,

don't worry about it, it more important he's right for the semi-final, we've got plenty of time to get him prepared for that, he's done brilliant, I'm delighted with his progress', 'ok thanks for that [Participant 6]'. And I knew that reassured him a little bit. But its little things – chill out, relax its fine. He's a whole career ahead of him. Even if that had been the semi-final, yeah it's a disappointment but... he's 16!

Researcher: Do you feel the parents try and have an influence on your decision, and do you let them?

Participant 6: Yeah every parent will, you got to shut them out. Its flawed decision-making if the parents are calling the shots. And erm, it's the same in the dressing room, at senior level with players trying to call shots. They need to know who the boss is, who calls the shots so that ultimately, if you get sacked, it's your fault. And I always try and keep the conditions be that way. I would be f*&king raging with myself, if whatever the reason, if it was performance related in the youth academy or I was running a senior team, and somebody else had made me make a decision because they had pressured, which now I've been sacked for their decision and not mine. And that's a fatal flaw. So I'd always be pretty head strong with, when you're having conversations with parents, I mean a lot of the parents don't approach me, probably for various different reasons, they think I'm a grumpy ba*&d or whatever. Some of the do, but I think they know with me that there's a certain line. I think [participant] has a different relationship and has to be because he's the head of coaching. So he has to play a bit more of a political game so, and probably with me being an ex-player, there's probably a little bit more of that barrier between me and the parents as well. Cause there'll never 'oh what do you know?', 'well what the f*&k do YOU know?!' you want to compare CVs I'm happy to do that! So, that gives you a little bit of a weapon against them, but I'd never let them influence and that, sounds easy but it's not. Because there are one or two in the group that will try and influence your decision-making. Will drop little comments in casual conversation, 'are you sure now?' like MacIver's old man be a good man for it like. He's a nice guy, but he's not afraid of putting his opinion across and eh, that opinion is there to try and influence. But if you don't allow it to influence its irrelevant you just gotta laugh it off. And he's not the only one, there will be one or two others in there too but, no I would never let, like if a parent came to me and said 'he's got tonsillitis but I want him to play', I'd say well it's not really your decision. And that would be where I would have to step forward and say he's not playing and I would probably to of stubbornness have to say I'm not happy with this, this is morally wrong what's happening here, as in a parent is forcing a kid to play, which is probably gonna do more damage. Now what [player] doesn't realise is when you step back in you strip emotions out of it, [participant] went down and watched England V Scotland, you know [player] was supposed to be in that game, in that squad playing. England's best player is their right-sided midfield player, and he tortured the left back of Scotland. So by [player] being injured, his stock went up. So sometimes being injured is not a bad thing... It breaks the looks you know, so I'm sure Scotland will enquire and say why [player] was injured, where was he yesterday? But the fact that there asking is that we need him fit. The last boy struggled against him, I'm not sure about him. So sometime being out of the picture is a good thing, but his parents won't see that. And the player won't see that, they won't understand that, cause they'll always back themselves and say 'oh well I would have sorted him out'. And [player] would have thought 'ah I wouldn't have let him get the better of me', but the reality is

he might have. Cause he's a pretty good player. Erm, so, so yeah, so there's times you have to take control, I think every player know, every person should know their know their own or get to know their own body. And learn about how they feel, what their thresholds are, what they're capable of, pushing through or not pushing through. And every player is different. Some players will need to be 100% fit before they play, others could play 50% fit. It's just it's just horses for courses, its everyone's different. Everyone's upbringing is different, their different make up and different personality and so, it has to be case by case bases. I don't think there's a blanket approach to players – 'this is what you should do until you get over it', so, especially in the later years.

Researcher: Have you been through a situation where you now have this opinion that no parents have any influence. What's made you have that opinion though, have you been through situations before where they've maybe got a bit too involved?

Participant 6: I suppose I've just decided that, from me own upbringing, my own father never got involved, I'd ban him from coming to games. Not that he was, he would never say anything, he knew nothing about football; he was a runner. And erm, I just felt too nervous when he was on the touchline, playing and it was weird as I got older and as a professional I had to ring him 'you coming to the game tonight?', 'oh do you want me to come?', 'Da I'm fliming 26, I'm hardly looking into the stands to see if you're there, I want you to see me play. I'm gonna be retired in a couple of seasons'. But that was every week id have to ring him. But that said, when I was coming through as a youth young player, I did see other parents influence on players and sometime it was with the manager, it was you know, there was always a player who was in the squad, and his dad was the assistance manager and you're going nah, he's f*&@g s@%t, playing every week/ so there is a bit of that as you're growing up. Erm, so I don't know, that's how far I could do, but I just think, one of the managers I played for, he was very black and white, play for him at three separate clubs and I liked playing for him cause you knew where you stood. You played well then you were in the team, played poorly you were out of the team. He didn't a f&^k who you were, if you were the biggest player... if he'd signed you as the marquee player whatever, if you had a shocker on Saturday, you were sitting on the bench the following Saturday and someone else went on the pitch and got that opportunity. And the, the environment that that created, was a highly competitive environment. There were no favourites, training was incredible under him, and it was you know, 100mph. so there was never any influence. He was the type of manager who was a leader, you never knocked on his door and asked why you weren't in his team. If he, if he went and it came up in conversation, he'd put you on the back foot straight away – cause you haven't been good enough. And then it would be eh, this is why you weren't good enough. And there was no argument. But when, he was fair, he didn't tell you any lies, so he didn't have to have a good memory. So you know, I think it's the same with eh, parents. I don't see why they should have an input unless it's to tell you something, eh, personal that's affecting their form as in, 'look we're going through a separation and its effecting such and such's how things are going', ok we'll look after him. And you manage the player and you take extra care of him. But in relation to where the plays, or how many minutes he plays, its none of their business. I don't go into their job and if they're a butcher tell them how many pieces of meat to cut off the bone there, you just don't do it. So don't come in and tell me how to do my job. Probably a bit of me personality as well, being stubborn

as fook. Like I've identified at 37 you begin to learn who you are, but I can be quite stubborn. I want always for any decision that I make to fall on me. I want that responsibility, I'm happy to take the blame and put me hand up and say – I made a balls of that. I made a wrong call, or the team was wrong last Saturday, or I should have made a substitution. But I'm not willing to allow any external influences to cloud me judgment and decision-making. And that's just the way I run things. I don't see any reason to have it any other way. And I think if you run it that back, I think people will respect you more for it.

Researcher: have you been through experiences with these guys, where you have looked back and thought 'should have done that or this' and you've learned from it?

Participant 6: yeah absolutely, we got our substitutions wrong against rangers, erm, which left us short. I've always like a team that is flexible without making a substitution. But me substitutions made me team rigid. So it was literally a case of, we need to hang on. And it's like driving a car with no steering wheel. It's f*&king pretty scary like, it's out of your control. And you're trying your best to do whatever, but we made substitutions that left us with no manoeuvrability; 'well if you made that changes and it doesn't work you could always shift him out and bring him in and', I've always liked teams that are quite, you can roll tapers around and I've always picked me starting line-up usually around the fact, 'well if he doesn't start then we can move him there and put him in there and that'll solve that problem and I won't need to make a substitution after 15 minutes an waste sub'. So erm yea there have been times. There's been other challenges, we operate off different size squads here, the weekend for me, [player] starts, and I would rather not have started [player] at the weekend cause he got suspended for dissent so he needed to learn a lesson. And I think he's like a f*^@ng cat with 9 lives man, he seems to get away you know, every time you want to f*&king nail him on something, someone gets injured or someone gets sick. You know [player] was the reason he got back in the team, and people say well you could have put someone else in, and yeah we could have but we would have had to reshuffle the whole package then. That's not right either. Cause then you end up with players out of position just because you just wanted to deliver a message. So erm, no this, there's different challenges here, it is what it is here, erm, it's a small sea, you've a select pool of players, it's a challenging environment where you're trying to do things right but, develop people with the right characteristics. I genuinely don't believe for a minute that they understand how f*&king tough the industry is, it's ruthless it's controlled. To the extent that your own team mates will stitch you up at times. That's just the way it is. I mean on the pitch I've played a game where your team mate will pass a ball to you and you're under pressure and you think 'what the f*&k is he doing?', he's tryna hang you out. Eh, its mental so I dunno how our players are prepared for that, that's something that we constantly evaluate – how can we give them more? How can we prepare them mentally? How can we bring them to a state of physical toughness that that'll walk through the walls basically and have the technical ability and have the physical attributes to go all the way in the game?

Researcher: I suppose as being an ex-player I can see that's looking at the bigger picture and think that you need to develop your players to, to get to the top level an having a plan of attack to get there. So that's the factors that you would say you would have to create that plan?

Participant 6: Its difficult cause I'm not, I'm not in the controlling seat to be able to say well, this is what I would... it's not my job. That's for [participant] and [participant] to go and do. So I can only have these conversation with [participant] and let him decide, it's his baby so. But there would be certain characteristics that would be needed to play in the Scottish premier league. And, worried, a lot of the players in the youth academy are lacking it. That doesn't mean they're not going to make it. Some might get through, but a lot of them wont. It's difficult, there's no right or wrong. If there was a blueprint out there, we'd have it and it'd be working and we would be making millions out of our youth team players going to first team. But it doesn't exist. But it's an ever-changing game and [participant]et if you like. So there's a different product all the time, so what you put on the pitch and what's required on the pitch will be ever-changing. Sometimes its possession-based football, sometimes its long-ball football, sometimes they'll want technical players, but it's a cyclical approach. So each counteracts each other. So if the training goes all out expansive football, then naturally someone's gonna come along and say that we need to change this. So you've got to look ahead and think where's the game gonna be in 7 years' time - I've got this 10-year-old that I need to develop but what's he gonna need for the game by the time he reaches that level? So you know, it's not an easy, you know so, erm, so yeah, so all them factors come into factors when you're making decisions around players injuries and you're thinking of the best development for them and getting them to look at, getting an education into them around their body looking after their body. Session that they need to have now-a-days, professional footballers players, when me and [participant] were here, we were on the beer like, it was a drink culture here at the club. Erm, that's not to say we didn't train hard, I was someone who came in, always first in and last out. I came in and done the gym before... But we hadn't got sports science then. I was doing all the wrong things. And then I got to the stage where I was like, turning up like the local boat there. So then I had to go and shed it all and had to build up my legs, and work on my running technique. We had a sprint coach here at the time, but he was no sports science. So the culture has changed and the game has moved on and I think the players need to understand that. You know when you're sitting watching match of the day, you should have a foam roller underneath your legs, you should be stretching, you should be you know when you wake up in the morning do you do, three sets of 20 press ups? What do you do? What gives you the edge? What gives you your obsession? I mean I look at other sports and I look at eh, eh, I look at MMA, I look at boxing, I look at eh, American football, I look at rugby and I look at the conditioning these players, and then I think to myself 'we're f*&king miles behind'. And look at MMA as a sport and I look at, not about their contact, it's about their mobility and their flexibility and how the body works and moves and the fluidity of them. And you look at how mechanical footballers can be. And you look at rugby players who are about 17/18 stone of pure muscle who can run the hundred metres in like 11 seconds! And we're looking at players going 'pffff' you know, [player], spaghetti legs. But if you went down, you know he would last in rugby. So where are we drawing off other sports? So you know looking at all these different sports and thinking 'where's the edge?' For me, the future should be 11 fitness instructors who can play football. I think if you get that, `11 players on the pitch who would be just as comfortable doing an iron man competition as they would be running on the park. Then there'd be no problems. You can be pretty sure they're gonna make their way through 40-50 games per season. And their tough in their heads, you know what I mean like? And they think it's hard on a pitch cause the intensity went

up for 10 minutes... try being in the middle of the f*&king ocean trying to get to your bike in an iron man competition thinking 'oh my calf is cramping up here', you've another 50k to go on your bike and a 10k run or whatever. That would be my thing with them around sort of, just, more so how they look after and condition their body so that we, the bare minimum of what the manager should get when they come through is, 'a f*&king incredible athletes' our younger athletes when they step into the runs of the first team that he's looking at the older players; laughing at them, 'young boys are coming through, c'mon you gotta keep up with them' and they're setting the bar. Whereas, now I don't know if this is true, but I would say a lot of the 1st team players run a lot of the young ones into the ground. But I dunno that was my experience of it.

Researcher: so the next thing I want to chat about is being able to notice things on the pitch quicker and faster and having an overview of your player. Is there a time you've had a situation stand out to you...?

Participant 6: well [player] was one. We were standing on the side of the pitch and going 'he's no running right', I remember we'd said to him 'how you feeling?', and he was like 'yeah yeah I'm ok', and we could just tell, it was there as the human eyes sees it. But as the ball drops you're going, he's struggling to get that, it looks like he can't run. There's no power in his legs, he's like a bambi on ice. Because the funny thing with his was, normally when kids are growing their co-ordination in their arms and legs goes, but with his, his technical ability hasn't dropped off, it's his athletic ability. His legs are moving but he isn't going anywhere. So we would have easily spotted that. And we're always monitoring for players that look like you know that have held their hamstring, or rubbing something, and we'll always ask players, they're maybe having a wee stretch by side of the pitch. [player] is one for that but I think a lot of that is nerves, I've had open conversations with him - why are you so nervous before games? He struggles a little bit, I can tell if he's nervous now, because he know he always needs that extra stretch. Oh I'm feeling a bit tight. You know it's down to the nerves, he's trying to get his head together - so again learning about the individual is important. And being able to have that one to one and have that relationship where he feels comfortable to tell you 'look I'm f%\$@ing sh%*@ng myself today'. We had an hour and a half conversation on the bus coming back up the road one day. Do I spoke to to him about my experiences as a player for the first team sitting in the bench s*&ting myself?

Researcher: and what do you do in that situation where you notice a player is taking that extra time to stretch or whatever?

Participant 6: it's just a quiet word you know, 'is everything okay?', and eh sometimes asking them, 'are you nervous, looking forward to this? How you feeling?' and you know they'll tell you then. Then you might just try and shift their psychological thoughts onto the front foot. Or it could be the other way around and just lacks, and you know you would have seen me a couple of times stop the warms up, what you saying about that? You think that's good enough? Well you need to do something about it! At that stage you're not going to change anything in the last five minutes of your warm up - they've either prepared well during the week or not. I always just watching for those little things in the individuals, reassure them, I mean, my experience of young players, and in general actually with their style of training I think I've had, you don't tend to get muscle injuries.

So a lot of my stuff as you've seen, I do small boxes, high intensity bursts for a minute and a half with 3-minute recovery so a ratio of 1:2, earlier in the season might be 1:1. And that's if I'm bursting them. But everything is short movements. I always found as a player that hamstrings went when you were running from the end line to the half way line 8 times and then recover, and then it was another 8! Whereas when it was short sharp, twisting erm, you know no oxygen, you would be struggling to breathe, all that type of stuff. I always prefer that type of training, and I think players can get much fitter and mentally stronger through that type of training. Because there's demands on you, there's no hiding place in a 2v2. You can't, its man for man, so I've never really had a history of, of say someone pulling up with a hamstring and this that and the other. A couple with the lads but I think, we haven't had anything major, a lot of the stuff I think has been directly related to stage in life when they're growing and stretching, and even down to, I know like people think I'm a mad man for fitness. I'm not really, I just think that there's a mental element, there's a mental side to fitness training that needs to be done and it's not about the run, like when I do doggies with them, 3 yards back, 6 yards back, 9 yards back, 15 yards back and you're doing that maybe for a maybe, with a minute recovery. There's nothing in the run that's going to do an awful lot for you, but psychologically you don't want to make those runs. Now in a game over 90 minutes, you make an awful lot of those movements. You're being lazy I said instead of coming here for 3 yards to close him down and show him back up the pitch, he's faced you knocked it down the line and you've had to make an 18yard run to double back your guard. So the more and more comfortable they get with being physically and mentally strong they're short sharp bursts, makes them play better. For me the game is won or lost over those couple of yards, so it's not won and lost over how many times we can run from our 18-yard box to their 18-yard box. They happen occasionally, which for me in a preparation in a senior team – it would only ever been occasionally I would do that type of running. So you try and make anything you do in training, game related. Everything that you do, it should be game related. Your thoughts should always be in your planning on what will happen in the pitch. I think a a result of that shorter sharper movements – there's more a reduction in injuries, mainly there more a likelihood of impact injury, but I think there's less likelihood of 6-weeks off with that type of an injury, unless they're just being dangerous and reckless which you wouldn't allow.

Researcher: Sorry can I just bring it back to when you were talking earlier about when you would notice something on the pitch and you would go and have a word with a player, why do you think that would be the best approach to go about it?

Participant 6: it depends again on the individual, some I might ignore, because they're looking for the attention, they're looking for me to go over and say, are you okay? When really they're s*&ting themselves. Now I with the, not so much with our group as I think they face it up a lot better. But the group younger, [player] and [player], we went to rangers last year and I could see it in the warm up, I said to [participant] 'we can't start them'. And he said 'ah just give them 10/15 minutes and we'll see how he is', I said he's f*%@ng throwing a funny one, I knew there was nothing wrong with him!'. So sure enough we started him, [participant] convinces me, 10 minutes in – get him off! Limping about the f*&king place, sat him in the dugout, eh, [player] was in a tough battle with the left back, erm, now at this point, [participant] had tried to speak to [player], but I had seen this in [player] earlier in the season and it didn't work, so I ignored him. So I took him off and said nothing to him as he came off the pitch and he sat in the dugout.

So [player] then was my side and he was in a good battle with the fullback, fullback getting the better of him, [player] gets the better of the fullback that sort of thing – and then ‘oh my stomach doesn’t feel right’ – and I said to him, there’s nothing wrong with your stomach, I says you’re in a good battle now and you’re getting the better of him, keep going. And he had a great game, but he was needing that reassurance. Kids are having that little wobble of like, oh it’s tough today and I don’t know if can see this through. We’ve gotta get that balance between, knowing and identifying you know, you know when a kid is struggling, they’re not playing at top level. If you’ve a sick stomach, you’re not gonna pick a ball, dance past the full back, run down the pitch and ping the ball I the box and then three minutes later your man wins it back and he goes down the pitch and you have to chase him, and you go ‘oh my stomachs a bit sick’, its sick cause your nervous! But [player] then came to us in the last third where we had rangers on the rack, ‘am I going back on today?’ I said well your injured? Oh no I feel okay, I feel okay. So we put him back on and he f*&king set up the second goal got back to three – two and rangers were on the rack – there was nothing wrong with him.

Researcher: it’s just learning what player is what type of mentality.

Participant 6: he would have built up this picture in his head of a really tough game and we were gonna get humped by rangers and been really embarrassed. He watches his mates ‘f*&king hell they’re doing alright’ and then wanted back in. so we put him back in and on a normal day at the next level, you might have said no, you’re off. And taught him a bit of a lesson, but we put him back in and he actually set up a goal and he learned a bit of a lesson from that. But at the same time a couple of weeks ago [participant] told me when they were playing Celtic, and he done the same thing!

Researcher: Okay so I’ll move onto the next part of what I want to talk about. Do you think you’ve been in a situation where you’ve had to make quick and effective decisions using information from sources around you to help with your decision-making?

Participant 6: Take [player] for an example for his rehab programme, erm, the physio had sent through about I think it was one session on Tuesday, Thursday he was to do some stuff with [sport science intern], off Friday and was to play 45 minutes on the Sunday. Think we played him for 60 minutes on that Sunday, but the reason we played him for 60 on the Sunday because we were so comfortable in the game. So it was, it was managing the risk a little bit, erm, but he was playing against a guy that wasn’t really testing him. so at no stage was he ever, really blown, whereas then a week later against Kilmarnock, he was talking about his tight chest, cause he was running box to box at that stage. So he was down to play 60 that week and we left it tat 60 that week because that was he reported back to us and visually what we’d seen was ‘he’s bombing today’. Whereas the week before he was being quite conservative, the guy he was up against wasn’t really challenging him so, like 45 quality minute we would have looked for, but because they weren’t quality we probably went 60. So erm, we felt that trying to keep him listening to all the information that we had, we were trying to keep him erm, on track or slightly ahead of schedule, we felt it was worth the risk to maybe give him an extra 10/15 minutes. I think it was maybe 55 he came off at, so it was an extra 10 minutes we got in the bag for him.

Researcher: So it's making that decisions, knowing that information that you've gotten from your support network rather than just thinking this is the best...

Participant 6: Yeah to be fair, since the physio has come in, the quality of rehab reports coming has gone up. Erm, and the communication has improved so, I feel like there's more, we're equipped with more information. Whereas before I think it was a case of, 'Sam did you speak to... physio....' 'Oh physio was saying this'... there wasn't any official... so it seems to be communicated better. I think any decision you make you weigh up exactly what information is being provided to you, erm, you'd be a fool to disregard any level of information and again the responsibility falls on you, you have to be the decision maker. And you've gotta, it should always be a calculated decision, for me, I always see it as being a calculated decisions. So what's the risk? What's the reward? It's it worthwhile? If it's not well then it's a stupid decision. So all the resources should be taken into account and used otherwise it's just a waste of time. The only one I feel that fell through the loop and that was an easy one, cause he was given a month off, at a holiday period, do it was when everyone shut down. So it just really flew below the radar. But that was more missed on outside, we should have said like I said to you last week about getting something programmed for [player]. But I think to be fair to the young flip, because he's taken such a stretch, he needs to sharpen up. He's gotta learn how to use his body, it's like a young baby learning how to walk and run you know, and then I suppose prime opportunity for his mechanics to make sure how he runs and moves is better than it's ever been. So... erm....

Researcher: one more thing I want to talk to you about – and it happens pretty much every day in your coaching life, is adapting and improvising to unexpected environments basically. So whether you've been in a situation at training where you've been caught off guard in regards to injury/player numbers for your session, etc., and how have you adapted to that environment?

Participant 6: Run of the mill stuff really. At this stage for me, don't want to sound really cocky or whatever, because of the amount of years I've been doing this, when I actually tutor on the SFA courses I go through all of this with them – numbers; playing with numbers. You arrive at a session, with the perfect session written out for 14 players and little Johnny doesn't turn up because he's sick or, a coach comes across and says, I've only got 3 tonight, can you take them as well? 'oh f*&k sake, my sessions' ruined'... but it's not ruined, you design your session to be adaptable it should be allowed for eh, I don't necessarily plan me session around numbers anymore, I plan it around the theme of the topic and I fit the numbers in around the side. So if you arrived to me with a couple extra players I would just adapt to it and I've had to do that over the years, boys clubs I've worked at at home. I went in at director of coaching at some of the club where you oversee the whole coaching structure/pathway. That always happened. You had it all planned out, and you arrive and there's actually only 11. 11 and 13 are the two hardest numbers to work with, but you have sessions that you can just automatically default into, and go its fine, I'll do this. Add a floater in, take one out. Plus one of the things we've discussed with guys in Coach Ed as well, you've the perfect session, but a player could get injured. But you can't say to them 'well you have to carry on cause I've got this perfect session.' So you just need to adapt and change sometimes you arrive and eh, guaranteed there's no little small goals, you'll have to use the big wheely goals. You might want just little bucket goals, but you don't have any, so you gotta adapt around that.

Researcher: how have you learnt to make that quick changes and adaptations?

Participant 6: Purely just at the clubs I've had to work at previous. Where they're resources were, we didn't have the set up that we had at the youth academy. You'd arrive... plus then I use to do a lot of, when I was doing all me coaching badges, I used to be a guest coach type thing. For me I would say, listen I'm looking to run a b license session... and you arrive on a Saturday and I promised 16 players, and you arrive there and there's either 30 players or there's 5... but you're there. So you gotta do a session, so you do it. So it's just part and parcel of it. Running squads managing teams, so it's all down to just historically having to deal with odd numbers and guessing all the time, even at the start dealing with some managers when you're on the coaching staff they're disorganised. So you just constantly had to adapt your numbers, very rarely was there nights, there would be some nights you'd be nearly buzzing, so it was more an exception you'd have the numbers you thought you'd have. So you'd just end up having to adapt them.

Researcher: So there must be situation on a pitch at the weekend, and maybe a player who's central to the team, or anyone, and they've come up injured...

Participant 6: yeah remember I was saying to you earlier I like to have a team where you have like moving parts. Say like [player] can play upfront or play midfield. [player] can play wide, through the centre or front layer. [player] will play right back or right wing. So you've players that can play in multiple positions. So when you pick your team, I mean the most valuable, when you get to the knock out competition. And for me when you're coaching at senior level, 3 subs and they'd be pretty important and if you got them wrong, you were f*&ked. So erm, so I always like to think about okay, do I wanna waste a sub after 20 minutes, or two subs after 20 minutes. Cause you might get someone who has an injury and is struggling. So when you pick your team its always something I sat down and said o the manager, look I was thinking this, say 10/15 minutes it's not working, we can switch him with him. He might bring a different element who plays that position, in a different way. Stuff like that, so you'll always look at how flexible your team is and how you can move your different parts around to try and prevent yourself getting stuck, and that was the most frustrating thing, was that, it was my responsibility, I got it wrong. I f*&ked up on that one. But it happens, and that's life and we got away with it, so thankfully. So yeah they're all the things you think about the night before a game, rather than just pumping up balls and washing bibs, you're thinking about what's the first 10-minute gonna be like? What if he gets injured? Who could slot in there? Having that plan B, and C and D right through to Z.

Researcher: [participant] talked about that earlier having that Plan B, session is running fine but he could see that wouldn't actually happen in a game with his ex-player experience. Do you think that happens with you as well?

Participant 6: yeah it does, cause you know something, like we lost the game down in Dundee utd this year. And I like I didn't say it obviously at the time, cause I didn't want to say it. But I knew after the warm up that this was gonna be one of those f*&king days. [Player X] pulled up injured. [player] was tight, erm we were already missing, missing [player] that day. Possibly [player] went in at left back.

And he played that out well and he's got a free kick but then the game just fell away from us. It seemed every break went against us. We had a think [player], was away at a rangers game, and the younger goalie was in goal and, there was just think that you just thought, this is just gonna be one of these days and. You can prepare all you like, sometimes it's just goes wrong. It goes wrong and you get tried fighting as best you can to try and turn it round. Thankfully we've only, you don't tend to get them at a lot. Hopefully we've had our one for this year. Sometimes you just know, and you just try and salvage what you can out of it. But yeah you're constantly thinking about match day, should always be thinking about match day. Your preparation and what have you, and erm...

Researcher: And that goes for injuries as well obviously?

Participant 6: Absolutely, and bringing it full circle, its different at the youth academy, you think about your players' career, you know so that is probably the hardest bit. The individually development, team and tactical development. And then getting that individual through his career and getting him ready for a career in the game. You know I mean the individual bit is more important than the team thing. Which goes against everything really I believe in. but you got to develop players, you just gotta go with that. Erm, but at the same time, you can't dismiss the fact that they need to be able to operate within a system. And different systems and that's why I think it's good for our young players, me and [participant] try a lot of different systems with them which is great. Which means if they go and play for Paul and he plays various combinations or formations, it doesn't matter cause they've done it. It's not a shock to them, they just slot in and that's what's important. Erm, whereas for me I think if I was managing more at a senior level it would be looking at, looking at more of the power of the group, so the sum of the parts is greater than the individual pieces, that type of thing. But I think for youth academy you have to have individual pieces first. Because otherwise you can produce great teams but when they leave you and go to another club, they're used to working to your system, and then they have to learn a completely new system under another manager and they'll struggle. So it's all a little bit different.

Researcher: So I think you've summarised that very nicely there. Thank you very much!

Participant 6: Okay doke! Thanks.

Participant 7: MRes Interview Transcription Phase One

Researcher: How's the last 6-weeks been?

Participant 7: It's the last thing I've been thinking about to be honest!

Researcher: No, I know it's totally fine. It's been a quiet few weeks for the 14s anyway injury wise. It's been a good 6-weeks for everyone though, they've enjoyed it and they've enjoyed putting in the voice memos and stuff. You guys have had very minimal memos anyway.

Participant 7: Its funny cause erm one of the hearts coaches was saying, he wasn't sure how we were finding it, if we always had the same squad, as they've had heaps of injuries, whereas we've been quiet, there's been nobody that's really missed much games due to injury. I know [player] the end of last season had quite a little bit, but even he's been not too bad.

Researcher: Well you've put in a bit about [player], but I know nothing really came much of that, and then there's been, I know he was out of the game at the weekend was he?

Participant 7: yes, he was suspended for disciplinary.

Researcher: Oh great, and there's been one thing from [player] and one thing from [player], and that's been about it?

Participant 7: Yeah that's right.

Researcher: So, I've got [participant] and [participant] just to talk about other times that you've had to deal with injuries and stuff, because there's obviously been times throughout your coaching career that its happened. But first to start off with, I want you just to talk about what you do when a situation arises when you're dealing with a risk of injury and what processes go through your mind when you're making a decision.

Participant 7: The [player] one would have been about 20 minutes to half an hour into the session, erm, just said he was feeling quite tight, erm, again because sort of maturation and that physically he's one of the stronger ones, and erm a lot more sort of developed, erm, and to my mind probably likely to get problems with sort of erm, more sort of muscular injuries and stuff, erm, he's one of the strengths is pace and stuff like that as well, erm, certainly I think it was one of the sports science guys that was maybe there that night, went and seem him for a bit, did a bit of stretching, came back was still feeling quite tight, erm, he played in quite a lot of games recently, he's been a key player in the squad. One that, wouldn't be any benefit in risking him. Yeah well we spoke to [participant] as well at the time, just sort of agreed it wasn't worth it when he was feeling tight.

Researcher: When you're making that kind of decisions, do you base them on past experiences do you think or things in the future?

Participant 7: I think it's just case by case, and knowing the players as well and case [player] is more physically developed and stuff, erm, it just wasn't really

worth risking, especially him saying he's feeling it cause you won't want him to then push it too far and then risk missing games when we're building up to a tournament where he ended up being top goal scorer so you obviously want him to be as fit as possible for that.

Researcher: A lot of people have said where they are in the season, if they've seen a lot of the same injuries happening before, erm, and they've kind of learnt from, do you think that's where you've pulled that information from? From your coaching experience or playing experience?

Participant 7: For me, it's probably slightly different cause I've only started working with this, is probably the oldest age group I've started coaching. I've predominantly coached younger age groups – U10s, U11s, U12s where its different where they don't tend to get that serious an injury as well so part of it probably learning experience for me with the kids being at the slightly older end of the age group as well.

Researcher: And do you find different process and methods due to the different age groups?

Participant 7: Yeah possibly, again I think part of it is knowing the players as well, I know some of them that maybe mentally are fine in the session, difficult or they're finding it challenging, they maybe look to exaggerate something or potentially fabricating an injury a bit more to try and get out of playing or remove themselves from the situation, and you'll tend to find the ones that are, that If they are injured you almost know it's true, because it's out of their normal character. For example, like [player], erm, he'll basically go flying into tackles, contest things in the air, erm, if he's looking to come off or he's down you tend to know he is hurt.

Researcher: I suppose it's less of an issue for a task to think through, you kind of know what to do, if he's down, he's down, he's definitely injured...

Participant 7: yeah pretty much, again it's just depends, some of it will come from seeing how the plays developed or, what it looks likes happened, erm...

Researcher: So, looking at the big picture do you think tis important to have a plan of attack to progress them on and what kind of factors influence your decision?

Participant 7: Yeah, normally it would be hamstring, it would be quite serious it could be a couple of weeks he could potentially be out if it would be to get worse, so that would be sit out of the session, potentially speak to parents and say look, see how you're feeling before the next training session, still feeling tight, maybe rest it. It then comes to that, if there's a reoccurrence then we'll look to take the next week off and then beyond that I think then comes a problem we'll have to refer to physio from there and just...

Researcher: and again, would that be what you've learned from coaching ed?

Participant 7: A bit of both, I think erm, the academy has gotten much better, erm, at its as well because I think before I think there was too much ownness placed on the coaches yino, 'they're just kids', prioritising the first team and

they've not really got time, whereas now there's a clear process in place, if they need the physio and that there's a gateway, erm, drop ins and stuff like that available to players which erm, I think helps as well if it's used probably, I think on a whole my experience it is.

Researcher: on the pitch you can notice that these injury risks are happening, and how do you think you are able to do that with your experience, as opposed to someone coming in that's less experienced?

Participant 7: yeah erm, dunno, that's a difficult one to answer cause it almost, I think a lot of it is probably more common sense I would, I would say, I wouldn't necessarily say an inexperienced coach... but I suppose you do notice it, a bit more I guess but erm, yeah suppose the more times you see situations and that it definitely does help.

Researcher: Do you think as well from working with younger ones you can see the difference in someone who has grown up now that you're with the 14s, that one of them is maybe not moving the same?

Participant 7: Erm, possibly, I think a lot of times you'll pick up on things erm, and with some of the younger ones, we had [player] in the summer who he was going through a bit of erm, growth he had, you could see quite clearly he wasn't moving quite right, and it took a while for him to get out of that, so I think yeah you can notice, and probably like I say, probably with more experience and that having watched them you do probably pick it up quicker and probably just knowing the capabilities of the players as just general movement patterns and how they're running over you can notice more when they maybe aren't at 100%.

Researcher: As well you guys were also away for a tournament in September.

Participant 7: I wasn't at that one...

Researcher: Well skip that question [laughs]... so looking at being able to make decisions quick and effectively using resources you've got around you. How'd you think you do that to make a quick effective decision? In the middle of a game, or something in the middle of training that you have to adapt to...

Participant 7: again, in terms of dealing with injuries and stuff like that I kind of don't see myself erm, as an expert so I try and use what's round me as much as possible whether it's the sports science support or physio and of course the sports village have got first aid provision and that, as well as probably my opinion is probably don't take any sort of necessary risks, cause a lot of them with the players will be pretty minor, even sort of let them get up and get on with it, and leave them a sort of period of time and see how they get on, monitor that situation, it's not getting any better and if it's something they need to come off and rest and it will be a case of then using what's around, whether that's a first aider to come and have a look at it, erm whoever's on at the weekend; sports science guys, referring or the club physio...

Researcher: And with those guys, with someone coming back from an injury as well, would you have the help you make your decisions in what you do with that player?

Participant 7: yeah erm, I wouldn't say make decisions, but probably assist with decisions. Like a lot of players now. They can't just go bursting back into training, like [Player X] booth just now, he'll maybe go bits with sports science like sports specific stuff then build up his fitness again, rather than coming straight back into full training. I think that is definitely utilised as well.

Researcher: How do you feel that, obviously football is a massive adaptation game, being able to adapt to things that you're not expecting being caught off-guard. So how do you adapt to that and decide what to do?

Participant 7: That's the trouble with part of coaching, again probably from my own background I've done a lot of community coaching, coaches education courses, everything training sessions especially, you'll always need to be able to adapt them, because someone might call off ill or, a player might get asked to train up a session at short notice erm, so that's normally straight forward. You might have player that calls off last minute for a game. It's not ideal, but you've obviously got players there that can step in and you're always ready to adapt for that.

Researcher: Do you think that comes back to looking at the big picture when you're planning sessions, and having an A/B/C/D plan? Does that filter through your decision-making?

Participant 7: yeah I think all the sessions you can adapt, regardless of your numbers or stuff like that. erm, yeah I think in terms of games, I know the 16s went for a light squad in the cup game because they wanted to go with the strongest squad erm as possible, and then got caught out so I think in the future its potentially getting younger players the opportunities to be a part of the squad, you know, an older environment, erm, so they might not get as much game time, but erm, but then they if you do get an injury you have then got that option.

Researcher: Yeah, and looking at self-monitoring when you're coaching and stuff, has there ever been a time where you think you could have changed the way you've maybe coached to get the job done?

Participant 7: Erm, yeah so I'm trying to think.. I'm not sure if I'm answering these questions correctly [laughs]... I dunno, almost give me an example of what you're meaning...

Researcher: Okay, so say you've taken [player] out, he's had a tight hamstring, and you've rested him the rest of the week to be okay but actually he didn't need that time, there wasn't really anything wrong and he could have gone back in the next session. Or vice versa, you've kept him in and he's actually popped his hamstring..

Participant 7: Yeah, I can't think of a situation where erm, a player's, almost not driven them to injury but had that situation where they've carried on through and injury, erm and it's got worse. In terms of the pulling them out and they're actually okay, erm like I say on a case by case, so with [player], so even if it did turn out that he was okay he could have maybe trained the rest of the week, and he could have played in that tournament. I think he was actually also had similar things erm, in training games, stuff like that probably more air of the side of caution, see

how he's feeling and take his word for that. and if it did turn out he was fine then that's...

Researcher: Do you have any sort of experience from playing yourself that you feel crosses over in to the decisions that you make?

Participant 7: erm, a little but like, I've ruptured left and right cruciate ligaments, which isn't ideal [laughs].. so, I don't know, I probably empathise with players more or whatever, if I see stuff, it can probably be more aware of twisting and turning injuries and stuff like that. and if I see something happen or they come off, or some of them maybe say 'no I'm ready to go on', and I'm wondering how long's left of the session so there's no point risking it..

Researcher: Do you think there's a confidence issue with the players that they feel they don't want to say if anything is niggling away at them because they don't want to be pulled from training or a game?

Participant 7: yeah I think some of them erm, some of them definitely would have wanted to play through. Erm and carry on, and again that just comes down to then at times letting them do it and then using your own, using your own monitor and saying look you'll need to go see the physio or..

Researcher: Sometimes as well its letting them learn the hard way?

Participant 7: Yeah..

Researcher: At that age group its getting them to learn that it's their body. I think that's a big thing with younger age groups, they try and hide as much as they can as a lot of the diaries coming back from the 15/16s and they've said they're feeling this and that and its nothing that the coaches have noticed and highlighted. So, the point of this is to be able to tie in with the voice memos, the diaries and the RPEs and the Wellness to provide a better understanding of the players on a day-to-day basis.

Participant 7: and you know, we're playing in that environment where you want to go and win games, but there's no real pressure, and with the boys wanting to be the first team, or the management being harsh and saying 'the boys are just soft' etc..

Researcher: 100%... Well thank you very much for your time today, it's been much appreciated!

Participant 7: No problem, thank you!

Participant 1: MRes Interview Transcription Phase Two

Researcher: So the 14s have been a bit more active this time round?

Participant 1: There's been a few more injuries during the game that the boys have carried on with. Erm, one I can probably highlight for you is, erm, big [player]. Last game there at the end of the season down at erm Rangers, had played for the 16s, sorry the 15s on the Saturday. Said he had a tight groin, so obviously says to him for the game, see how you are, let us know. He said it was tight, but it was, do the warm up, see how it was, there was a physio there. I says to him, go speak to her see how it is, so he came back and more or less, erm told him to go and have a warm up, stretch it. Erm, and see how it is before the game. So he came back and said, its fine, start, so that's fine, half time, sorry end of the 1st third, [player] said, he come over and spoke to the physio. Told him he was struggling, and I told him, well you need to, is your injury that bad that its gonna go, or is it just tight and you think its jus uncomfortable. And he just kept shrugging his shoulders. So I spoke to the physio and asked what was going on. And he says look, if he's gonna carry on, obviously don't take him off and put him back on, cause he might just tighten up completely and no be able to run. So we did say to him look, if you can carry on, slight injury, cause that's all it seems to me, like I spoke to you before, there's different injures, and getting through it. It's the last game of the season or whatever we had coming up so. We says to him right, if you're gonna carry on, great, that's fine. So, he managed to carry on for the rest of the game, erm, and, obviously says it was tight after the game, erm, and so I was expecting him to say that was it and text us, and no join in the training for the rest of the week. But he came in and trained, and he was fit to play the following week. Erm, but the other side of that is, that was great, so it was for the mentality we're wanting from the players. Erm, and he obviously didn't want to miss, well he wanted to play in the big game. The other side of that is, fitness testing the other night where, all of a sudden we're training, its sore again. Or sorry, he was doing the fitness testing, the bleep test, it was sore, erm, so spoke to him when he'd come out, erm, obviously pointed to the bit that had been sore. Couple of weeks before, erm, and right fair enough, so says to him look, just go the side and that, and erm, so the rest of the boys carried on and done the testing. Erm a lot of the boys obviously done really well. Then, at the end of training, we were playing games, and [coach] says, cause big [player] had kinda wandered over to join in with the game, [coach] says to me 'is he playing?'. I says no he is struggling, just leave him. He went aw right, and [player] shouts over, 'no, should be alright'... now this was us, last training session before the break up. So, erm, I was, I did say to him, you don't need to do it, it won't make any difference. The guy who wasn't fit enough to run during a fitness test, was all of a sudden fit to run and training again. So kinda, what we're trying to, he's done himself in basically. If you canna finish a fitness test but can play in the games, it's a bit of a giveaway, he's obviously trying to use it as a bit of an excuse. But that's the other side of, erm, trying to get trust in a player to do whatever.

Researcher: And how do you notice that within, so going back to when you were talking about in the game, and he's come off and said he was struggling, whatever else, but he's played on and you're thinking, now I've got to watch this for the rest

of the week not expecting him to train. How do you notice that when it's happening within a game and for the rest of the week and see how it develops?

Participant 1: You just keep an eye on him for the full game more or less. If he cannae run then he's more of a hindrance than anything, then he's coming off. But like I said to you before, with football, being the way it is and the game being what it was. To us that's a massive competitive game for us under one of the best teams, so we need to look at that side of it as well. If he can stay on the park and maybe give us something. Cause the way he's went scoring 60 goals in 18 games, and he can score goals from anything, he might not be able to run about half as much but knowing fine well if he gets a wee half chance, 9 times out of 10 he scores it. So as a coach, do you out your money on that to hopefully happen? Knowing fine well that in the next couple of weeks, we've probably got cover to play against Motherwell the following Sunday. Erm, its, you'll look at that as just like a cup final at the weekend. If Mikey Devlin had half a chance, then Mikey Devlin would have been playing. Erm, so that's kinda how we look at that game and Sunday, it's how high profile that is for us. So that's how we went about it, erm, and we were kinda proved right cause he did have a few chances to score, and unfortunately for the first time in a while he never. But I think we coped with it well as coaches and like we said we spoke to the physio that was there and he was in close contact with us during the game. And we kept making sure he was alright, like shouting on at him. So... that's it, that's.. you know fine well when someone's running about dragging their leg, they'll not be any use to you. But, [player] wasn't, and the way he's built just now anyway, it's like he was stumbling about the place.

Researcher: So you could notice he wasn't his usual self and it wasn't anything..

Participant 1: Yeah but I think you can, you see them that much that you know straight away if someone's injured or not, properly. Like I said its down to, a personal thing for me is you know fine well when you're, something's sore but it's no gonna, properly injure you. But obviously at that age, they don't really know that. they've no experienced that too much. But I have and knowing fine well with speaking to the physio, what he thought it was, erm, so we just kinda let it go. And if something did come of it, it wouldn't have been, a bad injury, he wouldn't have been out for too long, and we've obviously got from now till February to recover. So he'd have been fine.

Researcher: So how do you over the week period after the game, you're not expecting him to train, how do you monitor his progression?

Participant 1: Just keep an eye on him and speak to him that was it, soon as he comes in to training or that, ask him how he is, erm, watch him. There's nothing too much else you can do. The problem he's got he's as well coming through from Elgin so he's sitting in a car for a long time as well so, you've got to make sure that he goes out and when he's doing the warm up, he's doing it right. And he's not just coming straight in and smashing footballs before he gets taken away from the sport scientist. Just silly wee things like that, you just need to say to him, 'look go warm up and then come back to us'.

Researcher: So the first incident we have recorded here, is [player] in a match, he had a chest infection, can you remember that? It said he didn't play [reads out recording to coach]?

Participant 1: Erm, is that at training? [Researcher: It says it was a match..] No, I think that was training. Cause he ended up playing at the weekend and scored after that.

Researcher: So he's coming to training and saying he's not fit, so how do you decide between yourselves how to react to that?

Participant 1: Right, well the problem with that one is, [player]'s mum and dad are split up, erm a wee while ago. Erm, but [player]'s mum's no massively for him playing football, but his dad's ecstatic and pushing for everything. Erm, his dad works offshore, so when he's dad's no here, his mum's no too fussed about, if he's coming in or all the rest of it. So she had mentioned, erm out of nowhere that he had a chest infection on the Thursday. Really bad chest infection, blah blah blah, thought oh right, erm, so, that was, was it a Tuesday? [confirms with timeline] ... Yeah so he missed training Thursday, bit of erm, [participant] and Dooser had kinds said look, his dad's obviously away. So kinda alarm bells going anyway. Erm, he turns up for the game, and he looked fine, nothing wrong with him. And you know fine well yourself if you'd had a chest infection it's not going away in two days, especially if it's that bad and you're lying in your bed, it was put on quite thick that he was more or less on his hands and knees. So all of a sudden on Sunday, he was running about all over the place and erm, seemed fine, he wasn't coughing he wasn't doing anything. He might have had it, who knows, but I'm very dubious about how, quickly he got over it.

Researcher: So then how do you deal with that as an improvisation...

Participant 1: Once again, it's that case of just keeping an eye on him. Like I, we were obviously speaking about it before the game, how are you? [player] aye I'm fine nae problem, I had a chest infection, or whatever, and you do cough a wee bit and all the resto fi t. but he's running about for however long, so.. erm...

Researcher: And again, that's you monitoring during the game as well?

Participant 1: Aye, yeah that's it, that was the full 90 minutes so, erm

Researcher: And are you just keeping in touch, speaking and communication wise...

Participant 1: Aye exactly, the physio and coaches, and I mean there's three coaches there watching it, erm, so there so much else you can really say. It's how it's put to you, so you've just got to keep an eye on it. Knowing fine well that he's, he's no getting tired, obviously you mention it, erm, when he came off at the first third and the second third, just to make sure that they're alright. Shrugged his shoulders and he was fine so...

Researcher: So I'm guessing that's you just taking his trust and his responsibility into account...

Participant 1: Well that's it, if somebody's mum phones up and he comes back and says he's fully fine, there's nothing you can do.

Researcher: So the next one we've got would be [player], erm, just it came up saying sore calf, player said he needed to come off due to pain in calf, never seen anyone, but said he was fine after the game. Can you talk a bit more about what happened that time?

Participant 1: he was running, during the game, erm, and he was playing over on the other side in front of us. Erm he made a few runs (it was later on in the game), erm I think it was erm, we could see him over the far side, we said to him at half time, 'look.. '(I think we were winning in the game), and was that the same training session? Im sure this was the game, cause he was doing this in front of us. Erm, and he was holding his calf. But we says to him look thing is obviously he, he's fine, he's flying up and down the wing no bother. Said he was fine, he came over to our side the last third and was playing in front of us, I thought he was struggling, so we just took him off. Says to him after the game, was it a kick or whatever? He couldn't really remember, he just it was tight. So like I said we just whipped him off and stuck someone else on. Erm, says to the physio after the game to speak to him, I think she spoke to him and just, she says it was just tightness, so she said just keep an eye on it, if you're struggling let the coaches know through the week and, I think she said he was to put ice on it, just because she wasn't sure if it was a kick or a, something else, just to make sure. Erm, and from what, I didn't even think it was, he was obviously fine for training so, on the Tuesday.

Researcher: And is that again you just, when he comes in to training, or do you do anything prior to the session?

Participant 1: That's it, the boys know themselves if trainings coming up on the Tuesday, or one of their parents will even phone in, and he was fine.

Researcher: Next one you have [player] on the 11th of November. This one was reported as a match...

Participant 1: Yeah [player] had played as well half an hour I think it was the day before, erm, for the 15s, played up an age group and came to the game erm, and to be fair to them, I think the grass was quite soft, but I think it was maybe 20 minutes into the first third, and eh you could see he wasn't running properly, he wasn't his usual self bursting all over the place. But he went down, but he said it was, it was if his legs were like jelly, they weren't working. Erm, so but he was, he was crying coming off as well, just said they were really sore. Erm, so we obviously worked him off and erm, spoke to the physio and erm, but he couldn't really explain what was happening or nothing.

Researcher: So what do you do in that situation? Cause obviously it's harder, you've got to try and do something different to get a bit more out of him?

Participant 1: Well, the main thing is for us, the physios there to take over. So she gives us a bit of feedback which was, erm, his legs might still be tired from the day before even though he only played half an hour. The pitch was maybe a bit soft. But, he missed the last 15 minutes of the first third, he never played the second third, erm, and once he'd ran about the side of the park and done whatever the physio told him to do and the stretches, ii think he managed to come on. I think he maybe come on in the final third and he said he was okay. It was erm,

I'm sure he was okay for training the following week. But its once again, we're saying to him before he goes on, look, I think we were winning the game anyway, but, its, he doesn't need to go on. I'm trying to say to him, if you're fit to go on and your legs feel completely fine, erm, and that's what he more or less said. He said it went away whatever it was. I mean he was running about daft at the side of the park getting himself ready. So it was, the physios advice was just if he's fine, it's no, nothings sore, if it was a muscle injury or whatever, it was just aches and pains.

Researcher: Do you have certain things you would expect from a player before you let them back on the pitch or do you let them take the responsibility?

Participant 1: if he's running about fine, you're fine with that. erm, and the physios, I've said to you before, they know a hell of a lot more than we do. If they're giving us the go ahead to stick him back on its, if they're kinda behind his back shaking they're head Whilst he's telling us he's alright then he's not going back on. Pretty sure she was alright she was happy

Researcher: And then again couple of days later [player], he's coming and said he's got a sore hip flexor and he was told to talk down the page stretch and it never got any better, so he never trained...

Participant 1: I had been with [player] that week at school and he hadn't joined in the performance school either. So when he appeared on training I think that might have been the Friday, it might have been the Friday. Yeah that was the Rangers game we were playing Rangers at the weekend so as I said for that that's a cup final and obviously [player]'s been our best player for a long time well he's been playing a high standard for a long time so obviously we want to give her as much time as possible to get them back fit. and he is he's a fit boy one about the park right now. so you turned up for training on the Friday and I had obviously seen him through the week at the school as well and he had the exercises to do strengthening stuff to do. so as we were going through training at the performing school he was at the side of the park doing stretch his and stuff, so he was doing stuff that would help him with his injury.

Researcher: and did you notice over that week did you monitor him?

Participant 1: just kept speaking to him, obviously we've got his dad there as well, [participant]'s there as well,

Researcher: and did you notice a change with them throughout that week?

Participant 1: Well not really cos he hadn't joined in.

Researcher: yeah but movement why did you notice him any sharper or?

Participant 1: not really no just the stuff he was doing it was more if you could feel pain or not, and obviously he turned up Friday, And I said to him how are you and he was like kinda no sure. but before you join in, cause they were late that's what had happened the bus forgot to pick them up from the school. And they were late in and we'd kinda already started the, warm up so I had to kind of grab him before and said to him you need to make sure you're all right before you join in

you can't just join in at the start if you're not sure how you are. So I said to him go and do a couple of laps of the place and stretch and then come back and see me and tell me or tell though sports scientist how you are. and off he went stretched went away again stretched and come back spoke to I think it was a sports scientist that was trying to take them. And he was still feeling it so. but we says to him as well, look fitness wise he is fine, 12-year-old boy or whatever it is. So it was a case of hoping that what he had was kind of, and the rehab he was getting it would come down and they will to play on the Sunday and that's what you done. So we kind of worked it Quite well. It was a risk as a coach and as a player that we were willing to text because because it was the Rangers game and he did he came in and played out of position for us at left back, and he played really well he played the full game I'm pretty sure. So I it worked well the team never joined in training.

Researcher: So going onto that he's obviously missed out training and then you thought it was going to be training and was it a caught off guard kind of moment or were you expecting him to be in training?

Participant 1: no I knew he was going to come in he was going to at least try it, Like I said training was halfway in and you kind of think you can just jump on the park and join in training where it is so that's why I said to him to go for a jog see how he was.

Researcher: So [player], he took a knock to the shin and it says here player reported pain due to knock on shin, but he played on and didn't report anything at the end of the game...

Participant 1: Was that [player]? No that was [player], He said quite early on that he was struggling but I don't really know him that well, but He seemed determined that he was fine. The only problem with that is later on in the game he got kicked in the same place, but it just seemed to make him angrier he wasn't coming off, so he was fine. But I mean like I say the way he was the Way [player] was after the game, I would have had the two of them down as not training that week. For [player] like I said he came in, but I don't think he was fully fit to be honest. But let me I don't know I wasn't...

Researcher: it's quite interesting when you say, you know you're speaking about you don't really know the player, but the last round of interviews the majority of the Themes that were coming back or speaking about it all comes down to your knowledge of the players and you get to know them and what they like if they're pulling your leg or whatever. So how do you deal with that, when you've got a player playing up or playing down?

Participant 1: Well the thing with [player] once I had spoken to [participant] obviously during training during the week and they had mentioned about [player] coming down and we had obviously spoken to [participant] before me and they're saying it would be good for him. And their feedback on him was that he runs through a wall, so obviously I like that, and like I said it wasn't as if he was hurting, it was just saw it wasn't stopping him from doing what he was doing Andy is from what I'm led to believe is the type of small boy that if he was struggling badly would let you know. So like I said I don't know him personally but feedback from the coaches - He's a real fighter - and that's what you done for us that day he was

good, but I did say to him after the game obviously speak to your coaches and that if you're struggling.

Researcher: So you're basically taking that decision based on information from the other coaches?

Participant 1: 100% yes.

Researcher: Last one we've got is [player]...

Participant 1: [player] was, we were playing two games 6 aside is going on and the coaches we were in the middle watching both games but after he went down and [participant] was watching it and I think There was [player] and the Goalie and another Defender all going in for the same ball and [player] ended up in the bottom of a pile up and I think he got need in their head right in the corner of the eye on the way down. So he actually went into a bit of shock because it was so sore, so me and [participant] we're watching it, but the screen that came from him we thought oh no, we actually thought he had done his knee in. but when we went over he was just lying there.

Researcher: how to deal with that because you're obviously caught off guard on the head neck is quite serious?

Participant 1: but that was the thing I never knew was a head knock until, I mean I'm looking for them I think he's twisted his knee, but you could tell he was in a bit of a shock where the injury was it was right in the corner of your eyes there's nothing there there's no soft tissue there to take the impact or anything so. so he was panicking I'll be back because it was so sore, so we had to kind of just slowed down calm down, slowly sat him up, but he was.. training had finished it was a last minute, so we got him up, walked him over to the side and sat him down, everybody was getting changed and all the rest of it and I said to him just take a minute and have a drink. but like I said he was crying as well but he had calmed down, we had gone away and cleared stuff up and came back he was sitting there crying again and somebody I don't know who It was I think it was [participant] that got the ice pack, so we got the ice pack for him and put it on his head. But he was panicking again because his head must have been getting sorer. The Dumbarton United boys had come in and they had the physio there and I know they're physio quite well so I said to him look cause [player] was kind of going he's fly at the best of times but you was going see through at this point and you could see that I was swelling up so I thought that's a wee bit out of my physio range so there might be something else there so I spoke to him and he came over and had a wee feel about family around his eye and made sure it was alright checked his eyes so he [participant]e them away once over for me. He [participant]e him the all clear but obviously it's an impact injury and it's quite hard and things can happen after it's, so it was a case of keep an ice pack on it he was heading home [player]'s dad was taking him home, so I says look keep an eye on him if anything happens from now till my house give me a shout. The thing was I stayed literally about 12 doors away from him and I says to him I would take him home, but they'd already arranged everything, so it was fine but when I went home I passed [player]'s Dad on the way out of newton hill and he said he was hurting again in the car, but he was fine and got him home no bother. So I went round and see his mum thinking he just burst out crying when he got in the house

to see his mum but I just said to his mum look anything that happens - this is what we done this is what the physio said so I think it's just an impact and we just need to watch him and have a wee feel about, the physio had a wee feel about his he doesn't think anything is broken or anything.

Researcher: and did he come back to training the next night or?

Participant 1: I think he did but he had a big black eye, he was in at school. If I'm right there was nothing on the Friday, but he was fine just a massive black eye

Researcher: So it sounds like obviously when it's something like that do you let the parents as well help with the monitoring of the injury and recovery?

Participant 1: I think you have to, at that age as well you've kinda got the boys, and they don't really know how to cope with it. Because, like I said it's a massive bit of a shock as well cause it's been right in the corner of his eye, so you do crap yourself when that happens, and you think you've broke your head. So it was obviously lucky like I said before the Formartine physio had a quick look at it for me which I thought was quite good from him.

Researcher: Have you ever had that in your past playing experience that you can relate it to how he feels?

Participant 1: Loads of them I said that to him at the time look I said it's just killing you massively because it's there is no tissue there. And he's just going yup! Cause you do you feel sick and everything. It is, it's horrible, it's a shock thing, you get that. You could see him just lying there, crapping himself cause he didn't really know what had happened. The keeper had fell on top of him and the defender had tangled himself amongst it as well. So, like I said, I says to his mum, if anything happens just let me know, but, erm, she says they think he'll be alright.

Researcher: Just the last couple of questions just a bit away from the incident says that have been recorded but have you ever felt has there been anything come up recently that you've really thought all I'm really off-guard here I'm not expecting this, and you've really had to you know that can adapt change the way you've done something to get the outcome you want?

Participant 1: Injuries of happened and I've had to I've had to go onto the physio bag and try and produce some sort of magic to help them get through training, [player] had the ball the ball of his foot was killing him I can't remember but I have nowhere I'm thinking back to what happened to me when the physios looking at me and I had the same thing I was getting pardon on it and it takes a bit of pressure away from the injury full stop so I done that for [player] but his feet were already sweating and everything so whatever I was trying to do wasn't, wasn't really working. It was the right idea and in my head I was a physio he played on and you got through training but just staff things like that you're thinking right now I'm not really physio and a couple of times I've looked after the boys when they had burns in and whatever else on the stuff in the physio bag has helped them keep it clean and covered it.

Researcher: So it's kind of down to you guys wherever you are, to find it, do you find it quite a difficult thing to deal with or quite a stressful thing or?

Participant 1: It's so you know there's quite a lot of stuff in the physio Bag, but when something like that happens like I said that was so many years playing football in being in about it with all injuries and the daft injuries, bumps and bruises and you think back to what the physios or doctor's would do with you, if it's something I'm struggling with I would have this logo and see yourselves as we've done before with a couple of the boys. Something that out with what I think I can deal with I'm not going to count myself on try and fix somebody that I can't fix some things out my hands I've got to let somebody else deal with it. Like I said there's situations and the [player] situation and the Rangers game, but we've not really had that this season. But we're maybe winning 3-0, So it's ok so right can we take him off and put on somebody else and just make sure he's alright and make sure he is fine for the following week so that's that works that's the same everywhere. That's not so much just for the younger boys, Derek McInnes would do that with his players you know I make sure they're fighting fit for the big game that was coming up or try and keep them all in the pitch as long as possible. So it's just that things like that that you need to think about as a coach.

Researcher: Last question, throughout any of these incidences or other ones that you've mentioned aside from that do you feel like a self-monitoring process where you think you solve like and think I could have done that a bit better I could have handled that a bit better and think all this outcome could have been a bit different if I done this? Do you think that's part of your thinking process within the moment and then on a longer-term basis as well?

Participant 1: I think like I said, like I mentioned there about the about the stuff in the physios bag, should we have may be between us, Made sure that more stuffs in it and totally nude and all the rest of it and I think it is most of the time it's looked after I think it's got the usual I think it's [participant], that looks after the physio bag, but maybe getting to know exactly what's in it and what should be in it all the time and from the time it comes out open it up and have a proper look in it and make sure everything's there that you think is needed full stop to be fair once the physios bags there there's nothing else you can do there's nothing you can do about it if nothing's there but like I said most of the home games we've got physios there that look after those boys anyway but obviously the away games as well sorry there but I mean obviously training Tuesday Thursday Friday we've got a physio bag and it's down to us to make sure everything's alright with the boys are struggling. Obviously the Sports Village in a wider situation would call them through as well so if anything was that bad we've got a folk on standby.

Researcher: What about your decision-making processes in a game or within a player, returning from an injury or anything like that, do you think anything could have been done a bit differently?

Participant 1: No, because I think we get report back from is it [the physio], so [the physio] obviously looks after the boys that are struggling and he'll get back to us and tell us who's fit and who's unfit. who's got a chance of joining in training or whatever and once again you're taking your lead from them. if somebody comes in and they've been struggling from school and I mean the performance schoolboys and they've missed training there because they were struggling. then they're not going to train with us so that's how that's how that happened there said the side and I miss training. I think more or less your I think I said if there's boys been

out long term and they're coming back then you're just doing what you're told, not he's just playing because I said so, so a physio that's been a physio for years, they know a hell of a lot more than any coach does so we'll take our lead from that. And then if somebody comes in from the school and says their struggle so turn will just tell them to sit out of the side or maybe like I said a situation a bit like with [player] where he's been struggling but coming back and maybe think they're all right you've obviously got to give them the chance to see if they're alright. But that's maybe where I think we've done that well you've seen the physio at the start of the week I'm sure and he [participant]e him strengthening stuff and whatever else stretches so I think he worked well through that. Most of the time it is just somebody need an election there to hear her there to make sure you get through fit and get a full recovery it's not just and 80% recovery where you fling him in at the deep end. and then we've got the other side of it which is were in the middle of a game on somebody's touch and go whether we can play but we're treating the game like a final and if you need to take chances with players we will. Because of the type of injury as well it was in a life or death injury you know what I mean it was he was just feeling tightness. I don't know how many times over my career probably about 90% of my career I was unfit I was never that 100% to run about the result was something somewhere but you just got up on you got on with it so that was the chance we [participant]e [player] and he got through the game so. And I think reporting back quite quickly after the game it's quite clear he was injured [sport scientist] here your go. Serious enough injuries get sent to [the physio] only get in contact with [the physio] and he organises the boys coming in and then for the rest of the week you kind of you know what's happening with them.

Researcher: thank you very much.

Participant 1: There you go.

Participant 2: MRes Interview Transcription Phase Two

Researcher: So the first incident we have is [player] at the end of training felt the side of his shin, player didn't report previous week, so can you just talk to me a bit more about that and what happened?

Participant 2: He just said he was feeling it so, he stepped out said he felt his shin felt like an impact and it was a game where, was it a game in training? Aye, he just said he didn't want to take any chances at all with the games coming up so he just went off, yourself even had a look at it it just look like you had a kick at some point. he never actually said never actually pinned it down to, it might have been School. It wasn't something known, so that's the sort of thing there would say just come off precautionary, and nothing's ever come of that either.

Researcher: So in that incident is come out all the sudden so how did you improvise on the pitch with that, you're obviously player down all the sudden so how do you deal with that's not even what goes through your head?

Participant 2: Right in that case I think we went with 10 man, just for our sake just to give them a different scenario so I can see he wasn't in major pain, I think he was just being careful as well. I think the stage that some of these injuries were happening you know where leading up to a semi-final or final, so no one was one to push anything and the staff we were the same we were probably always edging on the side of caution.

Researcher: Do you feel you would have made a different decision earlier on in the season when there's not as much important games coming up?

Participant 2: Yeah for something like that that's not a major concern, he he's not complained about it before, he's had a kick and he's just feeling it yeah yeah it's just about no in the individual. it is quite rare for him to be injured, yeah I think he's just you know every players different and I think he's maybe someone who's kind of in and out of the team and he was 12 just make sure he was alright. and I think that night we did just go with 10 man but it was fine.

Researcher: And do you just do that deliberately to the players? And how do you feel the boys react to that?

Participant 2: I think it was good I think you have to have these scenarios because if you don't have these scenarios when you're at 10 men then that can happen in the game. And it's just how you're playing and how you're managing the game a bit more so I think it's important to do that so whenever you go into a match, nothing is unexpected. You try and avoid being in a game where all of a sudden the boys are like oh we've never been here before, what do we do? So I think we done that going into the cup final just recently we chunked 10-minute intervals of scenarios so tenner 15 minutes where they had to play with 10 men 10 or 15 minutes where the new did I go 10 or 15 minutes for the day must keep the clean sheet so these type of things are important so I think with that incident obviously that's what we did at the time and I think it was fine.

Researcher: And how following on from that training session did you monitor that injury?

Participant 2: Just speaking to him to be honest just speaking to him and saying how are you and he says I'm fine now and you just watch him and make sure he's alright in training. So I saw that one is a very minor if not just being very cautious.

Researcher: And what are you specifically looking for when you are watching them in the following training session just to make sure that he's ok?

Participant 2: Just making sure that is movements normal and because it was a shame that is not rinsing or you see is facial expressions and it doesn't look like he's struggling at any point. and listening you know for him him saying anything.

Researcher: So next time we have is [player] at the match vs Kilmarnock I think it's the semi-final, he's come down twisted his knee and the physio was went on to assess him and the player felt that you was fine to continue no further action from the coaches. So, I can do you want to just talk through that until we have happened in the game?

Participant 2: Yeah that one I thought might have been something a bit worse than it was it first because he went down quite heavily in the corner. and I think for us one of the biggest challenges is we've a different physio every week and we don't have consistency so the real reason we have there is that the physios don't know the players. no the physio that day I think was the guy, we have had him a couple of times before and I think Ian is he does look at the age of the player and the strength of the player and further that and sometimes says no mentally they should be getting through this there's no further risk. So I think we all had a twist and he was a bit worried because he was injury prone this season this year. physio came back to me I hadn't seen while at that time and he says no is and then it's just a case of us making sure we monitor them and watching them very closely to make sure he's fine especially around the knee area. But why is someone who is this year he has been quite injury prone due to growth, but again he looks like he grew stronger as the game went on and even after that actually watching them carefully he we actually looked like he was running better. as time went on but no that's a bit of a challenge when you've got different physios.

Researcher: So you're saying that has been growing in obviously is being injury prone this season so how have you monitored that over that period of time?

Participant 2: He's been one that the easy one is any time that the the parents have phoned in to report that he's feeling sort or whatever else are we spoke to him and he said that we would just monitor his load. So, I think when he was coming back he was getting initially he was getting reduced number of sessions it was all faced in and then he was being told about is reduced playing time as well once he got closer. and I think again it's just listening taking advice from our physio the sport scientist working with them and [sport science intern] in particular was tasked with a lot of running with Lyle. and then he kind of gotten back up to speed with the recommendations from the physio. I actually thought that one was handled really well. probably better than we had in previous times, because the physio is quite thorough with his report I shall know and a sports science team can read that it's in black and white here's what I needs, and I think I said in my last

interview I think that's where I'm the type who has trust in the staff you have there. You know the physio the physio knows more about being a physio than I do sport science team no more about that than I do. and we'd employing these people so I think we need to trust them to be able to do the job.

Researcher: So as you went on and then obviously had the tonsillitis just before the final that was obviously a bit of a worry as well how did that one get handled?

Participant 2: That was again something that we've I've never personally had to deal with before. take of that was we put them off the week where they would have been off the week anyway without tonsillitis, he is on a course of antibiotics we did ask him to come to training on the Thursday because he said he needed to see the preparation for the final but not train. So I said he had to be wrapped up and that was really just so that we covered off everything and we weren't going into the final as I said before with any doubts and [player] saying 'Oh god I've not been here before' because we were adapting the formation for the final. And then out of the normal I went and met him on a Saturday at the sports village and its dad brought him along. and they put him through his paces there and I think it was literally just movement he's not coming back from injury it was just really I think it was more mental at that stage. and then he wasn't 100% by any means, but he was getting stronger as each day went on he was back to school you was eating more and I just another 24 hours for the captain the boys had a tough season to go and finish it to push it. I'm not saying that now you still didn't put in the level of performance that I think he can but but the decision for him personally and for the club paid off. and it is a bit of a risk.

Researcher: And how was that decision made that you played because I remember you joked about it [player] that he wanted to play or was it just completely your decision?

Participant 2: That was the most important part of that day because we did some movement that day, he actually forgot his boots with them as well which told me a lot that's something he's never done that which told me his mind wasn't on it. He left them in his mum's car and he came with his dad so the stuff I had planned a lot of change of direction stuff things that he would be used to doing I couldn't do because he had a pair of trainers like these on but she couldn't turn. So I can be found after 20 minutes doing a little bit of activity it was the one to one just making sure they made eye contact with him and my question to him was 'how do you feel about playing tomorrow?' and his answer to that was well I'd like to play a part in the game. So, wasn't 100% that I want to be in, I then said to him when you say play apart in the game what do you mean? He said I'd like to finish the game which means he wanted to be a sub, again your captain going into the final but I know you well enough just say he's a thinker he's a perfectionist, and he will need pushing to make the right call. then when I started talking to him more and I said to him what if I was playing you front of forwards rather than the usual left back position in a different formation you've got protection behind you so the consequences of any mistakes are minimised. He then picked up a little bit. Then I said if you want to play a part in the final if you're on the bench you might never get on cos you look at the semi against Kilmarnock no subs were made whereas as if you starting the game at least you start the game we see what we get out of you you come off and then we've no wasted a sub because you've impacted. and to be honest me and [participant] both said before we kind of thought but he could

have got a decent cross on the box at some point which could lead to a goal we didn't expect him to go on and score the winner but... you know he got through the hour and it wasn't until he got clattered that again I think it was more when he was down he was breathing he thought that's enough just in terms of fitness wise because there was no sort of injury or reported or anything after that.

Researcher: Yeah because that's one of the last incidents here here is with the cup final he's had a taco so he's come off so do you think it was just due to him being mentally done from the and physically done?

Participant 2: Yeah I had looked him and he was just sitting down and he just looked like he was blowing and we were already debating making a change at that point because it was so, you know he hadn't, [player]'s game is based on his fitness up and down the wing and that wasn't showing as much as it normally would and I can understand why. You know here 2 weeks the game before will Scotland she's had tonsillitis in between it, I just felt a boy like that who's had a lot of up and down for the season in terms of fitness and injury mental there that one was so important to go on because he wasn't injured, I just thought going into that game would have been the right thing to do push him. you could see within his reaction when he came off he was buzzing and we never heard a thing about the injury and the physios didn't say anything they just said I think he's just blowing her whatever else.

Researcher: Your decision there are you said you were already debating taking him off was that just because of the previous?

Participant 2: Yeah just because we thought, we thought initially the half would have been alright if we could have got that first half out of them but we played really well indeed scored so then you're saying well, he because [player] had a habit of getting stronger as the games gone on, but no we just made the call to come off around that point. and it was the right thing to do it didn't make it difficult for us.

Researcher: You talk to them about obviously had that conversation with them on the Saturday and that's obviously a very good example of being able to improvise and you've got to think of something different to try and get around him to want him to play. have you had any other kind of examples of that with other players that you've had to really..

Participant 2: I've not that's probably the first time I've had that because that's the first time I've been in there been going into a game that meant something that really meant something to the club and the individual and to the families so. I'm never, I mean listen if it was any other game that wasn't a, I guess maybe even a semi, I would have said just leave it we don't want to see you at the weekend. but I think it was more for him because he's gone away with the Scotland he'd missed he wasn't feeling the best there I think he could have done a bit better than he did. he didn't want to say to anyone who wasn't feeling great and I just thought he looked he finish the season off you've got a boy who should have been absolutely flying the season, and he's been really unfortunate with her it's gone and you know, I think mentally that gives a boy a real chance here to go and do well at this club. so that was so important so I think it was just the different

scenario I think for even myself made an exception to a normal a normal rule with that.

Researcher: And do you think, you're obviously to notice [player] not 100% due to x y and z where do you think that no it's inability has come from? is that due to knowing him or you've seen in other players?

Participant 2: I think it was obvious in Liar just served due to his mentality I could see it I could just tell he just looked a bit white more wiped out on Saturday on Saturday morning. But a lot better than he did on Thursday so I just kept thinking another 24 hours he'll be better again.

Researcher: But being able to tell personally [player] looks quite wiped out for him, is that just down to previous knowledge of him?

Participant 2: Just spend them probably seeing and probably 3 or 4 times a week for the last I don't know how many years. and knowing what he's been like in the past I'm not I know his parents quite well, knowing their mum saying that you shouldn't be playing but the Dad saying he should be playing, and understanding the differences with them.

Researcher: And how do you do that actually cos that must be quite difficult when you've got a push and a pull with the parents?

Participant 2: You just have to spend time with getting to know these people and if you go in blind with them it's very difficult when you get a new group it's very difficult you've got to spend a lot of time seeing the signals. I'm really fortunate because of the job I do as well as the under-16 coach it allows me to do that. So, you tend to find out how the characters are in parents meetings, or when things are going bad. So you tend not to see characteristics when things are going well. So you need to have if they get dropped or if sometimes not players case but if somebody else gets an incentive and the jealousy kicks in and the jealousy is a big problem as well. You might not know this but that group of got a real the parents are a very jealous culture very jealous. they've got a real jealous culture that you might not notice because we've been doing well you know, if things if things take a turn at any point then then you'll see it it's not healthy.

Researcher: and do you like that influence your decision-making on your side or do you just trying shut out?

Participant 2: I mean yeah you block that out completely because I mean listen we're looking at our group of 14 players me and [participant] I'm looking of a group about 100 players within the Academy but they're looking at 1. So you have to do you have to you have to be sort of compassionate to what their priorities are but you've also got to look at the bigger picture here as well. and the bigger picture is more important but of course to them it's 1 but listen there's a parent they will do everything they can to get that advantage or to get that bit of extra knowledge. you've got to be also very guarded when you have discussions with them.

Researcher: It's interesting that you say you've got to think of that bigger picture because that's a massive part of obviously decision-making is looking at that bigger picture. to you what is the bigger picture to these individuals?

Participant 2: You've got to look at the mall and every individuals pass is going to be different not one is going to be the same. you've got to look at being realistic with how you treat them if you've got one that you think is really going to have a chance of getting a contract. and it's almost right for him to know that might happen but without saying it, and you think that's going to inspire them enough then you need to approach that differently than the boy who is also likely to get a contract but is performance might be detrimental to knowing that he might so you might have to keep pushing him to make sure so it's just getting it's just working out what's best for each individual to help them fulfil or achieve their potential going forward. that's difficult but that is literally talking that is talking to people and speaking to people and watching how they react it is just down to listening to the coaches and realising that that kids going very comfortable just now he needs to be taken out of his comfort zone and being prepared to fall out with them as well. So the bigger picture is trying to maximise the opportunity within our environment to make individuals can achieve their path. On the same thing is if one of them is at the other end and might be you think it's not going to be here like race for an example we've had to manage that for like just now and he's going to get a move to St Mirren. but that's being managed quite carefully and tonight were officially changed the forms. but the way he's been he's not been getting a lot of game time as such so you've got to be fair to him.

Researcher: And when you're saying it's coming from watching the People's characteristics have you got any red flags that you would kind of say that would make you notice something?

Participant 2: I hate because everyone is so different one of the red flags is if there performance tips or spikes if there's a drastic up and down you need to find out but, no I think what I've learnt he is as there's no science behind it it is just it's listening hear what people are saying I'm just I don't think there's any red flags at all. because what's right for one is it what's right for the other and it used to be a comment that used to bug me parents used to say to me or you treat him differently to my kid. Yes I do. and I think that's where this year working with [participant] he's very much, play this I'm not the parents and I'm happy with that because we've had an agreement there were I've known his parents for a long time. some of them will try and manipulate things. you're not change that parent there'll always be like that so there's no point in you trying to change them. So, you've almost got to unfortunately except of what they are and work out other ways to get around them.

Researcher: Because that's been another thing that's come across as a theme throughout the past interviews is that parents can be very influential. so how do you try and work around that for your decision-making?

Participant 2: Sometimes you've got to be prepared to upset them as well so, I think what at the end of the day the way to get through to them I find is you need to be on you need to be getting to the same page as everyone I also want the best for your boy. What's best for your boy doesn't mean I want to see him go on and get a professional contract because he's not going to get a game at the weekend, so it's making sure there's times you've got to say look this is not personal this is about us trying to get the best for your son and will always be honest with you and that is the biggest thing just be honest so when you say about tact and how

do you approach it? nobody can shoot me down for being honest, I've had it before when releasing a player a younger player. And that's more important for me than being liked so knowing where you are and be honest and it is football so difficult. if you're playing an individual sport like golf or whatever the statistical based you have a handicap of 1 while you get a chance to go that competition next swimming or athletics you know your personal best will you can go. footballs all about opinion. So you are and at the end of the day that's what you'll have to say you have to say this is only my opinion at this moment.

Researcher: That's really interesting because some coaches let parents have a bit of an influence on their decisions and some wont. So the next incident is [player] again match Cup final got cramp in the calf managed to recover them play on. so how do you, he's played on which is obviously your decision so how do you make that decision to let him play on?

Participant 2: Again we've got a full-time physio here for that day he goes on he's feeling cramp but the feedback wasn't actually I was quite surprised the feedback wasn't that quick on the fact that it was a final like you looking over and I don't know if this is right or wrong you're looking over them someone's getting treated and you're not sure you may be expecting a signal or he's alright. and we were kind of standing thinking is he ok or do we need to make a sub just because there was a digital board we had to tell the referee. There's a few moments in that game that we were at 10 men which goes back to the scenarios that we practiced where we knew what formation we were going to change to and I never thought of that until now but. so yeah that probably did help but no that was a strange forward one for me he's came off his just feeling cramp so it was good then to know it wasn't a calf strain on anything you've just got to make sure the risk of that again happening because it can be quite common again.

Researcher: Well I was just going to ask how did you monitor that within the rest of the game?

Participant 2: It's just watching just making sure that is not going to go down good because that's going to be something that's going to come on quite sudden so you just need to be ready but we also had to be ready to have a backup and we didn't have a and we didn't have a another back up there because [player] was off so we didn't really have another?

Researcher: So that is a bit of a caught off-guard scenario so how do you then deal with that under the pressure of a final?

Participant 2: At that point there we had planned was [player] was going to drop in at the back, [player] was going to stay there [player] was going to go right back and [player] was going to play further up the park I think was the plan.

Researcher: Is that because you know you've got flexibility within your players were they can play around the park or is that just you had to do it and that was it?

Participant 2: No I think we were comfortable that was what it was and we were alright with that. it wouldn't have been a deal because the way the game was going and you want to you've got a plan in your in a cup final and you've only got

so long to go you want to get over the line. And I change you can always question yourself it was that change that cost you. It was a bit of pressure let's be honest even within myself not just within the 16th or the Academy I felt that was some pressure.

Researcher: And that kind of ties into what I was going to ask early that you've obviously got these different physios all the time so there's that inconsistency and obviously that will influence your decision as well, so how did you feel different that day with there being the full-time physio in the dugout?

Participant 2: Probably the good thing that reassured us with that one was that the physio is already seen a lot of these boys so the ones that I've had previous injuries the physio knows them, so that helped. [player] for example being one other one he probably didn't know but you're getting your head don't you that because he's a full-time physio with a football club rather than just in a clinic a spear or a clinic yeah that he's so much better that you just think that more whether it is or isn't. and you just have that trust and also because he's working with the age group above I always think the physios you can be very much we've got to get off because they don't know it's very reputation they don't want to see the boys fine and he's not. Whereas with the physio being in football you just have that and I find that the rugby ones are like that as well I find the ones who are involved in Rugby require he's alright and I think that's probably really important for this whole study that we have to get across that you can play with pen it's not an injury pains not necessarily an injury then I think now it is because young teams at 11 and 12 and upwards there's physios at the side of the pitch and there's so many more people will go to the physio when they feel pain.

Researcher: The club didn't have a physio you would actually reduce your injuries quite significantly due to that?

Participant 2: I do yeah it used to be that when someone got a knock or an injury that they'd want to request a physio straight away and it was actually a me and myself and I went to a me and said you need to reduce this because I'm getting parents on the phone and I'm trying to put them off coming to see you which is wrong. so we had a procedure in place which is the coaches know now there is 48 hours rest and ice on anything first and then after 48 hours if it is still sore then we'll deal with it. because it is if they do have a lot of swelling and they can't do a great deal anyway so we've kind of try to manage that a bit better but I definitely I think nowadays that having the physio present there's someone to go to. you know they can help on the mentality it can it can have a negative effect on that.

Researcher: So when you're saying you've got to try and put people off going to the physio, how do you deal with out within the parents and thinking we need to stop this how does that get across the parents?

Participant 2: I think you just have to say because you know what a policy is it's 48 hours but see if there's something that's if there's anything that's like alarming are you literally can't walk then you go straight to the physio.

Researcher: Again would you use that previous previous knowledge of the player as a whole to kind of guide that and say well it probably is true with this player?

Participant 2: Yeah well your have is history so, you can also do it the other way so say a kid's had a he's having a poor performance and he fakes an injury and you get that to or it's because of this survivor then you call them out I want you to see a physio to find out about that mentality part and if the physio says there's nothing there then we've got to that to go back to. and you will get what you used to get which we've not had of late. used to be really really common this time we used to be the halfway point of the season not the end but you used to sit parents at the welcome meeting I don't want to see a bandage in December because what you would get his kids are coming in with the knee bandages why the supports so there is always an excuse so when they went over that halfway line and they didn't perform are over the touchline sorry and he didn't perform for your miles so he was feeling his knee so you've got all this. Again, if he needs to wear that the new doesn't play unless the physio and said you need to wear that. but we're away from that now which is quite good and I think we just need to make sure the environment is harder.

Researcher: So the next one we have is the cup final again, [player] took a high tackle above the knee and I think he did struggle so how did you deal with that he played through it but struggling days later to walk as well so?

Participant 2: That one was right in front of us that was a bad tackle and I think God is resilience and games like that is, the type of player he is he's he's a warrior type player. So, we did get him in a bad tackle and again getting seen by the physio he wants to carry on it was an intact one probably soft-tissue I guess, and it looks sore for him but again he's the type of boy that do you want to play through that and I think that's what we talked about before with the pain and injury. I mean that could have been one that put another one off, probably another player would have decided to come off with a weaker mentality. but his pain threshold I think after the game nothing was mentioned he didn't mention it at all she was 90-minute man and that was him he wants to do that. and it was only after the when I spoke to the mum a couple of days later and just said and she's just said he's really sore with that one still but again she never said it was an injury you know so and the Dad as well he says Look he's been toiling through that one and my response of my phone here is if it doesn't improve at all let me know and we'll get a min to be seen just to be sure. Again, nothing so and I think he just cos we saw it that helped it wasn't on the far side of the pitch and we could see his face the physio's close to it so I can potentially that could have done a lot worse because of the height of the tackle.

Researcher: And I was going to say there that you've just got to monitor in for the rest of the game but do you guys take a lot of that monitoring on yourself or do you leave that to the physio and the dog out?

Participant 2: Yeah like I said they sometimes pick up on players I'm guessing we're watching 11 players on the pitch but I think the physio tends to focus on one or two that they've may be treated because they sometimes get in my ear and say I look at your player he's struggling and so does a sports scientist at times and they will look for things that are a bit different and you can get caught up emotionally and tactical during the game. So I you still look for them but you don't look hard. you're aware.

Researcher: You kind of expect the coach to be able to pick up on things but it is awesome you guys are all saying that that's what they're in the expert in the so you leave that up to them. so how would you then monitor them coming back because obviously he's not trained for a week now so how would you then deal with that?

Participant 2: The other thing you was asked to do was go to the 18s game against Melbourne. So I phoned mum and said Mike just to let you know would like him to play here what's the situation? She said aye he's still so sore but probably want to I said well just leave them then. You know the stage of the year it's a bounce game against Melbourne we're not short of players don't push it if you saw then again whilst I'm saying pain over injury the game it wasn't an important game. He's finished his season on a bit of a high there he's taken one he's got through it with the type of mentality he's got somebody else can have an opportunity to go. don't worry yourself don't worry about going into the game that doesn't mean as much. so it's just managing it as well and listen if you if it was a, a league game or a regular game we would have had the conversation closer to the time and said look how are you feeling for this week can you train I think...

Researcher: And do you think you'll need to again obviously that's coming down to treating it differently because of the level of competition do you notice that difference with them players that they know that themselves. So do you think that influences decisions on that side?

Participant 2: Yeah definitely. and I think this is what's quite good about them getting towards the age where they could be trying to get a professional contract and they need to be showing that resilience going in and I'm learning that probably from from what the manager saying to me and the assistant manager they need to have that toughness because the way the train here under play in this league here it's not your you're Scottish League you've got to be able to play a certain way or handle a certain way which isn't always the best. it's because we can have real technical clever players who are well aware who would maybe suit a more continental style for your maybe not gonna get as much slide tackles or 50 50s second balls in the air. but what I've been reminded of time and time again you can develop these players that might be technically as good as some of the Spaniards but you need to be able to play against Hamilton away in mid-week.

Researcher: We noticed that when we were away in the tournament in Holland and it was different styles of play in they had to change to adapt to that so how do you deal with that and how do you think it effects the players?

Participant 2: What I always find when you go abroad is your technical players tend to need to play because teams don't come after you like they do in Scotland. So you can and sometimes the games a lot slower people tend to pass moves they try and find gaps and they want to keep the ball whereas here it can be mentally frantic I think what we have to do we have to still be able to bring that because that's what we're stronger in this country and you see but at the same time we need to improves the other side of the game a bit more and to be able to adapt. but yeah that can be a challenge?

Researcher: Do you notice your monitoring change or when you're watching the game do you notice that's different do you look at things differently when it's a?

Participant 2: I think when you go to a tournament you still try and bring what we're good at which is different from what they are used to because if we go to a tournament you know Aberdeen technically and tactically are going to be behind some of the biggest academies we might have players that are good enough but collectively we would be really we would be short collectively so we have to bring intensity physicality to the game that they're not used to I don't mean in terms of bad challenges I mean in terms of how you press how you don't give them time on the ball and that tends to allow us to compete a more level playing field so against some of the biggest academies in Europe strangely enough. Because they are used to playing some of the English teams as well So we have to bring that side of it which it kind of balance is off the game streaming. When you see a lot of the English teams and you'll see these teams play against each other they play a very slow pace and the bowls just moving and technically they're very good and tactically are very good as well. we have to remind ourselves that we have to develop players that have got to be able to play here midweek against the St. Johnstone or a Hamilton it's what it is.

Researcher: Do you notice a change though relating that back to injury when you're playing continental teams that there's a change in Risk to injury due to the different style of play whether that's due to more others less?

Participant 2: I, I think there's glass I think we have a higher chance getting injured here even though it's a tournament you think that I turn of it because it's more competitive it would maybe be that but I think our culture here is harder. I think out there your focus on your concentration becomes more important because you're playing against better let's just say footballers. But certainly here I think this is as a hard environment that our teams are coming up against.

Researcher: It's quite interesting to be able to notice that different patterns of playing how that then affects players physically as well. last one we have recorded here is (Player X) in the cup final took attack on this one was obviously quite bad it was rolling around on the ground and I can the physio went over so what happened there and how was that dealt with?

Participant 2: Do you know what I don't even think I saw that one. I didn't I don't think I seen exactly what happened funny when you know you was down and and the physio went on and fine he got him off to the side but then when he got them off to the side he was just along from us and he was just screaming and I didn't hear that at the start so I guessed so I mean my worry there was initially it sounded like it he damn dislocated his knee or something in my first thought. and then the physio was looking like he was manipulating something and he was screaming for about a minute or so which now having said that I've had [player] at under 12 at Hibs where I thought he broke his leg and I had [player] at another incidents when it was about a year and a bit ago with again he did something and I thought he'd really damaged himself and he's got that in him that dramatic side of him but he is also had a very bad injury to his knee and in Ireland really split is me open. so it took you awhile to get back from that because it was quite a heavy heck of a scar he's got so he has had a very bad injury and he's still play still leads to that so my first thought was that he had dislocated which wasn't pretty and then at that point this was the one of the times that I was waiting to find out if you was alright or not and now we said no no he definitely need to change him so

we got the sub ready for that. and then when he came back I said to the physio well what what do did you have to do thinking it was his knee and he says no not a lot it's his calf. So I spoke to [player] and said are you ok I he said nah, he's just showed me it it look like had swollen up a little bit and he had like her I would describe it like I have golf ball just down there just right in the middle of this calf. but it wasn't what I thought it was when I heard him screaming.

Researcher: And how do you deal with that because you've obviously maybe got an initial thought in your head and then prepare a plan for that and then it's then changed again where you're in a bit caught off-guard so how do you improvise to that sort of scenario?

Participant 2: in terms of the substitution that was we were gonna make it anyway so see you could have been somebody who played 90 minutes so we were ready for that so we got that ready straight away and then the only thing that I wanted to do there was make sure he was ok in fact I think I went... no I did I walk over to help the physio?... I can't remember I don't think I did know I didn't leave the technical area... but no he he sat down and he seemed alright he just looked like he was sore. I don't know whether he got a fright and then he's settled down but once he sat down he looked alright and listen he was sore after the game and it's another one of these you know after the game you speak to the parents and over the phone or text and spoke to his dad Justin and nothing more come of it.

Researcher: And obviously having a player that's so dramatic will make you naturally think or something is really gone wrong here so how do you deal with that is that knowing the play it again or?

Participant 2: Do you know what right because it was like a final I almost I wouldn't call a crisis but I use it or you've got two things here and You've got a player that you want to make sure it is alright but you have a match that you need to win and I can you just got to trust the physio that's doing his best and whilst it was a distraction to me personally because of the screen you kind of there and [participant] then is focusing far more on the game and I'm looking at that substitution [participant] is then dealing with a set place and I'm back to the game when trying to manage that. So one is this young lad alright but I'm not going to be able to do anything when I'm standing the physio was treating him so you've just got to let that happen and I've got to focus on what my job is.

Researcher: Okay perfect, thanks very much for all that Participant 2.

Participant 3: MRes Interview Transcription Phase Two

Researcher: If you want have a read of that again and familiarise yourself with the data and then can you talk me through the first incident there from start to finish.

Participant 3: So it's all [player] basically? So I think if I remember rightly he just pulled up at training. To come out of the session and giving on where it is, I didn't want to strain it anymore. And then how we moved on from that was so after the session I spoke to his mother and said if you could could you phone me tomorrow and give me a little bit of an update to see if you have to make an immediate action so I... do we really need a physio interception or do we just rest up kind of thing. I think he ended up being out for quite... [verifies with timeline] ... So his mum must have got back and said it was ok, he trained fine and then that must have been that was the Celtic game. so that was quite interesting, he trained on the Friday, so Thursday he pulled up his mum contacted me and he hadn't trained with the SFA his mum says he felt fine, giving the Friday session was more tactical than technical, on a Friday we've always the load is reduced, given that been training all week. Says he was fine then we done a warm up and in the warm up he says he felt ok but he asked if you he'd been given such as previously, so he asked if he could come out of the session and do some extra stretch in the side of the pitch. What you done and within 5 minutes of the session, it says there is started the game and pulled up but he actually didn't just say it was his groin he says it was his hole mobility light down one side was a bit of a struggle. so we took him off he wanted to go back on I said no, given that he had had a pattern of Injuries prior to that like he is growing a lot so says no get him off so he won't be going back on. he asked a couple of times actually but we left them with a physio so the physio had started doing little bits and pieces must be assessment of how the pain is. then he never played again the rest of the season, obviously it was near the end of the season anyway. On the Monday or the Tuesday I spoke to his mum, then we got him referred to change the physio, then [the physio], says it was his hip flexor I think it was... I feel a lot of it was psychological as well as physical. because he had a lot of Injuries over the course of the season, like a lot. but I think that he had grown some ridiculous amount and I must admit I can't remember how much, I'm sure it was like 3 or 4 inches over the space of 6 or 7 months something ridiculous like that. so his dad said, it was all connected he was all over the place kind of thing. I'm basically I kept in touch with [the physio] thereafter, the physio is emailing myself [participant] and [participant]. so [player] was coming in on a Tuesday or Wednesday getting his session and then we were getting reports back, now at this point of not actually seen them again, we've not trained, so he's been out that whole time since.

Researcher: so that the actual game when you says he has come off and and decided he wasn't getting back on how did you make that decision what are you looking for to be happy for him to play again?

Participant 3: it's a bit of the physio and a bit of myself, so he couldn't run properly so he actually, he came off I think the ball was still in play nearest trying to run but it was quite apparent that you couldn't run. yeah so I challenged him before he challenged it to me, and there was a breaking play and I says [player] you're struggling aren't you? so I'm ok I'm ok. but no he lay down, we said to come off and the physios seeing him and I says look, the best thing for this is once you've

assessed them we need to get him running a bit, so see if you can run at the side of the pitch first. and it was a little bit of stop start. psychologically he looked quite weak he looked a bit emotional. so from that point of view we do guarantee them 16 minutes at that age group, but it was only 5 minutes gone. but in my mind was sitting out and see how he goes from there but at no point did he prove to me that he could that he could go back on, because you're always conscious to just go and run and see how you get on and at no point did he manage to actually convince me that he could even run.

Researcher: so you have these objective measures that you look for employers that make you happy?

Participant 3: I definitely I will never let them on the picture again unless I'm a million percent. if it was an impact, he would maybe be a bit reassured because he looks confident and he can genuinely quite run a bit, it's kind of a rule of thumb will go and do a couple of runs and then we'll see how it is from there, because it's not going to change the world at that level.

Researcher: so when you're looking at him and you challenge them you've noticed him, how is it that you can maybe see that better and him done somebody coming in new to the job with less experience?

Participant 3: I think, because you're training with him every day, every kids' got a different running technique so, I would say I could give examples, like [player] to the normal eye, some people would maybe even go, that was weird and there's something up with him so it's actually identifying how he runs compared to how he's running now. so you tend to find that sometimes there heels go up a bit and that's kind of put on a bit. So just looking at that kind of things.

Researcher: so do you think it comes down to knowing that individual player?

Participant 3: yeah I think it does come down to that a bit, obviously the physios no best do they? so they know their intricate little things that I wouldn't notice. but generally that's how I would kind of assess - can he run? is he comfortable? was he unnatural running style? was he grimacing when moving or touching the ball? so just you go through a natural process in your own brain.

Researcher: so you've done that, he needs to be referred to the physio for treatment... so what is your trigger point that you then think he needs to go to the physio?

Participant 3: well prior to that, I've kind of touched on, he's had quite a few injuries not from our perspective, but I personally felt but if there's your team back then was less responsive, so you would be contacting them and then it was kind of like well we can't see him. and [player]'s Mum and Dad had actually sent him to private physio at one stage because we just couldn't get them in here. but it was more like we were being told well just rest up. I kind of knew myself that, speaking to him and speaking to [coach], I kind of knew myself it would be best to refer him plus I think [the physio] is more accommodating, I'd assume he'd get a list of coaches and you would rarely see my name, so he would probably assess it by the fact that coach isn't going to just put him in willy nilly. and probably because he was struggling so much like prior, he has already felt the same pains

prior to that. So you've got you've almost plotted a route.. instead of it being a one-off. if that was a one-off then I would have said will just missed training, that would be my normal stance let's just missed training Tuesday, Thursday will speak to your parents and then the Friday how is he getting on? then let's leave it this weekend and then we make her decision, because clinic used to be on the Thursday so you almost get to like so what's that 11 days near enough you get too and then you get to then referring him.

Researcher: that's really interesting because obviously it's a longer time frame are dealing with here when looking at injuries in sport, rather than the previously researched areas of naturalistic decision-making where they only have 3 or 4 minutes to make crucial decisions before the outcome of the incident...

Participant 3: sorry 9 days it is actually 9 Days and 11 days until he would be able to see a physio sorry. so 9 days before you go oh we actually need to do something about this. kind of thing because a lot of the time it is rest and a lot of them are still at that age where they don't know the difference between growing pains...

Researcher: and that's another interesting point at that age was you just said they don't know the difference; how do you educate them then in that scenarios?

Participant 3: I suppose you just you can speak about the history of players but there's always.. so you always care I've had quite a few of them now [player] who's been out for a whole season.. so, you do tread carefully. because it's about pain threshold because [player] has been growing at the same rate as [player] but every week and he's like, he's never actually seen directly, but the guys speak about it and you can see [player] going "always going to have some sort of pain" whereas you can see [player] a bit weaker mentally so he's the type that if he got a clip of his heel, it's hard to balance it up.

Researcher: so how do you then deal with that from a psychological difference within the players?

Participant 3: I think that when you said the precedence right at the start. So you paint the picture that a physio is a luxury, that you only get at games, ok I can give you first aid treatment but you need to have a self-awareness about yourself, about what's pain and what's an injury? also we told them, well [participant] did initially but [participant] as well, how many times do they play at 100%? 100% fitness, where is are you playing at 70% fitness? In the nature of the sport, you're never going to be 100-percent off the back every time, it's being able to self-evaluate and going actually I'm quite tired or I am actually injured.

Researcher: so when you've noticed the situation, in a game or whether it's a training session, how do you unlock training session? are you more aware that you're keeping an eye on that player specifically putting more attention towards them? how do you monitor them in that setting?

Participant 3: If I first notice something I suppose you've got to, that's when you work as a team, so I've always been a big, big on the sports science guys I don't here for just 20 minutes to do the sports science bit I want to engage them as well. so it's like kind of saying to the likes of [sport science intern] and [sport science intern], the rest of us have got to focus on this session can you specifically

look at how he's running how he's reacting to things so it's just kind of collaborative focus as a group that we have an awareness. but you've also got to have that awareness of not making a big deal of it because you don't want him thinking [participant] looking at me a lot, it almost becomes a panto kind of thing. as if you're speaking to the sports science team and they're saying don't go in there but just watching you tend to get better outputs of it I think.

Researcher: can you talk about different scenarios where you've had that you've maybe hit your threshold at different times due to different situations?

Participant 3: I'm trying to think I've been quite lucky the season with injuries, and even past seasons in that, I'm trying to think of injuries in the past. it's usually the threshold has been stuck naturally. I can think of a kid called Fraser Duncan who broke his wrist so your thresholds broke immediately, and quite naturally... I think the, so maybe a good example would be really really quick players with their hamstrings so that's something that you're really really aware of that are fibres have a lot more issues. so we've got and athlete, [player], really really quick boy so we're aware of him more than anyone else in that sense. for some reason he tends to cramp a lot, cramp in his calf cramp in his hamstring. so with him he hits the threshold you would probably think physio but with him who covers a lot more yardage and stuff like that you do tend to say while in actual fact going to a lot of stretching. now he's obsessed with stretching as is [player], they are like almost a phenomenon compared to any group I've seen. so if you turn up at our training you won't just see them kick a ball they will have 10 minutes of before the session [player] is exactly the same. they actually became almost like a weird friendship because I think they obsess over the need for doing stretching in that. so you have got to, I know it's not probably quicker in getting to the threshold but it's quicker in identifying that there may be issues quicker.

Researcher: I think we have a few players like that across the Academy that have extracurricular activities going on...

Participant 3: and I think as well in terms of thresholds it's about, and this is something we done previously and I don't think we do as much now I think, when they're going through their growth spurt, so they're ones as well the threshold isn't about the physio than the threshold is about getting them out the sessions. I've had a couple of occasions and people have been aware of it's a growth spurt puberty in certain players. so there's been times that you are a bit more sense of them.

Researcher: so what do you do in that situation from an opportunity and improvisation respective how do you accommodate for that situation?

Participant 3: I think how you accommodate is actually just say giving them that questions of - how are you feeling? are you feeling it a bit? think it's best to stretch? after a few runs come back to me. I think you'll find that I'm a more cautious I'll be more of the type in actual fact go and go out the session and go and do your own stretches. I think it's particularly handy if you've got the likes of [sport science intern] and Donald or yourself that you can actually say well could you do some work with him kind of thing. and then the other adaption to that as if you've got feeders that are just throwing balls so if they've got a leg injury or that, look could you just go into that kind of role whereby you're still, because I think it's important

to keep them in the group I think that's really important. like when we get injuries, [player] attended every game, and set pieces he done them so I think it's psychologically you've got to keep them involved you don't want to leave them out.

Researcher: and is that you looking at the team well-being in that situation as well?

Participant 3: yeah I think that's really important in terms of their well-being to create that, because when you look at the the needs of people and what they've got to be they've got to feel wanted you've got to be able to eat you've got to be able to sleep etc., so when you look at that kind of that triangle people want to they crave to be wanted... so you've got to think of ticking that box of how can you get him involved in everything that you're doing? I've even had situations when I've asked them well go on you create a session for us. two boys were injured and I actually said to them well we want you to turn up at training with a session. it's trying to immerse or or feel that your knee meeting the needs of their wants. Got to keep their morale up in these things as well.

Researcher: Definitely. So we have here [player]...

Participant 3: See he was me phoning in for somebody else because he is actually [participant] group. so I had actually phoned him in on behalf of him. so the only bit I could tell you about that was [player] got the injury and put them to the side of the pitch he had a swollen foot and then his mum and dad, they actually came into the session, cos it was a 14 and 15 mixed session. so he sat out the session but he actually left, so to give you feedback on that that's probably one for [participant] to be honest.

Researcher: but in that situation just if you can talk about as much monitoring and noticing as you can and how you may be adapted the rest of the session because of that?

Participant 3: Yeah so that was mixed games, so it was actually [participant]. so I pitch was doing 1 pitch and [participant] was doing the other and he got injured on that pitch but as we were coming off they had mentioned it to me so I said to [player] to go and see [sport science intern]. so he went right to [sport science intern] and that was basically all there was to. I'm not even sure if [participant] was at the training session I think that was handed over to [participant] thereafter and then [participant] dealt with it.

Researcher: there might be a follow on from it may be, maybe I can chase that up but again it's leading towards the end of the season so there might not be much there but that's fine. if you can talk about potentially anything else there with your self-monitoring how you would maybe just look at a player notice in if there's anything or if there's anything else you feel you can elaborate on especially as well when you're at a stage where you've had a player come out insured with that it's a match or a game and how you're caught off guard in that situation and how you have to adapt and how you know how to adapt?

Participant 3: So is this during injuries post injury or pre-injury?

Researcher: We'll talk about pre-injury first and then we'll talk about during and post.

Participant 3: well in terms of self-monitoring pre, a lot of it to me, is due to the psychological aspect off then coming in and being down in the mouth so to speak. so what's wrong with you there's something up with you kind of thing. so that would be the first stage because every player comes up to you and shakes your hand, I don't let them go that easy, so unlike how's you how's things with you how's your day been how's your school been have you been in doing sports? rubbish chat, but it actually has a meaning to it. so it's just are they ok physically and mentally so that would be in terms of self-monitoring pre. then it's remember and get a little bit of stretch off do more dynamic stretching building into moving the ball about getting into the session so it's more about monitoring that and monitoring patterns is somebody running differently is somebody not getting involved as much? could be something like random like somebody like [player] who's not so much keen on stretching and then suddenly he's doing stretching with [player]. You would engage that right away what's up with you why are you stretching? sorry you're looking at individual traits of stuff that they would normally do and what they're doing outside of their normal routines. because we're creatures of habit aren't we? always into a routine. so in terms of pre, that would be one of the key ones just looking is there anything different? during an injury or an injury happening... it's just isolation with me. isolating the person away from everybody else going through that normal routine of testing the thing. so it could be the wrist for example, so put your hands like that try and push some weight into that, some weight that way, push up the way, push it to the side. to see if I'm just using the rest as an example. and then getting other people involved so a lot of the times you're doing it as a group with decisions a lot of the time it's not just me as an individual. the Times it is just myself I probably tend to find that I do a little bit more so it's not like it's almost like you need to reassure yourself more if there's just yourself there. because if you're sitting with [participant], [participant] what do you think? but with if it's a session yourself you're saying to them going I want to see you do a couple of runs don't overly push it first kind of thing. then if they can return so say it's a session or a game, you would probably say to them don't go full on right away make sure you're comfortable with what you're doing. we've also got the luxury of Rolling subs so quite often, I would probably say as a percentage you would probably say 25% of the time you would just take them off. Just come off we might put you back on in 5 minutes and then. But because at games you've got a physio so they've got a huge influence in that. Especially because you've got to focus on the game a massive bit of that is actually where the physio needs to go and test them and find out they're ok and then tell me. if they are fit but me having my own self-awareness of monotone it and it's not just like you can go with the physio and that's it it's me, OK is he running normal? because that might be normal to the physio but it's definitely not normal to me. In how he runs. and then post in terms of self-monitoring, erm, a lot of that is speaking to player speaking to the parents, so there has been an injury at training you hand over the child to the parent. you clear in principle or contact strategy so you say while I'll phone you at 10 tomorrow or could you message me first thing tomorrow let me know how he is. the second part of that if they're performance school I will text [coach] and say to [coach] there's been an incident at training could you make a full assessment of him before he trains and then could you feedback to me. and then I think that really is posted and then you obviously go

through your normal do you see the physio doesn't need to rest does he sit out for a while? and then you go from there.

Researcher: while we're in the Self-monitoring topic could you maybe also talk about how you then self-monitor your own performance. do you do it over a month and look back and see how you've performed in that month or do you do it game by game or?

Participant 3: I'm a bit of a self-critic so I would do that quite instantly born through experiences and through actually what's happening in that situation. cos there's been quite often that you come away from a session and you think that was quite an innocuous situation and there doesn't seem to be an injury and then before I know it's 9 at night and I'm texting a parent by the way I never said but he did pick up a knock is he ok kind of thing? so that is a bit of self-reflection as well having that came out. and the nature of being a coach you do self-reflect a lot because you've got to go onto sports office and there's that kindly reminder was this it was there an injury? so that triggers a lot of self-reflection I don't think we're in a spore how you can self-reflect on months down the road it's kind of been and gone and you've kind of missed opportunity. you could get opportunities after that but for me you need to be really on the ball and see what's happening and what could you have done better? I am absolutely sure if it was something more severe that your self-reflection time, it maybe would be longer.

Researcher: Because I think being part of an expert in your field is being able to have that criticism of yourself because that's obviously how you learn and get better so it's obviously it's nice to see that it's an important part of all the coaches day today.

Participant 3: yes I think it needs to be if you want to improve yourself then it has to be.

Researcher: and just to clarify I know you've probably already said it, what you just said there were previously before I asked that last question when you're monitoring posts and you're thinking does he need to go to the physio or does he just need to rest? what are flags there that you would say no he can just stressed or yeah he needs to go to the physio?

Participant 3: a lot of it has got to be about the injury at the time so do you think it was quite a bad injury? and then the output is the conversation with the parents is important so the swelling is really bad or the swelling is not going down there is a lot of bruising. a lot of the time parents are super sensitive nowadays you know I think bygone years your parent would let you hobble about for a few days so, because the football is more leg injuries or tends to be leg injuries you found that parents are so precious over them that before you know it there in hospital they're in the A&E kind of thing so. to get to the physio I would love to see a plot chart of how often I've put to the physio because it's probably not very often because actions has been taken out my hands so it's not actually an injury it's growing pains because that's quite a common one at my age group with a growing pains. or the other spectrum as well in actual fact it's became quite serious and he's got an injury or proper injury or he's had an X-ray and not so fat he's been told he's got to rest up for a week or he's got a splint on or... so to get the threshold is not that easy to be honest.

Researcher: Okay that's really great for today. Thanks very much for that!

Participant 4: MRes Interview Transcription Phase Two

Researcher: So can you talk to me about the first incidence here with [player], and talk me through in as much detail as possible from start to finish?

Participant 4: It was a strange one I'm glad that's one of them because I could have been looking at some of them I'm going what the hell was that one I can't remember.. that was it Kilmarnock, it's not the best surface it's a grass pitch it's not the best surface. We play two 45's so he comes off at half time not true performance not do anything, it was we were wanting a player to come on in that position and send me and me had both agreed second half every 10/15 minutes we were going to make changes so [player] don't sit down then get cold, just keep on the move because we're going to be making changes. I would have said about 10 minutes into the second half, right just make sure you're right to get warmed up I think [sport science intern] was with us, I'm sure it was [sport science intern] that was with us. I'm conscious when they're going back and doing their warm up so that's done and so he's ready to go on so he goes on and he wasn't on 2 minutes wasn't on 2 minutes, weird attacking the balls coming in from the right-hand side it's came out I didn't see the incident all I'm referring to this when he was on the ball. so the ball had been cleared and he's out of the box and I think he's took a touch the plate back wide again and watching the ball and watching the game he doesn't go down but he indicates to me he's got to come off straight away. flagged with his hand to me, I've got to come off here. [participant] was looking at me and we were amazed that we didn't see he does all the talking I go on the pitch with the physio I go one so we're working off together... I've twisted I've just twisted that ankle.. I would have said the way he was speaking it was one of these situations where he knew himself it was freak how the hell have I managed to do it.. at the time he felt it was a bad twist.. how the hell have I managed to twist this is bad as I have doing what I was doing. as in it wasn't a tackle it wasn't running chasing the ball freely, it wasn't a bad touch nothing, he's taking the ball out of their passing it white, I asked if it was during that bit of play and he said yes. so, what I thought was how can this happen so I'm thinking, is it his starting off position when he went to move to the ball, that's what I was thinking at the time. did he.. because it was weird. how can you be injured like that so.? I've asked the questions I've went through everything was you feeling that before you went back on? he's that type of player, I think I spoke about this the last time the character of the player he's in midfield player he's a tackler he's used to being in there in the physical side of the game so. certainly wouldn't be asking to come off, so that's not in my head at all. if [player] is wanting to come off because he's twisted his ankle there must be something wrong with him. Then there was a period of time out.. there was gradual come back. Breaking him in. Ankles I'm always thinking where does he start? because if the uncle if he twists it so depends on the type of drill is it straight I would think if it was straight straight-line drills then great, but if it's a lot of change of Direction, so what I can remember of this was one of the first things we did with him was, a wall player, where's he just he was getting to touch as nobody could get near him they were well warned before. and I actually done a thing with a box as well I think but he wasn't the only one I think there was somebody else, it was just probably building up from there. I remember at Cove being cautious because I think he was 12 push on but I was like you'll be a wall player because I'm sure the first time he was a wall player he felt it and I went and said to him stay just stay out. and then gradual and just the

normal possibly a lot of the injuries, come back to touch of the ball back into non-contact, non-contact right up as far as the game, as a floater I used to it that stage just let them I didn't tell them to push it or anything just let them float about the game because they feel good about themselves that they're backing and there a way home and they're thinking I'm back and then the next night thinking maybe and then the next night they can maybe build it back from there. but looking back from the length of time and how it happened it was a bit of a freakish one, he wasn't out six month for nothing like that but, it was freakish as in he's run back of the pitch fine trust him don't think he was at it trying to get back on with an injury or anything and some things just went click. and I think the injury has done slight damage it wasn't nothing major that was going to keep him out for a while. he's a relatively fit or he actually he's one of the kids that cycles to training, so that was part of his rehab as well because we change at Lawsondale on a Monday night.

Researcher: So you then at the time of their training...Obviously got some objective measures that you look for before you be happy to put them back on the pitch. can you talk about what they are and why they are your go-to measures that you use?

Participant 4: I would probably watch what he was doing with you guys, I would probably pay attention by that I was setting up her and noticed that he's involved now I better have a look and see what he's like.. movement wise.. because you guys are giving him change of direction stuff like that. I remember just speaking to [sport science intern] at the time what [sport science intern] was going to be doing and where he was and what was [sport science intern] thinking about?

Researcher: So you use that multi-disciplinary fashion?

Participant 4: Yeah, what was [sport science intern] thinking, I was thinking but what was he thinking? was it the same sort of thing? I do remember that I remember and he was there all the time and again has a good lad as far as you're not chasing them up to do any extra so I wouldn't think the physios would have any problems with them at all.

Researcher: so again you're using that feedback at the time of the situation from the sport science and from the physio so is that a feedback you're using two then make a decision?

Participant 4: Yea I think I said to you last time you're always if you're preparing a session and a Cove session it was me, so a Tuesday night and [player] was coming it was me and I knew you guys were there that night so you would always do that first. so I was taking not just my own selfish idea that I needed tonight for a numbers I was thinking right what's happening in [the physio]'s emails? they're always coming in. I think player wise as well she's a new player to the academy but I wouldn't say he's a player you have to go chasing up he's dedicated.

Researcher: so the next phase moving along that incident he didn't train the Monday but you change light on the Tuesday and then he was referred to the physio so that's obviously you've got to what's called a triggering point are you've hit a threshold and he now needs to go to the physio so what was it that made you trigger that for processing make that decision?

Participant 4: Well I think happened on the Saturday being a normal kid and parents as well his dad works in Germany a lot, I think he's just taking it as a (probably I would have done the same myself), I can't believe this is happened I'll be fine by Tuesday. he's been pretty sensible because we play Saturday he's got all day Sunday all day Monday to rest and then I'll go Tuesday. I am pretty sure we didn't even get through the sport science stuff with him I'm pretty sure I'm pretty sure we were at a stage I can't remember if he did it and then it was the very first thing that I did and it wasn't and I I remember I definitely kind of made the decision- you're stopping. I always try and say to them if I'm thinking that I'll always try and soften the blow by saying like this is one training session if you stop here and don't aggravate it if it's earliest is Tuesday possibly could make Saturday, if you get this thing tonight then you've got no chance. I usually say that a lot with muscles if you're feeling tired and you know it's going to go so I definitely remember making the decision myself I was probably in the zone not listening to anybody.

Researcher: so what was in your mind that 'ok now I need to make the decision that is to stop training' what was it that you were noticing?

Participant 4: you know what I wasn't even thinking about he's not right we need them for Saturday nothing like that what I was I thinking just his actual movement wasn't right knowing that you get players that are probably, the way the walk they sometimes look as if they're limping or the way that body moves or it needs a wee nudge or a push to get them going in the game and then there are fine. he wasn't comfortable that was my thing thinking you're not right.

Researcher: and does that just come down to the knowledge of the player?

Participant 4: yeah if I hadn't said anything is he going to try? I don't know if you would have that night I don't know if you would have kept going but I was stepping in. I was in the zone myself thinking you're not right you're not training here.

Researcher: and then that decision to them putting to the physio what was that based on?

Participant 4: he knew that was coming that was explained so that refer to physio after was spoken about on the Saturday.

Researcher: and that point that you think he needs to go and see a physio is that to get a second opinion is that because you feel that they are in a better position to look at it and you're thinking it's maybe a bit too much of a risk?

Participant 4: yeah the diagnosis of what it is could be something really liked it could be something not good at all that you don't you don't realise again just back to the stage one of how long I've done this... there's nothing wrong with him he's fine and all the rest of it and then oh my god you're surprised. It's mainly just to get them better you just want to get him he needs to be seen, I probably would be thinking at that time I'm not letting you go here until you have another couple of days and it comes to Thursday and then you get to Thursday and he still not quite right and you all try on Saturday.. to me well that's wasting a week. we've wasted a whole week I would like to think we're not wasting [the physio]'s time

by putting them there. so why not get seen by [the physio] ASAP, and I think we did I think we had it by the Thursday so he was seen on Thursday so he can then rule them out of the Saturday and then you ask how long are you looking at? and then job being the coach of the team can then come in and prepare for the weekend and how many weeks is he not going to be there for because he's a main player he'd be playing the majority of the games so.

Researcher: so you're basically just trying to be as efficient as possible with your time?

Participant 4: yes yes definitely. has he got a chance? and if he hasn't then as the coach he need to be right well that's us goosed we haven't got [player], you've got to look at your whole squad and see who's available.

Researcher: but that to being able to improvise the taken opportunity to change what you now need to do, he's not available, so how did you then go on from that situation, how did you then improvise and select a team because [player]'s not available?

Participant 4: I think when you're doing the age groups that we're doing you're always conscious while you've got to be because you've guaranteed them game time so you're probably first port of call is if he was ok to go and you've got the see how it goes from [the physio] and it was give it a go.. you've got a choice to make. You either force the issue and play him or you protect him and give game time two others. if I'm [participant] or [participant]in and have got a semi-final or quarter-final against Kilmarnock I'm thinking physios [participant] gave me the green light so the medical side of it I then have a word with him and say how are you feeling? but just knowing the type of kid that he is he's a positive kid he would than want to play. but us being in the non-competitive side we've got to make the decision whether he plays or not. It could go both ways could start him Take him off so he's warm after the warm-up or let the game settle it's an easier game with 20 minutes to go he'll get on and we'll speak to him there and then as well but, planning ahead definitely with what you've got left. you probably need to know on Tuesday night and then saw by physio on Thursday, he needs to be seen and sorted out we now need to know by Thursday night how many players we've got for calling up or cooling down because it's not the easiest you're begging and borrowing from different squads they need to be notified that that one can't manage.

Researcher: one question just to summarise the situation is then reflecting back on your decisions and the way that you handle that whole incident do you think you could done anything differently in that situation that may be would have had a better outcome or?

Participant 4: the thing that would cross my mind would be... he's had a knock where he's had to come off straight away, where we putting too much pressure on them by letting him decide to try it on the Tuesday? or should we have referred it to the physio and take control because he's in and out for a period of time after that. not seeing exactly what happened so you don't have if it's a crunching tackle you can say to the player you've taken a sore one there and he's caught you, but for it to be so freakish, I would probably have looked back and what should we have acted emailing to [the physio] he could have been seen on the Tuesday where

he was coming to training on the Tuesday so he then went in to treatment on the Thursday? do at a higher level would we have lost 4 days?

Researcher: and do you reflect on that how often do you do self-reflection within your own coaching methods or is it just maybe..

Participant 4: That's quite a hard question because in his case I maybe wouldn't reflect till the end or you might do it a couple of times during the process you might do it a couple of times because as I say you're not knowing how long is going to be out but I would have said with that one definitely. the physios we get a different one every week so it's not they don't have the bond they don't have the consistency and the bond to say... the physios, we're obviously coaching on the touchline we don't want to get involved with us we're sitting going back up the road because the physios come from down there we're coming back up the road on the bus and I would probably listen to them saying I think he needs to come out and come in on Monday but at least on Tuesday. and then you take it it's your call is it gas work? maybe it is a wee bit of guesswork but sometimes it works we're sometimes it doesn't maybe.

Researcher: So do you think as well when you say that once he's returned to sport you will maybe reflect a couple of times through the incident does that may be vary and depend on the severity of the incident or what do you think?

Participant 4: The severity definitely. You've had ones that you can't stop thinking about especially if it's been a bad one. [player]'s one was horrendous. a lot of the blood ones I would probably say.. so how do I reflect? sometimes if other people like if I wasn't with [participant], you just speak to other coaches and they asked how did things go and they asked if there was any injuries and you say aye so and so took a knock and then you start to think about it again. or you go home say to the wife oh you should have seen this one or that one today. It depends on the type of court if the physio was seeing to you that she thinks he's fine, I go on their word. unless that kid is adamant that he ain't crossing that line. you've obviously got to watch what you're doing at that point.

Researcher: Brilliant that's a lot of great information there, thanks very much for your time [participant].

Participant 5: MRes Interview Transcription Phase Two

Researcher: So the first thing on your timeline here, the first one being recorded was [player] he had cramp in his calf he tried to continue but he had to stop in the last 10 minutes. Coach said he would monitor it at the next training session and see how he is. So can you tell me a bit more about that how it happened and what you done to act on it?

Participant 5: We, it was just a normal session out at Lawsondale and off the top of my head I'm sure it was like 15 minutes to go or something, it was quite intense, high intensity, and he shouted out in pain and I thought it may be pulled his calf here or is it cramp? so I said let's see how it is. did he come back to training the next day? no he didn't turn up that's right. so I phoned I phoned the mum and... no I actually text to Mum saying how is [player]'s calf is it because of that that is not at training tonight? she said no he's fine he's missed the bus. I said ok then we'll see him on Thursday. and he came back on the Thursday and he said I'm fine it was cramp.

Researcher: so first of all what did you notice?

Participant 5: I'm just trying to think if I caught [the physio] in the corridor. I've got a brief recollection that I did but I haven't noticed it but I have a brief recollection that I mentioned it to him but nothing official, nothing an email or anything. because I bought myself and [participant] said oh, he's maybe pulled a muscle or something.

Researcher: and what makes you think that is it through past experience or how you think that is a potential outcome of the injury?

Participant 5; just the way he went down all of a sudden he was running and then he screamed in pain, it looked as though he's pulled something. and then he went down and couldn't move his car and he was rubbing it and everything so obviously, the first thing I thought was he's maybe tweaked a calf or something. but in my head you know [participant] I think was there as well... and sides maybe just cramp and obviously it was. so there was there was no need to take it any further.

Researcher: because it says here that is trying to continue but has to stop so was that your decision I was that the place decision?

Participant 5: I had said to him just leave it.

Researcher: so why was that your decision?

Participant 5: just because of you know, you've got to rule out if he has pulled a muscle you don't want to make it worse. and then cramp if it is cramp then you know it might just ease off. the tightness and attention might just go.

Researcher: and is that learnt through past experience being around other players or through yourself?

Participant 5: I think it's just common sense probably rather than knowing.

Researcher: in that situation as well so you obviously stop them so how did you then improvise into that session? so you're obviously not expecting that to happen so did you have to change anything in the session?

Participant 5: it was right at the end so, I think it was right at the end. I think myself or [participant] joined in [laughs]. so it was just that chance to get in and play!

Researcher: perfect so the next one you have recorded is [player]. this was a match he had a dead leg, he mentioned it at half time coach let him play on, and he never mentioned it again for the rest of the day or after the game so coaches just moved on from it. This was reported on 28th of October, it doesn't say what match it was...

Participant 5: Celtic away... I know exactly what happened there. he was at fault for two of the goals, there was a, one was his fault, one he could have been in a better area. He... he mentioned it at half time my view was it wasn't anything of note. and I gave the "look really need you on there come on just get through it just get on with it" be it would have been easy for him to just come off. she wasn't having the best of games it was almost like, I can get out of this situation by being off rather than just get on with it, it was more of a mental trick. Then he played the full game after that. And he was completely fine for the next training session.

Researcher: so was there any collision that would have given my dead leg or was it just?

Participant 5: I never saw anything so there was nothing in my head that I thought, I just felt it was a, wanting a wee bit of sympathy and, just a wee trying to hook us in. maybe to say, you better come off.

Researcher: and do you notice that pattern within him because you know him as a player over the years or have you seen that in other players?

Participant 5: no I think that is time and we have to be mindful that he has had a number of muscle and growth problems. But a little collision and a wee bit of soreness in your life for me doesn't say that he cannot walk. and cannot play on. I mean obviously if, if he If I saw him limping then it's in your mind while ok he is maybe. but there was no sign of that whatsoever.

Researcher: and did you monitor him then the rest of the game just to keep an eye on them are?

Participant 5: it's in your thoughts I haven't got I'm in my vivid mind that I'll just keep watching him?

Researcher: but if you are maybe watching a player that is genuinely come up with something how do you monitor him within this session or match?

Participant 5: while you're going to see one, their gait, how they're walking how.. how they're playing. you know if they're looking to the dugout. you know, and as I've said before with young kids if there's a bump and they're crying, I would always give it 30 seconds, and not pay attention but quietly have a look and to

make sure it's not nothing bad and I would say 9 times out of 10, if is showing no interest, and then when the ball comes into the air than their up and away again.

Researcher: and is that just noticed through past experience?

Participant 5: Yeah...

Researcher: because how do you think that would be more difficult for somebody to notice those kinds of key points but you look for, how do you think that would be more difficult for somebody with less experience to notice that?

Participant 5: I mean there's one, I will never take any chances with any kids, if it was an injury or anything or something that was you know was going to do the more harm I would never, you know, stomp your feet on the ground and get on with it I would never do that. but I think you just have to be...I just think you've got to be open to seeing how how it's portrayed how they're running and assess it from there really.

Researcher: because [participant] was speaking yesterday about the game is sort of changing and the Dynamics and culture of the game is totally changed, do you to change your decision-making tactics or do they always stays same regardless of where the game is at?

Participant 5: I think the basics of my game will always be the same you know control it Pass It..

Researcher: yeah but as they age groups change do you see a change in your decision-making?

Participant 5: as in injuries?

Researcher: yeah within injuries...

Participant 5: yeah I think that is a difference between you know the younger players and as they're going up the age groups. but then I also know that if you're not wanting to waste time and there's a wee clip on your heels and you go down.. you've got to then ask if you're ok or is it something that they can get on with. that is definitely a difference I think between the young pups. and as you're getting up the age groups the running is quicker the impacts harder the ball is harder and the ball is bigger the kicks are sorer.

Researcher: so you would say there's more risk of injury. so you probably see a lot being the head watching all the different games, do you notice your mindset change as you're watching the different age groups and how you sort of analyse things on monitor from there?

Participant 5: no I don't think I do. I think he just, every individual case..

Researcher: no not necessarily by age but by person.

Participant 5: yeah and the actual incident, or the time.

Researcher: perfect the next one we have is Luke Renforth. He took a knee to knee knock with somebody in the match on the 11th of November. Player came off after 25 minutes but indicated that he will be at training the following night.

Participant 5: I know how sore a knee to knee knock is, cause I've had that happen to myself. I remember one game need to ne bang and I couldn't walk I could not walk. so that was the school on the Saturday morning. I to tell my mates I won't be able to play in the afternoon he came round in the car and said look we really need you and I was limping and I played in the afternoon. I was picked for the Aberdeen under 18 schoolboys select who were playing on the Sunday. so I said I better go and tell him I can't play and his response was I really need you. I played 90 minutes in that game as well. but the impact of a knee to knee is agony. but I know [player] and at times 'I will need to come off I'll need to come off'. just get on with it and he plays the full game and he comes back so... a knee to knee I think 48 hours recovery and it's eased off. but the actual impact fight in that area there I can see it it was sore I mean he was limping so... so I'm not putting up.. I genuinely thought but there is times [player] can be a bit.. cos he's had a lot of growth and whatever in the groin, I do think in that occasion it merited a substitution and there was no surprise when he trained on Monday.

Researcher: so how do you then monitor that period from leaving the game to training on Monday.

Participant 5: just get ice on it...

Researcher: do you get in touch with the parents at all?

Participant 5: just see the parents at the game I saw his dad in the tea room and just make sure he gets out on that.

Researcher: and during the game obviously it's been an unexpected occasion do you then substitute or what do you do to make decisions after that?

Participant 5: it was just a straight off you come and then you look at your bench and we've obviously got the physio who's covering two pitches.

Researcher: so was it quite easy it wasn't a hard substitution to make?

Participant 5: Yeah exactly.

Researcher: So [player], again this was the following week on the 17th of November.. so he crashed off the post and hurt his ankle and physio assess the game and he was was put away in crutches and he will be assessed with our physio this week. so what happened there?

Participant 5: The ball comes across Rangers players miss it, it hits him and goes in for an own goal. He then brushes the post, signals for help, the physios going he'll need to come off. I'm saying take him off. this is one where you maybe get, contradicting myself, I thought there was nothing wrong with him. and he was crying, and I think it was more because he had put in a goal, no I didn't know it was an own goal at the time. but I watched the footage and we could see he was down on the bus, and he didn't even scratch that posted where as it was his

ankle. so he's now in crutches from the physio... I'm just trying to think... Monday, right away, I think he's at it. I emailed [the physio] "[player], off the post he's in crutches, can you see him for treatment?". Monday comes and I phoned [coach] and said [player] has hurt his ankle, I am not sure. he said oh he's in here today with crutch, I said ok right. so, what the hell was on that week as well? I'm sure there was something that week but I haven't got it down.. oh I will tell you what it was. he went in for treatment and his dad said, ach he'll be fine, he should be back to training on Thursday and he played the last game against Hamilton. so he's in for treatment on Tuesday, we had training at the sports village, no.. Thursday, no he's in for treatment on Wednesday, but his dad says he'll be fine, he'll be fine, he's now off the crutches. when I came into the Sports Village, email from [the physio] out for two weeks phased back, slow bit of jogging increase to run in everything, when I came into sports village he's kicking the ball, and I saw him running about. so I said how are you? - I should be alright for Saturday. I said no you won't look here's the email from [the physio], if I let you play on Saturday, and I showed him the email.. and he was all down and said ok. so I don't think it was as bad, but he's probably thinking 's*** he's got me in for treatment now, so I've got to play up to it almost'. this is all in my head but if [the physio] is said no, there may be be was a bit of sprain.

Researcher: but at the same time the player can also act on it a bit to the physio to make the physio think that there is something there, that's quite possible...

Participant 5: yeah, so I think [player] is a really good player but I think that is a bit of Weakness in the mental.

Researcher: why do you think he's done that because of the own goal situation?

Participant 5: yeah I think so even though I it was an own goal at the time, but he'll have known that.

Researcher: So obviously you've explained what you doing in that situation, but have you come across players a lot that try and pull the wool over your eyes with an injury?

Participant 5: Aye, yeah..

Researcher: and how do you deal with that because it's obviously, a hard decision to make and being able to notice the differences?

Participant 5: I mean it is difficult as you say you can't take any chances, but he's got a wee history of things like that. so like the Celtic game at the end there's nothing, at the end of the game he's down shouting 'oh my leg, my leg', and then he's limping off and then by the end of it he is walking into the dressing room.

Researcher: and this is after you being beat by Celtic?

Participant 5: yeah in our last game.. you know so that is we things like that where [Player X], if things aren't just quite going his way, where facing up to the challenge he'll need to get out of. he can put up the White Flag a little bit, and I thought that was one of these incidences. it's a 50/50, because he's obviously...

Researcher: it's obviously interesting because looking at it there is obviously a repetition of the same kind of pattern, and it's good that you can pick up on it and notice it. so again how do you think somebody with less experience, would have dealt with that situation?

Participant 5: I think she would have done the same probably, probably get him off. they might have shown them more sympathy but the same process would have been the same. contact the physio, this player has been off he's in crutches, can you see him? and then it's up to the physio now to diagnose him. I do think [the physio], airs on the side of caution and I think he does that with a professional ones as well. and I think sometimes it's just a kick up the arse, or I think you can push a bit further. but I suppose he's the medical expert, if that's the way he, and look you might get them back maybe not quicker but it might not happen again. and if that's his process of thinking..

Researcher: so how do you then over the course of time, to monitor is it just communication with the physio or how is the monitoring process for that one?

Participant 5: [the physio] just gives me emails. in terms of what he's to do over the two weeks. and then, he should have some tonight but he's not available for the parents meetings, so I'll need to organise one for next week.

Researcher: perfect, ok so we have the last one reported being [player], now did he play up for you? so, that was the same much that he was reported in?

Participant 5: Same match, it was the first time he had played up so it was a challenge for him. and he's been scoring goals left right and centre. he was obviously, I had in my head also, myself and [participant] we didn't think he was going to play the full game anyway because he's going to play for the 14th the next day. he stayed down for a double session. at half time he said he was feeling his groin a wee bit, so we said ok [player] with a mind that you've got a game tomorrow let's not do anything silly, off you come now. and, and then what we did then was we obviously, go and see the physio, and she said oh oh I think he's just a bit tight. and then we let [participant] know, and said to him look, just do a wee simple stretch, if you can get a wee bit of ice on it and you'll be fine for tomorrow. he actually played the next day but he was feeling his groin and bits.

Researcher: and how do you think that's then developed into, because he's been back to training and he pulled up in the fitness test, but then he played in the games after words. so how do you think he as a player mentally, do you notice anything within him?

Participant 5: he's not robust enough yet. mentally I don't think, because he, everything has been so smooth so far, and the challenge will come next year when if he plays up, and everybody catches up with him he will, it won't be so.. so he has to find mechanisms to be able to cope with that and with the challenge. and so it's not always going to be, but then, the other part of me that also thinks, he's from Elgin, he's naive, you know, if you're sensible and if you're going to pull out of the fitness test and say your groin sore then not playing the games after it. but he's probably just thinking, a wee bit sore, then I'm not going to push it. probably, he isn't sensible or savvy or streetwise to understand that that's probably a flag for all of us.

Researcher: and what do you think of that when you see that? I know you said the mental side but on a bigger picture what do you think of?

Participant 5: I wasn't for the [player] one I just think it's naivety. personally I wouldn't be getting too hung up of, that he isn't pushing himself, maybe he wasn't and it was an excuse to come out early. but his groin probably was sore, and then when he's stopped its eased off again. So he's thinking, brilliant.

Researcher: And how do you develop a player through that to get him to the other side of that?

Participant 5: just put him through challenges but then you've either got that are you haven't.

Researcher: so how in that situation then, in the game, was here crucial player to the game?

Participant 5: we were under the cosh anyway...

Researcher: so did it make yous feel caught off guard and think you had to make...

Participant 5: No, it was half-time. It was into our heads, we thought maybe 60 minutes, but I also had in my head that they could be short tomorrow, the 14s.

Researcher: it's quite interesting because they obviously recorded a few incidences for him as well in the groin area...

Participant 5: Yeah...

Researcher: Okay perfect, thanks very much! Appreciate your time again.

Participant 6: MRes Interview Transcript Phase Two

Researcher: So the first incident we have would be there Would be with [player] at training and he's holding his hamstring and you reported that you noticed he held as hamstringing every time the intense he got too much for him you think he's not fit enough doesn't look after himself well enough so can you expand on that bit?

Participant 6: mentally he's quite weak but I know that from his personality when you push him replay games regular and I know that his fitness levels improve you can see from this personality that athletically he is really he's a good athlete he's quick he's strong. Endurance wise I've seen him get two levels as well where is able to go up and down up and down but then when it falls off getting them back up to that level is very difficult and a lot of it is mental stay and mind that is just not into the hard work so. it's got to the stage where we've we've tried to tap into a him by saying look we've explained to them that you're a guy who's going to have to look after yourself, and I don't think the penny has dropped with that, so trying to keep him fit by playing games but naturally it always comes to the brakes you get the October holidays he goes away he comes back he hasn't look after himself you give him a programme to do whilst he was away. A simple test of set of doggies one-minute doggies 1-minute recovery could you do 3 sets of them was all I destined to do halfway through set 1 you know holding his hamstring are you ok or it's just a bit tight. I've been there I've had hamstring injuries when your hamstring is tight you're not really holding it mid run you sort of stretch it after you've run, things like that. so mentally you're thinking he just doesn't sort of fancy this, he just doesn't want to do the runs so so one she's got halfway through the second one and he's holding his hamstring I've just stopped stopped it. And said right will just leave them out of the semi-final the approach I took was for was obviously for his long-term learning that he needs to understand that you're not fit at enough there's consequences to that you've left the group down there's consequences to that. so we left about the team and played [player] made that adjustment on Thursday night on Friday night, which weird pre-spoken about implant that if he doesn't come back in good condition what would we do? We will play [player] right back and we'll have to do some tactical work with [player]. And we're leaving him out of the team. it's the semi-final and the main thing we need to go down there and win and the message really drops if you don't want you still sort of wine really if you go down there and you don't get the result you go back to the player and say you've like your players down you know so. We are always had a phrase when you were managing that the manager always wins, if the manager manages you properly the manager always wins so if you get the result by leaving you out well then he sure he can get the result without you. if he doesn't get the result by leaving you out he can flip it on the group dynamics I'm just say you failed your teammates not me you've not let me down you've let all them down they wanted to win the Scottish Cup and you've gone away to Italy and you've not looked after yourself you've not done the programme that you were supposed to be given you've basically cheated everybody else. and it's putting the responsibility back onto the play it again that it's not just about them it's about the bigger picture of the group as well so it is about them and their future and that we see things you know so. him going around with his hamstring over the course of the year, we've had to kind of manage it, and it's a case of the Boy Who Cried Wolf because sometimes you could have a tight hamstring so that would be why I

we just stop things and you're not fit enough you know. One way to work out if he is fit enough it's just a stop and doing the hard work and just integrate him into the training session and if he comes through the full training session and you don't see him stretch his hamstring then you know it's just a case of he doesn't want to work hard. Other times taking him out and you say no I feel ok I'll join in now you're not turning tonight and then it's a case of your missing out while you're telling me you're not fit if you're not fit you don't try and go over to the sports scientist and do more runs light runs that he finds boring I need isn't want to do you clearly doesn't have a love for fitness and looking after themselves so so you've got to play that to your strength as well will just send them off and jogging around the pitch for a while and you quickly get bored of that. then you'll have to realise that maybe you need to have to go back and do the test again see how fit you are so. there is a fair bit of managing and it but it's getting the end result is working on and physically it's working on a mentally it's. and is it problem solving at this stage? no it's not space ink you learn a harsh lesson after the semi-final we put them back in the team for that just a run-of-the-mill case game couple of weeks later higher up the pitch so that you know if he wasn't as fit you wouldn't get found out as much and he played really well and he ended up forcing his way back into the team for the final in the space of there's only two weeks in the difference so it wasn't a case of it's a mental thing it was in the case of you to come off and gotten extremely fit we just knew it was a mental barrier for them and if you really wanted to play in the cup final he was going to have to come through that and he did and he end up getting his assist for the goal. it's a constant battle for him and we need to him to realise I'm one of those players that needs to, he's not even a heavy player it's just a mentality he just needs to accept I need to work on my fitness all the time, probably for psychological effect of I am that I can do that runs more than the physical fitness so that's a huge part of the mental side of it and the game. so between [participant]in myself we've had to work on him all season long trying and improve him mentally.

Researcher: and how do you monitor that through so obviously it's been there to 3 week. That you've had to work on that between dropping him and putting them back in the team how do you notice that improvement how do you monitor that's right the weeks art training?

Participant 6: it's just training so somebody is gone and taking the spotlight of off him so there's no focus on him. after his comeback from Italy he's been dropped for the semi-final, and we've won the game and we go back to training that week we spoke to him we said you should he needs to he needs to digest that himself so you leave them for the whole week we had made a decision that when we had a meeting myself and [participant] had a meeting and we discussed what's more beneficial for the team At this stage what are players can and can't do so priority is game time for those who have not been playing so everybody that's going to be in the final as match fit and sharp tactically playing about with different positions and having different options so that if option a doesn't work in the final then we can swap to Option B or move him around. without making substitutions so we looking to different players in different positions to see what can he move from centre back to life back can he go from left back to left midfield can the right back swap with a right winger and move them round so that we have different options for the final. so he was really integrated naturally back into the team from that point of view was he's gonna need game time so we need to plan we had two games to play before the cup final so it meant we could get basically 180 minutes

into him between the semi-final in the final. So we put him back into the team and it was very clear you know you're watching him but you're not putting the spotlight at him you're not isolating them so you're keeping a running at training and saying and he knew he had to fight for his place so automatically his mentality of shifted now he knew he needed to chase something to get in the team against Motherwell and we played him he played well told him he'd played well, and basically read spoken to the whole group as well it was a case of look, you are all playing for your places in the final It's easy street for us no we've spent all your fighting and pushing you trying to get we just turn up now. you've got to fight for your Jersey now, at any stage if you saw him roll on the ground you know he's one of these players that if you took an orchid sit on the ground for a couple of minutes feeling sorry for himself, so just ignore them the session goes on you know after a while you say to him I'm not going to stop the session for you cos you're on the ground you know cause you can see that it's a knock you know from when you've played What's a serious knocking what's not. There will be times I'll go or hold on stop a minute he is in trouble there that's a bad knock but you know little niggles and stuff like that you just get on you get the odd individual, really so we've been trying to manage that to get the best out of him for his development and the long-term he is just going to have to be a level of acceptance we cannot keep pushing people, and the parents as well, they will have to accept that this is a lifestyle that he have till live for him if he's going to make it.

Researcher: so was it quite obvious for you to notice a difference in his mentality to push for him pushing his way back in the team?

Participant 6: yeah but we obviously get lucky in the sense that it's probably a harder fight if you lose the semi-final because we were in the semi-final There is a final on the go and then everyone wants to play in the final. so there's less working where it would have been more of the group dynamics approach had we lost the semi-final would go to him and say people haven't looked after themselves in the dressing room and maybe even pick him out in the dressing room because he's at that age and say you've gone away for a week we've put her trust in you to look after yourself and you haven't done it you've not just like yourself down you've let the whole group down. and there's nothing like peer pressure to for someone to realise and go I've maybe drop the ball here. so yeah so no we it was probably a little bit easier for us and they all had a bit between their teeth went to play in the final but that was the way it was.

Researcher: I'm guessing this will probably be an obvious answer but looking back to that scenario you think you've obviously doubt without well do you think there's anything you could have done differently to get a better outcome?

Participant 6: it's hard cause we're talking about the final stages of the season, early on we've tried many other things and it hasn't really worked Where is said to him you know just carry on training are you pushing through it or whatever but we got to the stage where the stakes were getting higher at the end of the season where there's a trophy on the line and they bring different factors so you were sort of just saying Luke you can't do it now then you can't do it for the cup final or whatever so it was up to him it was shifting the responsibility after him with us earlier in the years as I was saying I work would have been me and [participant]in trying to get the educate them make them see the importance of it. but sometimes that's the importance of having a competitive team is that it's easier to deliver that

message when there is a trophy on the line or when there's there's an actual call up on the line. The biggest chance with him is Italian passport holder so it's not even he's good enough probably to be in the Scotland squad but he's not he's not going to be seen by Italy here so you know that bit of incentive was missing. so yeah it's going to be a constant battle with him I think but we've obviously got short term success with the fact it was a cup final and he wanted to play on it and for the end of the season parents meeting and we meet him when does parents delivering that message saying you were probably quite forcing you force your way back in and do you know that himself why cos you didn't look after yourself? and that's a message to the whole family because the parents need to take that on board as well and maybe give him a little kick up the backside so get out the door years are runners what are you doing this morning routine Italy get your winners on you're going you're going to the gym or you're going for a ride run or whatever you your programme is, you do your program. They don't realise how quick the time goes by and sometimes them opportunities can slip through their fingers then so.

Researcher: do you think as well that's a bit of an issue that use find difficult as coaches because the 16s age group downwards isn't competitive so do you think it's harder do you find you have to struggle a bit more in that sense?

Participant 6: yeah because the systems upside down here in Scotland so you have players playing boys clubs compete in for Scottish Cups and then do they come into the elite level in club academy Scotland and their glorified friendlies that's what they are so. so we're trying to install a winning mentality so the best thing that's happened this year was introduction of the CIS Cup it was competitive the dynamics of the game has changed even teams you were playing teams that you could go on you know be 3 year for now because they just took the towel in because it was a meaningless game all of a sudden you're still you're only one nail art with 10 minutes to go. So, to and I think it's the way it should be at elite level football which should be competitive.

Researcher: we'll move on to the next one being [player] on the 6th, took a bang to the hip you kind of flagged it and within himself as well but action was no issues trained on felt fine at the end of training but that's also fine so why do you think your decision was to let him just play on?

Participant 6: the responsibility has to be put on them even though their young players so I can probably through experience you see it's an impact rather than a muscle muscular strain your thinking well look it's an impact it's going to be a bit of bruising and ice afterwards and then you can sort of manager and deal with it so you're looking at the degree of serious potentially of the injury. if it's a bang it's a bang, if it's a dead leg it's a dead leg, you know so come the end of training or the end of the game the process will be you what it is weird as someone with a tight hamstring or a quad or a groin or whatever or they've rolled on ankle you're running the risk there of ligament damage pulled hamstring 6 weeks, it's no use to me to train a player for the extra 30 minutes or whatever is left of training and potentially lose him for several weeks. where if it's an impact and it's just going to be ice for and they feel they can carry on and you can put that responsibility on them and say are you sure you're ok and they say yeah I'm ok, carry on training then and you monitor them you keep an eye on them if he's limping about the place then you go this is stupid just step off and just go see the physio or go and

get an ice pack on it or whatever needs to be done so. I saw of always put injuries in the first three categories for me really just thinking of the top of my head- concussion bang to the head on you go out you get you're not training; the muscular ones stop training sit out of the rest of the training; and then an impact one would be how you feeling are you ok are you happy to carry on carry on then. that's the way I would treat them.

Researcher: you've obviously got that structure in a way due to past experiences, so do you think that comes from past experience?

Participant 6: past experience from when I played I would have had concussion or I would have had a muscular strain or I would have had an impact when I think I can carry this some play with us so and I think at the you know when you're playing a new level of professional sports semi-professional sports, you begin to know your body and you begin to learn from an impact what you can and what you can't carry what you can run off or run through or whatever and manage it when you go home. There's always niggles and knocks and that's fine are you 100% fit all the time when you're playing? no probably not there's always there is always a pain there's always a bit of stiffness soreness and that's about how you manage it then in your lifestyle. so proud probably from I put them into those, and as I say that all of the top of my head but that's obviously ones you treat more seriously. but I can probably depending on where they've taken the impact if it's on the ankle that's different than so many things can go wrong, if you have an ankle injury that can be something that repeats on you and really needs heavy management over your career. so little things that obviously I've seen little things I've had other players have fun so on.

Researcher: and how would you monitor them? What sort of methods would you use to monitor that player within the session and then on a week session say how would you decide?

Participant 6: You just keep an eye in across training and then obviously I say to him at the end how are you feeling and all that. speak to us then when you go home if it's more than that and you think you'll need the physio go and see the physio. more often than not with things than that they are just a minor knock, they may or may not but that will be down to the individual they will come back to training the next day and they'll be ok or we'll hear back if they're in the performing School and he's still carrying it then we'll need to get that looked at. so I can learn responsibility on the player to manage his body because they know best do you know so. there is always an element for that.

Researcher: and I just trying to differentiate between the severity and that, would there be a change in how you would deal with it if it was a bit more of a serious injury?

Participant 6: yeah we take him out and stop in training you know if he's feeling his hamstring and take him out and then it might be a bit more of you go and consult everybody you might go and speaks to sports science and say what are you saying about him? he he might need more stretching he might not he might need to go and do and see the physio it depends what the outcome of the schedule is because if it's we've no game at the weekend then take Friday off you don't need to train. down to the workload that's how you speak to sports science how's

he been what is his RPEs is coming in oh they're very high coming in. So take the night off all that type of stuff you're just collecting information then but each situation is for the individual so you just have to take it as you as you go if it was more serious you're thinking about rest so it's a case of, he's off straight away so that in the longer term, so if he misses one game it's better than missing the six seven weeks and we would just stick to that all the time as fast as we can.

Researcher: That's obviously your structure now has that always been your structure or have you learnt that over time?

Participant 6: Probably managers have played for over the time and I've seen different managers take an approach that really irritated me. They just they just carry on keep training you know or you need to push on through it when you're thinking do you know any serious ones someone close up in their managers the manager will ignore that played as if that players done something wrong he's just pulled his hamstring. but it does happen and I've seen it happen poor management if I'm honest with you. it does exist and then I've seen from other managers who would who were quite smart and would say well look you know I know that you're a fit guy so I've been fortunate to play and do some good manager and you how to an assessor situation so it's just based on experience.

Researcher: and tying that into something that sometimes happened that you're not expecting to, say maybe[player] did have to come out or it may be then held him back within his performance in the session, how do you adapt to that and improvise if you need to?

Participant 6: if he's to come out he's to come out, I used to play one team over the other team so I'm assuming that you're asking is in how does the session run? so if it ends up 6v5 let them deal with it you might get a man sent off at the weekend and have to play with 10 man or if I feel it's too unbalanced I'm still young enough to still step in I might get involved and even up the numbers or something they're still coaches there anyway so I'll say to [participant] look I'll step in give me your bib and I'll play instead of him. but if that's not possible then you just let it go and that's the way it is or you go to a floater. I suppose over the years you'll get used to playing around with numbers with your session and guy drops out injured you just adapt I make it work.

Researcher: is that again always been your approach or do you feel that that's learnt from something else?

Participant 6: I think you have to learn that and I suppose when you start coaching you just sort of your on the spot of like or man down and my numbers are out and what do you do and you just learn to to deal with it. and they'll be various different things you're doing your coaching pathway that'll help you know different numbers are odd numbers you know you get thrown a curveball in there but that would just be experience of coaching and learning.

Researcher: Remember you talked a lot before that you delivered coach education sessions and that's obviously something that is quite strongly talk now because that's football is it the complexity in the ever-changing kind of environment.

Participant 6: it is yeah how to adapt how to adapt your next session so that you have this perfect session plan and then somebody doesn't make it or somebody's picked up an injury or somebody pulls up in the warm up so you just have to be prepared for that you have to. And some need to pre-plan it some encourage it to be preplanner summer coaching that long some people could be coaching 10 15 years it's fine it's no problem he pulls out that's grand just do this do that.

Researcher: where do you feel you are within that kind of spectrum

Participant 6: somewhere in the middle of somewhere, I would hate to think at any stage I have it all worked out because you haven't the game changers too quickly you never do and I would say a lot on the coach education if if there's anybody here that thinks you know all you're on the start of the decline already that's the way is because, there too many factors involved in coaching the game is changing too quickly there's too many new ideas it's very fast paced so. that's the way it is and it's that type of Sport if people have to counteract what you do so there's always new Styles coming out and they're having to counteract what they've counteracted, so you're always you're probably always somewhere in the middle. and the guys are at the top end of the game they're a little bit further down the line that's why they're on the huge money in the Premier League you know the manage in the first team and so on so.

Researcher: that's probably another good point is the fact that you can notice the game changing and the dynamics shifting how do you think..

Participant 6: You just have to you develop as a coach as well so you're watching training and what teams are doing you're stealing all the time you have to. so after you go through a certain level of quality you turn on Match of the Day and you're watching it totally differently you're not watching where the ball is you're watching different things setups and structures and you're probably just reprogrammed that way so you're looking for different ideas and ways and the analysis of the game becomes more important to our coaches so you're looking all the time, I'm thinking I seen that at the weekend I like that or I didn't like that or this is what we do so you're always thinking about the game. so naturally I think you evolved as a coach a little bit you evolved because of who you work with so. this you're obviously myself and [participant] I would think complement each other work quite well because he is a certain way he likes to do things I have a certain way I like to do things and we found We Found over the course of this 7/8 months that we actually compliment quite well. and we would be nearly we would have difference of opinions are different thought around things and I suppose all we had to do was find that middle ground between us but I suppose it's not about me though it's about the result you just you work together and you get the results for. you're always changing the style of the game it's always changing and sometimes it's changing back to what it used to be and it's not that it's everything is new it's not it works in Cycles.

Researcher: do you find yourself changing and monitoring yourself?

Participant 6: probably not consciously doing it but naturally it has to happen because if you want to get results you need to be finding the different ways and the different styles and thinking of the different ways of formations you now looking at the different players you have and trying to get the very best and all of

them and that'll happen when your team goes through patterns when they're not playing well because you have to collect you know you can't just keep doing the mere thing if it's not working you need to change it. and then if that doesn't work you need to change it again and if that doesn't work until you find the answer and hopefully you don't run out of time if you're the first team manager. that's just the way it is you just have to keep trying to play about with the results.

Researcher: and again might be an obvious answer but do you feel that that ever changes in regards to injury so the games may be developing and changing around you but do you feel that your decisions towards injury change with that or do they stay on the line?

Participant 6: it comes back to you you just try and think of the bigger picture more if you're asking me if you're standing in the dugout and you need to stop I'm getting the sack there is a chance I may be need to put a play again because I might and survive after the weekend. so you may take that gamble and say I will play them and he scored the winner and he's out for 6 weeks and I'll just have to deal with that problem when I get to it so now at the level that I'm operating at it's different. you know you take [player] situation I think we had spoken previous about it here tonsillitis all week so it was a decision was whether he plays or not and [participant]in mentioned it at the end of year awards he rang me and he done the session and he said he's 50 50 I says great he plays. I mean I was waiting to get a phone call and say he's nowhere near it he can't even breathe when he's running so I did prepare myself for that. I had team 1 and team 2 with me that me and [participant]in had discussed so as soon as he said 50/50 well if I get 30, 40 minutes out of him I'll take it. if I've to maybe change I'll be prepared for it so I know I'm facing into and the counter argument to was well you'll have to make a substitution, so if he's on the bench he's just a Jersey filler on the bench because you're never going to put them on your put them on to take them back off They can't take that risk because that's just a waste of a substitution so you take the gamble it was the end of the season, the players said he really wanted to play he felt fit and thankfully it worked out and by chance it was one of them every now and then it doesn't happen often the ball comes to the box he puts it in the back of the net and wins the cup one nil. great for him he took the chance and we gambled and it worked it is always work so

Researcher: and how do you with while that was obviously it was quite a lengthy one he went away with Scotland came back with tonsillitis and 2 weeks he didn't train how did you wanna that over that course of time?

Participant 6: to be fair it was more through [participant] so I was getting information back from him so he spoke with the parents and see how he was and they were quite concerned about the cup final and the father said to me on the Wednesday he didn't think you'd be anywhere near playing but, with tonsillitis being what it is I grew up with it as a kid you sort of know the stages that you go through and you said always at the stage and you could still have a chance but you just have to hope and become a new scheme to training on Thursday he didn't look great but he was there to watch the tactical stuff he didn't need to be in it he just needed to watch it and pay attention and then there was no training Friday we [participant]e him another 24 hours with left it as late as we could do have a look at them. and look on another week he might have went in with [participant]in on the Saturday and failed, I just can't do it, were you just have to leave him then.

so what's all the factors you just have to wait up all the factors and just say well what's the game how much is he up for it, at no stage do we have to make him play he wanted to play it would have been totally different if you were convincing I'm saying och you'll be ok, I think you've completely lost the player at that stage. you know if you're convincing them so I mean that was his situation we got lucky.

Researcher: Do you think that decision is easier in that respect because it's happened over a few weeks so there's less time pressure?

Participant 6: well in many ways it was easier because it was a cup final in the season was over so plus it was it was you know he has there he has an infection so it's not, at that point it's not sort of any kind of long-term injury that were looking at so providing because it's a chest infection you look at things differently so we base the decision on on how he looked and I mean you was moving them but we thought we could get out of him and how far he was into the illnesses and how far you had to the other side because we knew he was recovering. I mean if you had the tonsillitis on Thursday then he's out so.

Researcher: and when he was playing on Sunday did you notice any difference with him?

Participant 6: yeah he wasn't you could see that he was he's a guy who's I suppose athletically he's very his biggest attribute is his athleticism so even if he's only operating at 75% it gives you a lot. plus 3 pitch them higher up the pitch so there is less risk so if he makes a mistake higher up the pitch, so we ended up playing on left side of midfield instead of left back which we knew if you made a mistake from that we could recover it made as if they made a mistake at left back its potential goal. so we also took that chance. so yeah it's just each situation has to be analysed for what it is, what's our short-term long-term benefit to it what's the negatives to it, what's the individuals long-term benefit, what's the teams short term long-term benefits to it, and you've got to find a balance of tips and if he's in favour of playing and his playing if it's not then you don't play him so.

Researcher: You've said that you noticed that [player] was not at full speed so how have you noticed that what kind of things are looking for does that come down to previous knowledge of the player?

Participant 6: I think when you watch a player every week you get to know his limitations what you can and can't do So you'll know when he's a little bit off the pace maybe or is playing on the periphery of the game at times where is normally he's always on the ball during the game full of energy and he's flying about 3 days he was on the periphery of the game a lot more we [participant]e this a lot but you [participant]e us a lot of other things when we were out of possession because he cause of his natural positioning as a Defender we knew out of possession he would give us a lot more and then the alternative. so that's probably why we went with that decision so it's more so that you have to know the individual you couldn't walk up to complete strangers and just say well, you can't say that you 75% fit cos you don't know what you can and can't do.

Researcher: well that's what I was going to ask how would have been more difficult for somebody whose movie walked into work beside you with a team. how would it be more difficult for them to notice things like that.

Participant 6: It would be they would not sit well I think they would just leave a lot out of it. I think of Us total stranger came in and told him that he had tonsillitis then they would just say oh well you can't play.. and it wouldn't know how to balance up the risk and reward because they don't know the individual so so yeah.

Researcher: okay brilliant, that will do us there, thanks very much!

Participant 7: MRes Interview Transcription Phase Two

Researcher: So as there is no recorded incidents is for you I just like you to chat through anything that's maybe happened within this timeline from the other 14s coaches from the last 6-weeks where you've had to make decisions under sometime pressure with regards to risk of injury?

Participant 7: [reads through incidents] Yeah, I remember that one, I'm sure that was the Friday night. He just pulled up, said he was sad he was feeling his calf, and then with that with the game at the weekend and everything as well it was just, no risk. we know [player] has a lot of athletics and stuff like that 200 and 100m training. so, if he's feeling that then I have ever the sport science was that weekend we just put them to them. Ice and rest and that was it.

Researcher: yeah so do you take obviously that into consideration that he's got other things in place as well...

Participant 7: I think again because he's one that does and is ridiculous look like I can my take on it is then he's probably going to be more prone muscular things. he's quite an intelligent kid as well, we wouldn't really think he'd be one to manufacture anything and stuff like that. so, it's not really worth the risk especially with him, and potentially risk pain in a muscle and making it worse.

Researcher: and what sort of things do you notice, there must be things that you look for and notice or hear on the pitch when any player comes up with an injury?

Participant 7: if I'm noticing it... it will just be you'll either noticed that they're not moving as quick or, like you'll notice there may be over compensating on one side, or basically not playing to their normal standard. basically it's just the sort of normal patterns that you tend to notice, it's at this age when they are likely to go through growth spurts, that you can see the ones that are a bit more... with that one as well if it's the sort of growth stuff, if it's Osgoods and stuff like that the feedback I've always had has been they just need to manage that and if they've been referred to physio it's normally 2 weeks rest and then it's really up to them how much then they can go push through that as well so.

Researcher: how do you monitor that? Either it's by you and the physio or do you want to try that yourself between the parents?

Participant 7: normally in the past it's a sort of 3-week conversation where as now, when you first sort of notice it's just referred to the physio so it's normally 2 weeks rest, throughout that. You're normally communicating with the parents. you know players of this age group it's just a case of being patient taking two weeks rest and then after that it's then sort of, it's playing it by ear and seeing how they are and speaking to the player, if they feel they need rest or if they can push on. but that comes down to knowing the players as well.

Researcher: do you think a lot of that is down to mentality and noticing weaker ones within the squad that maybe need pushed on a bit more than others?

Participant 7: yeah definitely, I think that's probably the biggest thing is mentality.

Researcher: and is that come back to know in the players individually or is that through coaching experience that you can relate to?

Participant 7: I think it's just knowing the players, the ones, I'm trying to think I've not had anybody with Osgood's for a while... I'm trying to think of specific examples. I had one player who had a real change in his movement, he was quite quick at the time and [Player X] wasn't able to play his normal game. and he sort of just carried on. we had one a few seasons ago... I can't remember it well maybe come back to me.

Researcher: ok well, if you have a look through the rest of these incidents is here...

Participant 7: Right the [player] one, that was the hibs game, that was a strange one. the player went down he came off and said he couldn't feel his legs, which you're then treating that as he's not going to be able to play again but ended up coming back on, was alright, so I'm not really sure with that one, with that again he's quite quick he's one that would be mentality whys isn't as strong as some of the other ones that are getting better. so, he can be a difficult one to, to gauge whether he needs to be pushed or if it's how genuine or severe it is so.

Researcher: and how do you think you deal with that with a player that's, that's come off and I've got to now adapt I need to make a different decision, but then he goes back on. so that quick change of decisions how do you deal with that?

Participant 7: well when you see that he needs to come off, so you would see it happen I guess and we've always got First Aid and a physio. so, the first thing you have to do is the physio will deal with that, and you're basically just planning then because we're roll-on roll-off subs it's pretty straightforward, we've always got plenty substitutions to use. so, we'll then have the discussion as coaches as to who we can put on. so, if he's coming off and saying he can't feel his legs then I wouldn't want to put him back on after that, either because then they've said they're injured and come off so then at the age of 14 they then need to realise that if they do come off injured then the coaches won't be putting them back on. so, then that helps them decide for themselves and how bad they perceive it on the own.

Researcher: so, you're saying there's somebody is obviously coming off are you quite happy to let the physio do everything, and you not have any input to that or?

Participant 7: again, it depends, I think on the whole will leave the physio to deal, to deal with it. and then basically then go and feedback to us. I think sometimes the physios we tend to get seem to be junior physios so then you need to wear that up as well they can sometimes over exaggerate the amount of rest or actual it potentially is. so sometimes you need to be bearing that in mind. a lot of times you all know from yourself from see in what actually happened and how bad it's going to be, and if it is something that they are referring them to get physio treatment then it would come to one of the full-time guys here until they get better.

Researcher: do you find that not having consistency with the same player is problematic? as they don't have the same knowledge of the players as the full-time guys to here?

Participant 7: yeah, again as coaches were obviously seeing three or 4 times a week, and they're just seeing them once and they don't know them especially if some of them like you say going through growth or therefore maybe got minor niggles that there that they're playing through and they don't have that background of knowledge on them as well so.

Researcher: and how do you monitor that within that situation?

Participant 7: it's not often that you would overrule a physio you would always take on board their advice and at the end of the day as coaches we've got the final say because they're not actually club members of staff that outsource so it would be a combination of taking on board for the physio saying speaking to the player, and then making a decision based on that. sometimes that will be to go back on the park and sometimes that won't. and sometimes as well if they're coming off and like you said it might be a case of to learn from coming off as well so there's a number of things you've got to factor in.

Researcher: and how do you actually deal with that is that a straightforward conversation?

Participant 7: if they're frustrated at the time or going a bit of a huff, then you tend to just sort of let it settle and then speak about it the following the following week and address it then.

Researcher: ok is there any other incidents is there that you can recall?

Participant 7: yeah [player] then came back for training. the first one I think was more of an impact, the second one I think was more my guts with that was it was general fatigue he's one of the one that's in the performance School so he's in is, second year of that but I think the combination of training 3 times a week he played up a couple of times he's then training most days at the school and we were then coming to the end of our run of fixtures as well so I think that was just a build-up.

Researcher: and you've mentioned there that he's in the performing School, so with him and any other lads that are may be included in that how do you monitor between the loads and how much they're doing?

Participant 7: no there's not that I don't think we've got to that level of communication, the school basically reporting back to us and vice-versa. for example, I think the school use I think it may be does happen but then it's not fed back to the coaches because they obviously do their wellness questionnaire is and there are RPEs, that we're obviously doing here, but I don't know if some of that marrying up and then us getting told and thinking they might need to be on reduced training this week. or maybe likely to have a bit of fatigue or something like that so that might be something that would be potentially beneficial.

Researcher: do you think you'll notice a difference on decisions when you get that information coming back to you from the school when [participant] is there?

Participant 7: it's difficult to say you would think so but I think some of it's difficult because it's then balancing up being at the school being at the club and then I guess for a lot of them realistically they are career if they're going to have one professionally it would more likely to be coming through the club, so then a lot of them do want to train 3 nights a week so we would come to some sort of balance.

Researcher: so, anything there were the rest of incident recorded?

Participant 7: [player] with his tight groin that again was training... with that one again with [player] it's difficult he's won the player of the season he's quite physically developed like we've spoken about before so getting any sort of muscular stuff that he's feeling. you tend to sort of factored in he then did come back on and play after that so I guess it's finding that balance where... deciding how bad it is if you can play through it, because it has at times come down to he's come out during sports science testing, and then was then able to play the game straight after so you're then question and that, is that mentality or is it genuine?

Researcher: so, what would you then do in that situation? what would be your general look on that because obviously it probably happens quite a lot with players when you're testing them?

Participant 7: yeah will your gut instinct with that is if you're not fit to do that and you pull out early then you'll be saying well that's a mentality thing, or are they pull out of that and want to go and play and think that well just almost play Within themselves or not play at the sort of intensity, which then I'd rather they just rested and came back fit so. but those ones can be difficult to judge but on the whole player does that the next occasion, then if they want to do that then you wouldn't be putting them on in the game. if it was me in that situation I would have made him sit out the rest of training.

Researcher: do you have you seen that and learnt that kind of being able to clock on to the players coming out?

Participant 7: yeah you know the ones as well that are likely to do it. [player] I've only just started coaching recently so I don't know I don't know I'm as well so you're still trying to sort of suss him out at the moment...

Researcher: do you find your decisions are more difficult with less knowledge of the players than the rest of the team that you've been with a bit longer?

Participant 7: yeah and I think like you say because he's new one and he's one that's coming and has excelled then he's probably one of the ones that you would say is physically most developed out of them so he's more one that you would air on the side of caution initially and just let him get better and build up information on him and builds up what you would do in different situations.

Researcher: brilliant, so anything there was [player] or Alfie?

Participant 7: [player], his one was a knock to the shin that was the first time, I used to coach him when he was under 12, two or three seasons ago, so he was playing up with us, so he played quite a lot of minutes that weekend he had taken a few knocks throughout the game. he will tend to sort of, he's got a good level of determination to a certain extent sometimes evil almost, maybe not over exaggerate but play on it a little bit but always tends to get, get through it. so, he ended up playing the rest of the game and it was then just reported to you and obviously to the coaches to keep an eye on him. he was fine.

Researcher: and what do you do during that game situation? how do you monitor him?

Participant 7: you probably just put on more focus on him. watch how he's moving watch how is running on the ball houses running off the Ball? and especially with impact ones that just takes either some minutes to run it off or and he's fine, but I suppose you've kind of got a, if their performance deteriorates below a certain level then you're thinking well that's the time to substitute him off, but they're not here taking wasn't having a significant impact to say that he looks like he needs to come off.

Researcher: and would you do anything by putting them back on like adapting to try and let him still play at the level, like playing a different position or?

Participant 7: at this level, you probably you probably wouldn't. and obviously first team level or levels higher up, maybe not got substitutions or you've got to keep a certain amount on the pitch that you might then try and put them somewhere where it's less running or put them in a different area of the pitch. at under 14s that's not something that we would do. only under the exceptional circumstances, you've got rolling subs so, if you got to the stage where we thought well he's not moving properly then we need to actually move him to compensate for his injury...

Researcher: Ok brilliant, thanks for your time today, that has been great.

Appendix 7: Thematic Analysis Map

