Promoting a psychological need-supportive environment: An investigation into changing behaviour

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Abstract

The creation of a coaching environment that fosters psychological need-satisfaction (Self-determination theory; Deci & Ryan, 1985) is proposed to facilitate positive psychological well-being for athletes. Previous studies have shown consistent support for Self-determination theory (SDT) with autonomy-supportive environments linked with adaptive outcomes, such as superior performance, enhanced self-worth, increased effort, and self-determined motivation; while controlling environments have been linked with increased attrition and extrinsic motivation or amotivation (e.g., Mageau & Vallerand, 2003; Mallett, 2005). In this way, much of the research in autonomy-supportive coaching has focused on the impact of coaching behaviours on athlete outcomes. Whilst this is an important focus of inquiry there has been a dearth of research examining those causal factors that impact coaches' behaviours in the first case. This thesis underscores the need for future research to examine the antecedents to coaching behaviours, which is central to understanding the complexity and challenges in promoting an autonomy-supportive approach to sport coaching (Amorose, 2007).

Study one compared coaches' perceptions of their coaching with those of the players. Moreover, an alternative means of measuring athlete perceptions of their coaches' behaviours using a single item scale was examined. Data were collected from 55 elite youth basketball teams (coach-player dyads, including 55 coaches and 258 players) at a major basketball tournament. The findings suggested an incongruency between coaches and athletes in how they perceive the coaches' behaviour. The coaches in the sample reported their behaviours as higher in autonomy-support and lower in controlling characteristics compared to their athletes. These differing perceptions of coaching behaviours between coaches and athletes highlighted a fundamental discrepancy in how coaches and athletes view the provision of coaching. Second, the single item measure of autonomy-supportive coaching was empirically supported. This study highlighted that
coaches and athletes perceived the coaching environment somewhat differently, namely through the perception of coaching behaviours.

The key aim of study two was to develop an understanding of the contextual factors that influence the behavioural choices of coaches to adopt an autonomy-supportive interpersonal style and how athletes’ perceived these behaviours in relation to their conceptions of quality coaching. Six male coaches, aged between 28 and 46 years were involved in this study. The second group of participants in this study were male, independent high school athletes (n = 29) from six schools. These athletes were coached by the six male coaches mentioned above and formed part of the Open age group basketball team for their school. The ages of the athletes ranged between 14 and 17 years and the total playing experience of the athletes averaged 5.75 years. Data were collected through one semi-structured interview with the coach and one focus group with the athletes at each school. The analysed data presents two key findings in relation to the antecedents of coaching behaviour. First, coaches believed that controlling strategies such as the use of punishment motivate athletes; and second, there was differing opinions between athletes and coaches regarding the intent behind the coaching behaviour and how the athletes perceived these behaviours.

Using an action research methodology, I assumed the role of critical friend to the coach as well as researcher. Other participants in the study included the athletes in the team (N=9) and the coach (N=1). This single case study took place within an Australian high school basketball context, and was conducted throughout the regular high school basketball season (12 weeks). During this time data were collected over two training sessions and one competitive game each week throughout the season. Data on the athletes’ perceptions of the coach’s coaching behaviour were collected through focus groups, informal interviews and semi-structured interviews. Throughout the season the coach was involved in interviews, informal discussions, keeping a reflective journal and the
training sessions and competitive games were recorded. The analysed data showed that athlete perceptions of the coaching behaviour had shifted towards an autonomy-supportive approach by the end of the season.

This work has highlighted that a coach can change their coaching behaviour to become more autonomy-supportive and therefore create a need-supportive environment. Consequently, research in SDT propose that coaches who adopt an autonomy-supportive interpersonal style are likely to positively influence athletes psychological well-being (Mageau & Vallerand, 2003). The antecedents of coaching behaviours outlined by Mageau and Vallerand’s motivational model are empirically supported through this work, which begins to fill a gap within sports coaching research. Namely, the context, the personal orientation of the coach and their perceptions of athletes’ motivation all influence coach behaviour and indeed the extent to which a coach is able to create a need-supportive environment. It is proposed that for coaches to begin to change their behaviour they should firstly increase their level of self-awareness on how they coach. The extent to which coaches are aware of their behaviours, and the effect that these behaviours have on the psychological and motivational outcomes of their athletes are important to coaching science research.
Declaration by author

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Chapter 1

General Introduction

The way a coach acts, communicates, engages and behaves has been repeatedly reported by researchers to influence the sporting experience for athletes (Amorose & Anderson-Butcher, 2007; Coatsworth & Conroy, 2009; Mageau & Vallerand, 2003). Broadly, this thesis will examine how the coach orchestrates the coaching environment to foster positive athlete motivation and the quality of the sporting experience. Research in sport psychology proposes that the behaviours of the coach can either thwart or assist an athlete to reach their full potential (Amorose & Anderson-Butcher, 2007; Mageau & Vallerand, 2003). As such, understanding the factors that influence coaching behaviours is an important line of inquiry. Specifically, athletes are likely to experience a sense of belonging and self-worth when their input is sought and valued (Mageau & Vallerand, 2003). Conversely, when athletes are intimated, punished, and experience a lack of volition they are likely to withdraw (Bartholomew, Ntoumanis, & Thøgersen-Ntoumani, 2009). Therefore, coaches’ pedagogical behaviours are pivotal to the quality of the athletic sporting experience. Given the significance of the coach in shaping the motivational climate and the possible positive and negative outcomes for athlete psycho-social development, examining the factors that influence coaching behaviours is critical (Amorose, 2007). Ultimately, athletes are likely to persist, engage, and enjoy their sporting experience if the coach creates a need-supportive environment where the psychological needs of autonomy, competence, and relatedness are supported (Mageau & Vallerand, 2003). Hence, this thesis is about better understanding the interplay of the factors that influence why coaches behave the way they do and to foster coach behavioural change.

Mageau and Vallerand (2003) propose that contextual factors affect coaches’ behaviour that, in turn, influences athlete motivational outcomes. Numerous studies have
provided evidence for the importance of coaching behaviours on the motivational outcomes for athletes (Bartholomew et al., 2009; Mageau & Vallerand, 2003). One approach to understanding coach behaviour conceptualises behaviours into two contrasted forms, autonomy-supportive or controlling (Bartholomew et al., 2009; Bartholomew, Ntoumanis, & Thøgersen-Ntoumani, 2010; Coatsworth & Conroy, 2009; Mageau & Vallerand, 2003). Whether athletes perceive the actions of their coach to be autonomy-supportive or controlling can influence the motivational climate (positive or negative) and their resultant psycho-social outcomes. Specifically, athletes, who are immersed in autonomy-supportive environments, display greater feelings of self-worth, enjoyment, performance, and effort while those in controlling environments are likely to be extrinsically motivated that can potentially lead to withdrawal and dropout (Bartholomew, Ntoumanis, Ryan, Bosch, & Thøgersen-Ntoumani, 2011; Mageau & Vallerand, 2003). Hence, it seems reasonable that coaches should adopt an autonomy-supportive interpersonal style so to facilitative positive psychological outcomes for athletes. It is likely that coaches prefer athletes with high levels of intrinsic motivation given the increased persistence, commitment and effort derived. Thus, guided by the research, it would be beneficial to adopt an autonomy-supportive style to facilitate these outcomes and create a need-supportive environment. An autonomy-supportive or need-supportive environment is one in which the three basic psychological needs of autonomy, competence and relatedness are satisfied (Deci & Ryan, 1985).

The seminal work of Mageau and Vallerand (2003) has driven this line of coaching research through their proposition of a motivational model that utilises a self-determination theory framework (SDT; Deci & Ryan, 1985). However, some aspects of the model have received less empirical attention. In the main, these are related to the coach and the key determinants of their behaviours as opposed to the outcomes of these behaviours. Specifically, the coaches’ personal orientation, the context, and perception of athletes’
behaviour and motivation have been largely ignored. Whilst suggestions about the possible causes of coaching behaviours have been raised by researchers in sports coaching and sport psychology (Amorose, 2007; Mageau & Vallerand, 2003), there has been a dearth of empirical research. In addition, although there has been support for the value of an autonomy-supportive style of coaching, more recent research has shown that implementing this style can be problematic (e.g., Ahlberg, Mallett, & Tinning, 2008; Byrne, 2010). As such, it would be beneficial for further examination of autonomy-supportive coaching to focus more on the enablers and barriers in creating a need-supportive environment.

As suggested by Amorose (2007), there is a need for research to devote increased attention to the antecedents of coaching behaviour. Given the potential positive outcomes for athletes when a coach is autonomy-supportive, why coaches may still consider shaping desired athletic behaviours through the use of controlling strategies (e.g., punishment for poor performance) is of interest. One possibility is that coaches, who are often under pressure to win and may be culturally conditioned to coach and behave in certain ways, may consider controlling strategies as an effective method of coaching. This approach may be especially reinforced if they have been successful with this method in the past. Therefore the context in which they operate could potentially influence not only the extent to which a coach is able to be autonomy-supportive but also it could also be the determining factor as to why a coach adopts a less-autonomy-supportive orientation. The interaction between these two actors can also shape how the coaching behaviours are emitted but only if the coach understands how their actions are being perceived.

**Purpose of the current thesis**

Given the significance of the influence of coaching behaviours on athlete motivation the aim of this thesis is to examine the causes of coaching behaviours and assist a coach to adopt an autonomy-supportive orientation through creating a need-supportive
environment. As mentioned, there is a lack of empirical evidence as to the role of coach personal orientation, coaching context, and coach perception of athlete motivation as prescribed by Mageau and Vallerand’s (2003) sequence in the motivational model. Further work in this area will contribute to understanding the social and psychological influences, as well as the challenges and opportunities for coaches adopting an autonomy-supportive style. Practically, coaches are central to the quality of the sporting experiences of the athletes they coach. Given the reported benefits for athletes who are immersed in a need-supportive environment, it is reasonable to assume that coaches should display an autonomy-supportive style. The findings of this research may assist coach educators to further understand the barriers and enablers for coaches as well as develop more effective ways to assist coaches in the adoption of this empirically supported interpersonal style.

This project has three key aims:

- To investigate athletes’ perceptions of the coaching received compared to coaches’ self-perceptions of their coaching behaviours in youth basketball;
- To develop further understanding of the context specific challenges in creating an autonomy-supportive environment in basketball; and
- To facilitate an autonomy-supportive behavioural shift in a basketball coach through emersion in an action research project.

The following section outlines the context in which research will be conducted, along with the specific studies that attempt to address the project aim.

**The Context**

This project consists of three sequential studies in the Australian youth basketball context. The participants include male and female High School and Club basketball coaches and their athletes (male and female). Côté (2007) has suggested that competitive youth athletes (ages between 14-18) are in their specialisation phase of athletic development
and thus are susceptible to drop out from sport. This age population has therefore been targeted as a greater understanding of the determinants of coach behaviours may be especially important for ensuring their continued positive experiences, and therefore likely greater retention in sport. Basketball was deliberately selected as the sport for investigation because unlike field sports, basketball, offers the coach close proximity to their athletes during training and competition. This allows the coach opportunity to at all times be in communication with athletes, which tends to lead to instructional coaching during the game (‘bench coaching’). Ultimately, an enhanced understanding of the factors that influence quality coaching in basketball is sought. This requires empirical investigation of the issues with both coaches’ and athletes’ voices. The research culminates with a case study aimed to assist a coach, who was seeking to improve practice through the adoption of an autonomy-supportive style and resultantely nurture young people’s participation in sport through the creation of a need-supportive environment.

By investigating the factors that influence coaching behaviour, sports coaching researchers may be in a position to inform coach education to assist coaches to adopt an autonomy-supportive approach. Additionally, from a theoretical perspective, this thesis is building on the seminal work of Mageau and Vallerand (2003) through the provision of empirical support for the antecedents of coaching behaviours, which will provide researchers a more measured understanding of why coaches coach the way they do. The following outlines the three studies within this thesis.

**Study 1**

The aim of study one was to gather quantitative data to examine whether coaches’ perceptions of their coaching (autonomy-supportive or controlling) was congruent with the perceptions of their athletes. Previous studies have examined athlete perceptions of their coaches’ behaviour (e.g., Amorose & Anderson-Butcher, 2007; Coatsworth & Conroy, 2009; Gagné, Ryan, & Bargmann, 2003) and highlighted the link between perceived coach
control and low levels of athlete intrinsic motivation. Nevertheless, thus far the voice of the coach has been absent from these investigations, with research focusing on athlete perceptions of coaching behaviours and the resultant effects on athletes’ motivation; therefore, comparing athlete perception with coach self-report in relation to coaching behaviours is a novel approach. To hear the voice of the coach adds an additional dimension to the complete story, which thus far has simply relied on athletes’ opinions alone. The participants for this study included 55 Basketball coaches and 258 Basketball athletes. Given the lack of sports coaching instruments using a SDT framework, a new measurement tool was developed to quantify the holistic picture of coaching behaviours. The large-scale data collection from both coaches and the athletes allowed for both voices within the coach-athlete relationship to be represented. Furthermore, the benefit of collecting data from over 300 participants allowed for investigation as to how the coaching within this context is perceived as more or less controlling or autonomy-supportive.

Study 2

Developing further understanding around the factors that influenced the behavioural practices of coaches and how athletes perceived these behaviours was the primary focus of study two. In total, 29 athletes from six Australian high school basketball teams participated in team-based focus groups. Following this process each team’s coach (N = 6) was interviewed about their coaching behaviours and their approach to coaching basketball. Focus groups and interviews were chosen as the methodical approach due to the ability of the interviewer to extract, build on, probe, and allow the participants to provide detail about the factors that influence coaching behaviours (Patton, 2002a).

Study 3

The final study sequentially follows and is informed by the findings from studies one and two. The aim for study three was to assist a basketball coach to change his coaching
behaviour towards an autonomy-supportive orientation to create a need-supportive environment. This study was a single case study, which used an action research methodology in the Australian Basketball context. The most important criterion for this study was seeking a coach that wanted to change their behaviour to become more autonomy-supportive. The coach that participated in the study actively sought out this research project and agreed to be involved, as he wanted to improve his coaching practice. The goal of this study was to use the information gathered in previous studies about the factors that influence coach behaviours to assist the coach to shift from a less autonomy-supportive coaching style to a more autonomy-supportive style during the 12-week season. Data were collected via various methods; the coach and his athletes were interviewed and surveyed throughout the season, training sessions and games were video recorded, audio of coaching sessions was captured, and observational notes were kept throughout the season. This study highlighted the challenges and the successes along the way for both the coach and the athletes.

The aim of this project was to address the lack of research that has been conducted around the challenges and opportunities for coaches wishing to adopt autonomy-supportive coaching behaviours. Specifically this project sought to investigate:

- Athletes’ perceptions of the coaching received compared to coaches’ self-perceptions of their coaching behaviours in youth basketball;
- Further understanding the context specific challenges in creating an autonomy-supportive environment in basketball; and
- The facilitation of a coaching shift from less autonomy-supportive style to a more autonomy-supportive style in basketball using an research action methodology.
Thesis Outline

The current thesis contains a literature review of autonomy-supportive coaching research (Chapter 2). Chapters 3, 4, and 5 each outline a study and include the methods, results, and a discussion of findings with implications and directions for future work. The final chapter of the thesis (Chapter 6) provides a general overview of the key findings, proposes theoretical and practical implications of this project and autonomy-supportive coaching, discusses research limitations, and finally suggests directions for future work.
Chapter 2

Overview of Autonomy-supportive coaching

Introduction

The importance of motivation has been emphasised in a number of vocations such as sport coaching because it influences how people think, feel, and behave (Deci & Ryan, 2000). Within sporting contexts, coaches’ motivation impacts their behaviours and subsequently, the motivational climate they create. Athlete perception of coaching behaviours influence the perceived quality of the motivational climate and subsequent athlete outcomes (Mageau & Vallerand, 2003). Several studies in sports coaching have shown that coaches’ behaviours are significant predictors of athlete motivation (Amorose & Anderson-Butcher, 2007; Conroy & Coatsworth, 2007). Mageau and Vallerand’s (2003) motivational model of the coach-athlete relationship has been a popular theoretical framework through which to understand the importance of adaptive motivation on desirable athlete outcomes. Their model has drawn upon the extant literature within Self-determination Theory (SDT) and the Hierarchical Model of Intrinsic and Extrinsic Motivation (HMIEM; Vallerand, 1997). Mageau and Vallerand’s (2003) model has been a catalyst for the promotion of research and practice using an autonomy-supportive approach in sport coaching. In sum, it is proposed that coaches who embrace a coaching style that is autonomy-supportive can contribute to psychological need satisfaction and subsequently adaptive forms of motivation that lead to positive athlete outcomes (e.g., increased persistence, improved performance).

Autonomy-supportive environments are characterised by a person in authority (e.g., coach) who acknowledges the feelings and perspectives of others (e.g., athletes), and who is not overly controlled by external pressures and demands (Black & Deci, 2000). Studies conducted in formal educational contexts (e.g., Standage, Duda, & Ntoumanis,
2006; Standage & Gillison, 2007) as well as within sports settings (Amorose & Anderson-Butcher, 2007; Conroy & Coatsworth, 2007; Gagné et al., 2003) support a positive relationship between autonomy-support (facilitated by the teacher or coach) and the satisfaction of the three psychological needs. This research highlights the consistent, positive evidence for using an autonomy-supportive interpersonal style in conceptualising sport contexts as learning contexts.

According to Mageau and Vallerand (2003), seven pedagogical behaviours are key to assisting a coach in creating an autonomy-supportive environment: (a) provide choice within boundaries; for example, allowing athletes to choose between two or three activities; (b) provide a rationale for tasks; for example, explaining the advantages or disadvantages of a particular skill or training session so that the athletes understand how and why decisions are made; (c) acknowledge feelings and perspectives; for example, asking an athlete or squad for input into a training session; (d) provide athletes with opportunities to take initiative; for example, allowing athletes to work independently to solve problems; (e) provide non-controlling competence feedback; for example, the coach provides feedback that allows her and the athlete/s to solve problems together; (f) avoid controlling behaviours; for example, avoiding statements that can be perceived as bullying or coercion; and (g) reduce the perception of ego-involvement in athletes; for example, focus on self-referenced evaluative criteria. Collectively, these coaching behaviours should foster satisfaction of the three psychological needs, especially autonomy and, in turn, promote autonomous motivation, and subsequent adaptive outcomes in athletes’ cognitions, feelings, and behaviours (Mageau & Vallerand, 2003; Vallerand, 1997).

Deci and Ryan (2002) proposed that autonomy-supportive environments are associated with psychological need satisfaction, namely, the need for autonomy, competence and relatedness. Mageau and Vallerand (2003) also suggest that equally important in the promotion of such environments is (a) the notion of structure provided by
the coach; and (b) the coach’s care for athletes as people (involvement). Coaches who provide structure ensure that athletes have the necessary understanding and information to perform their roles within the team (Pope & Wilson, 2012). This structured learning environment is hypothesised to foster athletes’ perceived competence (Mageau & Vallerand, 2003). In addition to providing structure, coaches can foster relatedness by showing emotional support and interest in the psychological development of the athlete within the sporting context (Pope & Wilson, 2012). These two dimensions are proposed to complement the seven pedagogical behaviours to facilitate an autonomy-supportive learning environment.

Recent research has focussed on operationalising the effects of controlling coach behaviours on athletes’ need satisfaction and subsequent motivation. In contrast to autonomy-supportive behaviours, a coach that acts with the use of pressure, coercive demands, and offers rewards to direct a person’s behaviour is said to be controlling (Bartholomew et al., 2009). Bartholomew and colleagues (2009) present a preliminary taxonomy of six controlling strategies; use of tangible rewards, use of controlling feedback, excessive personal control, intimidation behaviours, promoting ego-involvement, and conditional regard. In line with SDT, they propose that coaches’ controlling behaviours will undermine the intrinsic motivation of athletes by reducing or thwarting need satisfaction.

Bartholomew and colleagues’ (2011) work around understanding the social-environmental conditions that thwart psychological needs has begun to gain empirical support. Specifically, the negative impact of controlling coach behaviours (e.g., lack of perception of choice in training) on athletes is illustrated in a number of studies (Blanchard, Amiot, Perreault, & Vallerand, 2009; Lafrenière, Jowett, Vallerand, & Carbobbeau, 2011; Pelletier, Fortier, Vallerand, & Brière, 2001; Stebbings, Taylor, & Spray, 2011). Pelletier and colleagues (2001) tested the perception of coaches’ controlling behaviours and autonomy-supportive interpersonal behaviours with a sample of
competitive swimmers. As predicted, autonomy-supportive behaviours were related to
greater levels of self-determination whereas the perception of coach control was
consistent with non-self-determined motivation. Similarly, Blanchard et al. (2009) reported
the impact of team cohesiveness and coach controlling interpersonal style on athletes’
need satisfaction. Results indicated that perceptions of team cohesiveness positively
predicted satisfaction of autonomy, competence, and relatedness whereas coaches’
controlling behaviours negatively impacted on feelings of autonomy. Thus, research
examining coaches’ controlling behaviours suggests that this style may impair athletes’
perceptions of autonomy. Therefore, the actions of coaches with a controlling orientation
can result in reduced athlete autonomous motivation, and likely thwart their effort and
persistence (Bartholomew et al., 2011).

These contrasting interpersonal styles of coaches have been found to be
differentially associated with athletes’ adaptive psychological outcomes (Mageau &
Vallerand, 2003). As such the extant research on coaching behaviours within an SDT
framework supports the notion that coaches who value positive psychological outcomes
for athletes should be autonomy-supportive rather than controlling. The language and
description of these two contrasting interpersonal styles within the literature has the
potential for scholars to assume that coaches are likely to be either controlling or
autonomy-supportive. However, recent studies (e.g., Hodge & Lonsdale, 2011b; Smith,
Ntoumanis, & Duda, 2010) that have examined both autonomy-supportive and controlling
coaching behaviours have found a weak to moderate relationship between these two
styles. Thus, it is possible that coaches may exhibit both controlling and autonomy-
supportive behaviours to varying degrees (Jenkins, 2014; Hammermeister, 2014). Pelletier
and colleagues (2001) study tested a model incorporating youth swimmers’ perceptions of
their coaches’ interpersonal behaviours (controlling and autonomy-supportive) and five
forms of behavioural regulation. The findings indicate that coaches that were perceived as
autonomy-supportive were associated with greater levels of self-determined motivation and controlling coaches fostered non-self-determined forms of regulation. Additionally, Pelletier et al. (2001) found that the association between the athletes’ perceptions of coaches’ autonomy-support and control is significant but moderately negative, suggesting that these interpersonal styles are not bipolar but possibly orthogonal.

There has been an increased interest in the application of the principles of SDT to the field of sport coaching due to the research support for adaptive athletic outcomes (Bartholomew et al., 2009; Mageau & Vallerand, 2003). In light of the growing interest in the research and application of autonomy-supportive coaching environments, the following section will outline a summary of the research conducted to date in three sections. First, an overview of SDT is discussed. Second, the research on autonomy-supportive coaching using a SDT framework is reviewed. Third, some potential challenges in implementing an autonomy-supportive interpersonal style are discussed. Finally, thoughts for guiding future research using Mageau and Vallerand’s (2003) motivational model of the coach-athlete relationship is presented.

**Overview of Self-determination theory**

Self-determination theory (Deci & Ryan, 1985, 2000) is an approach to human motivation and personality that attempts to address the ‘how’ and ‘why’ of human behaviour (Ryan & Deci, 2000). This theoretical approach to understanding human behaviour has found practical use in a variety of domains (e.g., parenting, health, nursing, and education), and has gained recent attention in the field of sport coaching (e.g., Amorose & Anderson-Butcher, 2007; Bartholomew et al., 2009; Coatsworth & Conroy, 2009; Mallett, 2005). Basic Needs Theory (BNT; Ryan & Deci, 2002), which is a mini-theory of SDT, highlights the centrality of satisfying the three psychological needs (autonomy, competence, and relatedness) in fostering optimal human functioning and autonomous motivation.
Satisfaction of the need for autonomy involves the act of choice and the perception that one initiates one’s own action (deCharms, 1968). The perceived need for competence is satisfied when a person feels that their actions are able to bring about desired effects from directed effort (White, 1959). Finally, satisfaction of the need for relatedness centres on the perception of connectedness expressed by others (Baumeister & Leary, 1995). Deci and Ryan (2000) contend that, “human needs specify the necessary conditions for psychological health or well-being and their satisfaction is thus hypothesized to be associated with the most effective functioning” (p. 229). Thus, the motivational orientation of a person is impacted by the extent to which these three needs are satisfied.

Deci and Ryan (1985) contend that the motivational orientation of an individual is key to understanding how and why people engage with various activities. The reasons why a person chooses to exert effort and persist in an activity can be classified along a continuum of self-determination. The most self-determined motivation is intrinsic motivation, which refers to doing something because it is inherently interesting or enjoyable (Mageau & Vallerand, 2003). On the opposite end of the continuum is amotivation, where there is a lack of motivation and intention. Extrinsic motivation is situated between intrinsic motivation and amotivation and is demonstrated if one is participating in a task for a reward or to avoid feelings of guilt and thus have a non self-determined motivational orientation (Amorose & Anderson-Butcher, 2007). There are four forms of extrinsic motivation that range from higher to lower levels of self-determination, which include integrated regulation, identified regulation, introjected regulation and external regulation. Within extrinsic motivation there are four regulatory styles that range from external to integrated. External and introjected regulations are classed as non-self-determined or controlling extrinsic motivation, and identified and integrated regulations are classed as self-determined or autonomous extrinsic motivation. In order to become more autonomously motivated, the reasons for engaging in an activity need to be internalised.
This internalisation of the behaviour or activity is a process in which people transform formal external regulations and assimilate those with their own values and sense of self. This regulation occurs through integrated internalisation if the behaviours are chosen, even if they occur in the context of rewards or constraints. Research in sport and exercise settings has consistently shown more positive outcomes for individuals who engage in activities for self-determined as opposed to non-self-determined reasons (e.g., Amorose & Anderson-Butcher, 2007; Mageau & Vallerand, 2003; Reinboth, Duda, & Ntoumanis, 2004). One potent contributor to the development of motivational climate is the coach.

**Overview of autonomy-supportive coaching research**

The underpinning ideology and actions of coaches have the potential to shape an athletes’ view of their sport participation - psychologically, emotionally, and physically. In reviewing the literature, several themes emerge from the research conducted on autonomy-supportive coaching. Coaches who use autonomy-supportive behaviours are able to support their athletes in four key ways: (a) satisfy psychological needs; (b) sustain intrinsic motivation; (c) promote continued engagement in sport; and (d) enhance athletic performance (e.g., invest more effort; persist longer at tasks; and perform at a higher level). Furthermore, researchers have also demonstrated the negative influence of controlling behaviours on psychological need satisfaction and subsequent negative athlete outcomes (e.g., increased anxiety; fear of failure; decreased well-being; and drop out). These studies, which are discussed next, support the motivational sequence of the impact of coaching behaviours on athlete outcomes through need satisfaction and motivation.

Studies conducted in sport settings have provided positive support for the satisfaction of the three psychological needs within the coach-athlete relationship (e.g., Coatsworth & Conroy, 2009; Hollembeak & Amorose, 2005; Kipp & Weiss, 2013; Reinboth et al., 2004). Consistent with the tenets of SDT, it is proposed that when an athlete’s need
for autonomy, competence and relatedness are satisfied, this will positively influence athlete vitality when engaged in sport (Adie, Duda, & Ntoumanis, 2008, 2012; Quested & Duda, 2010). Reinboth, Duda and Ntoumanis (2004) used structural equation modelling to examine the relationship of coaching behaviour with intrinsic need satisfaction among adolescent male footballers and cricketers. Their findings suggest that players who perceived their coach as autonomy-supportive were generally more positive in their perceptions of autonomy, competence, and relatedness. Similarly, Coatsworth and Conroy (2009) found that swimming coaches’ use of autonomy-supportive behaviours, particularly through process-focused praise, predicted the satisfaction of the three psychological needs for their athletes. These studies have focused on an interpersonal style to psychological need satisfaction and it is noteworthy that although the term used is autonomy-supportive it might be more appropriate to term this approach as need-supportive. The seven pedagogical behaviours as espoused by Mageau and Vallerand (2003) were proposed to support all three psychological needs – autonomy, competence, and relatedness – not only autonomy.

Coach behaviours have been consistently linked with motivational outcomes in athletes (Amorose & Anderson-Butcher, 2007; Amorose & Horn, 2000; Conroy & Coatsworth, 2007). Hollembeak and Amorose (2005) investigated the relationship between perceived coaching behaviours and the impact on intrinsic motivation for college athletes from various team and individual sports. Their findings illustrated that coaches who displayed democratic coaching behaviours (e.g., allowing for athlete input and choice) positively affected athletes’ perceptions of autonomy and intrinsic motivation, whereas coaches who displayed autocratic behaviours (e.g., coach exerting sole authority over decisions) had a negative effect on athlete psychological well-being. Likewise, Amorose and Horn (2000) found that coaches who provided a high frequency of positive, encouraging, and informational feedback, created an environment that facilitated the
development of intrinsic motivation in their college athletes. As predicted in SDT, the authors argued that the increase in intrinsic motivation was due to the ability of such coaching behaviours to enhance both athletes’ perceptions of competence and their sense of self-determination. Consistent with the findings of Amorose and Horn (2000), Carpentier and Mageau (2013) reported the positive effect of autonomy-supportive change-orientated feedback. More specifically, with a sample of 340 athletes aged between 11 and 35 years old from 13 different sports and 58 coaches aged between 18 and 72, the authors investigated the impact of change-orientated feedback on the athletic experience. A key finding was that athletes who received this type of feedback were more intrinsically motivated, had higher levels of well-being, and reported greater psychological need satisfaction.

Autonomy-supportive coaching is also associated with athletes’ motives for sport participation (Gagné et al., 2003; Pelletier et al., 2001). Gagné and colleagues’ (2003) investigated the effects of perceived parent and coach autonomy-support on the motivation and well-being of gymnasts. Through data collected from training diaries, Gagné and colleagues found that athletes’ perceptions of parental autonomy-support and involvement were linked with increased autonomous motivation. Similarly a study by Almagro, Sáenz-López, and Moreno (2010) examined the motivational climate created by the coach and the subsequent impact on athlete intrinsic motivation and adherence to sport. The sample consisted of 608 male and female athletes aged 12 to 17 years in a number of team and individual sports. Similar to the findings of Gagné and colleagues (2003), it was noted that athletes who felt their input was valued and received praise for autonomous behaviour from the coach experienced satisfaction of their need for autonomy, increased intrinsic motivation, and increased intention to be physical active. Together, these findings highlight the importance of an autonomy-supportive interpersonal
style in the facilitation of increased autonomous motivation and promotion of adherence and persistence.

In a theory to practice paper, Mallett (2005) suggested that one of the many benefits of an autonomy-supportive interpersonal style to sports coaching related to facilitating performance outcomes. As an elite coach and sport psychologist, Mallett considered the coaching behaviours outlined by Mageau and Vallerand (2003) with his coaching of the Australian men’s Olympic track relay teams. Central to his thesis about the benefits of an autonomy-supportive approach to coaching was that performance in elite sport is not compromised. Athlete performance times improved, with a further improvement in the cauldron of Olympic competition. While the significance of the occasion may have contributed to improvement, Mallett (2005) stated that, “there were observable positive behavioural and affective outcomes that were considered attributable at least in part to the autonomy-supportive approach” (p. 427). This assertion was given further credence as, compared to previous championship campaigns, athletes reported increased levels of autonomy, competence, and relatedness suggesting that autonomy-supportive coaching behaviours have potential benefits in real-world settings. Additionally, a study by Gillet, Vallerand, Amoura and Baldes (2010) with 101 judokas tested the link between coach autonomy-support and performance using the framework of SDT. They found athletes’ performance of judo increased among those who perceived their coaches as autonomy-supportive exhibited behaviour that was more self-determined. Given one of the fundamental roles of coaches is to improve the performance of their athletes, the evidence is now building to support the notion that coaches who create environments where need-satisfaction is facilitated may, in turn, foster an increase the performance outcomes for their athletes.
Creating an autonomy-supportive environment

There is consensus in the sport coaching literature that coaches exert a major influence on the quality of the sporting experience of athletes. The way the coach-athlete relationship is developed and fostered influences athlete outcomes. Mageau and Vallerand (2003) developed a motivational model of the coach-athlete relationship (see Figure 1) illustrating coaches’ autonomy-supportive behaviours can potentially influence athletes’ motivation. In this model, Mageau and Vallerand (2003) propose three variables that may directly influence autonomy-supportive coaching behaviours: the coach’s personal orientation, the coaching context, and the perceptions of athletes’ behaviour and motivation. Mageau and Vallerand’s model infers that these three causal factors independently influence a coach’s behaviours. Whilst the authors’ intention might not have been to infer such independence, an understanding of the relationships between these key factors is central to understanding the complexity of why coaches behave the way they do. Similarly, Côté and colleagues’ (1995) coaching model proposes the interrelationships between the coach, athlete, and context in framing how coaches behave in developing athletes. Therefore, it is proposed that research might examine these individual antecedents independently as well as their potential interdependencies and their relationships with coaching behaviours.

Figure 1. Motivational Model of the coach-athlete relationship by Mageau and Vallerand (2003)
A coaches’ personal orientation reflects the behaviours they are likely to emit. For example, a coach who “must win at all costs” is likely to adopt a controlling approach; whereas a coach whose focus is about athlete development may have more of a autonomy-supportive approach. The coaching context also influences a coach’s use of autonomy-supportive behaviours; for example, if a coach is feeling pressured to perform under high levels of stress (e.g., fear of losing their position), they could produce more controlling rather than autonomy-supportive pedagogical behaviours. Finally, the coach’s perceptions of the behaviours and motivation of the athletes can influence the level to which a coach is autonomy-supportive. Amorose (2007) suggested that given the importance attributed to coach behaviours on athlete outcomes, research needs to investigate these antecedents of coaching behaviour.

Initial evidence from Stebbings and colleagues (2011) supports the notion that coaches whose context support their psychological needs and well-being are likely to display autonomy-supportive coaching behaviours. Researching the antecedents of coaching behaviours is considered important to guide adaptive behaviour change and also inform coach development. The role the coaching context plays in thwarting or supporting coaches in displaying autonomy-supportive behaviours is an area for future research. Despite these proposed links, to date there has been few research papers examining how these factors impact on coach behaviours and attempts to become more autonomy-supportive. Furthermore, there has been little published empirical examination that has elaborated on these three factors considered to influence coaching behaviours.

**Challenges for autonomy-supportive coaching research**

Research conducted on autonomy-supportive approaches within sport coaching supports the conceptual model proposed by Mageau and Vallerand (2003) underscoring links between coaches’ behaviours and athlete outcomes. Nevertheless, there has been a lack
of research that has examined the antecedents of coaches’ pedagogical behaviours as proposed by Mageau and Vallerand (2003). Specifically, this relates to the coach’s personal orientation, the coaching context, and the perception of athletes’ behaviour and motivation. Moreover, there has been a paucity of literature that has reported the real-world implementation of an autonomy-supportive interpersonal style to coaching.

**Limited evidence of the challenges in translating theory to practice**

For some coaches, a behavioural shift to becoming autonomy-supportive might present a significant challenge with regard to their understanding and their practice (Ahlberg et al., 2008). The research conducted thus far in relation to the challenges of moving from a controlling coaching style to being more autonomy-supportive is limited. For sports coaching researchers looking to position their work within the findings of previous research, there is an obvious lack of intervention studies where sport coaching is the pedagogical setting; however, research conducted in the educational context may be generative in informing future research in coaching settings. Using a SDT framework, intervention studies in educational research have explored whether or not a teacher can learn to teach using an autonomy-supportive teaching style. A meta-analysis of intervention studies and their effectiveness in developing autonomy-support was conducted by Su and Reeve (2011). The purpose of their research was to collate 30 years of intervention research in SDT and assess whether interventions are effective in developing autonomy-support. Their overarching finding supports the contention that people (teachers, carers, parents, instructors) in helping professions can learn to become more autonomy-supportive towards others. These are encouraging findings for coach developers. Currently the body of research in coaching within a SDT framework has examined the effects of coaching behaviours on athlete outcomes, especially intrinsic motivation. However, the empirical support within the education literature regarding the malleability of teacher’s interpersonal style should direct coaching researchers to the utility
of such intervention studies in coaching to subsequently inform quality coaching practice. Amorose (2007) hints at a shift in research focus when he calls for future research to "develop and test coaching effectiveness interventions" (p.223).

Unlike Mallett (2005), the work of Ahlberg et al., (2008) and unpublished work by Byrne (2010) suggests the need to problematise attempts in shifting to a more autonomy-supportive interpersonal style. As a basketball coach of youth aged athlete high school athletes, Byrne used an action research methodology to assess his coaching and attempt to incorporate a more autonomy-supportive approach. Using a variety of data sources (e.g., observation by a critical friend, video and voice recording, reflective journal and questionnaire), Byrne sought to move towards being more autonomy-supportive in his coaching. Firstly, he claimed his personal orientation was autonomy-supportive. He subsequently attempted to adopt the behaviours listed by Mageau and Vallerand (2003) to facilitate change within his coaching; however, he found translating theory to practice highly problematic. Not only did attempting to become more autonomy-supportive present some challenges to Byrne (2010) it also led him to ponder other related questions such as; ‘Are some behaviours more important than others’; and ‘Is a coach required to display all the behaviours all of the time to be considered autonomy-supportive?’

Similarly, Ahlberg et al. (2008) used an action research methodology to assist a Rugby coach in creating an environment that sought to promote players’ self-determined motivation through providing rationales for specific tasks and allowing athletes some choice in training. The coach proactively sought assistance in developing his coaching practice as he thought there was value in an autonomy-supportive approach. The coach described his current coaching style as direct with high intensity and discipline within sessions so that athletes could develop within pre-set limits and boundaries. The findings of the study suggest that the coach’s self-awareness increased during the study, however, he noticed that it required constant time and effort. For the coach, changing his coaching
through two key behaviours was challenging as it was in contrast to his own (socially constructed) personal orientation and beliefs about quality coaching. These two qualitative studies suggest an examination of the coach’s personal orientation and an autonomy-supportive interpersonal coaching style is needed; for example, the implicit theories of coaches about what is good coaching practice; the cultural influences on how coaches have learned to coach and the strength of that learning; and perhaps the integration of coaches’ personalities and their motives and strivings to coach.

**Influence of coaching context**

In addition to the personal characteristics of the coach, the context in which coaching occurs likely exerts a strong influence over coach behaviour. It is proposed that the context in which coaches and athletes operate, especially high performance contexts, is complex with competing demands and expectations of many stakeholders subsequently making the implementation of an autonomy-supportive approach to coaching potentially problematic. As previously stated, Mallett (2005) infers a somewhat unproblematic portrayal of using an autonomy-supportive interpersonal coaching style. Nevertheless, a few studies (see Amorose & Anderson-Butcher, 2007; Su & Reeve, 2011) have identified some contextual challenges in becoming autonomy-supportive. The pressure to perform at the high performance level in sport can produce significant stress, which can lead to controlling behaviours (Mageau & Vallerand, 2003). Moreover, some coaches believe they need to control as many variables as possible to produce successful and predictable performances (Lyle, 2002) and therefore may be sceptical of too much (if any) athlete involvement (autonomy) in the coaching process.

The influence of context on motivational climate has been investigated in educational settings. Reeve’s (2009) research on teachers’ interpersonal style has highlighted the role of external pressures (e.g., academic results) in producing a controlling motivational climate in classrooms. McLean and Mallett (2012) suggested that
for some coaches, the notion of ‘athlete involvement’ in decision-making might just be rhetoric (i.e., while espousing their commitment to establishing autonomy-supportive environments for their athletes, their behaviours are typically controlling in orientation). For example, although coaches might offer choice, the manner (tone) in which they communicate that choice might be perceived as controlling. Further, McLean and Mallett (2012) argued that a reluctance to involve athletes in the coaching process might, in part, stem from a lack of understanding about what being autonomy-supportive entails and the potential benefits of such an approach (Iachini, Amorose, & Anderson-Butcher, 2010).

**Limited understanding of individual and interaction effects**

The individual and interaction effects of personal orientation and coaching context are yet to be examined in any depth. Indeed, research is necessary to determine the saliency of both variables at the situational and contextual level and if their interdependence determines the feasibility of shifting towards an autonomy-supportive approach to coaching practice. Hence for coaches it raises a key question: Are there times when it is appropriate for a coach to be more autonomy-supportive and times when they should be less so? Qualitative research appears to give some credence to this supposition. d'Arripe-Longueville, Saury, Fournier, and Durand (2001) analysed the temporal and contextual organisation of coach-athlete interactions in elite male archery competitions and found that respect for the athlete’s autonomy in competitive settings depended on how the coach perceived the characteristics of the situation. Specifically, in situations that the coach deemed favourable for the archers’ performance, the coach respected the athletes’ approach and avoided intervening and discussing the shooting process. In contrast, in situations perceived as unfavourable for the archers’ performance, the coach placed greater importance on being at the archers’ disposal and encouraging the archers to initiate the interaction and to interpret their own results. Furthermore, when total agreement between parties was not reached, sensing a need for fast and efficient
decisions, the coach was more likely to provide the athlete with generic advice rather than take risks of giving irrelevant instructions, or leaving them in doubt by not saying anything (d'Arripe-Longueville et al., 2001). Potentially researchers might consider how they conceptualise the measurement of autonomy-supportive behaviours in the sporting domain. Current methods frequently overlook the inherent fluctuations in the environment, whereby coaches may move along a continuum of relative autonomy-support depending on the situation.

**Involvement of others**

In addition, within the coaching context it is important to acknowledge the involvement of others and the impact they can have on coaching behaviour. For example, at the youth development level parents are influential actors, whose interactions with coach and son/daughter can impact coaches’ behaviour. Byrne (2010) acknowledged this influence when speaking of the openly critical feedback received from parents when observing his attempts to adopt an autonomy-supportive coaching style. Some parents perceived his coaching as laissez-faire; that is, they thought he was doing very little directive coaching, which was considered appropriate by the parents in producing successful performances. Mageau and Vallerand (2003) hint at this potential confusion and subsequently make the distinction that, “an autonomy-supportive style cannot be confused with a permissive or laissez-faire interpersonal style” (p. 893). Again, this may suggest that coaching programs may need to include how to educate parents on different pedagogical approaches to coaching and provide the evidence supporting their efficacy and limitations.

**Coach perceptions of athlete behaviours and motivations**

Coaches’ behaviours are further influenced by how they perceive the behaviours and motivations of the athlete (Mageau & Vallerand, 2003). Reeve (2009) contends that teachers display controlling behaviours when it is perceived that students are disengaged,
off task, or lacking motivation. The passivity of the students during learning activities tends to promote episodic acts of controlling behaviours, even from teachers considered autonomy-supportive. Whilst not within the field of sports coaching, a study by Pelletier and Vallerand (1996) investigated whether a supervisor’s belief about a subordinates’ motivation influenced the interpersonal behaviour as either autonomy-supportive or controlling. The findings suggest that when individuals interact with each other they often bring with them preconceived beliefs that influence the interpersonal styles they predominately adopt. For example, when supervisors perceived their subordinate to be extrinsically motivated, they adopted a more controlling and less autonomy-supportive approach and vice versa. Similarly, Mageau and Vallerand (2003) suggest that coaches who perceive a lack of motivation within their athletes are likely to resort to controlling behaviours to artificially produce athlete motivation. Within sports coaching research, the relationship between coach perception of athlete motivation and the enacted coaching behaviours is unknown. Further research should attempt to address this gap in order to build the knowledge base.

**Athlete perceptions of quality coaching**

Underpinning athletes’ behaviours might be their conceptions of what is quality coaching. This acknowledgement confirms that coaches’ behaviours are not the sole determinant of whether or not athletes feel self-determined in their sporting engagement. Indeed, Deci and Ryan (1985) note that in many situations, individuals do not want to be in control and pass that control over to others. Those individuals may continue to experience positive sport participation outcomes psychologically, emotionally and physically, as long as they perceive that they have choice about who has control. Thus, for the promotion of autonomy-supportive coaching, this approach should also consider the athletes they coach. It is likely that in team sports, for example, that a coach has differing perceptions of individual player’s motives and behaviours and how they respond to those differences, if at
all. The potential challenges inherent in judging athlete perceptions give some indication of the practical issues involved in the implementation of autonomy-supportive coaching; therefore, it is proposed that the translation of theory to practice is likely problematic. For example for some athletes an autonomy-supportive approach may be foreign to them and therefore might oppose this approach.

In attempting to account for this, Pelletier, Fortier, Vallerand and Brière (2001) developed an intervention program to promote autonomy-supportive behaviours among swimming coaches that importantly, also aimed to teach athletes how to deal with increased autonomy and to become more proactive in their sport environment. Results indicated that a year and a half into the program athletes perceived their coach as significantly less controlling, and more autonomy-supportive. Athletes’ perceived competence and intrinsic motivation toward swimming showed significant increases as well. This finding suggests that it may not be enough to focus solely on educating the coach; rather, helping athletes deal with their newly acquired autonomy may be an important aspect of successful application of an autonomy-supportive coaching environment. Moreover this study was conducted over 22 months, perhaps highlighting the issue of time required in changing perceptions and subsequent behaviours.

Indeed, athlete perceptions appear to have significant consequences for how coaching is received. Research by Solomon and colleagues (1998) found that, among Division I American collegiate coaches and athletes, a significant relationship existed between coaches’ years of experience and athletes’ perceptions of coach feedback, expectations, and encouragement. Moreover, this relationship was influenced by the expectations coaches had for individual athletes’ success. Specifically, high expectancy athletes perceived less experienced coaches more favourably than did low expectancy athletes, while low expectancy athletes perceived more experienced coaches with greater favour than their high expectancy counterparts. Accordingly the coach needs to allow for
variations in athlete needs, motivation, and perceptions. From a research perspective, data should be collected from both the coach and the athlete (and perhaps other stakeholders) in order to assess any incongruencies and attempt to capture important contextual information.

Conclusion and Future Research

In sum, research in coaching within the sport psychology domain has shown much support for the positive consequences of autonomy-supportive approaches; however, an understanding of the antecedents and implementation of such pedagogical behaviours has been under-examined. It is proposed that future research consider the many complexities of the coaching environment so that autonomy-support can be understood and implemented in real-world settings to the benefit of both coaches and the athlete(s) with whom they work. Specifically, the interdependencies between the coaches’ personal orientation, coaching context, and the coach’s perceptions of their athletes’ behaviours, are worthy of investigation as well as other pertinent factors (e.g., involvement and structure).

The aforementioned literature was reviewed to create a summary of the research conducted on autonomy-supportive coaching behaviours within the SDT framework. The literature has been useful in testing, and in many cases, supporting the theoretical underpinnings of SDT within the sporting context. Mageau and Vallerand’s (2003) motivational model significantly contributed to research through emphasising the central role of the coach in the coach-athlete relationship. However, this volume of work has focused primarily on athlete perceptions of coach behaviour and associated athlete outcomes while there has been a paucity of research examining those factors that influence coaching practice as proposed in the Mageau and Vallerand model. Neglected thus far in this relationship is the voice of the coach, with athlete perceptions of coaching
behaviour the dominant form of data collection. As such, future research should be
directed towards a deeper understanding of the relationships between a coach’s personal
orientation, the context in which he/she operates, and the coach’s perceptions of an
athlete’s behaviour and motivation.

Currently, the literature within a SDT framework has been primarily informed by
athlete perceptions of coaching behaviour, which has involved large-scale survey design
across sports, gender and age. While this research has supported the theoretical
underpinning of SDT, we might consider integrating a variety of methodological
approaches and ‘voices’ to construct a more complete understanding of the coaching
process. To date there have been a number of articles published using a qualitative
research methodology investigating coaching effectiveness (Fraser-Thomas & Côté, 2009)
and quality coaching attributes (Becker, 2009; Gearity & Murray, 2011). While these
papers are within the field of sports coaching, they are outside the framework of SDT. It is
plausible to consider that qualitative research methods specific to SDT and sports
coaching may assist in enhancing our understanding of the barriers and enablers to
adopting an autonomy-supportive interpersonal style.

It may also be prudent to move beyond the traditional divide between psychological
and sociological perspectives of sport and sport coaching to better understand the
 independencies between the individual and the social. For example, how might we better
understand the contextual pressures to coach in particular ways that are not consistent
with autonomy-supportive coaching? Providing a holistic view of the coaching landscape
may involve combining critical and cultural psychology with more sociological
understandings to consider the environmental/structural and individual/agency aspects of
coaching practice. In practicality, this shift in orientation supports the social and
psychological context of coaches’ work. Through the application of Vallerand’s (1997)
HMIEM, research might examine the temporal nature of autonomy-supportive approaches
and the various coaching contexts (participant, development and elite) in which different behavioural approaches may be more or less effective. This consideration might involve more applied, intervention and *in situ* studies conducted with coaches and athletes and in various sport settings. Research conducted in educational settings has provided some insights into the utility of intervention studies in changing behaviours that might guide some aspects of future research in sport coaching.

Improving coaching practice is important to the field of sport coaching as coaches largely influence the quality of the sporting experiences for athletes. Thus, it seems prudent to investigate the degree to which coaches are more or less autonomy-supportive or controlling and if that is consistent in different contexts (participation sport, performance coaching contexts) and cultures (specific sports, countries). Furthermore, research has described individuals as autonomy-supportive or controlling, however evidence from quantitative research (Amorose & Horn, 2000; Bartholomew et al., 2011) suggests that it could be conceptualised as orthogonal. Moreover, coaches are likely to display autonomy-supportive and non autonomy-supportive behaviours to differing degrees and at varying times (e.g., during training, competitions, and championships). Sport coaching researchers might consider testing both autonomy-supportive and controlling behaviours simultaneously to observe the effects on athlete outcomes in varying sporting contexts. This focus might elucidate where to place importance in coach intervention studies; for example, the promotion of autonomy-supportive behaviours or the suppression of controlling behaviours? Furthermore, how might future studies consider the introduction of specific coaching behaviours at particular stages of an intervention? Understanding the factors that influence the decisions regarding what coaches do will lead to further developments in coach education to assist coaches in adapting their behaviours. Nevertheless, to determine optimal coaching behaviours, research might consider the
moderating effects of coaches’ personal orientation and their athlete’s learning preferences.

Finally, there is developing knowledge that autonomy-supportive behaviours are linked to need satisfaction (Adie et al., 2012) and controlling behaviours are linked to need-thwarting (Bartholomew et al., 2011). Investigations of the conceptual and empirical links between autonomy-supportive and controlling behaviours might consider the relationships with the antecedents of coaches’ behaviours. Furthermore, future research might consider whether structure and involvement play a mediating or moderating effect on the variables of coach, athletes, and context.

There is theoretical and empirical support for coaches to be autonomy-supportive, however adopting this approach to coaching can be challenging for all actors and thus poses inherent hurdles to broad acceptance of its implementation. Future research to investigate the problematic nature of translating theory to practice is central to informing coach development at all levels of participation to foster positive psychological growth and well-being.
Chapter 3

Study 1: Coach and athlete perceptions of coaching behaviour

Introduction

In the sporting context, coaches are the architects of the motivational climate as they design learning environments that seek to develop athletes’ potential (Mallett, 2005). Several studies in sports coaching have shown that coaches' behaviours are significant predictors of athlete motivation and subsequent outcomes (Bartholomew et al., 2010; Hodge, Henry, & Smith, 2014; Mageau & Vallerand, 2003). Using the lens of Self-determination theory (SDT), coaching behaviour can be broadly conceptualised into two interpersonal styles. For example, one coach may offer extrinsic rewards to athletes for producing a desired result and punish others for undesirable behaviours. Conversely, another coach may allow athletes some independent or free time in training to develop a new skill or practice some other aspect of their performance. The first style is conceptualised as controlling because the coach is shaping desired behaviours, in this case, through a sense of guilt or obligation and pressure (Bartholomew et al., 2009; Mageau & Vallerand, 2003). However, the second coach exemplifies an autonomy-supportive interpersonal style as it prioritises the athletes and their endeavour to learn new skills (Mageau & Vallerand, 2003). The interpersonal styles (both controlling or autonomy-supportive) enacted by the coach can create a lasting impression for the athlete with regard to the quality of the coaching received and subsequent athlete outcomes. While the literature has focused on how these behaviours are perceived by athletes, as yet there is no discussion as to whether these perceptions are shared by the coach. That is, in regards to coaching behaviour, are the perceptions of coaches and athletes shared or conflicting?
Mageau and Vallerand (2003) synthesised evidence from the educational, parenting, psychological, and sporting literature to contend that a pedagogical package of autonomy-supportive coaching behaviours can facilitate positive motivational outcomes for athletes. Specifically, coaches who are autonomy-supportive are able to support their athletes in four key ways, they (a) satisfy psychological needs; (b) sustain internal motivation; (c) promote continued engagement in sport; and (d) enhance athletic performance (Amorose, 2007; Conroy & Coatsworth, 2007; Mageau & Vallerand, 2003; Mallett, 2005). An environment that is created through the presence of autonomy-supportive behaviours has been found to facilitate positive psychological growth and well-being through need-satisfaction (Amorose & Anderson-Butcher, 2007; Bartholomew et al., 2009). Antithetically, Ryan and Deci (2002) suggest that contexts that are characterised by controlling behaviours can result in athletes focusing on external motivators (e.g., avoiding punishment), which are detrimental to their psychological well-being. Perhaps most concerning is research in sports coaching that suggests some coaches adopt a controlling interpersonal style even though they have been found to thwart the psychological development of players (Bartholomew et al., 2010; Fraser-Thomas & Côté, 2009). Thus, there is some evidence that coaches tend to be more controlling rather than autonomy-supportive within the coaching context (Bartholomew et al., 2010). The degree to which athletes’ potential well-being is nurtured or thwarted is an important line of enquiry given the strong evidence that athletes who engage in activities for enjoyment, to develop skills, and for satisfaction of the activity (self-determined reasons) are associated with positive cognitive and behavioural outcomes (Amorose & Anderson-Butcher, 2007; Bartholomew et al., 2011; Deci & Ryan, 2002). A key limitation of these existing studies is that much of work in the area of autonomy-supportive coaching has collected data from the athletes’ perspective only. It is proposed that multiple “voices” will enhance the reliability of the data.
(data triangulation) (Patton, 2002b) and provide a more comprehensive and revealing understanding of the motivational climate.

**Comparison of coach and athlete perceptions**

Recently, research has focused on coach interpersonal behaviours (autonomy-supportive or controlling) and the influence of these behaviours on athletes’ psychological outcomes. Specifically, the major foci of these researchers have been the influence of these coaching behaviours on athletes’ motivation and needs satisfaction (e.g., Almagro et al., 2010; Balaguer, González, Fabra, Castillo, & Duda, 2012; Blanchard et al., 2009; Coatsworth & Conroy, 2009; Gagné et al., 2003; Reinboth et al., 2004) and the effects of these coaching behaviours on the degree of self-determined or non self-determined athlete motivation (e.g., Gillet et al., 2010; Hollembeak & Amorose, 2005; Pelletier et al., 2001). This body of work has made a significant contribution to scholarly knowledge regarding the influence of coach behaviour on the psychological wellbeing of youth and adult athletes in competitive and non-competitive settings. Interestingly, within this body of literature, coaches are acknowledged as important and influential actors in the coach-athlete relationship, yet, despite this, the voice of coaches is noticeably absent.

Within the sports coaching literature the perception of coaching behaviour is often sought from the perspective of the athlete (for example see; Almagro et al., 2010; Amorose & Anderson-Butcher, 2007; Blanchard et al., 2009). A notable exception is a study of French Judo coaches and athletes by d’Arripe-Longueville, Fournier and Dubois (1998), and Jowett and Ntoumanis (2004) who developed and validated a self-report instrument to measure the coach-athlete relationship. Outside of these studies, research that includes the voice of the coach is scarce within the autonomy-support literature. In limiting the research to a single voice, and primarily that of the athlete, there is potential to constrain an awareness and deeper understanding of why coaches behave the way they do. It is through the coach that we can gain insight into the ‘why’ of their decision-making
and behaviours, providing a context that can direct our efforts in effecting appropriate behaviour change. Lacking in the current literature is an understanding of how coaches perceive their coaching behaviours in comparison to athlete perceptions. Cushion (2010) suggests that some coaches, despite being well intentioned, may emit behaviours that are perceived by athletes as controlling (Mageau & Vallerand, 2003).

What is unknown however, is whether coaches perceive their coaching as controlling or autonomy-supportive and if the athletes they coach have congruent perceptions. This is useful direction for research in sports coaching to pursue. Consideration of the coaches’ thoughts, feelings, and understanding of their behaviours in comparison to the way this is perceived by their athletes is a unique approach within SDT sport coaching literature. In essence, this study examines whether what the coach thinks they do is perceived as intended by the athlete. This proposition is a vital element in understanding the determinates to the creation of positive motivational climates. The primary aim of this study is to investigate how coaching behaviours are perceived from the coach and athlete perspectives.

Measurement of coaching behaviour

Given the centrality of the coach to the quality of the athletic sporting experience, research in sport coaching has attempted to capture the influence of coaching behaviours through implementation of psychometrically valid instruments (e.g., Bartholomew et al., 2010; Côté, Yardely, Hay, Sedgwick, & Baker, 1999; Smith, Smoll, & Hunt, 1977). While these measures have added to our knowledge, to date, there is no instrument that can account for the overall impression of coaching behaviour, and thus the motivational climate.

Scholars have utilised a variety of instruments to measure athlete perceptions of coach behaviours. Such instruments include: (i) the Coach Behaviors Assessment System (CBAS; Smith et al., 1977) that was informed by the leadership literature; and (ii) the
Coaching Behavior Scale for Sport (CBS-S; Côté et al., 1999) that was based on the development of the coaching model proposed by Côté and colleagues (1995). The use of these instruments has furthered our understanding of the effect of various coaching behaviours (e.g., decision making, provision of feedback and development of rapport) on athlete motivation, enjoyment and exercise adherence (Bartholomew et al., 2010).

However, although these instruments have been used to measure coaching behaviour across a variety of contexts and theoretical frameworks, they are not informed by SDT. As a result it is perhaps timely to consider a new measurement tool that captures the array of coaching behaviours informed by SDT. Developing an instrument that is informed by SDT is important as athletes have been found to have increased psychological well-being when immersed in an environment that is autonomy-supportive.

Until recently, measures of coach behaviours focused on athlete perception of coach autonomy-support, where low scores in autonomy-support were taken to be indicative of high coach control. Thus, Bartholomew and colleagues (2010) developed the Controlling Coach Behaviors Scale (CCBS) to measure athlete perceptions of coaches’ controlling interpersonal style. Bartholomew et al., (2010) stated that, “coaches may engage in both controlling and autonomy-supportive behaviours simultaneously and to different extents” (p. 195). In sport as it is unlikely that a coach, who is typically autonomy-supportive, would, for example, allow for athlete input during a 30 second time out in a basketball game when the team is losing by one point with only seconds of game time remaining. It is reasonable to assume though, that the coach may have worked with his/her athletes during training and allowed them input into the types of plays they might use in such a situation. The contextual and situational environment in which coaches operate might impact on their ability and their choice to be autonomy-supportive all of the time. Current measurement tools have chosen to focus on specific behaviours anchored at each opposing pole; however, it is likely that coaches are not simply one or the other
(autonomy-supportive or controlling) but instead move along a continuum of autonomy-support and coach control depending on various situational factors within the coaching environment. In addition, it is proposed that it is not the individual behaviours displayed by the coach in isolation that are important but the perception of the behaviours collectively. Hence the proposal of a single item scale attempts to consider the environment created by the coach holistically rather than breaking down the coaching process into discrete behaviours.

A secondary purpose of this paper is to propose an alternative means of measuring athlete perceptions of their coaches’ behaviours using a single item scale. Grounded within SDT, an Autonomy-Supportive Behaviours Continuum (ASBC) is proposed as a potentially useful, valid, and reliable measure of the motivational climate within the theoretical framework of SDT. The impetus for the development of a coaching behaviours continuum is about valuing the whole (e.g., a broad conception of the motivational climate) rather than the sum of its parts (e.g., individual behaviours). Of importance for the ASBC is capturing the broader pedagogical approach and not discrete behaviours (i.e., use of rewards or providing rationale for tasks). It seems unlikely that a coach is always able to ‘allow for athlete input’ (an autonomy-supportive behaviour) just as it is equally unlikely that he or she will always be the decision maker. Instead, it is proposed that coaches will display various behaviours that could be perceived along a continuum of autonomy-support from rarely to mostly.

Purpose of the present study

This study aims to investigate how coaching behaviours are perceived by both the coach themselves and their athletes. In addition, and in light of the lack of an established measure, a secondary aim is to develop a holistic measure of autonomy-supportive coaching behaviour. It is hypothesised that 1) coaches will perceive their coaching as more autonomy-supportive than their players; 2) that athletes will report more controlling
coaching behaviour than their coaches; and 3) that scores on measures of controlling coaching behaviours will be significantly and negatively correlated with scores on the new holistic measure of autonomy-supportive coaching (Bartholomew et al., 2010).

Method

Participants

The sample for this study involved 55 basketball teams (a team consisting of a head coach and a range of 3 to 5 players per team) competing in a state championship. Specifically, 55 head coaches (38 male, 9 female; 8 coaches did not report gender) aged 18 to 60 years ($M = 39.41$ years, $SD = 11.92$ years) participated in the study. These coaches reported between 2 and 32 years basketball coaching experience ($M = 13.20$ years, $SD = 8.38$ years). A total of 258 adolescent basketball players, coached by the participant coaches (207 males, 51 females) aged 13 to 18 years of age ($M = 15.17$ years, $SD = 1.17$ years) participated in this study. At the time of participating, athletes reported between 1 and 12 years basketball experience ($M = 6.20$ years, $SD = 2.48$ years).

Measures

Controlling Coach Behaviour. Controlling coach behaviours were measured using the Controlling Coach Behaviour Scale (CCBS; Bartholomew et al., 2010). This 15-item scale was developed to assess sports coaches’ controlling interpersonal style within a SDT framework. The CCBS comprises of four key facets, namely four items for rewards (e.g., “My coach tries to motivate me by promising to reward me if I do well”; $\alpha = .80$), four items for negative conditional regard (e.g., “My coach is less supportive of me when I am not training and competing well”; $\alpha = .81$), four items for intimidation (e.g., “My coach shouts at me in front of others to make me do certain things”; $\alpha = .75$) and three items for excessive personal control (e.g., “My coach expects my whole life to centre on my sport participation”; $\alpha = .69$) (Bartholomew et al., 2010). The internal consistency of all factors
were at or above the criterion of .70 recommended by Nunnally and Berstein (1994) for psychological research. The CCBS measures participants’ responses on a seven point Likert scale (1= Strongly disagree, 4= Neutral, 7= Strongly agree) and previous research has found it to have good validity and reliability (Bartholomew et al., 2010).

**Motivational Climate.** In lieu of an established measure of autonomy-support a single item measure was developed based on similar work by Reeve, Jang, Carrell, Jeon, and Barch (2004) in teaching. The Autonomy-Supportive Behaviours Continuum (ASBC) was developed to measure the degree to which the respondents perceived a coach’s behaviour as autonomy-supportive. Based on SDT, specifically related to autonomy-supportive coaching, the participant coaches and their players were provided two contrasting scenarios that described two interpersonal styles – low autonomy-support and high autonomy-support (see figures 2 and 3). Participants were asked to mark along the horizontal line that best represents their coaching (or the coaching they receive). The vertical lines denoted the scoring system where a mark on the horizontal line on the far left hand side receives a score of 1 where a score on the far right hand side represented a score of 7. Marks in-between were scored as 2, 3, 4, 5, or 6 in relation to the vertical cut-off lines. These contrasting descriptions were developed to capture a more holistic pedagogical approach as espoused by Mageau and Vallerand (2003) to coaching rather than a set of discrete behaviours typically captured in multidimensional measures such as the CCBS.

Participants were required to mark on a connecting line between the two ends of the continuum based on the most consistent coaching behaviour represented. At one end of the continuum, 1 = coach is low autonomy-supportive and at the other end 7 = coach is highly autonomy-supportive. This continuum approach to measurement of interpersonal style has been used previously in education contexts (Reeve et al., 2004).
Instructions

Please read the information in the two boxes below. Then, indicate with an \( \times \) somewhere along the continuum (the middle line) that best describes YOUR coaching. There is no correct answer and your response is completely individual to you. Please ensure your response is an honest self-assessment of your coaching. Your response will be kept confidential at all times.

---

I don't give my athletes an opportunity to have input into what we do in training and in competition. I don't provide reasons to my athletes for the drills and tactics I use in training and competition. I criticize my athletes to motivate them to work harder. I don't seek opinion from athletes and disregard any suggestions they put forward. I command what is to be done through the direct orders I give. I focus on what aspects of performance my athletes need to improve and communicate in a direct way what they are doing is wrong. I feel it is necessary to push my athletes to work harder in training by creating rivalries within the team and I threaten disciplinary consequences for poor performances (e.g., suicide runs, derogatory comments). I reward my athletes when they complete training and competition tasks to the level that I expect. I pressure my athletes to win and I reward my athletes for beating opponents. I favor the best players.

---

I provide my athletes with options with what training to do and or choices in which tactics to employ in competition. I provide reasons for why we perform particular tasks in training and competition; i.e., the purpose of the task and how it relates to each athlete's competitive performance. I listen, ask, and respect my athletes’ views about training and competition. I provide my athletes with opportunities to show initiative and to do some independent training (e.g., input into training and competition). I provide constructive feedback that provides direction as to what my athletes are doing well. I praise effort, and focus on personal mastery in training and competition. I treat all players equally.

---

Figure 2. Coach version of ASBC

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Instructions

Please read the information in the two boxes below. Then, please indicate with an \( \times \) somewhere along the continuum (the middle line) that best describes the coaching you receive. There is no correct answer and your response is completely individual to you. Please ensure your response is an honest assessment of your coaches’ coaching. Your response will be kept confidential at all times.

---

My coach doesn't give me an opportunity to have input into what I do in training and in competition. My coach doesn't provide reasons for the drills and tactics I use in training and competition. My coach criticizes me to motivate me to work harder. My coach doesn't seek my opinion and disregards any suggestions I put forward. My coach commands what is to be done through direct orders. My coach focuses on what aspects of performance I need to improve and communicates in a direct way what I am doing wrong. My coach feels it is necessary to push me to work harder in training by creating rivalries within the team and threatens disciplinary consequences for poor performances (e.g., suicide runs, derogatory comments). My coach rewards me when I complete training and competition tasks to the level he/she expects. I feel pressure from my coach to win and I am rewarded for beating opponents. My coach favors the best players.

---

My coach provides me with options with what training to do and or choices in which tactic to employ in competition. My coach provides reasons for why I perform particular tasks in training and competition; i.e., the purpose of the task and how it relates to my competitive performance. My coach listens, asks, and respects my view about training and competition. My coach provides me with opportunities to show initiative and to do some independent training (e.g., input into training and competition). My coach provides constructive feedback that provides direction as to what I am doing well. My coach praises effort, and focuses on personal mastery in training and competition. My coach treats all players equally.

---

Figure 3. Athlete version of ASBC
Procedure

A University ethics committee approved the study prior to data collection (see Appendix A). Data were collected over a period of two separate four-day State Championships. This event was chosen as it provided the researcher with direct access to over one hundred coaches and three hundred players from across the state. The State Basketball Association granted permission for the study and team coaches were approached in person and asked if they wished to voluntarily participate in the study during a Managers’ meeting prior to the commencement of the competition. The coaches completed the survey first and then randomly a sample of 3 to 5 of his or her athletes were invited to complete the survey. This procedure was chosen as it allowed the participant to voluntarily be involved in the study. Athletes (with parental consent) and coaches completed the surveys before, after, or during breaks in their competition (see Appendix B and C). The questionnaire package took less than 10 minutes to complete.

Results

With the exception of the biographical characteristics detailed in the participant’s section, there were no missing responses to the motivational variables. The dataset contained two athletes with missing data and these were excluded from the analysis (resulting sample = 256). For athletes, there was no evidence of high skewness or kurtosis among any of the variables (all < 1); however, three cases were identified as univariate outliers (using a criterion of $z = +/- 3.29, p = .001$) (Field, 2013). Descriptive information and bivariate correlations for athletes are reported in Table 1.
Table 1. Summary Statistics for Athlete and Coach Responses

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coaches</th>
<th>Athletes</th>
<th>t(253)</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autonomy-Supportive Continuum</td>
<td>5.92</td>
<td>4.83</td>
<td>9.57***</td>
<td>-.01</td>
</tr>
<tr>
<td>CCBS Rewards</td>
<td>3.58</td>
<td>3.19</td>
<td>3.05**</td>
<td>-.04</td>
</tr>
<tr>
<td>CCBS NCR</td>
<td>2.23</td>
<td>3.05</td>
<td>-7.99***</td>
<td>-.07</td>
</tr>
<tr>
<td>CCBS Intimidiation</td>
<td>2.36</td>
<td>3.01</td>
<td>-5.95***</td>
<td>-.06</td>
</tr>
<tr>
<td>CCBS EPC</td>
<td>1.75</td>
<td>1.89</td>
<td>-2.03*</td>
<td>.20*</td>
</tr>
<tr>
<td>Total CCBS</td>
<td>2.48</td>
<td>2.79</td>
<td>4.24***</td>
<td>-.02</td>
</tr>
</tbody>
</table>

Note. NCR = Negative Conditional Regard, EPC = Excessive Personal Control, CCBS = Controlling Coach Behaviours Scale (CCBS).

*p < .05, **p < .01, ***p < .001 (2-tailed).

Examination of the data suggests that participant coaches viewed their interpersonal style as high in autonomy-support (M= 5.92/7.0) and low in controlling behaviours (M= 2.48/7.0). Similarly, athletes reported that they perceived their coaches as moderately autonomy-supportive (M= 4.83/7.0) and low to moderate in controlling behaviours (M= 2.79/7.0).

The results also showed that the coaches and players viewed the coaches’ interpersonal styles differently. All coaches’ and players’ subscale and scale scores for the CCBS and the ASBC were statistically significant (see Table 1). Coaches perceived their interpersonal coaching style as more autonomy-supportive than the players (t (df) = 9.57, p < .001). Additionally, compared to players, coaches perceived their interpersonal style as significantly less controlling as measured by the CCBS (t = 4.24, p < .001). Furthermore, mean scores on all subscales of the CCBS were statistically different. The results also indicate that coaches perceive their use of rewards as the most commonly used controlling behaviour. It is noteworthy that, on average, the coaches reported less use of the other three controlling behaviours measured by CCBS compared with the players (see Table 1).
Finally, the only positive and significant correlation between coach and athletes scores on the four subscales of the CCBS was for the Excessive Personal Control subscale, suggesting that increases in athlete scores were associated with increases in coaches’ scores.

*Correlation Convergence between ASBC and CCBS*

The associations between the ASBC and the established measure of coach control (CCBS) are displayed in Tables 2 and 3. All correlations between the ASBC and the four subscales and CCBS overall scores were significantly and negatively related ($p < .01$) as predicted. These associations provide evidence for the convergent validity of the new continuum. The magnitude of effect was strongest for the relationship between the ASBC and the total CCBS score, then negative conditional regard, and intimidation. The association between the ASBC and rewards and excessive personal control were comparatively weaker though still significant.

Table 2. *Inter-correlations for Athlete Responses*

<table>
<thead>
<tr>
<th>Variable</th>
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<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
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<tr>
<td>1. ASBC</td>
<td>-.38***</td>
<td>-.61***</td>
<td>-.58***</td>
<td>-.20**</td>
<td>-.61***</td>
</tr>
<tr>
<td>2. Rewards</td>
<td>.43***</td>
<td>.42***</td>
<td>.19**</td>
<td>.71***</td>
<td></td>
</tr>
<tr>
<td>3. NCR</td>
<td>.65***</td>
<td>.29***</td>
<td>.82***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Intimidation</td>
<td>.34***</td>
<td>.84***</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. EPC</td>
<td></td>
<td></td>
<td>.56***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. CCBS Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* NCR = Negative Conditional Regard, EPC = Excessive Personal Control, CCBS = Controlling Coach Behaviours Scale (CCBS).

* $p < .05$, ** $p < .01$, *** $p < .001$ (2-tailed).
Table 3. *Inter-correlations for Coach Responses*

<table>
<thead>
<tr>
<th>Variable</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. ASBC</td>
<td>-.25</td>
<td>-.29*</td>
<td>-.12</td>
<td>-.37**</td>
<td>-.31*</td>
</tr>
<tr>
<td>2. NCR</td>
<td>.40**</td>
<td>.05</td>
<td>.41**</td>
<td>.64**</td>
<td></td>
</tr>
<tr>
<td>3. Intimidation</td>
<td>.13</td>
<td>.30*</td>
<td>.70**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Rewards</td>
<td>-.01</td>
<td>.63**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. EPC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.54**</td>
</tr>
<tr>
<td>6. CCBS Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Note.* NCR = Negative Conditional Regard, EPC = Excessive Personal Control, CCBS = Controlling Coach Behaviours Scale (CCBS).

*° p < .05, ‡ p < .01, †† p < .001 (2-tailed).*

**Sensitivity and discrimination**

To assess the sensitivity of the new continuum in discriminating between athletes who perceive high versus low autonomy-supportive coaching, item discrimination indices were calculated using the highest and lowest scoring athletes (upper and lower 33%) on the total CCBS scale. Based on item discrimination indices (defining ‘correct’ responses as >5 on the 7-point scale), the ASBC (D = .52) out-performed all of the individual CCBS subscales (D < .35) in discriminating high and low scorers on the total CCBS. These results suggest that the ASBC was better able to discriminate between high and low levels of general controlling coaching behaviours than any of the CCBS subscales alone in this study.

**Discussion**

This study aimed firstly, to investigate coach and athlete perspectives regarding coaching behaviours within the theoretical framework of SDT. Secondly, this study introduced a new single item instrument using a SDT framework to measure coach and athlete perceptions of the motivational climate. The first hypothesis and second hypothesis
were supported, as athletes rated their coaches as being less autonomy-supportive than did the coaches themselves. The third hypothesis was also supported as scores on the measure of controlling coaching behaviours (CCBS) were significantly and negatively correlated with scores on the ASBC. These findings suggest; a) coaches and athletes viewed the specified coaching behaviours differently and b) the new ASBC single item scale has support as a reliable measure of the motivational climate. These two findings will be discussed within the broader SDT and autonomy-supportive coaching literature.

Coaching behaviours are broadly categorised into two interpersonal styles; autonomy-supportive and controlling (Deci & Ryan, 1985; Reeve et al., 2004). The majority of the research into these two interpersonal styles has used quantitative methods to survey athletes to develop an understanding of the positive and negative effects of coaching behaviour. Moreover, data collected has focused on discrete coaching behaviours as either being autonomy-supportive or controlling to inform judgements as to the overall profile of the coach. This work has largely biased the voice of the athlete and marginalised input from the coach and in many cases failed to consider the motivational climate from a more unified perspective. This study attempts to address these shortcomings aforementioned.

This study sought to investigate perceptions of the coaching received from the perspective of both coach and athlete. Overall, the data suggests there is a difference between coach and athlete perceptions of coaching behaviour. The data shows that coaches perceive their coaching as more autonomy-supportive compared to athletes. One suggestion as to why there may be a differing of opinion between coaches and athletes could be that coaches may be unaware of how they behave. This notion is supported by Cushion (2010) who proposes that coaches have limited awareness of how they behave in certain situations. Hence it seems likely that the ratings of the performer may not accurately relate to the coach’s self-report. Another interesting finding was that the only
controlling scale in which scores from both coaches and athletes were similar was reported excessive personal control (ECP). In reviewing the items for ECP, it is proposed that coaches use these behaviours less commonly.

Prior experiences, both coaching and as players themselves, may inform the style coaches use in their attempt to motivate athletes (Sage, 1989; Trudel & Gilbert, 2006). Therefore, if less autonomous coaching approaches have previously been associated with success there may be sufficient personal practice perceptions that this approach is best for allowing athletes reach their potential. The body of empirical research in SDT suggests that the limitation of this approach is that it often leads to relatively poor functioning in the long-term for athletes and is likely to hinder an athlete’s ability to achieve their potential. Hence, while being well intentioned, coaches in this sample may be unaware of the influence of their less autonomy-supportive coaching behaviours on athlete sporting experience (Mageau & Vallerand, 2003). Alternatively, athletes may choose to focus on their perception of their coach’s personal orientation (e.g., they may view their coach as a strict taskmaster rather than an easy-going coach) rather than specific behaviours when making these judgments.

To those unfamiliar with autonomy-supportive coaching there is the potential that the perception is that the style is associated with an easy-going or Laissez-faire approach and therefore may be equated with a coach being permissive (Mageau & Vallerand, 2003). In applied settings, coaches may overcompensate within the coaching environment by increasing the amount of direction and instructions they provide to athletes and therefore creating a coaching climate that is controlling. Countering that view, Jang, Reeve, and Deci (2010) found that classroom teachers who were autonomy-supportive actually provided more instruction than their controlling counterparts, yet the difference is that the information is provided in such a way that students felt like they had control of the task at hand. Therefore the coaches in this sample may be identifying their continual direction
towards athletes as being supportive. Whereas, the athletes may be viewing the same interaction differently, where increased surveillance, punishment and enforcement and controlling feedback is perceived by athletes as controlling coaching behaviour. Given that educational research suggests that teacher-provided structure is exemplified as establishing order, introducing procedures and minimising misbehaviour it is likely that at times in the coaching context the way the coach communicates may explain the differing of opinions between the coach and athlete. Further understanding of the potential conceptual confusion between structure and control is certainly a vital avenue for future work. Perhaps this confusion is based on different understandings of what is quality coaching.

**Continuum**

Within SDT research there doesn’t appear to be a self-report measure for coaches to assess levels of autonomy-support. As a result a single item scale was developed to allow both coaches and athletes to report on their perceptions of the motivational climate. The statistical data from this study provided some initial and partial support for the measure. Further examination of this single item measure with larger samples and other variables are warranted to examine the measure in a more sophisticated manner (e.g., Exploratory Structural Equation Modeling; Muthén & Asparouhov, 2012).

There is support for links between high self-rated controlling coach behaviour (CCBS) and lower autonomy-support as measured by the ASBC. In contrast to most measures in psychology that capture the multidimensionality of constructs, it was considered a measure that captured a more holistic representation of an autonomy-supportive interpersonal style was more in keeping with the pedagogical approach espoused by Mageau and Vallerand (2003) and endorsed by Reeve and colleagues in educational settings. One of the key values of the ASBC is its ability to capture the broader pedagogical approach and not discrete behaviours (i.e., use of rewards or providing
rationale for tasks). Mageau and Vallerand (2003) propose that it is unlikely that coaches would use the behaviours in isolation but instead as a pedagogical package. For example, it unlikely that a coach is always able to ‘allow for athlete input’ (an autonomy-supportive behaviour) just as it is equally unlikely that he or she will always disregard athlete input. Instead, it is proposed that coaches will display various behaviours that could be perceived as autonomy-supportive or less autonomy-supportive. It is acknowledged that there are times when coaches are less autonomy-supportive but it is argued that if the motivational climate is generally autonomy-supportive the effects of these behaviours will be diminished. Further research is required to extend the notion that there may be value in considering coaching behaviours as whole rather than focussing on individual coach behaviours.

**Implications, Limitations and Future Studies**

Some limitations of the current study should be noted. First, the sample was a single-sport design and thus created a more homogeneous group. Second, the gender ratio of male to female was skewed toward males due to the larger male representation in the competition, which prevented testing of gender differences. In addition, data collection was conducted during a major sporting competition, which may possibly influence the results (e.g., athletes who may be receiving limited court time might view their coach less favourably and vice versa).

Investigation into potential changes in coaching behaviour in-competition compared with in-training, and how this affects self and athlete ratings of behaviour, may be a useful area for future work to explore. Regarding the development of the new measure, there are aspects lacking with this instrument. First, the integration of elements of the coaching structure and context is required in order to provide a complete picture of the motivational environment. Second, it would be useful to have compared the ASBC to another measure of autonomy-support to look at whether the continuum links more strongly to autonomy-
supportive aspects than control. Therefore, the ASBC may be best viewed as a psychometrically sound practical tool that has best use in applied settings. The ASBC is briefer, simple to use and interpret compared to multifactorial measures such as the CCBS. Thus, it may be a useful alternative in research where variation in the different aspects of coach control (e.g., rewards, intimidation, excessive personal control, negative conditional regard), are not essential to gathering an understanding of the overall picture of the environment, when time is critical, and when potential response fatigue is a concern.

This work provides a representation of perceptions within the coach-athlete relationship. By acknowledging multiple views (the coach and the athlete) a more accurate account of the differing views between coaches and athletes in relation to the motivational climate can be captured. Second, the construct validation of the ASBC is an ongoing process. More work is required to test the utility of the ASBC within differering sporting contexts. Furthermore, it is evident that one of the great challenges for coaches is in providing a style of coaching that is positively received by all athletes. What works for one athlete may not work for another athlete. In order to promote a motivational climate where positive athlete outcomes are likely, coaches must consider the influence of their coaching behaviours in relation to the individual characteristics of the environment and the individual athletes (Amorose, 2007).

The following chapter will adopt a qualitative approach with coaches and athletes to further understand where there is discrepancy and agreement in perceptions between coaches and athletes. By developing an understanding of why coaches and athletes differ in how they view coaching in relation to autonomy-support could lead to coaching research identifying the factors that influence coaching behaviour and aid to facilitate behaviour change.
Chapter 4

Study 2: Quality coaching and need-supportive environments

Introduction

Sport is sometimes seen as an antidote for societal problems facing youths. Indeed, organised sport participation has been shown to have the ability to decrease youth obesity through physical activity (Must & Tybor, 2005), to stimulate and develop cognitive processes (Trost & van der Mars, 2009), and deliver social benefits such as fostering and modelling ideal citizenship (Fraser-Thomas, Côté, & Deakin, 2005). However, just as sport participation has the ability to promote positive outcomes, sport also can be detrimental to athletes’ psychological and social development (Bartholomew et al., 2009). Much of this variability in athlete outcomes is dependent on the kinds of experiences that young people have in sport and these are generally shaped by key adults such as coaches (Adie et al., 2008; Reinboth et al., 2004). Given the variability of these outcomes and the overarching ideal that youths should engage in sporting pursuits, it could be argued that the most important figure in creating an environment that promotes positive athlete outcomes is the coach (Duda & Balaguer, 2007). The previous study found that coaches and athletes differed in their perceptions of coaching behaviours. However, further information is required to understand these areas of misalignment. This is an important line of enquiry, as coaches may be unknowingly displaying behaviours that have the potential to negatively affect the athletic experience. The overarching aim of this thesis is to further understand how and why coaches display certain behaviours within the sporting context so to promote positive experiences for athletes. This study extends the findings of study one by adopting a qualitative approach to examine coach and athletes views of quality coaching through investigating the factors that influence coaching behaviour.
Quality coaching

In somewhat of a contrast to conceptions of coaching 'effectiveness' and 'success', the term 'quality coaching' may be viewed as consisting of the vast array of behaviours, actions, decisions and interactions that take place within a more comprehensive account of the entire coaching process (Lyle, 2002). Indeed, the coaching environment involves multiple actors in which the interplay within the social context of coaching is likely to influence athlete and coach outcomes. Coaches are responsible for leading and managing the coach-athlete-performance relationship, which influences athlete outcomes (Mallett, 2010). A theoretical framework that provides a potential means to examine 'quality' coaching, through its acknowledgement of the role of the individual and the social environment, is Self-determination theory (SDT; Deci & Ryan, 1985). SDT proposes that humans seek to master their environment through the satisfaction of three universal psychological needs (autonomy, competence and relatedness) that contribute to psychological growth and development (Deci & Ryan, 1985). This framework permits a consideration of the extent to which coaches promote a need supportive environment and, as such, may be a useful way to consider the notion of 'quality' coaching. In other words, quality coaching might be understood in terms of psychological need-supportive behaviours. Research in sports coaching within a SDT framework has shown that coaches who create an environment that is need supportive (in that athletes’ needs for autonomy, competence and relatedness are satisfied) tend have athletes that, in turn, report higher levels of internalised motivation and personal growth (Reinboth et al., 2004). Hence, we might consider that coaches whose behaviour in training and competition promotes a need-supportive environment may characterise quality coaching in terms of psycho-social development.

Notions of coaching ‘effectiveness’ have attracted some degree of attention in the empirical literature (Mallett, 2011). While there is certainly value in attempting to
understand coaching craft in this way, Mallett (2011) suggests that ‘effective coaching’ as a term of reference has the potential “to reduce the craft of coaching to a range of specific technical components” (p. 51). Part of the problem is that this tends to narrow the focus to judgements that can be made in relation to observable coach behaviours (Lyle, 2002). Beyond this, popular conceptions of coaching effectiveness generally relate to three aspects a) athlete and team performance (win-loss percentage), b) athlete outcomes (social, physical, psychological), and/or c) coaching experience (duration and level of coaching) (Mallett, 2011). While the coach is likely to have some influence over and/or make some contribution to these aspects there are inherent issues in judging coaches in these ways. For example, correlating successful results (e.g., an athlete winning a gold medal) with effective coaching centralises the importance of the coach and largely ignores the inherent talent, desires, motivation and drive of the athlete. While it is acknowledged that coaches play a role in performance outcomes, judging one’s effectiveness exclusively on winning and losing is problematic (Lyle, 2002; Mallett & Côté, 2006).

Another way in which coaching is often considered is in terms of ‘success’ for coaches. In research this has often taken the form of studies that examine the key personal qualities of identified ‘successful’ coaches. The underpinning rationale is that if we can understand the behaviours of these ‘successful’ individuals we can reproduce these in other coaches through modelling and education. This reductionistic view may serve to limit the potential co-contributions of both coaches (and other support personnel) and importantly, the athletes. There are also inherent tensions in viewing coaching in this way because while coaching success is measured by association with successful performers, the nature of the contribution of the coach cannot be inferred from successful coaching (Lyle, 2002). Further, breaking the work of coaches into smaller parts underscores the notion that coaches operate in general social contexts in which coaching attributes may be generalised; for example, certain coaching attributes even though linked
to effectiveness may be either successful or unsuccessful in differing contexts. Therefore, matching appropriate coaching behaviours to suitable environments (i.e., understanding the person in context, stages of athletic development and sporting culture) may assist our understanding of quality coaching.

Athletes’ perceptions of the coaching environment are probably based on an interpretation of coaching behaviours (Cushion, 2010). These coach behaviours can either thwart or facilitate the quality of the coach-athlete relationship and resultantly whether the environment is primarily need-supportive or need-thwarting (Lafrenière et al., 2011). SDT research has supported the notion that coaches who adopt autonomy-supportive behaviours create need supportive environments in which positive psychological outcomes are reported (Mageau & Vallerand, 2003). Autonomy-supportive behaviours contribute to all three psychological needs and have be categorised by Mageau and Vallerand (2003) as including: a) providing athletes with choice within boundaries; b) taking the perspective of the athlete into account; c) providing rationale for tasks; and d) providing opportunities for athletes to develop self-initiated behaviours (Lafrenière et al., 2011). Given the reported benefits for athletes, the adoption of autonomy-supportive behaviours is an interpersonal coaching style that accounts for the athlete within the social environment and thus is might be considered as an example of quality coaching. While Mageau and Vallerand (2003) imply that adopting autonomy-supportive behaviours is a template for quality coaching, little is known about the factors that foster and inhibit coaches’ abilities to demonstrate this style in applied settings.

Mageau and Vallerand (2003) propose the adoption of autonomy-supportive behaviours will facilitate optimal psychosocial well-being for athletes. The research on coaching behaviours has largely been addressed in relation to athletic outcomes. A paradox for coaching research is that while the benefits of being autonomy-supportive are empirically supported, some coaches may still actively choose to still employ controlling
interpersonal styles (Bartholomew et al., 2011; Fraser-Thomas & Côté, 2009; Mageau & Vallerand, 2003). This highlights the need for further empirical investigation into the translation of theory and evidence based research to practice within sport settings. Mageau and Vallerand (2003) propose that within the social environment, factors such as the coach’s personal orientation, the coaching context, and perceptions of athletes’ behaviour and motivation can potentially influence a coach’s ability to display autonomy-supportive behaviours. These interdependent factors are yet to be explored within sports coaching research. A key question is why might coaches be so controlling or not need-supportive or both? Moreover what factors influence coaches’ ability to change? Therefore, an aim of this paper was to investigate coach and athlete perceptions regarding the factors that influence a coach’s ability to be more autonomy-supportive and less controlling.

The categorisation of coaching behaviours as either autonomy-supportive or controlling and the impact of these on athlete outcomes is well supported (e.g., Bartholomew et al., 2010; Mageau & Vallerand, 2003; Mallett, 2005). The challenge still remains to be assisting coaches to understand their own behaviours and their impact, as coaches tend to be poor at describing their coaching behaviours. Research by Smoll and Smith (2006) showed that coaches have limited awareness of how frequently they engage in various behaviours. Within this work, children’s ratings of their coach positively correlated with observer ratings rather than coach self-report, which indicate that coaches may not be aware of their behaviours. Therefore it may be useful to consider increasing self-awareness as the starting point for behaviour change.

Studies in education show that students report both psychological and educational benefits when their teachers actively support their autonomy (Reeve, 1998). Yet similar to the coaching research, students report that teachers tend to be more controlling than autonomy-supportive (Reeve, 2009). This appears to be a recurring paradox in both
education and coaching research; if athletes (or students) benefit when their coach (or teacher) supports their psychological needs then why do they display a controlling orientation? Reeve (2009) suggest that teachers are controlling due to three global factors such as; outside agents (e.g., administrators, parents and cultural norms), the teacher-student classroom dynamics (such as their perception of student behaviour) and the teachers own personality disposition (e.g., how they understand motivation). Exploring the factors that inhibit those in positions of authority to be more autonomy-supportive is an important line of inquiry for coaching research. Given the seminal work of Mageau and Vallerand (2003) and their conceptualisation of the motivational model, it is proposed that further understanding the factors that influence how coaches behave (interpersonal style) is a worthwhile endeavour to inform the translation from theory and research to practice.

To date the antecedents of coaching behaviour have been under-examined (Amorose, 2007). Addressing the causes of coaching behaviours serves the existing research in two ways. First, such examination places the coach at the foreground of the research. An issue in previous research has been that most studies have been based on reports of coaching provided by athletes, neglecting the voice of the coach. It is considered that both coach and athlete voices are represented to better understand the coach-athlete relationship from a motivational perspective. Second, for applied practice, understanding the determinants of why coaches may be not be using an autonomy-supportive interpersonal style should allow coach educators to develop programs that support autonomy-supportive coaching. Given the critical role of coaches in the development of the motivational climate, foregrounding the coach and examining the factors that influence their behavioural approach is required to promote quality coaching within sporting contexts.

This paper outlines research conducted within a youth basketball context. The key aim of this research was to develop an understanding of the contextual factors that
influence the behavioural choices of coaches to adopt an autonomy-supportive style and how athletes' perceived these behaviours in relation to their conceptions of quality coaching. Understanding the antecedents of coaching behaviour that influence how and why a coach behaves the way they do could potentially assist coaches seeking to shift towards a more autonomy-supportive interpersonal style.

Method

Participants

The participants for this study included coaches and athletes from an Australian High School basketball system. These participants were chosen to be included in the sample as they were all involved in Basketball at the junior elite level and through email contact expressed an interest in the research. Six male coaches from six high schools, aged between 28 and 46 years ($M = 34.66$ years, $SD = 6.43$) were involved in this study. Each coach held the minimum level of coaching accreditation in Australian basketball and all coaches were university educated. The coaches were all former basketball players with playing experience at varying levels (former professional player $[n = 2]$, former semi-professional player $[n = 3]$, former high school player $[n = 1]$). The total coaching experience of the participants averaged 15.66 years, with a range of 7 to 25 years ($SD = 6.50$ years). Each coach involved in this study has been assigned a pseudonym (e.g., Coach A, B, C, D, E, F) to promote anonymity.

The second group of participants in this study were male independent high school athletes ($n = 29$) across six schools. These athletes were coached by the six male coaches mentioned above and formed part of the Open age group basketball team for their school. Quotes represented by athlete are displayed in relation to their coach and within their team. For example, Athlete 6C represents athlete number 6 who is coached by Coach C. Within the Australian independent school context, prestige, and status is
associated with selection in this team thus the selection process is competitive. The ages of the athletes ranged between 14 and 17 years ($SD = .89$) and the total playing experience of the athletes averaged 5.75 years ($SD = 1.74$ years).

**Procedure**

A University ethics committee approved the study prior to data collection (see Appendix D). In total, 10 Australian high schools were invited to participate in this study through written correspondence. The criteria for inclusion related to the level of competition (i.e., only the premier team in the school would be considered) and appropriate coach-to-athlete ratio within each site (i.e., the coach and at least five of the players must be available to participate). From the 10 contexts contacted, six responded favourably to the invitation and fulfilled the aforementioned criteria. Prior to the commencement of data collection coaches and athletes (parental consent for those under 18 years old) was sought through the study information and consent form (see Appendices E and F). Semi-structured interviews and focus group discussions were selected as they allow participants to elaborate, provide examples, and describe details to clarify key points (Patton, 2002a). This approach also provided the participants the opportunity to provide detailed accounts, which supports the aim of the study. The coaches in the study participated in one semi-structured interview (Range = 52-112 minutes) about their coaching. Sample questions included (see Appendix G): How might you get the best out of your athletes? What do you think motivates your athletes? How do you get your athletes to work harder?

Focus groups were used for the athletes because it allows the researcher to get a variety of perspectives and increase confidence in whatever issues emerge (Patton, 2002). The athletes of these coaches participated in one focus group (Range = 60-102 minutes) for which the coach was not present. The six focus groups consisted of at least five athletes (Range 5-8 athletes) from the same team. As a result, six focus groups were conducted. The absence of the coach during the focus groups allowed the athletes an
opportunity to speak freely about the coaching they receive. Athletes were asked to comment about their coach in relation to the coaching they currently receive. Sample questions to stimulate discussion included (see Appendix H): What does quality coaching look like to you? What do good coaches do? What aspects of the coaching you currently receive are your preferred (and non-preferred) behaviours and how does this influence your participation in basketball? With permission from the participants, the semi-structured interviews and focus groups were transcribed verbatim resulting in 267 double-spaced pages of text, which were used for data analysis. The transcribed text was returned to the participants for member checking (Patton, 2002a), where participants had the opportunity to amend, clarify or remove sections at their discretion. The participants in the sample made no changes to the transcribed text.

Data analysis procedure

The process for content data analysis for this study was informed by the work of Côté et al. (1993). The primary researcher highlighted phases or chunks of text that were identified as meaning units; reflecting an idea, episode or piece of information (Côté et al., 1993). The meaning units were then grouped together into similar categories and labelled in a way that best captured the substance of the data. Côté et al., (1993) proposed that, “the purpose of the second step of interpretational analysis is, therefore, to re-contextualize the information into distinct categories, resulting in a set of categories which serves as a preliminary organizing system” (p132). Data were separated creating a set of coach data and a set of athlete data. The coding process was audited through the use of triangular consensus. The identification of meaning units and subsequent creation of categories and themes were discussed at length with two other experienced researchers. In the few cases in which there was a lack of agreement, further discussion took place until a consensus of opinion was reached.
Results and Discussion

The antecedents of coaching behaviour have been largely under researched since Mageau and Vallerand (2003) first presented their motivational model. As mentioned by Amorose (2007) and Stebbings, Taylor and Spray (2011), addressing factors that influence coaching behaviour is a priority for researchers so that coach educators can more appropriately promote an autonomy-supportive style. Cushion (2010) states that coaches are generally unaware of their coaching practice. Essentially, what coaches think they do is not necessarily viewed in the same way by their athletes. This study supports the finding from study one that coaches and athletes perceive aspects of coaching behaviours differently. The aim of this study was to provide some detail around the areas of misalignment hence the key findings are; the use of punishment is perceived by athletes differently compared to coach’s intent; the way feedback is delivered by coaches can influence athletes; and the coaching context can influence the behaviours of the coach. Furthermore, this study highlights that coaches are not always aware of their coaching behaviours in relation to the intent of their messages and how athletes perceived these actions. This finding will be discussed in relation to the antecedents of coaching behaviour, namely the coaching context, coach perception of athlete motivation and coach personal orientation.

Influences of coach behaviour: Perception of athlete motivation

How coaches perceive the motivation of their athletes can influence the coaching behaviours they display. For example, if a coach perceives that that their athletes are highly motivated they are more likely to adopt a coaching style that allows for their athletes to continue to fuel their own motivation. Conversely if a coach believes that their athletes are lacking in motivation, it is likely that they may use controlling behaviours to fuel their athlete motivation (Mageau & Vallerand, 2003). Divergent views emerged between the
athlete and coach samples in this study with regard to understanding and using punishment. Bartholomew and colleagues (2009) consider the use and threat of punishment as a form of intimidation designed to shape athletes to conform to desired behaviours. The athletes reported that the form of punishment delivered by their coaches was mostly physical (e.g., running ‘suicides’ or doing push-ups). However, the reasons for why the athletes felt they were punished were in contrast with the coaches’ reasons for delivering these consequential actions. Research conducted in sport contexts suggests that athletes consistently report coach use of punishment (Fraser-Thomas & Côté, 2009). Empirical studies have provided evidence as to the negative effects of coaches’ use of punishment on athlete psychological experiences. For example, Balaguer and colleagues (2012) found athletes of controlling coaches were associated with increases in burnout in youth football players. The athletes in this sample mentioned the use of punishment by their coaches was a non-preferred coaching behaviour.

The athletes in the sample reported that they perceived that coaches used punishment because the athletes had made skill errors, lost games, and/or not adhered to team rules. Athletes of Coach D, believed their coach used punishment techniques to correct skill errors for when they made basketball-related mistakes: “...if you miss a shot you do 10 push-ups” (Athlete 4D). To these athletes, punishments were about achieving desired behaviours, “...so that we don’t make the same mistake again” (Athlete 2D). Highlighting the tensions created by this approach, when asked if this approach decreased the amount of mistakes, an athlete replied, “It’s not like I’m trying to miss!” (Athlete 2D). In total, athletes from five of the six teams in the study spoke about how coaches used and threatened punishment in an attempt to control and shape behaviour. The coaches are using operant conditioning through the use of punishment to shape athlete behaviour, that is unlikely to produce long lasting behaviour change for athletes. The athletes recalled times when their current coach had either threatened or made them run ‘suicides’ when
they had played poorly or were late for training. For example, Athlete 4A said, “in games at training, if you are on the losing team you have to run a line”, and regarding training tardiness, “when someone is late to training he [the coach] makes the team run a ‘suicide’ for every minute you’re late” (Athlete 4C). In these athlete quotes it is evident that the athletes view the coach’s use of punishment as form of behavioural conditioning where athletes are scolded for not displaying desired behaviours. Unsurprisingly, the athletes’ preference was not to be punished during basketball practice. The use of punishment by coaches regardless of their intent stifles the motivational outcomes for athletes. Through use of punishment coaches are negatively impacting on an athlete’s sense of autonomy, competence and relatedness and ultimately creating a need-thwarting environment (Mageau & Vallerand, 2003).

The athletes in this study perceived that their coaches used punishment as a technique to correct and shape their basketball behaviours. The coaches, however, reported that they threatened and used punishment as a way to motivate athletes to work harder and strive to be better players. Coach F identified training as a time to “work hard and get things done” and as such when he felt the athletes weren’t performing to the standard he expected, he would “make them run, I call it the pain train”. Another coach made a similar statement when he said that he used running as punishment when the team performed poorly on the weekend during their competitive game: “I use it as a way to get consistency so if you aren’t going to make the effort to run in games then you will do it in training” (Coach D). These coaches believed that by punishing their athletes they were ‘lighting the fire’ of motivation within each athlete, intended to enhance their performance.

Coaches explicitly made the connection between their views on punishment and motivation; for example, “So there are a few carrots we try to dangle in front of them to motivate them. More so with this group I’ve had to return to negative ones like ‘suicides’ and such to develop some motivation within them” (Coach E). This coach openly
acknowledged that the use of ‘suicides’ was a negative tactic, yet still used it anyway. Further, another coach mentioned that “if the motivation isn’t coming from them then I have to set up extrinsic things like if they lose this game they are doing a suicide” (Coach B). These quotes highlight that while coaches in this sample have formed strong views on punishment in relation to increasing motivation, they have a fundamental misunderstanding of adaptive motivation. Empirical research conducted in sports setting has provided evidence that the use of punishment is likely to diminish one’s internal motivation and as such they are likely to burnout, or withdraw from sport (Bartholomew et al., 2009; Mageau & Vallerand, 2003). In this applied setting, the use of punishment may be exacerbated because coaches may not be cognisant of the consequences of their actions; i.e., not only is there incongruence between coach intent and how the message is perceived, the coaches' intent is not supported by the research (e.g., Bartholomew et al., 2011; Mageau & Vallerand, 2003). Moreover, the coaches in the sample are focused on the quantity of motivation compared with the quality of the motivation. In the above examples, the coaches use punishments to motivate the athletes to work harder. SDT proposes that motivation that is maintained over longer periods and more importantly is self-initiated is likely to produce internal motivation (Deci & Ryan, 1985). Therefore the coach’s roles in supporting athlete motivation should be targeted at creating a motivational climate that facilities motivation rather than the use of coaching behaviours such as punishments which is likely to thwart motivation (Bartholomew et al., 2009).

For the coaches in this sample the use of punishment to motivate athletes to deliver improved performance was linked with delivering results. Coaches in this sample believed that punishment would lead to increased motivation and this increase in motivation was associated with improved results. The coaches mentioned that they were driven by results. Coach A mentioned that a “winning record” was inherent in being a quality coach. Four coaches spoke about winning coaches being quality coaches. Specifically Coach F said,
“Let’s face it – you can’t name one coach who didn’t win anything as a great coach”. For the coaches in this study, being results driven was associated with self-placed pressure to perform (internal regulation, other-placed pressure to perform (external regulation), and wanting to be perceived as successful (perceived competency identity). Coaches who adopt a win at all costs approach are less likely to consider the thoughts, feelings and attitudes of others and therefore most likely to adopt a controlling orientation (Mageau & Vallerand, 2003). Two coaches said that they acknowledged that part of their role as a coach was to develop the athletes within their program but were sometimes conflicted as to what shape this coaching took. “Sometimes it just flows and the development part is easy ‘cause they want to learn but sometimes it isn’t and that’s when I’m not so sure what is the best action to take” (Coach D). Another coach (Coach A) viewed player development and results-driven as two separate forms of coaching and that he “constantly has to balance player development and winning” depending on a variety of contextual factors.

Whilst some of the coaches were focused on results, the players instead reported that their primary goal was to develop their skills and improve. The athletes mentioned that they were focused on becoming better basketball players. Nine athletes across the six teams highlighted that developing into better players was important. The athletes felt that developing into better players and to improve for next year was their major focus: “I just think that if I become a better player and the guy beside be gets better too and so on well then probably the results will come also” (Athlete 4F). Another athlete suggested that improving players should be the primary role of the coach when he said; “I would have thought that working with players to get better is the number one thing that a coach should do, it’s not always the case but” (Athlete 1A). The coaches in this study may have struggled with balancing between an athlete’s key motives for playing basketball and the focus on individual and team success. In this sample, the athletes were primarily interested in developing their skills in basketball and while the
coaches acknowledged this as important, their desire to be successful through winning games meant that were often perceived as controlling by the athletes (i.e., the use of discipline).

The use of punishment to motivate athletes by coaches in this sample highlights the differing views of two key actors in the sporting context and specifically, that coaches may not be aware about how athletes interpret the use of punishment in training. The coaches in this sample tended to rely on punishment to build athlete motivation to foster improved performance. In contrast, the message the athletes received was that punishment was about discipline, not about motivating them to work harder or improve performance. Understanding these differences in perception provides some evidence as to how coaches believe they achieve peak performance from their athletes. In this sample, a key finding is that the coaches believed that punishments motivated their athletes to work harder. Moreover this finding highlights that coaches readily resort to disciplinary behaviours and in doing believe they have the athlete’s interests at heart. Coaches might benefit from developing their self-awareness of their coaching to align what they do with what they are trying to do. Also important in the notion of coach reflection on how these behaviours are perceived by athletes and how it makes them feel, think and act. Few studies have identified factors that determine coaches’ use of controlling behaviours. It is proposed that a factor that has the potential to influence a coach’s use of controlling versus autonomy-supportive behaviours is their perception of athlete motivation (Mageau & Vallerand, 2003).

Feedback

In this present study, all athletes reported that the coaches provided a mixture of what the athletes considered to be positive and negative feedback. Overall the athletes stated that they preferred positive and informative feedback coupled with suggestions for improvement. The results from the interviews from the coaches and the focus groups
involving the athletes suggests that coaches and athletes are misaligned regarding the provision of feedback in relation to intent and interpretation. Namely, the athletes sought positive, skill related feedback from their coaches; and the coaches were aware of the effect of how their feedback is interpreted by athletes. Athlete 6C summed up this sentiment when he said, “I like the positive feedback. I think that’s important, for like knowing what I’m doing well”. One way the coach might positively influence athlete motivation is through the creation of a need-supportive environment. When an athletes’ need for competence is satisfied (along with autonomy and relatedness) they are likely to develop intrinsic motivation. Coaches can develop competence in their athlete through their provision of feedback. The mode and delivery of feedback provided by the coach has the potential to affect athlete motivation (Mouratidis, Lens, & Vansteenkiste, 2010).

The athletes in this study actively sought positive skill related feedback from their coaches. In line with SDT and psychological need satisfaction, this can be connected with their desire to be perceived as being competent basketball players. Recent research proposes that athlete feelings of competence are related to how the coach delivers feedback regarding performance compared to expectations (Carpentier & Mageau, 2013). One athlete spoke about how positive feedback allowed him to play with freedom: “you feel confident and that way when you are taking shots you are not thinking ‘does the coach what me to shoot this and that way you are just thinking about the shot” (Athlete 3E).

Athletes also voiced their frustrations about times when their coach provided what they considered to be poor feedback: “Instead of yelling at me for missing a shot, like, maybe actually coach me and then in games I’ll be confident to make that shot” (Athlete 2F). Another athlete lamented that “he doesn’t really help me with anything just tells me what I did wrong” (Athlete 5E).

The coaches in this study also agreed that providing feedback to athletes was linked to improving athlete performance. All the coaches in this study were adamant that
they provided numerous episodes of feedback to their players. However, in some cases the way the feedback was articulated and received highlighted inconsistencies between its intent (on the part of the coaches) and the perception from the athletes. One well-respected coach drew on his background as a teacher to inform his provision of feedback, “I know that focusing on the positives and then giving them tips for improvement, then finishing with an encouraging statement works” (Coach A). In line with SDT, Coach A’s approach should enhance athlete intrinsic motivation by facilitating the satisfaction of the basic need for competence through focusing on aspects of performance completed correctly (Mouratidis, Vansteenkiste, Lens, & Sideridis, 2008). However, coaches who are autonomy-supportive tend to differ from controlling coaches in the way they provide feedback (Carpentier & Mageau, 2013). For example, Coach B felt that yelling at athletes for mistakes was acceptable if this was coupled with positive reinforcement: "I never yell at a kid without some positive reinforcement to back it up”. Coach D spoke about “telling them how to do something and then making them accountable”. For athletes, the way and type of feedback delivered is just as important as the feedback itself. As highlighted by Carpentier and Mageau (2013), feedback that is empathetic, accompanied by solutions to correct the error, free from person-related statements, paired with tips and provided in a considerate tone represents an autonomy-supportive style, which is need-supportive. The athletes sought feedback that aided their improvement in basketball, thus satisfying their need for competence, autonomy and relatedness. Whilst many coaches spoke about developing skills and working with players, their use of language, tone, and content were perceived by the athletes as being controlling. For athletes, the provision of informational feedback was an important coaching behaviour.

Coaches may not be necessarily aware of how their provision of feedback is perceived by athletes. Both the coaches and the athletes in this sample reported that feedback occurred within each coaching setting. However there were times where the
intent of the coach’s feedback didn’t align with how this feedback was interpreted by the athletes. Interestingly, the athletes were sensitive to the tone, pitch, and language of the feedback provided by coaches. This highlights that during the coaching process coaches may not be aware of how their behaviours are perceived. Moreover, they may not be aware with how they deliver feedback. This might potentially be a key feature to increase their self-awareness of their coaching through understanding how they deliver feedback as well as what they deliver. While the presented data highlights this incongruence with the way the coach provides feedback it is likely that other aspects of the coach-athlete relationship may be also potentially misinterpreted. This misalignment between of views regarding feedback is an area for further investigation for sports coaching science. The lack of agreement between what and how feedback is provided and how this is being understood may cause the athletes to question their competence within their setting.

**Influences of coach behaviour: The coaching context**

Mageau and Vallerand (2003) proposed that the coaching context influences coaching behaviour, which may indicate why a coach may be less likely to adopt an autonomy-supportive approach (Mageau & Vallerand, 2003). The findings in this study suggest that the coaching context influences coaching behaviour, which partially supports the motivational sequence proposed by Mageau and Vallerand (2003). First, the coaches in this study reported that the pressure to win games influenced their ability to display autonomy-supportive behaviours. Second, the athletes reported that the behaviour of the coach fluctuated throughout the season based on times of high pressure (more controlling) and low pressure (more autonomy-supportive). Mageau and Vallerand (2003) suggest high levels of stress can result in people emitting controlling behaviours. Coaching work exposes coaches to various levels of pressure and stress. These findings are discussed in the following section.
The coaches in this study described the coaching context as pressure filled: “the pressure is on ’cause once you lose one game you basically can’t win the premiership” (Coach C). Given the flawless record required to win a premiership in the current competition format of this independent school system and the previously described emphasis that the coaches place on winning, the coaches in this study experience a high degree of pressure. Pressure increases the likelihood that coaches will engage in controlling behaviours (Mageau & Vallerand, 2003).

External pressures as well as cultural beliefs about how high performance is achieved influences the behavioural approaches a coach may adopt. In this study the coaches believed that the threat and use of punishments motivated athletes. This disciplinary and motivational strategy is attractive to coaches because they are perceived as an immediate and reliable means of shaping desired athlete outcomes (e.g., fail to see effort in a game therefore enforce punishments that require effort) (Reeve, 2009). By using this strategy, coaches are relying on visually observable outcomes (seeing athletes run), which is viewed as athlete motivation because they are working harder. There are numerous research papers that refute this approach (e.g., Mageau & Vallerand, 2003), yet coaches continue to control athlete behaviour.

Another finding from this work is that the athletes reported a shift in the provision of autonomy-supportive and controlling behaviour depending on critical points during the season. Reports from athletes suggest the demonstration of controlling coach behaviours fluctuated (i.e., punishments, discipline) throughout the season. There were times when the coach was perceived to be controlling (e.g., use of language, amount of punishments), such as when they felt that the athletes lacked motivation, and times when they were viewed as being autonomy-supportive; for example, when they encouraged the team. Similar to the findings of Reeve’s (2009) work with classroom teachers, coaching behaviour moved along a continuum between control and autonomy-support dependant
on the fluctuating pressures and stress present in the context. One athlete mentioned that the coach “was pretty hard on us in pre-season, making us run and work really hard and enforcing the rules but that changed a bit when the season started” (Athlete 4F). Athlete 3A was part of team that was losing matches and resultantly noticed change in his coach’s behaviour when he said, “once the season was gone the training was different, he wasn’t as hardcore, he was more relaxed”. Further work needs to consider the role of seasonal pressures (e.g., poor win loss ratio, important upcoming game, finals) in relation to the coach variation of behaviours.

**Conclusion**

The present study advances the current literature in a number of ways. No previous work within SDT has examined coaching behaviours from athlete and coach perspectives using a qualitative approach. The findings from study one were that coaches and athletes differed in their perceptions of coaching behaviour. Hence, this study built on the previous work by providing detail to examine these discrepancies. The findings suggest: coaches use punishments to shape behaviour; the way feedback is delivered by coaches is interpreted differently by athletes; and the coaches in the sample are under pressure to perform which influences their ability to be autonomy-supportive. More broadly, it is proposed that three possible explanations for why coaches may struggle to adopt an autonomy-supportive approach: 1) coaches falsely believe that controlling behaviours motivate athletes; 2) coaches may not be aware of how their behaviours are being perceived; and 3) they feel pressure to win. Mageau and Vallerand (2003) additionally suggest that when coaches prioritise their own perspective over that of the athlete that the displayed coaching behaviours will likely be less autonomy-supportive. Similarly in the educational context, Reeve (2009) contends that teachers (like coaches) display a controlling approach because they are unable to appreciate the students’ perspective.
usually resulting in teachers intruding on students’ ways of thinking, feeling and behaving and pressuring students to think, feel, or behave in a certain way.

Coaches likely have noble intentions; meaning, generally they process the desire to be supportive, encouraging and create a culture where athletes can be successful. Unfortunately, while the coaches in this study judged themselves based on their intentions, the athletes judged the coaches based on their behaviours and actions. At times there is misalignment between these two areas, which was reported and discussed by the athletes in the study. One of the determinants of coaching behaviour is how coaches understand motivation, and specifically how they influence the motivation of others. From the data presented above, the majority of the coaches in this study do not clearly understand motivation as understood from a self-determination theory perspective. Instead the coaches in this sample seem to misunderstand the difference between the ‘quantity’ versus the ‘quality’ of motivation. This is demonstrated through some of the coaches’ beliefs that the use of rewards and punishments in training positively influence athlete motivation for pursuing excellence. The coaches were displaying a controlling orientation; more importantly, they are actively thwarting their athlete’s motivation, which is in direct opposition to what they were trying to achieve. The research on autonomy-supportive coaching behaviours and SDT suggests that this approach to motivating others is potentially limiting to one’s psychological well-being. Essentially, despite their good intentions, these coaches may actually be undermining their athletes’ self-motivation and their development more generally. Future research may need to consider assisting coaches to enhance athletes’ motivation in adaptive ways by developing practices that create environments where athletes’ internal-motivation is able to thrive.

The findings of this study highlight inconsistencies between the perceptions, motivations, and lived experiences of coaches and their athletes. Consequently, coaches working in elite school sport contexts may benefit from developing a better understanding
of their athletes’ motivations and the types of coaching behaviours that they are most likely to positively respond to. The development of such an understanding may also assist coaches reconcile the tensions associated with the competing demands of competitive success and player development in short duration seasons.

Limitations and future directions

Although the present work provided some insight into the factors that influence coaching behaviour, a limitation is the lack of complementary data related to coaches’ behaviours. Whilst work in SDT emphasises the importance of an individuals’ perception of the social environment, future work might also include observational data collection from an outside member in order to provide confirming and contrary data. The triangulation of multiple sources such as from the coach, the athletes and an observer may lead to increased credibility of the findings (Patton, 2002a). Furthermore, prospective investigations (e.g., ethnographical tools) that examine the reasons why coaches behave the way they do would complement other means of inquiry. Further, this study was set in a specific sport (Basketball) and context (Australian youth sport in an independent school system and therefore the extent to which these findings can be generalised to other sports, levels, and ages is unknown and requires further empirical investigation. This line of inquiry is important for research so to understand if coaching behaviours are universally demonstrated across a variety of sports, age groups and competition levels.

The findings in the current study can be extended in several ways. First, further work needs to consider the factors that influence situations when a coach is more or less controlling or autonomy-supportive. As suggested in this paper, coaches may adopt either a controlling or an autonomy-supportive approach depending on the presence of pressure and stress and other factors. Second, these findings from this study provides some insight into the antecedents of coaching behaviour within the coaching context within Mageau and Vallerand’s (2003) motivational model. However, more work is required in order to
advance our understandings of autonomy-support. For example, the influence of ‘structure’ and ‘involvement’ on coaching behaviour and athlete motivation (Mageau & Vallerand, 2003) has been under examined within sports coaching research. Specifically, how might coaches’ structure of training potentially mediate or moderate the relationship between coaches’ behaviours and psychological need satisfaction, especially the perceptions of competence and relatedness? Finally, this work has highlighted the divergent views of coaches and athletes regarding perceptions of coaching behaviour. It stands to reason that coaches may benefit from increased awareness of their coaching behaviours and how specific actions influence the self-motivation of the players. Future work could include intervention studies that assist coaches to change their behaviour over the duration of a season. This study has extended study one by highlighting discrepant areas reported by the athletes and coaches in chapter three. Specifically, coaches misunderstood how to motivate athletes and moreover how to create an environment that supports their athletes’ psychological needs. Instead, the coaches in this sample resorted to behaviours (e.g., use of punishment and controlling feedback) that provided a ‘quick fix’ to shape the behaviour they demand from their athletes. This research is focused on assisting coaches to adopt a positive interpersonal style so to increase the likelihood of athletes enjoying their sporting experiences. Hence, the next study aims to leverage off the findings of study one and two through a season long study where a coach will attempt to focus on creating a need-supportive environment where coach intention and behaviour is aligned.
Chapter 5

Study 3: Improving coaching practice using action research

Introduction

Research in the sports coaching domain has shown that the coach has a significant influence on athlete motivation (Amorose, 2007; Blanchard et al., 2009). For athletes, the type of their motivation, their psychosocial well-being, persistence and achievement in sport have all been shown to share a relationship with the coaching behaviour experienced (Conroy & Coatsworth, 2007). In addition, recent empirical studies have investigated the juxtaposition of the value of autonomy support compared with the negative outcomes of coach control (Hodge & Lonsdale, 2011a; Smith, Ntoumanis, & Duda, 2010). Hence, given that athletes are likely to have positive athletic experiences when coaches are autonomy-supportive and negative experiences when coaches are controlling, it seems justifiable that coaches should adopt an autonomy-supportive coaching approach. In their seminal work, Mageau and Vallerand (2003) espoused that coaches should adopt an autonomy-supportive coaching style if they value fostering autonomous forms of athlete motivation and subsequent adaptive outcomes.

The overarching aim of this research was to promote positive forms of coaching through the adoption of an autonomy-supportive approach and to examine of the antecedents of coaching behaviours so that youth athletes may have positive experiences within sport settings. Studies one and two have highlighted that coaches and athletes differed in their perceptions of coaching behaviours. Specifically, coaches seem to misunderstand how to motive athletes hence resorting to the use of punishment to produce acute changes in athlete intensity and focus. Additionally, coaches are generally unaware of the behaviours they demonstrate and moreover, how these behaviours are perceived by the athletes are often different to how the coach intends. Hence, in an effect
to promote positive coaching, it is proposed that coaches should adopt an autonomy-supportive approach given the benefits outlined by the research. The research in sport coaching has provided support for the adoption of an autonomy-supportive approach hence, a key questions may be, how might coach developers promote coaches to adopt an autonomy-supportive interpersonal style? Moreover, can coaches shift to becoming more autonomy-supportive if their current coaching approach is not currently autonomy-supportive? The aim of this study is to assist a coach who wants to adopt a more autonomy-supportive approach.

There is a dearth of literature utilising interventions within the sports coaching literature in the area of coaching behaviour change in relation to autonomy-support and SDT. Therefore to begin to address this gap, the aim of this research is to assist a coach to develop and adopt an autonomy-supportive coaching style. Given studies one and two have identified misalignment between what coaches think they do and how this is perceived by their athletes, a secondary aim is to create alignment between coaching behaviours and how athletes perceive these behaviours. A discussion of the recent literature in SDT and autonomy-supportive coaching is provided below.

**Intervention studies**

SDT research supports the notion that people function positively when others support their autonomy rather than control their behaviour (Mageau and Vallerand, 2003). Sport coaches are central influencers to the value of the sporting experiences of athletes through the quality of the motivational climate they create. In recognising that others benefit when engaged in a positive motivational climate, researchers have investigated the effectiveness of intervention studies to teach those in positions of authority to become more autonomy-supportive. Intervention studies have involved assisting company managers (Hardré & Reeve, 2009), school teachers (Reeve, 1998; Tessier, Sarrazin, & Ntoumanis, 2010), and medical interns (Williams & Deci, 1996) to learn how to develop an
autonomy-supportive style within their contexts. The findings support that interventions can be effective in assisting others to change behaviour and support the autonomy of others. Specifically within the context of education, empirical work supports the contention that teachers can learn how to become more autonomy-supportive in their classroom instruction and the students of these autonomy-supportive teachers report increased benefits in psycho-social domains (Chatzisarantis & Hagger, 2009; Cheon & Reeve, 2013; Cheon, Reeve, & Moon, 2012; Tessier et al., 2010). To date there have been few intervention studies using a SDT framework within the field of sport coaching; an exception includes a study by Pelletier and colleagues (2001) that examined the motivational outcomes of competitive swimmers over the duration of the season based on their perceptions of coaching behaviour. The empirical results from the educational literature are encouraging for sports coaching research given the close relationship of coaching with teaching (Cassidy, Jones, & Potrac, 2004). It seems plausible to assume that if teachers can learn to be autonomy-supportive then coaches may benefit from interventions to change their coaching behaviours.

Interventions in education have explored if a teacher can learn how to teach using an autonomy-supportive teaching style. Given the many benefits of being autonomy-supportive, many researchers have asked if those in positions of authority (such as teachers) can learn to become autonomy-supportive towards others (Cheon & Reeve, 2013; Cheon et al., 2012). Reeve (1998) investigated whether 159 pre-service teachers were able to learn how to support the autonomy of their students using training booklets which outlined an autonomy-supportive teaching and motivational strategy and included examples of how to incorporate this strategy into their teaching. Reeve (1998) found that an autonomy-supportive style was teachable to pre-service teachers. Over the course of the intervention, pre-service teachers began to further understand how to motivate their students in autonomy-supportive ways through following training booklets that outlined
motivational strategies within classroom settings. Further, those pre-service teachers who were already autonomy-supportive (e.g., their personal orientation is founded in considering the thoughts and feelings of others) found the implementation of the training booklet relatively easy and confirmed their already established understanding of student motivation. Those with an established controlling orientation, found the implementation of autonomy-supportive behaviours challenging as it was in conflict with what they thought to be true about motivating others. It appears that developing an opposing style can be challenging for those unfamiliar to the autonomy-supportive process as it may go against their culturally entrenched beliefs.

Other intervention studies in education have reported similar findings regarding the adoption of autonomy-supportive behaviours. Chatzisarantis and Hagger (2009), Prusak, Treasure, Darst, and Pangrazi (2004), and Tessier, Sarrazin, and Ntoumanis (2010) have conducted intervention studies in Physical Education (PE) to assist teachers to teach in more autonomy-supportive ways. Chatzisarantis and Hagger’s (2009) aim was to train 10 PE teachers in a five week training course to become more autonomy-supportive through providing more rationales for tasks, and enhancing students’ sense of choice. The findings of the intervention supported the link between students’ perceptions of autonomy-support and autonomous motivation. Specifically, students that were taught by teachers who they perceived to be autonomy-supportive reported a more autonomous motivational orientation during the study. When people in positions that can influence the outcomes of others (e.g., teachers, coaches) adopt an orientation that is autonomy-supportive they are likely to positively influence the motivational outcomes of others (e.g., students, athletes).

Prusak and colleagues (2004) investigated the effect of choice in PE classes with adolescent girls in relation to their thoughts about physical activity and PE. Nine PE teachers in the intervention group were taught, through two 90 minute workshops how to give students choice in walking activities. The invention manipulated choice and no choice
conditions and found that students in the choice condition displayed more autonomous motivation compared with the no-choice condition. Finally, Tessier, Sarrazin, and Ntoumanis (2010) conducted an intervention study to train teachers to incorporate autonomy support, structure, and interpersonal involvement in their teaching style. The results of the 8-week study found that the teachers were able to adopt a more autonomy-supportive teaching style. Importantly, the amount of movement towards more autonomy-support varied amongst the three PE teachers. Tessier and colleagues (2010) propose that this may be due to personality characteristics. Deci and Ryan (1985) argued that personality may influence one’s orientation to the motivating style they adopt. Further, if a teacher or coach offers resistance to being autonomy-supportive may influence their ability to adopt such an interpersonal style. Hence it is important to consider the personal orientation of the coach or teacher in order to bring about behaviour change. Furthermore, resistance or acceptance of changing behaviour to become autonomy-supportive largely rests on the beliefs of the person undergoing change in relation to the benefits of changing. In order to demonstrate a shift towards becoming autonomy-supportive the participant is most likely to demonstrate a change if their orientation is already that way inclined (Su & Reeve, 2011).

Su and Reeve (2011) conducted a meta-analysis of intervention studies and their effectiveness in developing autonomy-support. The purpose of this work was to collate 30 years of intervention research in SDT and to specifically assess whether intervention studies have been effective in developing others to adopt an autonomy-supportive style. The overarching finding supports the contention that people (teachers, carers, parents, instructors) can learn to become more autonomy-supportive towards others. This paper highlights the usefulness of developing effective intervention studies to facilitate behavioural change. For sports coaching researchers there is an obvious lack of intervention studies where coaching is the setting. Empirical support of the malleability of
teacher’s interpersonal style should direct coaching researchers to the utility of such intervention studies in coaching. To date, the body of research in coaching has mostly examined the effects of coaching behaviours on athlete outcomes, namely intrinsic motivation. Hence, the aim of this research is to investigate whether a coach can adopt an autonomy-supportive style over the duration of a season using an action research methodology.

One such methodology that allows the participant opportunities to exercise some freedom of choice and to take ownership of the research process is Action Research (AR). AR is characterised by the participant developing their self-awareness within their practical settings (Öhman & Quennerstedt, 2012). For the coach to begin to adopt behaviour change it was vital that his thoughts, feelings and opinions became part of the research process. In this project the intention was to bring about behaviour change through collaborative inquiry by the coach and the researcher.

Social Psychologist, Kurt Lewin (1946) was the first to use AR as a methodology. During the 1940s his work attempted to bring together “the experimental approach of social science with programmes of social action in response to major social issues of the day” (Kemmis & McTaggart, 1988, p. 29). AR can be described “as research undertaken or led by practitioners, most commonly in their own practice settings” (Öhman & Quennerstedt, 2012, p. 250). Central to AR is the process of increased understanding of one’s professional practice in a systemic manner and to use this information to improve the quality of that practice (Kemmis & McTaggart, 1988). When examining the utility of intervention studies in sport psychology, Kellmann and Beckmann (2003) propose AR as an alternative to other more traditional paradigms due to its suitability in applied settings. AR is more than the practitioner engaging in reflection before, during or after practice. It is a process that involves strategically and systematically planned cycles, various data
collection points and engagement between two parties that allows for deeper understandings of behaviour and solutions for improvement.

AR is about generating knowledge based on existing understandings of practice, which is guided through a series of stages that allow for deep levels of consultation through each of the key steps. Tinning (1992) explains that AR is often described as a cyclic process involving planning, acting, monitoring, and reflecting. The reflective process involves the participant moving through the four phases sequentially (i.e., cycle 1), then re-planning, further acting, monitoring and reflecting (subsequent cycles) in order to improve their practice. Whilst the practitioner is the focus of behaviour change in action research, the process involves input from multiple sources (e.g., the athletes and the critical friend). The present study employs this framework within a longitudinal, single case design.

The current project

To address the lack of intervention studies in sport coaching, the current study sought to use an AR methodology to create a need-supportive environment by assisting a basketball coach to shift to a more autonomy-supportive interpersonal style over the duration of a season. Studies one and two found that coaches may not be aware of the effect that their behaviours on the motivational outcomes for their athletes. Specifically, Mageau and Vallerand (2003), propose that coaches are often influenced by (a) their personal orientation; the extent to which they are likely to be controlling or autonomy-supportive, (b) their context; how factors such as pressure and performance influence behavioural choices, and (c) their perception of athlete motivation, how coaches perceive the extent to which their athletes are motivated to perform. This study aims to consider the antecedents of coaching behaviours proposed by Mageau and Vallerand (2003) and to assist a coach to become more autonomy-supportive through creating an environment that is need-supportive. The present study was largely informed by three research questions; (1) can a basketball coach shift their interpersonal coaching style to become more
autonomy-supportive? (2) What are the challenges and opportunities in adopting a behavioural shift? (3) What effect do the antecedents of coaching behaviour have on a coach’s ability to change their behaviour? In considering the potential impact of this intervention, it was hypothesised that the coach would demonstrate a shift from a less autonomy-supportive interpersonal approach to a more autonomy-supportive interpersonal approach. This hypothesis was based on the volume of intervention studies and their positive outcomes as previously mentioned.

Method
The focus of this research was to assist a coach to create a need-supportive environment through adopting an autonomy-supportive orientation. The participant coach indicated that he felt that his coaching could improve and that his athletes would benefit greatly from being immersed in a need-supportive environment and thus was interested in changing his current coaching behaviour. Furthermore, he understood that his thoughts actions, feelings, and behaviours influenced the athletic experience and thus sought to develop a deeper understanding of these aspects. Successful behaviour change requires significant effort and input from the person who is attempting to change. SDT guided the underlying philosophical approach; namely, when one feels that ones’ actions are self-initiated and free from pressures or demands, their motivation is said to be self-determined (Deci & Ryan, 1985). These forms of self-determined motivation are associated with increased adherence and persistence (Deci & Ryan, 1985). How athletes perceive the coach’s behaviour is associated with potentially positive and negative outcomes (Mageau & Vallerand, 2003). Through previous contact within the coach during his Masters of Sports Coaching degree, the coach in this study was concerned that his coaching style was controlling and wished to adopt a more autonomy-supportive coaching style. Action Research (AR) is a flexible and adaptive research methodology that can be used to adapt behaviour through a systematic process.
Participants

The researcher. I played three roles in this research throughout the season. The first role was that of an observer. I was granted permission by the school headmaster and head coach to complete access to all matters involving the basketball team (e.g., training, games, the locker room). This meant that I was present at all training sessions and games. During these times I either video recorded and/or observed the coach and team. Much of the data collected informed my next role which was that of critical friend to the coach. Based on what was observed or recorded, I would regularly meet with the head coach to informally discuss aspects of this coaching, the training session or at times provide some video excerpts for his consideration. In this situation, the head coach and the critical friend are problem solving and attempting to improve practice through the use of questioning.

The final role was that of researcher. Given that this study was part of a larger project, I also had to move into the researcher role, where considerations regarding the direction of the project in relation to the research aim and questions were a priority.

The coach. Michael (pseudonym) is a former elite basketball player with 17 years of playing and 10 years coaching experience. Michael had also completed an undergraduate degree in Physical Education (PE) and at the time of data collection was employed as a PE teacher a private boys school. Additionally, Michael was enrolled in a Masters of Sports Coaching at the University of Queensland. Through his Masters study, Michael began to question his coaching practice and therefore participated in this study willingly.

The athletes. The team consisted of nine male, youth basketball players aged between 13 and 14. These athletes were selected in the top team and therefore represent the best payers in the school for their age. The players spent approximately 12 weeks of the year playing basketball in this team, however during the season approximately 60% of the team also played for their local club team.
Study Design

The aim of this case study was to assist a basketball coach to become more autonomy-supportive coach using an AR methodology. The head coach, Michael (pseudonym) had indicated that he was interested in developing his coaching to become more autonomy-supportive. From subsequent meetings with Michael, he agreed to participate in the study in the attempt to change his coaching process.

The AR methodology was chosen as an approach as it puts the coach at the centre of the research. The direction of the study was driven by the coach with some input from the critical friend to pose questions, help problem solve, and act as a sounding board. The utility of AR as a mechanism for behaviour change is inherent in its orientation towards continual improvement and focus on reflective processes. Consistent with Kemmis and McTaggart’s (1988) action research design, this study involved the coach participating in reflective processes throughout the study. The continual process of consideration, discussion, and negotiations between the head coach and the critical friend allowed for training and game planning and therefore action from the coach.

Procedure

Ethical clearance for this project was approved by a University ethics committee (see Appendix I). This project consisted of three action research cycles, with each consisting of planning, acting, observing and reflecting. During each cycle, data were collected from several sources (e.g., athlete survey, video recording, audio recording, and observation).

Data collection

Data were collected over the course of the entire basketball season in the form of three action research cycles. The season duration was 12 weeks (July-September), including four weeks of pre-season and trial games followed by eight weeks of training and competition. The team trained three times a week for a total of six hours and played a
competitive game against other schools on a Saturday morning. These games were competitive and overall wins and losses contributed to the perceived overall success of the basketball program. In total, the season consisted of 24 training sessions and 12 competitive games.

This study used qualitative data method through continuous observations (research diary), semi-structured interviews with coach and athletes, and informal discussions with the coach, and the researcher’s reflective diary. Prior to the commencement of the action research project consent was sought from the coach (see Appendix J) and the athletes through parent and guardian consent (see Appendix K).

Research diary. A detailed research diary was kept by the primary researcher, which was used to collate all the events throughout the season. The document was kept in written and word processing form and summarises the informal discussions with the coach, athletes, and others. In addition it was used as ‘thinking space’ for the researcher where observations were kept, questions were posed, and discussion topics to have with the coach were initiated.

Interviews. The interview procedure included the coach and the athletes as participants. For the coach two formal interviews were held; the first was in week 1 at the start of the study. The goal of this interview was to establish rapport, build trust, and discuss aspects of the study, which lasted for 98 minutes. The second formal interview was held in the week after the season had concluded (duration 122 minutes). This was the concluding interview where aspects of the season and particularly in regard to his coaching behaviour were discussed (see Appendix I). In addition to these semi-structured interviews, the coach and the researcher held numerous discussions during the season. These can be separated into two categories; causal discussions and event discussions. The casual discussion refers to general interactions about the team, coach or researcher. These casual discussions were not recorded verbatim instead they were catalogued in the
researcher’s diary. The event discussions were on every occasion audio recorded. The event discussions surrounded significant discussion points, for example pre and post game, pre and post training, post catalyst event, and when the coach needed direction. In total, 58 event discussions were logged totalling over 37 hours with the coach (not including game or training time).

The athletes of the coach were also involved in the interview process. This occurred formally on two occasions; during training in week three and training in week 12. In week three each athlete was interviewed in focus groups for approximately 30mins and were asked about their experiences in basketball, their thoughts about quality coaching, their current coach and their goals for the season (see Appendix M). These athletes were again interviewed in the final week, and the purpose of this focus group discussion was to allow the athletes to point out any changes in the coach over the season in relation to his coaching.

Data collection in cycle one

The first official contact was through a scheduled semi-structured interview between the coach and myself. I used this as an opportunity to assess the coach’s knowledge about autonomy-supportive coaching. By the conclusion of the 98-minute interview, we had planned cycle one and exchanged materials (e.g., season planners, team lists, and readings for the coach).

Cycle one data was collected through video recording, interviews, athletes focus groups and the recording of observational notes (see table 4). In total, five training sessions (training sessions 1, 2, 3, 7 and 8) were observed and of those two (sessions 1 and 3) were video recorded (total time 180mins). Michael and I met after training sessions two and three and held informal discussions that were audio recorded (total time 48mins) regarding aspects of his coaching for the week. Although it wasn’t scheduled during the planning phase, the game on Saturday in week two was audio recorded (57mins). The
choice to record the audio was Michael’s idea and given that I have the necessary equipment nearby and it was a simple way to collect some additional data. Michael and I met for 45mins after game two to discuss aspects of his coaching. The informal discussions post game on Saturdays continued during cycle one as it allowed Michael time to generally debrief about the games and for us to exchange comments and opinions. Mostly, these discussions were not audio recorded; however, I kept a record of interesting points (e.g., the language Michael used in the during the game) within my research diary for future discussions.

The athlete focus groups were held in weeks two and three during sessions four, five and six. The three focus groups each with three athletes each time and ranged from 46 minutes (group 1) to 29 minutes (group 3). Michael and I formally met on two occasions during cycle one. After training session six (in week three), I conducted a semi-structured interview with Michael that lasted for 53 minutes. Analysis of the video recorded trainings sessions and observational notes kept during the training sessions and game were complied to create an overview of Michael’s demonstrated coaching. This resulted in a ten minute edited video package of Michael’s coaching. The edited video displayed times when I perceived that Michael was coaching in both autonomy-supportive and controlling ways. For example, during a water break in training, Michael pulled an athlete aside and worked on some jump shots with him. During this exchange Michael commented on the athletes technique by saying “Yep, good work, nice follow-through, that’s great”. Additionally, Michael’s controlling behaviours provided (e.g., use of rewards and punishments and the provision of controlling feedback). The task for Michael was to review the edited footage collected in week one and two and submit his reflection regarding how he viewed his practice by selecting which behaviours he believed were autonomy-supportive and which were controlling. We used this reflection to begin the interview and went on to probe further to assess his level of self-awareness regarding his coaching.
Moreover, in cycle one Michael decided to allow the athletes work independently on any aspect of their basketball they wish for a period of 20 minutes to increase their autonomy. This was termed athlete independent training time (AITT). Finally, Michael and I met in week four to discuss the plan for the next cycle.

Table 4. Cycle one data collection

<table>
<thead>
<tr>
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<th>Tuesday Session</th>
<th>Thursday Session</th>
<th>Saturday Game day</th>
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<tbody>
<tr>
<td>Pre-interview</td>
<td>Semi-structured interview (98mins)</td>
<td>Session 1</td>
<td>Session 2</td>
</tr>
<tr>
<td>Cycle 1 Week 1</td>
<td></td>
<td>Observation</td>
<td>Informal discussion post training</td>
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<tr>
<td>Week 2</td>
<td></td>
<td>Session 3</td>
<td>Session 4</td>
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<tr>
<td></td>
<td>Video-recorded</td>
<td>Focus-group 1</td>
<td>Audio-recorded (57mins)</td>
</tr>
<tr>
<td></td>
<td>Informal discussion post training</td>
<td></td>
<td></td>
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<tr>
<td>Week 3</td>
<td>Session 5</td>
<td>Session 6</td>
<td>Game 3</td>
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<tr>
<td></td>
<td>Focus-group 2</td>
<td>Focus-group 3</td>
<td>Coach interview</td>
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<tr>
<td>Week 4</td>
<td>Session 7</td>
<td>Session 8</td>
<td>Game 4</td>
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<tr>
<td></td>
<td>Observation</td>
<td>Observation</td>
<td>Observation</td>
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<tr>
<td></td>
<td>Planning discussion</td>
<td>Athlete Independent Training Time (AITT)</td>
<td></td>
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</tbody>
</table>

Data collected in cycle two

Cycle two began in Week five with observation of training and informal discussions (see table 5). Five sessions (9, 10, 11, 14 and 15) were observed. Michael and I also spoke regularly during this cycle and informal discussions were held after sessions 9, 10, 11, 13, 14, and 15 as well as after each game on the Saturday (weeks, 5, 6, 7 and 8). The content of these discussions was primarily about the previous session where we would ask each other questions, talk about what worked well and generally about the project and his coaching (e.g., times when he felt he was controlling or autonomy-supportive). As I was playing the role of critical friend I rarely recorded these discussions, but instead kept notes in my research diary. Two sessions were also video recorded (sessions 12 and session
16). Michael also started to keep a reflective diary, where he would self-reflect on his coaching.

Table 5. Cycle two data collection

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<tr>
<th>Cycle 2</th>
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<tbody>
<tr>
<td></td>
<td>Session 9</td>
<td>Session 10</td>
<td>Game 5</td>
<td>Observation</td>
<td>Observation</td>
<td>Informal discussion post game</td>
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<td></td>
<td>Observation</td>
<td>Observation</td>
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<td>Informal discussion</td>
<td>Informal discussion</td>
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<tr>
<td>Week 6</td>
<td>Session 11</td>
<td>Session 12</td>
<td>Game 6</td>
<td>Observation</td>
<td>Video-recorded</td>
<td>Informal discussion post game</td>
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<tr>
<td></td>
<td>Observation</td>
<td>Video-recorded</td>
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<td>Informal discussion</td>
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<td>Informal discussion</td>
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<td></td>
<td>Michael audio diary</td>
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<tr>
<td>Week 7</td>
<td>Session 13</td>
<td>Session 14</td>
<td>Game 7</td>
<td>Observation</td>
<td>Observation</td>
<td>Informal discussion post game</td>
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<td>Informal discussion</td>
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<td></td>
<td>Video-recorded</td>
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<tr>
<td>Week 8</td>
<td>Session 15</td>
<td>Session 16</td>
<td>Game 8</td>
<td>Observation</td>
<td>Observation</td>
<td>Informal discussion post game</td>
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<tr>
<td></td>
<td>Observation</td>
<td>Video-recorded</td>
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<td>Informal discussion</td>
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Data collected in cycle three

During cycle three, four training sessions (training sessions 17, 18, 19, 24) were observed; of these sessions 19 and 22 were video recorded (total time 90mins). During the observations, data were recorded in a research dairy, which was used to stimulate discussions between the coach and myself (see Table 6). I acted as a sounding board for Michael regarding the plan for this cycle and held numerous informal discussions after training and games where I would ask questions related to aspects of his coaching. As this was the final cycle, the athletes were involved in focus groups to gather data about their perception of Michael's coaching. The athlete focus groups were held during weeks 10 (session 19), 11 (session 21), and 12 (session 23). Originally, it was planned that these would occur in the final two weeks; however, not all athletes who completed their focus groups during cycle one were present at training on the same days. The focus groups
ranged from 18 minutes (group 1) to 32 minutes (group 3). Michael and I met informally during cycle three where we would discuss aspects of his coaching in relation to the plan. Additionally, Michael and I held a formal interview in week 12 (session 24) after the last training session of the year. In this interview we reviewed cycle three and planned to meet in the following week for a final interview.

Table 6. Cycle three data collection

<table>
<thead>
<tr>
<th>Tuesday Session</th>
<th>Thursday Session</th>
<th>Saturday Game day</th>
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<tbody>
<tr>
<td>Cycle 3</td>
<td>Week 9</td>
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<td></td>
<td>Session 17</td>
<td>Session 18</td>
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<td></td>
<td>Observation</td>
<td>Observation</td>
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<tr>
<td></td>
<td>Informal discussion</td>
<td>Informal discussion</td>
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<td></td>
<td>Session 19</td>
<td>Session 20</td>
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<td></td>
<td>Observation</td>
<td>Focus-group 1</td>
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<td></td>
<td>Informal discussion</td>
<td>Informal discussion</td>
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<tr>
<td></td>
<td>Session 21</td>
<td>Session 22</td>
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<td></td>
<td>Focus-group 2</td>
<td>Video record</td>
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<td></td>
<td>Session 23</td>
<td>Session 24</td>
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<td></td>
<td>Focus-group 3</td>
<td>Observation</td>
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<td></td>
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<td>Coach interview</td>
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<td></td>
<td></td>
<td>Semi-structured interview (122mins)</td>
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The following section outlines the narrative of the AR cycles and provides the results and discussion.

**Results and Discussion**

*The desire to change: Initial meeting*

Prior to the start of the AR process, Michael was provided relevant academic articles on autonomy-supportive coaching as he showed an interest in developing his coaching practice. Michael and I met in during the pre-season and spoke about aspects of the study such as; training and games schedules, his goals for the season, how data would be
collected and my role as critical friend. In addition, we spoke about what he hoped to gain from the study. Michael stated that he wanted to improve his coaching practice by “looking at the reasons why I make them run lines. I’m trying to get them to work harder but I know that isn’t the right way”. He added that he wanted, “to motivate them without being the bad guy”. Finally, Michael mentioned that he understood the principles of autonomy-support but was “unsure how to use it in training and games”. We decided that developing his knowledge about how to motivate others using SDT principles would be a priority for his coaching this season. Specifically, we would attempt to create a need-supportive environment by moving him towards a more autonomy-supportive coaching style.

I wanted to gather an understanding of how Michael related to the autonomy-supportive style. With some probing, Michael was able to name the seven pedagogical behaviours outlined by Mageau and Vallerand (2003), which proved a good starting point to assess his knowledge base. He was also able to mention key terms such as intrinsic, extrinsic, self and non-self determined motivation. However, Michael was more interested in the pedagogical behaviours as indicated by a flood of questions. Michael questioned the notion of quality versus quantity, for example; “What I don’t get is – if I display all seven behaviours am I autonomy-supportive? What if I do a couple really well but some not so well? Do they need to be there all the time?” Michael raised some interesting questions, questions I had in fact asked myself when reading through the autonomy-supportive literature. I responded that I felt the behaviours in isolation mean very little, instead, my understanding of the work of Mageau and Vallerand (2003) was that the seven behaviours were a part of a pedagogical approach, more like a way to coach, a holistic plan of how to manage the athlete-coach interaction, a blue print of sorts. I went on to say that central to the autonomy-supportive behaviours is the notion of considering others and that putting the feelings and thoughts of the athlete into the coaching process above those of the
coach could be our overarching focus. In essence, “let’s provide a structure where the guys feel good about themselves in basketball this year”.

We ended the interview with the decision that Michael would continue to coach during week one and two how he normally would. I would use the first four training sessions (weeks one and two) and the two competitive games to observe his coaching and collect initial data. The data collection included my observations, our informal discussions, the first interviews with the players and audio and visual recordings of training. As mentioned, I stressed to Michael that the first two weeks were going to be used to “see where we’re at”. In essence, it was important for me to observe Michael’s normal coaching style. I finished by saying that the data collected in weeks one and two would inform the subsequent cycles of the project. It was emphasised that this would be a process that he would lead and direct based on the data findings from each cycle. He seemed content with the plan and was excited that he had begun to take the first steps to changing his coaching practice.

**Cycle one: Becoming aware of coaching practice**

Cycle one was guided by two aims. First, to observe Michael’s coaching and to establish his self-awareness of coaching practice and second, to gain an understanding of how the athletes perceived Michael’s coaching. The data collection included observations, video recordings, interviews, focus groups, and field notes. I planned to observe Michael’s coaching over a two-week period and use my observational notes and video recordings as stimuli for discussions that would assist him to develop his awareness of his coaching practice. One of the major benefits of observation is that it allows the researcher to get close to practice within specific contexts (Öhman & Quennerstedt, 2012). As part of this, I planned to develop an edited video of Michael’s coaching that Michael could view and reflect on before formally meeting with me to discuss. Secondly, it was planned that data
collected in the first two weeks would establish an understanding of his coaching behaviour so that comparison could be made at the conclusion of the project.

Michael would be involved in a semi-structured interview during cycle one which was to occur in during week three or four. The goal of this interview would be to get an idea of how Michael perceived his coaching and for us to discuss the next steps for the project. The interview format (see Appendix I) included topical questions followed by ‘probes’ to encourage Michael to consider his responses carefully and reflexively (Ennis & Chen, 2012). Also within weeks two and three I initiated data collection from the athletes about their perceptions of Michael’s coaching through athlete focus groups. Focus groups are useful in bringing together a group of individuals in a supportive environment where participants can share a range of views and perspectives associated with the topical questions (Ennis & Chen, 2012). For some of the athletes, discussing the coach’s practice may be threatening so focus groups allowed for athletes to support each other as well as build on or challenge others responses. This process, in turn, allows for the researcher to probe at critical points of interest in relation to the research focus (Patton, 2002a). Finally, towards the end of week four, Michael and I planned to meet to discuss cycle one and plan for cycle two.

**Coach self-awareness**

During our meeting in week two, we discussed the notion of autonomy-support based on the work of Mageau and Vallerand (2003). Particularly we discussed what the behaviours might look like within a basketball setting. He listed four of the seven behaviours with examples but he couldn’t remember the last three. Failure to recall all seven behaviours highlighted that Michael was only understanding autonomy-supportive from a basic level. To be able to demonstrate the behaviours he would need engage with the concept practically. Hence, I probed Michael about times in the last two weeks when he thought he was displaying an autonomy-supportive approach. Michael responded with
three examples that he could remember but admitted that examples weren’t immediately obvious. This further highlighted that Michael would need some grounding in the theory so that he would be able to self-evaluate his coaching using the lens of Self-Determination theory in the future. We turned to the edited video clips of Michael’s coaching to continue our discussion. Michael’s ability to identify which behaviours were either autonomy-supportive or controlling was an important aspect of this first cycle as it allowed us to begin to understand his level of self-awareness and understanding of his coaching behaviours.

When asked about the edited clip Michael acknowledged that he could see value in reviewing video data, “Well it’s weird seeing yourself coach, I’ve never seen what I look like when I coach so it’s strange but I think it could really valuable cause it adds an extra dimension or view to my coaching.” Michael struggled to assess his coaching behaviours as being autonomy-supportive or controlling as he felt the examples weren’t immediately obvious. I also took this as an opportunity to outline the core principles of SDT and specifically what an autonomy-supportive or controlling approach may look like. For example, in reference to autonomy-support; providing athletes with rationales and allowing for athlete input and for controlling behaviours; the use of punishment and use of controlling statements. We then looked at the video for a second time, with the new understanding of autonomy-support and control, Michael was able to identify behaviours such as when he punished athletes but less overt behaviours proved more difficult. For example, Michael identified the following statement he made to a player during a dribbling drill as an example of feedback, “good speed there, just watch it though cause when you move too fast you tend to lose control of the ball and if you want to make it you’ll need to improve that.” When I asked if he thought it was good feedback within the framework of autonomy-support and control, he replied that it’s a bit of both. When probed further about the intent of the term ‘make it’, Michael stated that it he was referring to the athlete improving his technical skills in basketball – he saw the feedback as aiding player
development. We discussed if the athlete would have perceived the feedback in the way Michael has intended. Michael was unsure, some of the other ways the athlete could have perceived the feedback were listed as, make the starting team, play in the top team in his senior year and even play professional basketball after school. This highlights the misalignment reported between coach feedback and athlete perceptions outlined in study two. Coaches, while well intended, can sometimes unknowingly use feedback that can be perceived as controlling by athletes. Mageau and Vallerand (2003) identified that the use of controlling statements that encourage athlete ego-involvement as examples of controlling behaviours used by coaches.

Michael acknowledged that he needed to work on his delivery to ensure that his intent matched his communication, hence he proposed that in that example he could have been autonomy-supportive through providing a rationale for why ball control was important. Our discussion provided me with some insights into Michael’s understanding of the autonomy-supportive theory as well as his level of self-awareness of his coaching. Theoretically, Michael’s understanding was limited hence, through the use of the video as a stimulus I was able to begin to educate him by using practical examples of his coaching. Michael was generally unaware of his coaching behaviours and in particular the messages he was delivering to the athletes and moreover how they might be perceived. An excerpt from my reflection dairy provides some detail to my thoughts about our discussion.

Overall, I think that he understands parts of what AS (autonomy-supportive) coaching is about but it really is at a basic level - need to help him increase his understanding of this. His level of self-awareness of his coaching behaviour in relation to AS and control is low – this needs to be developed further. It is clear that he feels that the sessions are structured so therefore this must be part of good coaching practice. More work needs to be done on this aspect. Today’s discussion was useful for both of us as it begins the process of working together and I was happy with our discussion about the video. In time hopefully, he will be better at critiquing his coaching and self-reflection.
For a coach to begin to understand the positive and negative implications of their coaching behaviour they must first develop a deeper level of self-awareness and reflection (Cushion, 2010). In cycle one, Michael was immersed in activities that were aimed at increasing his understanding of what he does and why he does it. These included interviews and discussions as well as self-reflection using a video stimulus. The discussion from the video data suggest that Michael was unaware of some his coaching behaviours. Furthermore, Michael was surprised by some of his coaching. For example, he mentioned that he had felt that the sessions weren’t engaging and that he was far more controlling than he had previously thought. It was only through stepping back, reflecting on his practice, asking questions and through our discussions he started learning more about his coaching practice. In light of the evidence collected from the athletes and from the video data he began to increase his self-awareness. Increasing the coach’s self-awareness was only one aspect of this cycle, it was important to give the athletes an opportunity to comment on how they perceived Michael’s coaching.

**Athlete perceptions**

During weeks two and three, athletes participated in focus groups. These focus groups targeted the athletes’ perception of Michael’s coaching. For example, athletes were asked, “What do you enjoy most about the coaching your receive?” and “What are some aspects of the coaching that you don’t like?” In addition, athletes spoke about what they hoped to achieve in basketball this season and the role they felt their coach played in achieving those goals.

The athletes spoke about their coach and in particular the coaching behaviours they preferred and those that were non-preferred. Most athletes commented that they wanted more feedback from Michael on their basketball performance in both training and games. For example; “he tells you what you are doing wrong but doesn’t always tell you how to fix it” (Damon) and “I’d like really like to improve and get some feedback on how to get better”
Most athletes mentioned that Michael didn’t provide a great deal of personalised and informative feedback during training but mentioned that he was quite positive towards the group when providing general feedback. For example, he would say “great work guys” or “good intensity” and “nice work” to the group.

The above examples highlight that Michael was using a mix of controlling and autonomy-supportive feedback. More importantly the athletes were able to distinguish between times when Michael was being supportive and times when he was controlling. Thus it seems that coaches are likely to engage in both styles (autonomy-support and controlling) to differing extents (Bartholomew et al., 2009). Such findings highlight the need to understand more about the factors that influence coach behaviours to be autonomy-supportive or controlling. Michael stated that the intent behind comments that are negative are not intended to be controlling. Instead he stated that when he focused on an athlete error his intention was to direct the athlete’s focus to improving the skill error for next time. However for his athletes, comments that point out errors without a suggestion for improvement are perceived as controlling. As Michael was now aware of his use of language he sought to use positive feedback regularly. This is exemplified by the quote below from week four after the Saturday game where he said;

I’m thinking a lot more about what I say now. You know, working out the best way to say things to the boys so that it’s positive. Even today in the game I wanted to make sure that when someone came off the court I spent half a second with them and looked them in the eye and said good job or something like that.

It was promising that Michael was beginning to become more aware of the impact of his coaching on his athletes. Specifically, as mentioned in the quote above he was actively seeking opportunities to provide positive feedback coupled with informational comments about how to improve. For example: “Great shot Peter, on the next one try and keep your elbow in line with your wrist and see if that helps with your follow-through”.
While Michael was thinking more about how he spoke to his players he still at times used feedback that were aimed to control athlete behaviour. More importantly his athletes perceived his use of feedback as controlling as well.

The athletes also mentioned their dislike of punishments during training, which included push-ups, and running as a result of not performing adequately. Gavin said, “I don’t like doing the running very much” as it took time way from playing basketball, which he enjoyed. Jake agreed when he said, “sometimes I don’t get it why I have to run for someone’s mistake”. In this example, the athletes were seeking a sound rationale from Michael as to why they all needed to run, which is congruent with the literature in SDT. When coaches provide a rationale for aspects of training they have the potential to satisfy an athletes’ psychological need for competence (Mageau & Vallerand, 2003). Other athletes mentioned that the coach use of punishments such as push-ups and running were a part of the basketball culture, for example Luke said, “every coach I have had here and at my club has made us run for making mistakes so you just have to do it.” It was also reported that the athletes wanted to play more games during training. “The drills he makes us do get a bit repetitive” (Jon) and “I would prefer to practice the drills in game situations” (Tom).

To gather some information about what informed Michael’s coaching practice we spoke about what assumptions underpin his approach. Michael mentioned that he was primarily focused on technical development, discipline, and playing hard. He was asked how he motivated his athletes. “One way is to make them run. The running is just to get them back on task and focused on what we are about to do and I also use for discipline”. Additionally, he added that he knew it was wrong, but stated that his former coaches when he played, used punishments (such as running) as a motivational technique and thus it has become part of his practice. To truly adopt an autonomy-supportive approach, Michael would have to consider his use of punishments. For Michael, the use of punishments to
shape his athletes’ behaviour was familiar to him given his experiences in basketball as a player. Research suggest that coaches tend to coach in ways similar to how they were coached as athletes (Lyle, 2002). The experiential nature of coaching practice highlights part of the challenge of behavioural change.

The athletes also reported on aspects of Michael’s coaching that they preferred. This included his basketball knowledge and his approachable manner. For example, athletes mentioned that he was knowledgeable about basketball, “He knows what he is talking about, he knows the fundamentals of basketball” (Charles). Gavin supported this notion when he said; “He has played at a high level so he knows a lot about basketball”. Finally, the athlete liked that he was approachable, “I would say that he is easy to talk to and he speaks to me about things other than basketball” (Toby).

**Cycle one summary**

The aims of cycle one were to establish how Michael perceived his coaching and to increase his level of self-awareness of his coaching as well as canvas the views of his athletes in relation to his coaching practice. The findings from cycle one suggests that:

- Michael has low self-awareness of his coaching;
- The use of feedback provided by Michael is not always aligned with his intent;
- The athletes sought more instances of positive and specific feedback from Michael;
- The athletes reported punishment as a non-preferred coaching behaviour; and
- Michael was approachable and knowledgeable about basketball from the athlete perspective.

The overarching aim of this thesis was to examine the factors that influence coaching behaviour. Exploration into why and how coaches behave as they do is important as the perception of these behaviours has the potential to impact on athlete motivation to the extent that it can influence whether athletes perform at an optimal, enjoy their participation,
exert persistence, and effort and experience intrinsic motivation (Amorose, 2007; Mageau & Vallerand, 2003; Smoll & Smith, 2002). Caution must be applied to devote attention purely to the observed behaviours of the coach. Just as important as the behaviours themselves is understanding the intent of the coach leads to the demonstrated behaviours. Hence focus was aimed at understanding Michael’s level of self-awareness within the coaching process and how his athletes perceived his coaching.

Towards the conclusion of the cycle one, Michael and I discussed what he had learned about his coaching during the four weeks. Michael stated that he felt that the early training sessions in weeks one through to three were very direct and drill focused. He rarely allowed athletes time for input or discussion. Further, at times he believed he was impersonal, not engaging in discussions with the players except for brief moments in training. Mageau and Vallerand (2003) contend that “coaching behaviours that provide structure and show involvement in athletes’ welfare represent important determinates for athlete’ perceptions of competence and relatedness” (p. 893). Hence, there was value in changing the existing structure of the training sessions for athlete outcomes as well as increasing coach support and involvement (e.g., the coach working with the athletes one-on-one and providing positive feedback). From our discussion there was evidence that Michael has started to consider his coaching more conscientiously than previously, as he also noticed that he was thinking about his coaching more regularly during his sessions. For example, Michael reported that after the video analysis discussion he was constantly thinking about what he was saying and how this aligned with his intentions. He acknowledged that constantly reflecting during his coaching was at times tiring as he found himself constantly asking questions and providing rationales. Michael was beginning to reflect in action (Schön, 1987). While this reflection in action was still at a superficial level, it provided some promising signs for the remainder of the project as the reflection could possibly increase his self-awareness.
In our final discussion in cycle one we begun planning for cycle two. It was mutually agreed that in cycle two he would allow the athletes to work independently at some point during each session and he would use this as an opportunity to provide positive feedback to help develop some rapport with the athletes (i.e., relatedness). Furthermore, the independent work completed by the athletes in training would be an opportunity to increase competence and autonomy in his athletes through giving the athletes the choice to work on whatever areas of their game that they wished (autonomy) and during this time it would allow Michael the opportunity to move around the court and provide personalised positive feedback to each athlete (competence). Finally, Michael would continue to engage in reflective practice about his coaching to continue his exploration into his self-awareness, in the form of a reflective journal.

**Cycle Two: Psychological need-satisfaction**

Based on the findings of the last cycle, the plan for cycle two was for Michael to structure his coaching sessions so that he could adequately satisfy the athletes needs for competence (through positive feedback) and autonomy (by providing the athletes opportunity to work independently). Mageau and Vallerand (2003) proposed that structure instilled by the coach along with the coach’s involvement has the potential to affect an athlete’s psychological needs (autonomy, competence and relatedness). Further, Jang and colleagues (2010) considered structure (within educational settings) to be an aspect of a teacher’s (or coach’s) interpersonal style that is used to promote student (or athlete) engagement. Hence in the attempt to create a psychological need-supportive environment for his athletes, Michael decided to focus on displaying an autonomy-supportive approach through the use of positive feedback and also to engage the athletes in training through giving them choice within boundaries, providing rationales, and allowing the athletes to work independently.
Michael and I discussed how he could best create an environment where all of the above were achieved. After some discussion Michael suggested changing his training approach through putting some time aside in training for the athletes to work independently which was referred to as athlete independent training time (AITT). Michael decided that AITT was to occur after the warm-up and was a section of the training when the players (either individually or in small groups) were free to choose to work on any aspect of their basketball they felt they needed to improve. Michael felt this allowed the athletes an opportunity to demonstrate some choice into what they wished to do, which is linked to athletes being autonomous. During AITT Michael would be autonomy-supportive through moving around the court and working with the players and providing positive feedback to increase their sense of competence. Research within SDT and autonomy-supportive coaching proposes that positive competence feedback is associated with a positive effect on athlete motivation (Mouratidis et al., 2008). It was planned that the AITT to be implemented in week five, session nine and scheduled to continue throughout the season.

Similar to cycle one, data was collected through observations, video and audio recordings, and informal discussions with Michael both before and after training. The purpose of the informal discussions was to allow the coach an opportunity to ask questions, discuss how he was feeling about the project and to give him a space where he could reflect on his practice. While Michael had begun to develop self-awareness of his coaching through cycle one, it was useful for him to continue to develop this aspect. Hence, his self-awareness was a constant theme through cycle two and beyond as coaches might have limited awareness of how often they behave (Cushion, 2010). Furthermore, as Tinning (1995) states, “if becoming reflective were simply a rational process then it would be easy to train” (p. 50). The addition of a reflective diary would also assist Michael by providing him with a space to write his thoughts and feelings. Finally,
video and audio recording was to be used again as stimulus for discussions. Once a session was recorded I would watch and listen to the video and audio and take notes that could assist in the questions I would ask in my discussions with Michael. In sum, the aim of cycle two was for Michael to create a coaching context that satisfied the psychological needs of the athletes as well as continue to develop critical reflection and self-awareness of his coaching practice.

Creating a need-supportive environment

The first session in cycle two started with Michael asking the athletes to choose between three types of warm-ups. Mageau and Vallerand (2003) proposed that providing the athletes with options within boundaries contributes to satisfaction of an athlete’s need for autonomy. It appeared that Michael was starting to experiment with autonomy-supportive behaviours in his coaching. In my reflective journal I noted, “…provides options within limits for warm-up. Athletes respond with a show of hands.” In the first cycle, Michael rarely allowed his athletes the opportunity to choose training activities so this was additional evidence that Michael was thinking about his coaching in an autonomy-supportive way.

Once the warm-up was complete, Michael introduced the AITT by outlining that the players were able to move around the court and work on an aspect of their game they felt they needed to improve (e.g., dribbling at speed, jump shots, lay-ups). However, unlike the warm-up, Michael didn’t provide the athletes guidance around what aspects they may like to develop. As a result, some of the players moved quickly to a hoop and started shooting and playing one-on-one, others dribbled around the court, and some looked paralysed by the abundance of choice and the lack of direction provided by Michael. During the AITT Michael, immediately went over to the athletes that were off task and started by asking some questions to help direct their focus. This resulted in Michael telling the two athletes to work on some pressure dribbling. Michael then moved on to provide feedback to other
athletes but before he moved away he said he would be “back to check-up on them later”.

In this instance, Michael was effective in his attempt of providing athletes with an opportunity to be independent and creative (e.g., autonomy-supportive). Yet in the same exchange he was also able to be less autonomy-supportive, through directive statements and surveillance.

Furthermore, I noted that some athletes struggled with the concept of working independently. As proposed above, some of the athletes were challenged by the freedom of choice during the AITT. This was because Michael failed to communicate the desired outcomes clearly. Structure not only refers to the activities outlined but also the clarity of the information that coaches provide about athletes’ expectations and ways that athletes can demonstrate the desired outcomes (Jang et al., 2010). It was apparent that the athletes were unfamiliar with choosing how to best spend their AITT. Michael sensed the confusion after the first session that incorporated AITT, when he said; “Some of them were a bit lost at the start so I had to go around and tell them what to do, which defeats the purpose”. He added, “I know when I went to help I was really controlling and just told them what to do without really asking for their input”. Michael and I discussed how he may add some additional clarity in his instruction of AITT. Eventually, Michael decided that he would provide the athletes choice within boundaries in the AITT. For example, instead of asking the athletes to pair up and work on an aspect of their game they wished to improve he would additionally use choice within boundaries to increase clarity. The excerpt below demonstrates the difference in how AITT was presented in week five, session ten:

Our game on Saturday was really good but there are a few things that we could have done better. Who can tell me something we did well and something we didn’t? (Response from athlete was shooting and making baskets under pressure). Good! So for the next 20 minutes or so, after you have paired up, you can either work on shooting under pressure, lay-ups under pressure, or passing under pressure. While
you’re doing one of those I’ll come around and work with your pair to help you out.

Make sense?

In the short dialogue taken from Michael’s training session, he allowed athletes the opportunity for input and allowed the athletes choice within boundaries. Unsurprisingly, given the clarity of his instructions, the athletes went on without confusion to work on aspects of making baskets under pressure. As a result, Michael continued this format of asking for input and giving the athletes choice for the reminder of the season.

By week six of the AR project, changes in the structure of Michael’s sessions were observed. Michael had included more opportunities for athlete choice (e.g., choice of drills, warm-ups, games); additionally, the AITT sessions became a permanent element in the training sessions. As a result, the training sessions had moved from drill and skill sessions to sessions layered with athlete input, choices within boundaries, autonomous working time, and increased game play. Michael had improved his instruction regarding the set-up of these activities to the point that the players knew what to do and where to move. Also, given our informal discussions about autonomy-supportive coaching and in particular the behaviours espoused by Mageau and Vallerand (2003), Michael decided to provide rationales for what athletes should focus on during AITT. For example, if Michael noticed during game that aspects of defence needed to be improved he would use this as an example of what could be worked on during AITT. Now that Michael was providing athletes with rationales as to why they choose to focus on a particular aspect of their game, the athletes were able to connect between the purpose of the training and their own improvement. Originally, the designated time put aside for AITT was 10 to 15 minutes, however by weeks seven and eight, this time had increased to thirty minutes of the session. Michael felt positive about these changes when he commented after a training session that; “it’s working well. I think the boys like it”. I agreed with this observation, as for me as the critical friend, the sessions appeared far more engaging now compared to
earlier in the season. To confirm this change, I edited small sections of sessions 1 and 3 (cycle 1) and the added some small sections of session 13 (cycle 2). Michael reviewed the clips and he wrote about the differences in his reflective journal. Michael noted that he had moved away from sessions filled with skills and drills, the athletes spoke more (input into training) compared to sessions one and three where the most dominate voice was his, the athletes tended to laugh and appeared to behaving a good time in cycle two compared with cycle one, and there was more creativity (athletes trying out different moves) in cycle two clip compared to cycle one. However, for Michael, upon reviewing the video, he noticed that his provision of feedback was at times a mixture of controlling and autonomy-supportive. While Michael was creating a need-supportive environment through his new structure, lacking in his sessions was adequate positive feedback (coach involvement).

Provision of feedback

One of the aims of cycle two was for Michael to consider his use of feedback. Through informal discussions and self-reflection (through reviewing the edited video) it was identified in the final week of cycle two that Michael’s provision of feedback varied between positive and negative feedback. The motivating role of feedback (positive and negative) for athletes is well supported in the SDT literature, where coach use of positive feedback has the potential to satisfy one’s feeling of competence while negative feedback potentially thwarts athlete competence (Deci, Koestner, & Ryan, 1999). Throughout cycle two, we discussed how Michael might be able to support his athletes’ need for competence through his provision of feedback. Hence Michael was attempting to move away from feedback comments such as; “that’s not how you do that” (negative) towards feedback that is positive and has the potential to positively influence athlete competence (e.g., “Your jump shot has really improved due to the extra time you have put towards it”.

From my observations, Michael’s self report, and the video data there was evidence that Michael increased his provision of feedback to the players compared with cycle one.
Largely, the increase in the amount of feedback was predominantly due to the inclusion of AITT. Michael said, “The one on one time at the start of the session is giving me plenty of time to go around and work on aspects of their game”. Given the change in how Michael coached his athletes he was spending more time with his athletes in providing feedback and hence developing the skills of the athletes. Previously (during cycle one), Michael rarely provided the athletes with individual feedback (either negative or positive) so these results were encouraging. Through my observations of the training sessions I too noticed that the while the total amount of feedback had increased, the type or the delivery of the feedback warranted some attention. Regarding the development of an autonomy-supportive climate, it is the type of feedback that is important. The video data revealed that while Michael was working with athletes during AITT his language was a mix of informational feedback and a controlling communication style. Below outlines some quotes that Michael used during AITT in cycle two that demonstrate language that is autonomy-supportive, and those that are controlling.

“Nice work Tom, really like your follow-through” (autonomy-supportive feedback due to the focus on areas of competence)

“I’ve told you before that you need to make those easy baskets to stay in the starting team” (controlling feedback due to the threat of punishment)

Mageau and Vallerand (2003) contend that without adequate structure from the coach, athletes are unlikely to be progress their sporting pursuits. Equally as important is involvement within the structure, where a coach provides support and encouragement. During this cycle, Michael experimented with both structure and involvement with varying degrees of success. Michael agreed that he needed to consider his use of feedback and therefore the provision of feedback became a focus of cycle three.
Cycle two summary

The aim of cycle two was for Michael to create a need-supportive environment through considering the structure of his sessions and how he could increase his level of coach involvement through the provision of feedback. Additionally, similar to cycle one, Michael continued to increase his self-awareness of his coaching practice through reflections kept in a coaching journal. The findings from cycle two propose that:

- Michael had increased the quantity of feedback that he gave to his athletes;
- It was identified by Michael that the quality of the feedback needed to be provided in an autonomy-supportive way;
- The inclusion of AITT allowed the athletes' opportunities to provide input and to make choices during the training; and
- Based on data from cycle one, Michael didn’t use a form of physical punishment (e.g., push-ups or running lines) to shape behaviour.

This cycle highlights further Michael’s development of self-awareness of his coaching practice as he was beginning to offer solutions to problems rather than being lead by his critical friend. Further he was becoming more aware of how his behaviours affect the experiences of his athletes. The largest shift was seen in Michael’s ability to recognise times when he used controlling feedback. Moreover, he identified that this was to be an area that he wished to develop. This demonstrates the strength of an action research approach as Michael have moved from being lead by my insights and instead through his analysis of video and his coaching journal was beginning to lead the process. This was an encouraging sign as it had taken seven weeks of intensive work from Michael to start to drive the direction of the study with little prompting from me.

In our discussion at the end of cycle two we planned what Michael would focus on for cycle three. Given our discussion on how he provides feedback during cycle two
Michael decided that he would focus on providing autonomy-supportive feedback and removing the use of controlling feedback. He stated that he planned to be more supportive and encouraging to satisfy the athletes’ needs of competence and autonomy. Finally, given this would be the final cycle for the study it was planned that I would interview the athletes to gather their thoughts about how they perceived Michael’s coaching throughout the season.

**Cycle Three: Increasing need satisfaction through quality feedback**

The plan for this cycle was to continue to build on the creation of a need-supportive environment. Specifically, it was identified in cycle two that Michael needed to increase his use of positive feedback. Towards the conclusion of cycle two Michael and I spoke about his provision of feedback and he acknowledged it was an area that he wished to focus on for the final cycle. Michael choose to focus on his provision of feedback as he felt that it would allow him to connect with his athletes through caring for their development as well as increase their confident and ability in basketball (competence). Michael’s rationale for choosing to focus on positive feedback is supported in the literature. It has been shown in the literature that when one provides positive feedback, specifically in an autonomy-supportive way rather than controlling there are benefits for person receiving the feedback in relation to their feelings towards the activity they are engaged (Ryan, 1982). Hence Michael was interested in assisting the development of his players through the provision of feedback. Therefore the plan for cycle three was for Michael to increase the quality of his feedback by providing positive competence related feedback.

Broadly, the aim of this action research project was to assist Michael’s behaviour change from a less autonomy-supportive to a more autonomy-supportive approach. Therefore, as this was the final cycle it was also an opportunity to gather data from the players to capture their views on Michael’s coaching throughout the season. It was planned that the athlete focus groups would occur in the last two weeks of the season.
Additionally, as well continual informal discussions with Michael during practice, I conducted a formal and final interview with Michael the week after the season ended to gather his thoughts, feelings, and his sense of opportunities and challenges of the action research process. Finally, audio and video recordings were collected during cycle three in line with previous cycles.

**Athlete focus groups**

It was reported by the athletes that they had noticed a change in coaching behaviours during the season. Athletes were asked questions about training, for example; what aspects of training this year did you enjoy? What aspects of training didn't you enjoy? Athletes were asked questions about Michael’s coaching during the season, which were based on the responses they gave during the first round of focus groups. The focus groups highlighted that the athletes reported a change in the delivery of feedback (competence), the structure of training sessions (autonomy, competence) and enhanced rapport (relatedness) with the coach. The athletes mentioned that Michael was more forthcoming in his provision of feedback over the duration of cycle two and three. Specifically, they felt that he was providing them with helpful tips on how to improve. The athletes also recognised that Michael was more supportive, approachable and interested in their improvement compared to the start of the season. This was a pleasing finding given that increased feedback and specifically the provision of quality positive feedback was an identified aspect through the action research cycles. Finally, the athletes mentioned that the way training was structured changed over the duration of the season; namely research within SDT supports the notion that athletes prefer feedback that is positive and supportive coupled with tips for improvement.

The athletes mentioned that they noticed that the quality of feedback improved, they noticed changes in training, and a felt that they enjoyed playing basketball this season. For example, regarding quality feedback Luke said; “He’s more helpful. Like not
saying, “just do this” he was like telling us what we were doing well and how to improve.” Jake commented on the changes in training structure when he said; “He lets’ us choose what we do for our warm-up and other stuff. He’s given us more options to do in training and then works with us more.” Finally, Gavin said that he had enjoyed playing basketball more this season, for example; “At the start it was kind of boring and then it was fun to be here. And due to that I looked forward to school finishing so I could come and train.”

Coach interview

The focus of this cycle was for Michael to continue to increase his use of positive feedback with his athletes. It is interesting to note that at the beginning of cycle three, Michael and I had ceased talking about specific coaching behaviours and instead Michael was more interested in “creating a positive climate”. Michael stated,

At the start I thought being autonomy-supportive was all about doing the seven behaviours all the time, but I guess I’m coming to understand that it’s really about putting the boys needs and feelings ahead of yours and helping them feel valued.

I saw this as further evidence that Michael had changed the way he thought about need-supportive environments. He had begun to understand that a need-supportive environment was not about isolated individual behaviours but a pedagogical approach that enables the participants to feel connected, autonomous and competent. For Michael, the notion of structure and involvement provided a useful platform for him to begin to change his behaviour.

Mageau and Vallerand (2003) contend that a coach that provides structure and shows involvement allows the athlete to feel competent and connected respectively. During the action research cycles Michael identified his provision of structure and involvement as an area for development. It was evident that Michael demonstrated both structure and involvement from the first session however, in practice, each of these factors
operated in isolation from each other. In sum, he viewed aspects of his coaching practice as times where he would promote each of the psychological needs individually rather than as a complete package. Michael spoke about the difference between “structure or involvement” compared to “structure and involvement” when he said:

I know that in my first session, I didn’t ask them any questions. I just told them what to do, it was really organised, like “this is what you’re doing”. It was about routine or the structure of the session. And I know that’s not really right - they’re only doing it because I am telling them, not because they believe in it or want to. Now I get the sense that within the structure you include the positive feedback to help them feel more confident.

The above quote highlights two important points in relation to behaviour change. First, for Michael, the inclusion of structure was an aspect of his coaching that was already established. His experience as a player and coach has meant that he has participated in numerous training sessions over his playing career, so he was familiar with what a basketball session should look like. Second, through engagement with the action research process, Michael developed an understanding of how his knowledge of structure could be incorporated with an increased understanding of involvement. By providing Michael with tools for the provision of feedback meant that he began to understand that need-supportive environments are those where all psychological needs of the athlete are satisfied as opposed to targeting each need in isolation. Michael pieced this together when he said, “they are being autonomous which they get to choose what they want to work in the individual time, then through my positive feedback they are developing their competency in basketball”. This is important for the literature within coaching science as it suggests that coaches bring with them experiential understanding of sport content knowledge which is a useful starting point to begin to add layers of deeper understanding of their coaching practice through increased self-awareness and reflection.
Michael stated that he had developed a greater understanding of what autonomy-support means in compared to cycle one. He acknowledged that being autonomy-supportive required an investment of time and effort in his athletes to allow them to feel valued and place them as central to the process rather than coming from a very direct coaching orientation where the “coach knows best and you will do what I say” (Michael). He believed that it had had positive effects on his coaching but also in other areas. For example; “I feel that this project has influenced my teaching as well, I am thinking more about the students needs and how to help them get to where they want to be rather just telling them what to do all the time”. He also spoke about how he now understood that his use of feedback was a powerful way to connect with athletes when he said, “I never really thought too much about the effect of my feedback and how it is received. Over the past weeks I think that the boys are seeing me in a different way, a better way.” This comment is supported by his athletes who openly commented that over the season he had become “more approachable” (Jake), “friendly” (Luke), “relaxed” (Tom) and “I’ve noticed he has taken more of interest in” (Gavin). This was a positive sign as this was the focus of cycle three. Finally, Michael sensed that he had developed a greater understanding of his coaching practice through a shift in his reflection-in-action, “As a teacher you are always told about reflecting and I think before I was so caught up in training drills and plays I forgot about the players. This new sense of others has really opened my eyes and it’s like I’m seeing things for the first time”.

Overview of findings

In their motivational model of the coach-athlete relationship Mageau and Vallerand (2003) contend that three factors influence coach’s autonomy-supportive behaviour. Coaching behaviour in the form of autonomy-support is influenced by the coaches’ personal orientation, the context in which they are situated and their perceptions of athlete motivation. These antecedents of coaching behaviour warrant further empirical support.
with the coaching literature (Amorose, 2007). Understanding the factors that influence coach behaviour is a worthwhile endeavour as they impact on the potential of the environment being either need-supportive or need thwarting. Further, research proposes that athletes in need-supportive environments report higher levels of motivation, persistence and psychological well being whereas need-thwarting environments lead to drop out and dissatisfaction of the sporting experience (Amorose, 2007; Coatsworth & Conroy, 2009; Conroy & Coatsworth, 2007; Gillet et al., 2010; Mageau & Vallerand, 2003; Mallett, 2005). This section aims to discuss the general findings of the action research project in relation to the coaches’ personal orientation, the context, and coach perception of athletes’ motivation in his attempts to create a need-supportive environment through changing his coaching approach.

**Increased self-awareness and reflection can lead to behaviour change**

Michael and I met the week after the season finished to review the action research project. The aim of this project was to assist Michael to shift his coaching behaviour to an autonomy-supportive approach and consequentially create a need-supportive environment over the duration of the basketball season. Michael wanted to change his approach to a more autonomy-supportive approach so that his athletes experienced greater enjoyment and satisfaction in playing basketball. Michael believed he had developed deeper understanding of autonomy-support and the creation of a need-supportive environment. A constant theme throughout the action research cycles was a focus on enhancing the coach’s self-awareness and reflective processes. Through the increased self-awareness and reflection Michael developed a greater understanding of his coaching practice, for example, he said, “I never really thought too much about my coaching until this season. I guess one of the benefits of this project is that I’m more aware of the good things and not so good things I do”. This comment is supported by the literature in coaching where coaches may not be necessarily aware how their behaviours impact on the psychological
outcomes of others (Cushion 2010). This study proposes that the first step on the path to improving coaching practice might start with increasing coach self-awareness of their coaching behaviours.

Adopting an interpersonal style to coaching that took account of all the complexities of the coaching context was beneficial to improving Michael’s practice. In applied practice, Michael identified that attempting to solely demonstrate the behaviours outlined by Mageau and Vallerand (2003) was counterproductive to creating a need-supportive environment. The quote below demonstrated this shift in understanding of what it means to be autonomy-supportive.

“I thought it (autonomy-support) was just about being really positive, giving them lots of encouragement, doing the behaviours. But it’s more than that - it’s a lot of one-on-one time. It’s about finding value in that person. Individually giving them skills to develop. And rethinking what is success - not success necessarily in win/loss but success in getting them to think.

He spoke about how it was easy to get caught up in trying to display the behaviours as often as possible. For example, “I was just looking for times when I could ask for their input, or I would just provide a rationale just because it’s one of the behaviours – but it’s more than that”. By the end of the season, Michael had moved beyond an understanding of the autonomy-supportive behaviours in isolation and instead sought to focus on “creating a positive environment” which centred on “quality feedback, actually engaging with the boys asking them how I can help them get better.” Through an increase in self-awareness he acknowledged that the coaching process was not the product of a series of behaviours but a holistic pedagogical approach to satisfy the psychological needs of the athletes.

The change in Michael’s self-awareness was also demonstrated in the way he reflected on his practice. Michael acknowledged that through a greater understanding of his coaching practice he increased his reflective process. Initially, before this study,
Michael admitted that his reflective practice was mostly about technical and structural elements, for example; “I used really only think about what drills I was running and whether or not they were working in relation to what we were trying to do”. Further he added, “I never really thought deeply about the other stuff, like the athletes, it was mostly what are we doing and what are we doing next”. Michael instead now thought more about the athletes and their needs and these thoughts demonstrate a shift in his reflective practice through increased self-awareness. Research in the autonomy-supportive literature supports the notion that when coaches put the thoughts, feelings and opinions of others ahead of themselves they are likely to create a need-supportive environment (Mageau & Vallerand, 2003).

Michael felt that his engagement with reflective practice and self-awareness was the most beneficial aspect of the study. Through this in-depth understanding he was able to shift his approach and realign his views with his practice, he said, “I now understand that my role is to create an environment that assists in their learning and assists in fuelling their own motivation. Before this I thought my role was to crack the whip and run the drills to be successful.” For Michael this was a fundamental shift in his thinking about his coaching practice. The quote highlights Michael’s primary interest was in being perceived as a successful coach, which at times interfered with, his ability to consider the needs of his athletes. Once he realised that his role was able enabling others to develop and be better athletes did he really start to change how he interacted with his team. It took some time for him to truly let go of the control. Within a SDT framework this is a novel finding, however some caution must be acknowledged. For this coach, behaviour change occurred when he examined his coaching practice through developing self-awareness and self-reflection. It should be noted that for Michael this took several weeks to occur but he was committed to continuing the journey of self-reflection and self-awareness moving forward. Using reflection to mediate the relationship between experience and learning isn’t new, but
it has the potential to positively contribute to improving coaching practice (Gallimore, Gilbert & Nater, 2014). Future research should begin the process of behavioural change by first developing the self-awareness of the individual who is trying to change. Moreover, behaviour change is possible when coaches deeply understand the effects of their behaviour on others. Michael sums up this sentiment when he said;

What I noticed, especially at the end, the boys seemed to enjoy it a lot more. They seemed to enjoy basketball. But even from previous years, they weren’t sick of basketball by the end. They wanted to keep playing. That’s a good sign.

Challenges to changing behaviour

Michael believed that he demonstrated a behavioural shift towards a more autonomy-supportive approach. However, he commented that developing a need-supportive environment was challenging. In particular he spoke about the culture of basketball, time pressure, and the pressure to win as aspects that constantly challenged his willingness to fully adopt this new style. Mageau and Vallerand (2003) contend that even if coaches strongly believe in autonomy-supportive behaviours, the context ultimately shapes the behaviours that are demonstrated. Michael’s thoughts towards autonomy-supportive coaching had shifted through increased self-awareness and reflection however he struggled to convert this new mentality into practice. A possible barrier for the translation from theory to practice is the effect of pressures from others within the coaching context.

In this study, the coach felt pressure to emulate other successful coaches by adopting similar behaviours. Moreover, he believed that culture of basketball shaped his coaching behaviours. He spoke of this struggle when he said;

The big thing that I struggle with is having the Bobby Knights and all these winning college coaches, and seeing their method of coaching. And even the coach that I worked with in America, where he was more about controlling behaviours and then during this season I was trying to do the opposite - really it’s going against the grain.
There are not too many coaches in basketball that set up a completely autonomy-supportive environment I don’t think. There’s a culture in basketball about running lines and about doing suicides as a consequence for not achieving a target. And I think reading (John) Wooden really opens up or reiterates the autonomy-supportive environment and how effective it can be. So I’m trying to find ways to really buy into it – I know that an autonomy-supportive programme works but I want to find ways to really buy into it.

The above quote from Michael outlines the challenges that he faced in changing his behaviour. It highlights that while coaches may resonate with the theoretical principles of SDT and need-supportive environments, in situ, being autonomy-supportive is challenging. Theoretically, the benefits for adopting an autonomy-supportive style are well supported. However the translation from theory to practice was problematic in this study due to Michael’s perception that basketball culture values the provision of controlling behaviours. Moreover, for Michael, a controlling orientation was associated with quality coaching, given that many prominent basketball coaches have been successful by adopting this style. Therefore, he felt that by adopting an autonomy-supportive approach he was going against the behaviours that are valued within the culture. This was further highlighted when he spoke about the added pressures from those the outside team.

The culture of basketball; it (controlling) was the way I’ve been coached in the past; it was, not the confidence to let go but go against sort of the grain a little bit; and I guess being the coach I thought it was about performance and to get the win/loss ratio on my side. Also people expect you to be hard and strict. So there’s external pressures there and to sort of really let go and to become less controlling was difficult.

There is a perception by other coaches, parents and even the athletes that basketball coaches should be disciplinarians, enforcing strict codes of behaviour in order to achieve increased performance. Research has demonstrated that when people are pressured to perform they are more likely to emit controlling behaviours (Reeve, 2009). This is due to the coach becoming ego-involved in their work where the coaches’ own
interests are tied to the athletes’ performance. The coach in this study spoke about the pressure to win and dealing with expectation when he said; “There’s an expectation on me to win games. And I think that was a big issue for me as I wasn’t sure if what we were doing was going to produce results.” This quote highlights the largest issue confronting the adoption of autonomy-supportive coaching even in developmental sporting contexts. Coaches may not be entirely convinced that being autonomy-supportive produces competitive results. This understanding warrants future research. Coaches and indeed people in general have an inherent need to master challenges and be perceived as being competent (Deci & Ryan, 2002). This personal orientation can thwart the behaviour change process through bypassing the needs of the athletes through satisfaction of personal pursuits. A key line of investigation for future work is supporting the link between performance outcomes with an autonomy-supportive style. In line with Mageau and Vallerand’s model, this study supports the notion that the context in which the coach operates can positively and negatively affect coach behaviour. Currently, little empirical data has been collected to provide further evidence and is a direction for future research. However, this study proposes that further understanding the contextual factors may assist the behavioral change process.

Michael acknowledged that focusing on his coaching during the action research project was challenging. He admitted that when he started the project he was expecting to be lead through the process rather than taking ownership of his behaviour change. This is a key feature of action research, which mirrors one of the major tenants of SDT. For successful behaviour change to occur, one must internalise their actions and act free from pressures and feel that their actions are self-initiated. Michael mentioned that he was “surprised that you (the critical friend) wasn’t driving the cycles but instead asking me to think, answer questions and problem solve”. He went on to say that this made him feel that he was the implementing the behaviour change, which allowed him to go deeper into the
process. Specifically, Michael mentioned that it takes time and patience to develop a need-supportive environment.

The basketball season in the Australian school context is short, which impacts on what coaches believe they can accomplish in that timeframe. Michael stated that he only had 12 weeks of coaching with the current team and was doubtful that much could be achieved. After being part of the process he acknowledged that he was taking the first steps towards where he wanted to head. He constantly wrestled between what he wanted to the team to achieve and how long it was taking. For example:

I’ll think it’ll come, that being able to set it up will come with a little bit of time and experience, but I think the big thing I struggled with is patience, I think in an autonomy-supportive environment you have to be patient. Autonomy-support is not the coach telling you what to do - although that is what you want to do! Autonomy-supportive is more so planting ideas and making the player sort of almost like to figure it out for himself. Which I believe in the long term will be more beneficial, but in the short term, especially in the short school basketball season, it was hard.

In this quote Michael highlights his understanding that autonomy-supportive coaching is a holistic approach to coaching. Mageau and Vallerand’s (2003) list of autonomy-supportive behaviours might be interpreted that adopting the seven behaviours is unproblematic. Within applied settings, the coach can be constrained by time and as such may be likely to adopt a less autonomy-supportive approach in pursuing short term results. Further understanding of the effect of pressures (e.g., time) would be a useful direction for future work because time pressure may influence a coach’s willingness to try to be autonomy-supportive. This is likely because it is easier to tell athletes what to do (e.g., bench coaching) and make them accountable for performance rather than work with athletes to achieve the desired outcomes.
Limitations

The choice of methodology for study three was an action research project that sought to change coach behaviour over a period of a 12-week basketball season. In general, the findings of the project support previous work (see Reeve, 1998; Reeve et al., 2004) that adopting an autonomy-supportive orientation can be learned and developed over time. An action research approach was chosen as a useful methodology to employ given the emphasis placed on the participant to guide the research and ultimately his own behaviour change. Moreover, in action research there is an opportunity to bridge theory and practice as action research is conducted within applied settings with practitioners. However, with the conventions of academia and in particular the presentation of action research within a thesis has some implications and limitations should be acknowledged.

I found reporting data using Action research challenging. Within this thesis, the preferred method was to provide a narrative of the coach’s journey. This allowed an opportunity to clearly articulate what occurred and when to demonstrate the gradual shift over time. Furthermore, within this investigation, data was triangulated between the coach, the athletes, and myself in order to establish validity but also as a process of obtaining several viewpoints. From a research perspective, the presented narrative of the action research project could potentially be interrupted multiple ways at any given point. Hence the findings may lack generalisability to broader populations, yet that is not the purpose of such a case-oriented design. The action research process is designed to be context-specific which within the broader view of this thesis, logically adds to the work of Mageau and Vallerand’s motivational model, namely the role of the context on coaching behaviours.

The long lasting effects of the action research process are unknown. There was a shift in behaviour change over the duration of the 12-week study, which was supported by the data presented from the athletes, coach, and researcher. In theory, the action research
cycles of plan, observe, act and reflect are infinite, meaning that these loops continue over and over again as the coach improving their practice. In this work, three action research cycles were completed, however, for behaviour change to be lasting it requires serious commitment from the coach to continue with his own ‘action research’. Therefore it would be useful to see if the action research process has become part of the coach’s practice of continual self-improvement or if when left to his own devices the structure of the action research process falls away also.

Playing multiple roles (observer, critical friend, and researcher) was challenging. In the role of the critical friend I was trying to assist the coach in developing his practice by asking questions and providing stimulus for discussions. At the same time, I was directing this project from a research perspective, constantly trying to collect as much ‘value adding’ data in order to produce a high standard of research work. This meant that at times I was frustrated by the time taken for the coach to demonstrate the changes we had discussed. In reality, I constantly wrestled with displaying an autonomy-supportive approach while at the same time wanting to interject and tell Michael what to do and say (controlling orientation). There were occasions where I was directive towards Michael and others when I was asking questions, allowing for input and generally putting Michael’s needs ahead of my own. So like Michael, I was undertaking a reflection of my own practice as well. This has widened my understandings of what is means to adopt an autonomy-supportive approach. It is challenging to be completely autonomy-supportive all the time as there are factors such as pressure, cultural norms, and in some cases personal expectations that influence how we behave and interact with others. The notion supports the contention that coaches (and indeed my role in the project) likely move along a continuum of high autonomy-support to low autonomy-support, which is influenced, by the context and the actors within this context.
Conclusion

The key points are that behaviour change is challenging and behaviours are the product of complex person environment interactions. In order to adequately facilitate change researchers might consider the interplay between the coach and the environment within specific contexts. Key to behavioural change is the development of self-awareness. The behaviour change demonstrated by Michael was modest. It could be argued the greatest shift was seen in his understanding of his coaching process and autonomy-support (i.e., self-awareness). This is an important finding as during the project he changed his coaching behaviour by starting to promote a need-supportive environment. This finding is a worthwhile addition to the body of research in SDT and need-supportive environment and contends that shifting one’s coaching practice is challenging and takes time to develop.

Behaviour change is non-linear and is influenced by factors such as personal orientation and the context. It is interesting to note that Michael was PE teacher trained, wanted to change and was engaged in an intensive 12 week study, yet the only clear demonstration of behaviour change was seen in his self-awareness and his understanding of how to create a need-supportive environment. Future work needs to consider the findings of this study in line with assisting other youth sports coaches to adopt autonomy-supportive behaviours. The coach in this study found the movement towards a more autonomy-supportive approach difficult, as it was a new way to coach. Moreover, for some coaches the belief that autonomy-supportive coaching is ‘soft’ coaching may inhibit coaches to wholly adopt this style. For behaviour change to be successful, coaches need to fully endorse the change. The coach in this study demonstrated increased self-awareness, improved reflective practices, and increased knowledge of the process. Furthermore the athletes in the study reported that Michael’s behaviour changed during the season.
This study proposes many challenges to adopting an autonomy-supportive approach. Conversely, there are also opportunities for future work to consider and investigate further. As mentioned by Michael adopting an autonomy-supportive approach takes time, continual reflection and a commitment to self-improvement. Hence the long lasting effects of this project should be scrutinised and considered in further work. The coach in this study wanted to change as he immersed himself within the process. By the end of the project he had made gains in understanding and self-awareness but really only superficially began to experiment with translating this theory to his practice.
Chapter 6

General Discussion

The overarching aim of this thesis was to examine the causes of coaching behaviours and assist a coach to adopt an autonomy-supportive orientation through creating a need-supportive environment. The way people coach is important as it has the potential to influence the coaching context either positively or negatively (Mageau & Vallerand, 2003). This is an important line of inquiry because we want people to have positive experiences in sport through the promotion of holistic development, which includes, personal growth through optimal performance. Hence, how might we assist a coach to create an environment that is focussed from the perspective of satisfying the psychological needs of the athletes? What are challenges and opportunities within this process? Can a coach adopt a positive coaching orientation to facilitate the needs of his athletes? This thesis is broadly about changing the way people coach so the athletes have positive sporting experiences. To achieve this aim the three sequential studies were conducted. Each study is located within its own chapter, which discusses the limitations, implications and directions for future work, thus it would be verbose to repeat this again. The goal of this final chapter is to review the major findings of this body of work and to orientate the significance within the primary aim of the thesis; changing coaching behaviour. This project addressed the key research issues outlined throughout the thesis, including: a) the need for a greater focus on understanding how coach behaviour is influenced by their personal orientation, the context and their perceptions of athlete motivation, and in examining this, b) how a coach may change their behaviour to create an environment that is need-supportive. The following section will discuss the research in terms of these themes as well outline directions for future research.
Statement of findings

Deci and Ryan’s (1985) proposal of self-determination identified three psychological needs (for autonomy, competence and relatedness) as universal in a person’s pursuit for autonomous motivation. When these needs are thwarted (through pressure, coercion and threats) the behaviour is less likely to be self-determined and if sustained over time will be detrimental to one’s psychological well-being. Coaching research suggests that the coach influences the motivational outcomes of athletes through their actions, behaviours, and ultimately the coaching environment they create (Amorose, 2007). In their conceptual paper, Mageau and Vallerand (2003) provide evidence from educational, parenting, psychological and sporting literature to contend that the pedagogical package of autonomy-supportive coaching behaviours can potentially facilitate positive motivational outcomes for athletes. Contrastingly, Bartholomew and colleagues (2010) contend that environments, which are perceived as controlling, can thwart psychological need satisfaction and functioning. Both papers highlight the inherent possibilities derived from perceived coaching behaviour and in doing so highlight the contrasting interpersonal styles.

Mageau and Vallerand’s (2003) motivational model proposes the influence of coaching behaviours on athlete psychological need satisfaction. Recently scholars (e.g., Amorose, 2007; Jowett & Ntoumanis, 2004) have identified investigation into the antecedents of coach behaviour is warranted to improve coaching practice and the experiences for athletes. This thesis aimed to begin to contribute to this research gap by investigating the factors that influence coach behaviours described by Mageau and Vallerand as the coach’s personal orientation, the context and perception of athletes motivation. Within this investigation this is outlined by three sequential studies that build on each others findings.
Study 1 (see Chapter 3) aimed to provide an overview of coach and athlete perceptions of coaching behaviours. The results of the study suggest that coach and athlete differ in relation to their perception of the coach behaviour. Specifically athletes viewed their coach as less autonomy-supportive compared to the coaches. This study highlights that what coaches think they do might be perceived differently by the athletes. In relation to Mageau and Vallerand’s model, if athletes perceive their coach’s behaviour as less autonomy-supportive it can result in a need thwarting environment. In sum, there is misalignment between how the context is perceived by the coach and the athletes. While this finding was insightful, the quantitative nature of this study failed to provide detail as to the areas of disagreement and agreement in the coach and athlete sample. In an attempt to further explore coach and athlete perceptions, study 2 adopted a qualitative approach to provide detail about the areas of congruence and incongruence.

Study 2 (see chapter 4) sought to provide coaches and athletes an opportunity to describe the factors that influence the behavioural choices of coaches. This study used qualitative research methods to understand the differing of perceptions between athlete and coaches in relation to coaching behaviour. The results of this study suggest that coaches generally misunderstand what motivates their athletes and thus use punishment tactics to motivate. Secondly, in relation to feedback, coaches while well intended are mostly unaware about how their behaviours are perceived. Furthermore, two possible explanations were proposed as to why coaches resort to less autonomy-supportive style: a) due to the belief that controlling behaviours motivate athletes and b) coaches are unaware of how their behaviours are being perceived. With reference to Mageau and Vallerand’s motivational model, coach behaviour is influenced by their perceptions of athlete motivation and the coach’s personal orientation. These findings of this study informed the final study of the thesis by providing an avenue of increasing coach awareness through a directed action research project.
Given the previous two studies provided valuable insight into the factors that influence coach behaviour, the final study sought to assist a coach in creating a need-supportive environment by adopting an autonomy-supportive orientation. The primary aim of Study 3 (see chapter 5) was to change coach behaviour from less autonomy-supportive to a more autonomy-supportive approach. This involved a season long assisted behavioural change program in which the coach worked through three action research cycles in order to change his practice. The results of this study suggest a modest change in behaviour over the 12-week season. Specifically the coach: a) developed increased self-awareness of his coaching practice, b) developed an increased understanding of how his behaviours influence athlete motivation and c) implemented new ways of providing structure and support within his coaching context. However this study also highlighted the inherent difficulties in changing behaviour in the sporting context; Namely, the role of the context and cultural practices in thwarting the opportunity for coaches to support the needs of their athletes. In consideration of Mageau and Vallerand’s model, this study supports the notion that the context, personal orientation of the coach and their perception of athlete motivation influences coach behaviour, yet while this association is theoretically supported, translation in practical settings is challenging. The interplay between these antecedents and coach behaviour is largely influenced by the coaching context. In situ, the coaching environment is constantly changing and coaches at times can be reactive, which might be perceived by athletes as being on a continuum of less-autonomy-supportive or more autonomy-supportive.

Translation of theory to practice

The research in sport coaching suggests that adopting an autonomy-supportive interpersonal style is the preferred way to coach given the psychological benefits for athletes (Mageau & Vallerand, 2003). In their seminal work Mageau and Vallerand outline seven behaviours that coaches can adopt to be autonomy-supportive which should foster
satisfaction of the three psychological needs, especially autonomy and, in turn, promote internal (self-determined) motivation, and subsequent adaptive outcomes in athletes’ cognitions, feelings, and behaviours (Mageau & Vallerand, 2003; Vallerand, 1997). The adoption of an autonomy-supportive interpersonal style to sport coaching seems straightforward; that is, adopt the pedagogical behaviours espoused by Mageau and Vallerand and coaching practice should produce positive athlete outcomes. Coach behaviour change was the primary aim of this thesis. The organisation of the studies in this thesis build towards the Action Research project (Chapter 5) as little is known about how to facilitate a successful shift to an autonomy-supportive approach. Hence, the purpose of this section is to outline some of challenges and opportunities with the translation of theory to practice in creating need-supportive environments.

A major barrier to the translation of theory to practice within the SDT literature is the perception of how successful coaching contexts are created by head coaches. Controlling coaching behaviours have been demonstrated in research to exist in sport settings (Bartholomew et al., 2009). Hence, these behaviours are so prevalent that in many cases they have become normalised to the extent that controlling athletes is seen as necessary means for achieving successful outcomes. Even though it is known that these behaviours thwart the long-term psychological outcomes for youth athletes (Mageau & Vallerand, 2003). When coaches coach in manner that is not consistent with how others (e.g., parents, other coaches, and even the athletes) perceive what successful coaching should look like it can influence one’s reluctance to adopt an autonomy-supportive coaching style. In the unpublished work by Byrne (2010), his autonomy-supportive style within a youth basketball setting was perceived by others as ‘soft’ coaching. Additionally for the coach involved in this thesis (chapter 5) mentioned how his perception of what quality coaches in basketball do and how they motivate their athletes was in stark opposition to the autonomy-supportive style he was attempting to adopt. The view that an autonomy-
supportive approach is soft or unlikely to produce results is a challenge for coaches and therefore may explain why even though there is support in the literature for being autonomy-supportive, in practice, coaches may choose to coach in a way that is viewed as leading to success or to be accepted. For research in SDT and autonomy-support the greatest challenge is promoting the autonomy-supportive approach as the preferred way to coach to the point that viewed by the sporting community as the only way to coach. However, until future research is able to link an autonomy-supportive to athletic success it is the role of sport coaching researchers and coach education practitioners to continue to promote the benefits for adopting this style.

Another challenge in the translation from theory to practice within sport coaching settings revolves around the personal characteristics of the coach. Ego involvement is the extent to which a coach is invested in the performance of their athletes (Mageau & Vallerand, 2003). As a result, the self-image of the coach creates internal pressure to perform and hence adopt an approach that is controlling so to have the largest effect on the outcome (Iachini, 2013). For a coach who is seeking to win at all costs is likely to overlook the thoughts, feelings and subsequently the needs of their athletes in the pursuit of successful outcomes. The theory would suggest that coaches who have the ability to place the athletes needs first are truly adopting an autonomy-supportive that, in turn, can increase the quality of the relationships between coach and athlete (see Study 3). However it is questionable if a coach who may be the epitome of autonomy-support can even suppress their ego-involvement to the extent to which they are wholly focussed on their athletes needs. Hence further research should investigate the role of coach’s personal characteristics, specifically at what times ego-involvement form the coach is either high or low and how athletes perceive this in relation to their coaching behaviour.
Contribution to research and directions for future work

Capturing the opinions of both the athlete and the coach within their context has contributed to our understanding of how each perceive the environment. This is a novel approach as coaching research has largely foregrounded the opinions of the athletes in coming to understand coaching behaviours. Hence, numerous studies in autonomy-supportive coaching literature have been conducted from the athlete perspective. This work has broadened this line of investigation by centralising the coach within the research. The rationale for this shift is due the influence the coach has on the outcomes of athletes and therefore it makes sense to collect information from all the actors within the environment in order to be able to describe the whole environment. In addition, studies 1 and 2 not only support the contention that athletes perceive their coaches as less autonomy-supportive compared to coach self-report but also provide some justification as why there is misalignment. Further investigation into this misalignment of what the coach thinks they do compared to what the athletes perceive is a useful starting point for changing behaviour. The current body of work has attempted to align these perceptions. Future work should consider this notion further by not only investigating how coaches coach but also why coaches coach the way they do. More specifically, research that targets exploration of additional dimensions of coaching behaviours for both control and autonomy-support would contribute to our understanding of how coaching behaviours are interpreted by athletes.

This work has provided coaching research with a reliable tool to measure the coaching environment. The ASCB was introduced as a new holistic measure of the coaching environment. While the ASCB should still be tested and questioned in future work it certainly plays a role as a useful discussion point between athletes and coaches to access how the environment is being perceived. Furthermore, through implementation within the coaching context the ASCB provides athletes with an opportunity for input into
the coaching context, which is line with SDT and autonomy-supportive coaching. Lastly the ASCB is useful to coaches in assisting with their professional development through increasing their self-awareness and reflexivity. Behaviour change is challenging and the findings from study three suggest that becoming reflective and self-aware may begin the change. Self-reflection is an effective tool that can improve awareness about a coach’s current practice and enhance professional development (Ahlberg, Mallett & Tinning, 2008). As such the ASCB may be useful for coaches in developing their understanding of the “critical points” within the season in which they are prone to adopting a less and more autonomy-supportive orientation. Future work should also include the role of structure and involvement of the coach in order to complement the autonomy-supportive behaviours demonstrated by the coach to fully encapsulate the coaching environment (Amorose, 2007). Finally, the ASBC would benefit from use in differing populations (outside of Australia), sports (team and individual) and levels (participation to elite).

Mageau and Vallerand’s motivational model has been cited through this thesis, specifically the role of the antecedents of coaching behaviours. Other researchers in the field (see Amorose, 2007; Stebbings et al., 2011) the role of the coach personal orientation, the coaching context and coach perception of athlete motivation has been largely overlooked in the coaching literature. This work has begun to fill this gap. This thesis has provided empirical support for Mageau and Vallerand’s motivational model by supporting the notion that these three factors influence coaching behaviours. Additionally, this thesis has offered some considerations for how these three factors influence the behaviours of the coach, which is briefly summarised below.

• Regarding personal orientation; it was presented that coaches adopt less autonomy-supportive orientation due to the perception that controlling strategies are more likely to produce competitive results. Increasing one’s self-awareness of their coaching may assist in changing their personal orientation.
• Regarding the coaching context; influences coaching behaviours as when a coach is under pressure they tend to adopt less autonomy-supportive styles to control the result and the hence bypass the thoughts and feelings of their athletes. Additionally within coaching there is a general perception that quality coaches are those that enforce discipline and use punishments.

• Regarding perception of athlete motivation; it is proposed that how coaches perceive the motivation of their athletes influences their coaching behaviours. In sum, the coaches in this study misunderstand how to motivate athletes and rely on the use of punishments to shape desired behaviours from athletes.

Further work within the sports coaching literature should examine these findings with differing contexts. Also, observation in practice settings may hinder our views of coaches; hence more work needs to be completed in competitive settings. Finally, research would benefit from more SDT related intervention studies with sports coaching. While there are some interventions have investigated coaching behaviours (e.g., Smoll & Smith, 2002; Treasure, 2001), this work is one of a limited number of sports coaching interventions using a SDT framework. To truly change coach behaviours and improve the sporting experiences for athletes more applied research needs to be conducted within practical settings. An increase in the number of practical interventions to assist coaches to adopt an autonomy-supportive interpersonal style could potentially improve the experiences for athletes.

Conclusion

The primary purpose of this investigation was to understand the factors that influence coaching behaviour to improve coaching practice. The findings from this research extend the work of Mageau and Vallerand’s (2003) motivational model by
providing detail around the antecedents of coaching behaviour. The main findings from this investigation were:

- Coaches and athlete differ in their perception of the coaching environment;
- Coaches misunderstand how to motive their athletes and tend to resort to the use of punishments to control athlete behaviour;
- Key to behaviour change is awareness as it seems necessary for coaches to be cognisant of their coaching behaviours and how these behaviours are perceived by those they coach; and
- Changing behaviour in the coaching context is challenging and takes continual time and effort from the person attempting to change.

In summary, the three studies presented in this investigation have sequentially built towards assisting a coach to adopt an autonomy-supportive coaching orientation with the youth basketball context. Future research should advance the current findings of this work with more coach focused behaviour interventions aimed at improving coaching practice and ultimately the sporting experiences of athletes.
References


Reeve, J. (2009). Why teachers adopt a controlling motivating style toward students and they can become more autonomy supportive. *Educational Psychologist, 44*(3), 159-175.


Tinning, R. (1995). We have ways of making you think, or do we? Reflections on "training" in reflective teaching. In C. Pare (Ed.), *Training Teachers in Reflective Practice of Physical Education*. Trois-Rivières, Quebec: Université du Québec à Trois-Rivières.


Appendices

Appendix A: Ethical approval for study one

5 April 2011

Mr Joseph Occhino
School of Human Movement Studies
Con nell Building
The University of Queensland
St Lucia QLD 4072

Dear Mr Occhino

Re: Ethical review of “Understanding coaching behaviours and motivational climate: A case study in basketball”

Thank you for the opportunity to review your proposal. I am pleased to let you know that your project has been cleared in accordance with the ethical review guidelines at The University of Queensland. Your approval number is: HMS11/0504.

Please note that:

Amendments to any part of the approved protocol (however minor) should be submitted to me for consideration.

Signed statements of informed consent should be kept secure in case we need to access them in the future.

I wish you well with your research.

Yours sincerely,

[Signature]

Dr Olivia Wright
School of Human Movement Research Ethics Committee
Appendix B: Information and consent forms for coaches in study one

School of Human Movement Studies
HEAD OF SCHOOL
Professor Doune Macdonald

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CRICOS PROVIDER NUMBER 00025B

Information Sheet for Coaches Participating in Research Project

Introduction

You have been invited to participate in research examining motivation in basketball. The main aim of this research is to conduct in-depth analyses of how coaches perceive their own coaching compared to how athletes perceive the coaching they receive. By understanding this relationship we hope to discover what types of coaching athletes and coaches alike prefer and use this information to inform coach development.

Benefits

Specifically, this research will be useful in:

- Better understandings of how coaches what type of coaching basketball coaches in the Australian context predominately exhibit;
- Further understanding about what type of coaching youth basketball players prefer.

What is required of Participants?

Your participation is valued and appreciated. As a participant you are requested to complete a short survey. This survey will ask you questions about how you perceive your coaching and your motivational aspects related to your experience in sport and as a coach. There are no right or wrong answers, and we would appreciate you taking the time to answer the questions as faithfully as possible. Individual results will be free from any identifying features and the survey is purely used for research purposes. Overall the survey should take no longer than 20 minutes to complete.

Confidentiality and Data Security

This study has been cleared in accordance with the ethical review guidelines and processes of the University of Queensland. These guidelines are endorsed by the University's principal human ethics committee, the Human Experimentation Ethical Review Committee, and registered with the Australian Health Ethics Committee as complying with the National Statement. You are free to discuss your participation in this study with project staff (contactable on 3365 6313). If you would like to speak to an officer of the University not
involved in the study, you may contact the School of Human Movement Studies Ethics Officer on 3346 7768.

Data associated with this project will be kept in a locked filing cabinet for the duration of the project. Only the primary investigator will have access to this cabinet. However, the coaches will have access to their data when requested. After the project, the data will be archived securely for a period not exceeding five years after which it will be destroyed. Participants involved in the study will not be identified at the presentation of data, your comments will remain completely anonymous. Additionally your survey response is in no way related to your current employment, performance review or your state sports association. Your survey response will, once completed be collected by the primary researcher where all identifying features are removed.

Rights for the Participant

It is important that the requirements outlined above are carefully considered before agreement is given for participation. If you have understood the descriptions of the project outlined above and wish to volunteer as a participant, please do so. You will be able to withdraw from the study at any time for any reason without penalty. Your time and interest is greatly appreciated.

Yours sincerely,

Joseph Occhino
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Fax (07) 3365 6877
Email cmallett@hms.uq.edu.au
Consent Form for Participation in Research Project

Name  
________________________________________________

Project Title  Understanding coaching behaviours and motivational climate: A case study in basketball

Investigators  Joseph Occhino (UQ); Associate Professor Cliff Mallett (UQ), Dr Steven Rynne (UQ)

I consent to participate in the above project, the particulars of which, including details of procedures, have been explained to me.

I acknowledge that:

- I have been informed that I am free to withdraw from the project at any time and to withdraw any data supplied without penalty.
- The project is for the purpose of research and/or coaching and not for treatment or in any way related to employment.
- I have been informed that the information obtained from me will be kept confidential at all times.
- If I would like to speak to an officer of the University not involved in the study, I may contact the School of Human Movement Studies Ethics Officer on 3346 7768

Signed __________________________________ Date__________________
Appendix C: Information and consent forms for athletes in study one

Information Sheet for Athletes Participating in Research Project

Introduction

You have been invited to participate in research examining motivation in basketball. The main aim of this research is to conduct in-depth analyses of how coaches perceive their own coaching compared to how athletes perceive the coaching they receive. By understanding this relationship we hope to discover what types of coaching athletes and coaches alike prefer and use this information to inform coach development.

Benefits

Specifically, this research will be useful in:

- Better understandings of how coaches what type of coaching basketball coaches in the Australian context predominately exhibit;
- Further understanding about what type of coaching youth basketball players prefer.

What is required of Participants?

Your participation is valued and appreciated. As a participant you are requested to complete a short survey. This survey will ask you questions about how you perceive the current coaching you receive and your motivational aspects related to your experience in sport and as an athlete. There are no right or wrong answers, and we would appreciate you taking the time to answer the questions as faithfully as possible. Individual results will be free from any identifying features and the survey is purely used for research purposes. Overall the survey should take no longer than 20 minutes to complete.

Confidentiality and Data Security

This study has been cleared in accordance with the ethical review guidelines and processes of The University of Queensland. These guidelines are endorsed by the University's principal human ethics committee, the Human Experimentation Ethical Review Committee, and registered with the Australian Health Ethics Committee as complying with the National Statement. You are free to discuss your participation in this study with project staff.
(contactable on 3365 6313). If you would like to speak to an officer of the University not involved in the study, you may contact the School of Human Movement Studies Ethics Officer on 3346 7768.

Data associated with this project will be kept in a locked filing cabinet for the duration of the project. Only the primary investigator will have access to this cabinet. However, the athletes will have access to their data when requested. After the project, the data will be archived securely for a period not exceeding five years after which it will be destroyed. Participants involved in the study will not be identified at the presentation of data, your responses will remain completely anonymous. Additionally, your survey response is in no way related to your current or future selection in any team, nor will any of your responses be shared with any person except with the principle researcher. Your survey response will, once completed be collected by the primary researcher where all identifying features are removed.

**Rights for the Participant**

It is important that the requirements outlined above are carefully considered before agreement is given for participation. If you have understood the descriptions of the project outlined above and wish to volunteer as a participant, please do so. You will be able to withdraw from the study at any time for any reason without penalty. Your time and interest is greatly appreciated.

Yours sincerely,

Joseph Occhino
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Consent Form for Participation in Research Project

Name

Project Title  Understanding coaching behaviours and motivational climate: A case study in basketball

Investigators  Joseph Occhino (UQ); A/Prof Cliff Mallett (UQ), Dr Steven Rynne (UQ)

I consent to participate in the above project, the particulars of which, including details of procedures, have been explained to me.

I acknowledge that:

• I have been informed that I am free to withdraw from the project at any time and to withdraw any data supplied without penalty.
• The project is for the purpose of research and/or coaching and not for treatment.
• I have been informed that the information obtained from me will be kept confidential at all times.
• If I would like to speak to an officer of the University not involved in the study, I may contact the School of Human Movement Studies Ethics Officer on 3346 7768.
• If I am under the age of 18 I understand that a legal guardian must sign on my behalf

Signed _________________________________ Date__________________

Or

Legal Guardian Signature for under 18’s

Signed _________________________________ Date__________________
Appendix D: Ethical approval for study two

6 October 2011

Mr Joseph Occhino
School of Human Movement Studies
Connell Building
The University of Queensland
St Lucia Q10 4072

Dear Mr Occhino

Re: Ethical review of “Autonomy-supportive Sports Coaching: Investigating quality coaching in the basketball context”.

Thank you for the opportunity to review your proposal. I am pleased to let you know that your project has been cleared in accordance with the ethical review guidelines at The University of Queensland. Your approval number is: HMS11/0610.

Please note that:

Amendments to any part of the approved protocol (however minor) should be submitted to me for consideration.

Signed statements of informed consent should be kept secure in case we need to access them in the future.

I wish you well with your research.

Yours sincerely,

[Signature]

Dr Timothy Carroll
School of Human Movement Research Ethics Committee
Information Sheet for Coaches Participating in Research Project

Introduction

You have been invited to participate in research examining preferred coaching styles and views on quality coaching in basketball. The main aim of this research is to conduct in-depth analyses of how coaches prefer to coach and your opinions of the characteristics of quality coaching. By understanding this relationship we hope to discover what types of coaching athletes and coaches prefer and use this information to inform coach development.

Benefits

Specifically, this research will be useful in:

- Better understandings of how athletes in basketball are currently coached;
- Further understandings about the characteristics of quality coaching from the coach perspective.

What is required of Participants?

Your participation is valued and appreciated. As a participant you are requested to be involved in an interview, conducted by the primary researcher. The researcher will ask you questions about your current coaching and your opinion on what characteristics make up a quality coach. Your opinions are extremely valued and at all times will be free from any identifying features. Overall the interview should last about one hour and will be held at a time deemed suitable to you.

Confidentiality and Data Security

This study has been cleared in accordance with the ethical review guidelines and processes of The University of Queensland. These guidelines are endorsed by the University’s principal human ethics committee, the Human Experimentation Ethical Review Committee, and registered with the Australian Health Ethics Committee as complying with the National Statement. You are free to discuss your participation in this study with project staff (contactable on 3365 6313). If you would like to speak to an officer of the University not
involved in the study, you may contact the School of Human Movement Studies Ethics Officer on 3365 6380.

Data associated with this project will be kept in a locked filing cabinet for the duration of the project. Only the primary investigator will have access to this cabinet. However, you will have access to your data when requested. After the project, the data will be archived securely for a period not exceeding five years after which it will be destroyed. Participants involved in the study will not be identified at the presentation of data, your responses will remain completely anonymous. Additionally your interview response is in no way related to your current employment or performance review.

Rights for the Participant

It is important that the requirements outlined above are carefully considered before agreement is given for participation. If you have understood the descriptions of the project outlined above and wish to volunteer as a participant, please do so. You will be able to withdraw from the study at any time for any reason without penalty. Your time and interest is greatly appreciated.

Yours sincerely,

[Signature]

Joseph Occhino
PhD Candidate
School of Human Movement Studies
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Phone (07) 3365 6765
Fax (07) 3365 6877
Email cmallett@hms.uq.edu.au
Consent Form for Participation in Research Project

Name  ____________________________________________________

Project Title  Investigating quality coaching in the basketball context

Investigators  Joseph Occhino (UQ); Associate Professor Cliff Mallett (UQ), Dr Steven Rynne (UQ)

I consent to participate in the above project, the particulars of which, including details of procedures, have been explained to me.

I acknowledge that:

• I have been informed that I am free to withdraw from the project at any time and to withdraw any data supplied without penalty.
• The project is for the purpose of research and/or coaching and not for treatment or in any way related to employment.
• I have been informed that the information obtained from me will be kept confidential at all times.
• If I would like to speak to an officer of the University not involved in the study, I may contact the School of Human Movement Studies Ethics Officer on 3365 6380.

Signed _________________________________ Date__________________
Appendix F: Information and consent forms for athletes in study two

6 October 2011

Mr Joseph Ochino
School of Human Movement Studies
Connell Building
The University of Queensland
St Lucia QLD 4072

Dear Mr Ochino

Re: Ethical review of “Autonomy-supportive Sports Coaching: Investigating quality coaching in the basketball context”.

Thank you for the opportunity to review your proposal. I am pleased to let you know that your project has been cleared in accordance with the ethical review guidelines at The University of Queensland. Your approval number is: HMS11/0610.

Please note that:

Amendments to any part of the approved protocol (however minor) should be submitted to me for consideration.

Signed statements of informed consent should be kept secure in case we need to access them in the future.

I wish you well with your research.

Yours sincerely,

Dr Timothy Carroll
School of Human Movements Research Ethics Committee
Introduction
You have been invited to participate in research examining preferred coaching styles and views on quality coaching in basketball. The main aim of this research is to conduct in-depth analyses of how athletes prefer to be coached and the types of coaching they receive. By understanding this relationship we hope to discover what types of coaching athletes and coaches prefer and use this information to inform coach development.

Benefits
Specifically, this research will be useful in creating:

• Better understandings of how athletes in basketball are currently coached;
• Further understandings about the characteristics of quality coaching from the athlete perspective.

What is required of Participants?
Your participation is valued and appreciated. As a participant you are requested to be involved in a focus group. The participants of the focus group will involve yourself, some of your teammates and the primary researcher. The researcher will ask you questions about how you perceive the current coaching you receive and your opinion on what characteristics make up a quality coach. Your opinions are extremely valued and at all times will be free from any identifying features. Overall the focus group session should last about one hour and will be held at a suitable time for all participants.

Confidentiality and Data Security
This study has been cleared in accordance with the ethical review guidelines and processes of The University of Queensland. These guidelines are endorsed by the University's principal human ethics committee, the Human Experimentation Ethical Review Committee, and registered with the Australian Health Ethics Committee as complying with the National Statement. You are free to discuss your participation in this study with project staff (contactable on 3365 6313). If you would like to speak to an officer of the University not involved in the study, you may contact the School of Human Movement Studies Ethics Officer on 3365 6380.

Data associated with this project will be kept in a locked filing cabinet for the duration of the project. Only the primary investigator will have access to this cabinet. However, the athletes will have access to their data when requested. After the project, the data will be archived securely for a period not exceeding five years after which it will be destroyed. Participants involved in the study will not be identified at the presentation of data, your responses will
remain completely anonymous. Additionally, your participation in the focus group is in no way related to your current or future selection in any team, nor will any of your responses be shared with any person except with the principal researcher.

**Rights for the Participant**

It is important that the requirements outlined above are carefully considered before agreement is given for participation. If you have understood the descriptions of the project outlined above and wish to volunteer as a participant, please do so. You will be able to withdraw from the study at any time for any reason without penalty. Your time and interest is greatly appreciated.

Yours sincerely,

Joseph Occhino
PhD Candidate
School of Human Movement Studies
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Email cmallett@hms.uq.edu.au
Consent Form for Participation in Research Project

Name ____________________________________________________

Project Title  Investigating quality coaching in the basketball context

Investigators  Joseph Occhino (UQ); A/Prof Cliff Mallett (UQ), Dr Steven Rynne (UQ)

I consent to participate in the above project, the particulars of which, including details of procedures, have been explained to me.

I acknowledge that:

• I have been informed that I am free to withdraw from the project at any time and to withdraw any data supplied without penalty.
• The project is for the purpose of research and/or coaching and not for treatment.
• I have been informed that the information obtained from me will be kept confidential at all times.
• If I would like to speak to an officer of the University not involved in the study, I may contact the School of Human Movement Studies Ethics Officer on 3365 6380.
• If I am under the age of 18 I understand that a legal guardian must sign on my behalf

Signed _________________________________ Date__________________

Or

Legal Guardian Signature for under 18’s

Signed _________________________________ Date__________________
Appendix G: Outline of semi-structured interviews with coaches

Study two - Semi-structured interviews with coaches

Preamble about ethics

“As with all interviews your participation is voluntary and anything you say is strictly confidential as well. You will be assigned a pseudonym, or you may choose to create one, as will any names that you mention here on in and you won’t be referred to specifically in any further work unless I contact you and express written consent. Feel free to express your opinions; what I am seeking is open honest responses, as the focus of the interview is to elicit thoughtful considered responses. Take your time and if you would prefer not to answer something or don’t know the answer please say so.”

Part One: Demographic questions

1. Tell me about your coaching, when did you start? Why did you get involved in coaching?
2. Former player? Other sport involvement? What level? How long?
3. What do you like about basketball?
4. What team do you currently coach? Is this the team you coach mostly?

Part Two: Former Experiences

5. Think back to when you were a player (basketball or other), can you remember if you had a great coach (don’t need to know names)? If so, why were they so good? What did they do? Can you name some characteristics?
6. What about coaches you didn’t like? What did they do? Can you name some characteristics
7. When you think about your current coaching – How much of an impact do you think your former coaches had on your coaching say in your early days and then compared to now? What parts?
   - **Probe:** Look for link between how they were coached and how they coach now

Part Three: Personal Orientation and Context

8. How do you get the best out of your athletes in training and competition?
   - **Probe:** can you give me an example when you tried to or done this?
   - **Probe:** have you got an example of when you have tried it and it’s been difficult? How did you overcome this?
9. What do you think motivates your athletes?
10. Do you think you have an influence over their motivation? How? Can you provide an example?
11. How do you get your athletes to work harder?
   - **Probe:** use or rewards/punishment? Does this work for you? Why?
   - **Probe:** have you ever had anyone in your team who seemed to lack motivation? What did you do about that? Were you able to do anything about that?
12. Why do you coach?
13. Do you think the way you coach is the same or different to how you started out?

- **Probe:** How is it different or the same? How have you changed? OR why do you think you have stayed the same?
- How is this approach the same or different to how other basketball coaches motivate players?
- In what ways do you think you are similar or different to other coaches in your school? In your sport? Does this create problems for you?

14. Does the school have any influence on how you coach?

15. What are your goals for your team this season?


16. How would you describe the pressure you have placed on you to achieve these goals?

- **How important is it to achieve these goals?**
Appendix H: Outline of focus group discussion with athletes

Study two – Focus groups with athletes

**AIM:**
To understand what quality coaching in basketball is for these athletes
To understand to the culture of coaching of basketball from the players perspective

**Preamble about ethics**

“As with all interviews your participation is voluntary and anything you say is strictly confidential as well. You will be assigned a pseudonym, or you may choose to create one, as will any names that you mention here on in and you won’t be referred to specifically in any further work unless I contact you and express written consent. Feel free to express your opinions; what I am seeking is open honest responses, as the focus of the interview is to elicit thoughtful considered responses. Take your time and if you would prefer not to answer something or don’t know the answer please say so.”

**Part one: Quality coaching (individual task)**

This focus group is about coaching and in particular what type of coaching you prefer and why. To start with, can you individually fill out the sheet below. All you need to do is list all the things you can think of they you feel are examples of good coaching and poor coaching in basketball. Remember there are no right or wrong answers.

For example….

<table>
<thead>
<tr>
<th>Good coaching</th>
<th>Poor coaching</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Part Two: Use of the above material to probe about quality coaching, culture from the athletes perspective (group discussion)**
Once athletes have completed this –

- Ask them to rank their top 5.
- Then, as a group start an open forum discussion of what they wrote down and why.

Where possible probe for examples, more information, and why some are more important than others.

QUESTION: How might a coach get the best performance from you?

QUESTION: What do you think the % contribution of coaching to you basketball performance today?

QUESTION: in addition to being coached – how else did you learn about playing basketball?

Where possible use of the autonomy-supportive continuum.

The purpose here to gain some insight into culture of basketball.

E.g., if players want to be told what to do – why? (Answer: because that is the way I [we] have always been coached….)

Demographic questions

Age:

Gender:

How long have you been playing basketball?

Do you play club basketball? Yes No

Do you play sports other than basketball? If so what sports?
Appendix I: Ethical approval for study three

June 18, 2012

Mr Joseph Occhino
School of Human Movement Studies,
Connell Building
The University of Queensland
St Lucia QLD 4072

Dear Mr Occhino

Re: ethical review of the following project:

Autonomy-supportive Sports Coaching: Creating a positive motivational climate using an action research approach.

Thank you for the opportunity to review your proposal. I am pleased to let you know that your project has been cleared in accordance with the ethical review guidelines at The University of Queensland. Your approval number is: HMS12/0618.

Please note that:

(i) Amendments to any part of the approved protocol (however minor) should be submitted to me for consideration.

(ii) Signed statements of informed consent should be kept secure in case we need to access them in the future.

I wish you well with your research.

Yours sincerely,

[Signature]

Timothy J. Carroll
School of Human Movement Studies Ethics Committee
Appendix J: Information and consent forms for coach in study three

6 October 2011

Mr Joseph Occhino
School of Human Movement Studies
Connell Building
The University of Queensland
St Lucia QLD 4072

Dear Mr Occhino

Re: Ethical review of “Autonomy-supportive Sports Coaching: Investigating quality coaching in the basketball context”.

Thank you for the opportunity to review your proposal. I am pleased to let you know that your project has been cleared in accordance with the ethical review guidelines at The University of Queensland. Your approval number is: HMS11/0610.

Please note that:

Amendments to any part of the approved protocol (however minor) should be submitted to me for consideration.

Signed statements of informed consent should be kept secure in case we need to access them in the future.

I wish you well with your research.

Yours sincerely,

[Signature]

Dr Timothy Carroll
School of Human Movements Research Ethics Committee
Introduction

You have been invited to participate in research to assist your coaching practice in Basketball. The main aim of this research is to facilitate your development as a youth basketball coach using an action research framework. By participating in this research we hope to use the data collected to further inform coach development through providing a structure as to how coaches can promote positive experiences for youth athletes in basketball.

Benefits

Specifically, this research will be useful in:

- Better understandings of how athletes in basketball are currently coached;
- Provide researchers and resultant coaches with a practical implication of how autonomy-supportive behaviours can positively influence the motivational climate.

What is required of Participants?

Your participation is valued and appreciated. As a former student in SPCG7003 you are familiar with Action Research and the process. This study will adopt an action research approach where the primary researcher will act as your critical friend throughout the duration of the season. As the participant you are requested to be involved in two semi-structured interviews, be involved in discussions, planning sessions and contribute to observational notes all conducted by the primary researcher. The researcher will assist you in your intent of becoming more autonomy-supportive through the data collected within the action research process. Your opinions are extremely valued and at all times will be free from any identifying features. Overall the duration of the study will last throughout the GPS Basketball season.

Confidentiality and Data Security

This study has been cleared in accordance with the ethical review guidelines and processes of The University of Queensland. These guidelines are endorsed by the University's principal human ethics committee, the Human Experimentation Ethical Review Committee, and registered with the Australian Health Ethics Committee as complying with the National Statement. You are free to discuss your participation in this study with project staff (contactable on 3365 6313, Joe Occhino). If you would like to speak to an officer of the University not involved in the study, you may contact the School of Human Movement Studies Ethics Officer on 3365 6380 (Dr Tim Carroll).

Data associated with this project will be kept in a locked filing cabinet for the duration of the project. Only the primary investigator will have access to this cabinet. However, you will have access to your data when requested. After the project, the data will be archived securely for a period not exceeding five years after which it will be destroyed. Results from this experiment may be published. However, your individual results will be stored securely and published in such a way that it will be impossible to link any data to you personally. Participants involved in the study will not be identified at the presentation of data, your responses will remain
completely anonymous. Additionally your interview response is in no way related to your current employment or performance review.

Rights for the Participant

It is important that the requirements outlined above are carefully considered before agreement is given for participation. If you have understood the descriptions of the project outlined above and wish to volunteer as a participant, please do so. You will be able to withdraw from the study at any time for any reason without penalty. Your time and interest is greatly appreciated.

Yours sincerely,

Joseph Occhino
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Fax (07) 3365 6877
Email cmallett@hms.uq.edu.au
RESEARCH PARTICIPATION CONSENT FORM

Project Title: Autonomy-supportive Sport Coaching: Creating a positive motivational climate using an action research approach

Researcher: Joseph Occhino (School of Human Movement Studies, UQ)
Assoc. Prof. Cliff Mallett (School of Human Movement Studies UQ)
Dr Steven Rynne (School of Human Movement Studies UQ)
Dr Kristy McLean (School of population Health, QUT)

This study has been cleared in accordance with the ethical review guidelines and processes of the University of Queensland. These guidelines are endorsed by the University's principal human ethics committee, the Human Experimentation Ethical Review Committee, and registered with the Australian Health Ethics Committee as complying with the National Statement. You are free to discuss your participation in this study with project staff (contactable on 3365 6313; Joe Occhino). If you would like to speak to an officer of the University not involved in the study, you may contact the School of Human Movement Studies Ethics Officer on 3365 6380 (Dr Tim Carroll).

1. I, the undersigned……………………………… hereby acknowledge that I have read the information document, and that the specific sections of the document that are relevant to the present experiment have been drawn to my attention. I have been provided with a description of the experiment, including the purposes, methods, demands, and possible risks and inconveniences involved.

2. I am aware that I may withdraw from this research project at any time without penalty (even after I have signed this statement of participation), and that I am entitled to a thorough explanation of any procedure employed in the study. I understand that any information I provide will be treated confidentially, and that it I will not obtain any direct benefits from my participation other than what has been outlined in the participant information sheet.

3. I hereby consent to being a research participant in this study.

(Signed) ……………………………………………………………… Date: ………………………
(Witnessed by) …………………………………………………….. Date: ………………………
Appendix K: Information and consent forms for athletes in study three

6 October 2011

Mr Joseph Occhino
School of Human Movement Studies
Con nell Building
The University of Queensland
St Lucia QLD 4072

Dear Mr Occhino

Re: Ethical review of "Autonomy-supportive Sports Coaching: Investigating quality coaching in the basketball context".

Thank you for the opportunity to review your proposal. I am pleased to let you know that your project has been cleared in accordance with the ethical review guidelines at The University of Queensland. Your approval number is: HMS11/0610.

Please note that:

Amendments to any part of the approved protocol (however minor) should be submitted to me for consideration.

Signed statements of informed consent should be kept secure in case we need to access them in the future.

I wish you well with your research.

Yours sincerely,

[Signature]

Dr Timothy Carroll
School of Human Movement Research Ethics Committee
Information Sheet for Participating in Research Project

Introduction

You have been invited to participate in research where the main aim of this research to improve your experiences of Basketball. By participating in this research we hope to use the data collected to further inform coach development through providing a structure as to how coaches can promote positive experiences for youth athletes in basketball.

Benefits

Specifically, this research will be useful in:

- Better understandings of how athletes in basketball are currently coached;
- Provide researchers and resultantly coaches with a practical implication of how autonomy-supportive behaviours can positively influence the motivational climate.

What is required of Participants?

Your participation is valued and appreciated. This research is focussed on your basketball team and specifically your coach. This study will adopt an action research approach where the primary researcher will observe your basketball coach and attend your training and competition throughout the duration of the season. The focus of the research is about the coach and how he coaches you in Basketball and as such your participation in this study will be minimal. You may be asked at times to speak with the primary researcher informally about training and competition related to basketball. These conversations will likely occur during before or after training and you and your guardian/s will be notified prior to the discussion taking place. It must be noted that only players who have signed the consent form (including guardian consent) will be approached. Your opinions are extremely valued and at all times will be free from any identifying features. Overall the duration of the study will last throughout the GPS Basketball season.

Confidentiality and Data Security

This study has been cleared in accordance with the ethical review guidelines and processes of The University of Queensland. These guidelines are endorsed by the University's principal human ethics committee, the Human Experimentation Ethical Review Committee, and registered with the Australian Health Ethics Committee as complying with the National Statement. You are free to discuss your participation in this study with project staff (contactable on 3365 6313, Joe Occhino). If you would like to speak to an officer of the University not involved in the study, you may contact the School of Human Movement Studies Ethics Officer on 3365 6380 (Dr Tim Carroll).
Data associated with this project will be kept in a locked filing cabinet for the duration of the project. Only the primary investigator will have access to this cabinet. However, you will have access to your data when requested. After the project, the data will be archived securely for a period not exceeding five years after which it will be destroyed. Results from this experiment may be published. However, your individual results will be stored securely and published in such a way that it will be impossible to link any data to you personally. Participants involved in the study will not be identified at the presentation of data; your responses will remain completely anonymous.

Rights for the Participant

It is important that the requirements outlined above are carefully considered before agreement is given for participation. If you have understood the descriptions of the project outlined above and wish to volunteer as a participant, please do so. You will be able to withdraw from the study at any time for any reason without penalty. Your time and interest is greatly appreciated.

Yours sincerely,

Joseph Occhino
PhD Candidate
School of Human Movement Studies
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Phone (07) 3365 6313
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Assoc. Prof Cliff Mallett
Postgraduate Programs in Coaching
School of Human Movement Studies
The University of Queensland
St. Lucia QLD 4072
Phone (07) 3365 6765
Fax (07) 3365 6877
Email cmallett@hms.uq.edu.au
RESEARCH PARTICIPATION CONSENT FORM

Project Title: Autonomy-supportive Sport Coaching: Creating a positive motivational climate using an action research approach

Researcher: Joseph Occhino (School of Human Movement Studies, UQ)
Assoc. Prof. Cliff Mallett (School of Human Movement Studies UQ)
Dr Steven Rynne (School of Human Movement Studies UQ)
Dr Kristy McLean (School of population Health, QUT)

This study has been cleared in accordance with the ethical review guidelines and processes of the University of Queensland. These guidelines are endorsed by the University's principal human ethics committee, the Human Experimentation Ethical Review Committee, and registered with the Australian Health Ethics Committee as complying with the National Statement. You are free to discuss your participation in this study with project staff (contactable on 3365 6313; Joe Occhino). If you would like to speak to an officer of the University not involved in the study, you may contact the School of Human Movement Studies Ethics Officer on 3365 6380 (Dr Tim Carroll).

4. I, the undersigned……………………………… hereby acknowledge that I have read the information document, and that the specific sections of the document that are relevant to the present experiment have been drawn to my attention. I have been provided with a description of the experiment, including the purposes, methods, demands, and possible risks and inconveniences involved.

5. I am aware that I may withdraw from this research project at any time without penalty (even after I have signed this statement of participation), and that I am entitled to a thorough explanation of any procedure employed in the study. I understand that any information I provide will be treated confidentially, and that it I will not obtain any direct benefits from my participation other than what has been outlined in the participant information sheet.

6. I hereby consent to being a research participant in this study. NOTE if the participant is under 18 years of age a parent or guardian must sign on their behalf.

(Signed - Athlete)………………………………………. Date: ……………………..
(Signed – Parent or Guardian)…………………………. Date: ……………………..
(Witnessed by)……………………………………………….. Date: ……………………..
Appendix L: Semi-structured interview questions for coach

Interview Questions

1. What are your thoughts about the teams’ performance this season?
2. Can you tell what you understand about AS- what is it?
3. What do you like or dislike with the notion of AS coaching?
   - Do you think your understanding of ASC has changed, developed, stayed the same over the course of the season? How has this made you feel?
4. What are your coaching strengths?
5. What did you identify at the start of the season as an area of focus?
6. Do you think your coaching has changed this season?
   - In what ways?
   - What in your coaching behaviour changes this season did you find challenging? Why was this challenging?
   - Do you think that other coaches in Terrace BB could coach in this way?
   - What are your thoughts about the challenges with helping others adopt this style?
7. As leader in the program how do think your coaching is perceived?
   Provide an example from the parents of the boys – what do you think about that? Is this how you want to be perceived?
8. On providing choice – Can you provide an example when you did this? How do you feel this went throughout the season? What have you learnt with regard to choice? Has the way you provided choice changed? If so Why?
9. On asking questions – can you provide an example when you used this? What did you learn about your use of questioning this season? Do you think the way you have asked questions has changed? If so why?
10. On providing feedback – can you provide an example of when you used this? What did you learn about how you give feedback? Do you think the way you have provided choice has changed? If so why?
11. In the session where you played games all session – what did you like/dislike about this?
   - Did this feel like the way you have coached in the past?
   - What was the difference?
   - Did you feel comfortable in doing this?
   - Do you think the athletes were getting something out of this?
   - Do you think this is good coaching?
   - Is this what coaches are supposed to do?
12. On running lines – What do you feel about asking athletes to run lines? What are they learning?
   - When did you use this method last?
   - Why did you use that method?
   - Do you believe you achieved your desired goal?
Appendix M: Guidelines for focus groups with athletes

ATHLETE:

Please complete the questions below honestly. Your responses will be kept confidential (only seen by the researcher) and will not impact on your position within the team.

1. Age:____________________

2. How long have you been playing basketball? (years)____________________

3. Do you play club basketball? (circle)   Yes             No

4. Do you play sports other than basketball? If so what sports? (List them below)

5. Is this the first time you have been coached by Mr. Baruksopulo? (Circle)

   YES          NO

6. Think back to when Mr. Baruksopulo coached you and write down what are some of things that you can remember about his coaching. (See examples below).
Mr. Baruksopulo’s coaching is……..

Complete the your list below:

- 
- 
- 
- 
- 
- 
- 
- 

7. What do you personally want to achieve in basketball this season?

1. 
2. 
3. 
4. 

END OF SURVEY