CHAPTER 2: LITERATURE REVIEW

Introduction

The purpose of this chapter is to discuss the literature related to the roles of coaches and coach expertise that have helped frame the current study. This chapter investigates the literature from several perspectives. These include: (a) leadership theory situated in organisational psychology, (b) leadership theory adapted to the sport context, (c) leadership theory developed within the sport context, and (d) coach expertise research. The literature review highlights the shift from a leadership perspective to a focus on understanding the role and development of coaching expertise in the sport environment. Also explored within this literature review are changes in research methods, which have enabled researchers to take different approaches and ask different questions about the coaching process.

Early Models of Leadership

The majority of the research undertaken to explore and understand effective coaching in the sporting domain has its roots in leadership theory originating in organisational psychology (Chelladurai, 1980; Chelladurai & Carron, 1983; Chelladurai & Haggerty, 1978; Danielson, Zeihart, & Drake, 1975; Lenk, 1977). The corporate world has always sought to identify, develop, and enhance leadership within an organisation, and the sporting world has followed this model. Theories and models of business leadership have been adapted to sport based on the premise that sport and business have much in common (Ball, 1975).

Although sport teams and business organisations have similar elements such as identity, an exact roster of members, a program of activity, and procedures for replacing members, in other ways they are quite distinct (Caplow, 1966). Ball (1975) examined these differences in terms of specific structural characteristics, such as size, normative codification, positional interrelationships, and maintenance of public and
precise records. The day-to-day working of sports teams also differs from that of business in that the majority of time in sport is spent in preparation for competition, where performance is assessed. In business, the preparation period is shorter and assessment is continual. Researchers have raised questions regarding differences in motivation between participating in work and sport. Understanding the similarities and differences between business and sport has led to researchers adapting theories and models to better represent leadership in sport (Chelladurai, 1980; Chelladurai & Carron, 1978).

Leadership theories adapted from organisational psychology for the sport setting have been divided into four categories. These categories are: (a) personality theories (e.g., Carlyle, 1910), (b) situational theories (e.g., Hersey & Blanchard, 1969, 1977), (c) interactionist theories (e.g., Evans, 1970; Fiedler, 1967; House, 1971; House & Dessler, 1974; Osborne & Hunt, 1975), and (d) normative leadership approaches (e.g., Vroom & Jago, 1974; Vroom & Yetton, 1973; Yukl, 1971). Personality theory describes traits and behaviours as predictors of leadership. In contrast, situational theories proclaim that the situational context influences leadership behaviour. Interactionist theories take into account both the personality of the leader and the situation, and the effectiveness of the group is contingent upon the interaction between leadership style and the situation. Normative leadership approaches are prescriptive as they describe appropriate leader behaviours for specific situations.

**Personality Theories**

Early leadership research attempted to identify the personality traits that distinguished leaders from followers. The search for personality traits was driven by a belief that leaders were different. Personality theories like “great man theory” (Carlyle, 1910), proposed that great leaders would be great leaders in all situations. It was assumed that the individual achievements of great persons were the causal factors
of progress. Personality theories emphasised who the leader was rather than what the leader did. Various personality traits, social traits, and physical traits were identified to differentiate leaders from non-leaders (Filley & House, 1969). These theories were unsuccessfully applied to sport to try to identify personality traits and behaviours that predicted leadership effectiveness (e.g., Danielson, Zelhart, & Drake, 1975; Hendry, 1968; Lenk, 1977; Oglive & Tutko, 1966; Penman, Hastad, & Cords, 1984; Tutko & Richards, 1971).

To date, there has been little support for a common set of traits that differentiate between effective and ineffective leaders (Bass, 1981; Stoghill, 1974). Fiedler and Garcia (1987) argued that the weakness of this line of research is firstly that everyone is either a leader or follower on some occasions; hence, if everybody fulfils each of those roles, it is difficult to separate them based on personality attributes. Secondly, a person might be an effective leader in some groups and ineffective in others.

Locke (1991) claimed that trait theories (e.g., great man theories) are not totally wrong and yet are not fully accurate as theories of leadership. The possession of certain traits, such as honesty and high levels of energy, is a necessary precondition for effective leadership. If leaders are to be effective, however, they must use their traits to develop a vision, and implement the vision into reality. Therefore, traits only represent part of the picture.

Situational Theories

As personality theories proved ineffective as predictors of group performance, leadership research changed direction. Instead of investigating the effect of the leader on the situation, researchers investigated how the situation influenced leadership behaviour and their subordinates’ performances (Barrow, 1977). The situation referred to variables in the external environment.
Situational variables, such as subordinate behaviour, task type, task complexity, technology, and the size of the organisation, were found to influence leader behaviour (Bass, 1965; Baumgartel, 1956; Blau & Scott, 1962). As those factors continue to influence leader behaviour, however, the leader also influences, in turn, the situational factors.

Situational theories have been applied to sport irregularly. There has been more interest in exploring specific variables and their influences on leader behaviours compared to developing a deeper understanding of the leadership process. Hersey and Blanchard's (1969, 1977) situational theory was adapted and applied to the sport context to investigate the effect of athlete maturity on leadership behaviour (Chelladurai & Carron, 1983). Hersey and Blanchard (1969) defined maturity as the capacity of the person to set high but attainable goals, to be willing to take responsibility, in addition to the education and experience of an individual in a group. This definition was loosely applied to the sport domain, which led to difficulty in interpretation of results.

Fiedler and Garcia (1987) voiced concern over the exclusion of individual personality from the leadership equation in situated theories. Although the situation is important, it does not account for the differences observed in performance within two organisations with the same situational structure (Fiedler & Garcia, 1987).

Interactionist Theories

Interactionist theories underpin current models and research in the study of leadership effectiveness in sport. Proponents of these theories have considered a whole set of situational variables that may change the impact of a given set of leader behaviours. Variables, such as leader-member relations, task variables, structures and ambiguity, and the personality of both leaders and followers, are taken into consideration (Hunt & Larson, 1974). The interactionist approach is typified in
models such as contingency theory (Fiedler, 1967), path-goal theory (Evans, 1970; House, 1971; House & Dessler, 1974), and adaptive-reactive theory (Osborne & Hunt, 1975).

Contingency Theory

Contingency theory (Fielder, 1967), describes the effectiveness of a leader or group as contingent on: (a) the leader’s need structure, specifically, whether the leader is motivated through task achievements or the development of interpersonal relationships; (b) the leader’s situational control, which refers to the leader’s confidence that the task will be accomplished; and (c) the interaction between the leader’s need structure and situational controls. Task-oriented leaders perform best in situations in which they either have high or low control. Relationship-oriented leaders perform best in situations where they have moderate control.

The leader’s need or preference for a specific structure in contingency theory reflects the leader’s personality. Personality is separated into two dimensions; the leader is either relationship-oriented or task-oriented. Relationship-oriented leaders derive satisfaction from developing relationships with their subordinates and are influential if the subordinate perceives the leader in a favourable manner. If the leader is task-oriented, then the focus is on completing the task. Such leaders derive satisfaction from completion of the task, rather than from leader-subordinate relationships (Fiedler, 1967).

Although the leader may have a specific personality disposition (task or relationship), once outcomes are achieved it is probable that the leader will return to less important goals. Therefore, the task-oriented leader, having achieved the outcome, will return to the less important goal of maintaining relationships with co-workers. The relationship-oriented leader will not strive to better good interpersonal relations when they are already established. Under these conditions the leader will
attend to the task. Leaders shift from primary goals to secondary goals depending on
the level of situational control. Situational control plays an important role in providing
flexibility to shift from primary to secondary goals. It predicts when a task-oriented
leader is in a position to concentrate on interpersonal relationships and vice versa.

Leadership situational control involves factors in the environment that are
unpredictable and are capable of producing feelings of anxiety. An environment that
lacks structure (e.g., poor organisation support, unreliable athletes) is likely to create
feelings of insecurity, unease, and lack of control. Leaders have high control when
they are assured of achieving the outcomes. Insecurity is likely to occur when the task
outcome is uncertain. The determinants of situational control are: (a) group member
support for the leader; (b) clarification of the leader’s role, that is, how the job is to be
performed; and (c) evidence of organisational support for the leader and their dealings
with subordinates. The most important element of situational control is the group
member’s support for the leader because leaders feel more relaxed when they know
that they can depend on their subordinates (Fiedler & Garcia, 1987).

The second important element of situational control is the task structure, which
is divided into four dimensions. The first dimension refers to the clarity of task
description, that is, the goals and standards required. The second dimension is the
method to be employed to ensure task achievement. Here the critical issue is whether
there is more than one method that could be employed. The third dimension addresses
expected task outcomes, and the last dimension refers to how the task will be
monitored to ensure that everything is going according to plan.

The final element of situational control explores the real power the leader
possesses to achieve the task. The organisation’s capacity to confer enough power to
enable the leader to exert influence on the subordinates to perform the task is the
important factor. In sport, if the administration does not provide power and support to
the coach, it is unlikely that athletes will complete the task or perform to expectations, because the coach is viewed as essentially powerless. Power is also visible through rank, the power to dispense reward and punishment, and the group’s physical distance to the next highest boss. If a coach works in a country town 600 kilometres from the regional centre, then the athletes will be more dependent on the local coach to achieve personal outcomes due to ease of physical access.

The major point emerging from this theory is that leadership effectiveness, as measured by group performance, depends as much on the group situation as it does on the leader. One style of leadership is not better than another, nor is one type of leadership behaviour suitable for all types of situation. Therefore, almost anyone can succeed as a leader under some conditions and almost anyone is likely to fail in other situations (Fielder, 1967).

Fiedler and Garcia (1987) made several criticisms of the contingency model that relate to method. Task and relationship leadership measures correlate poorly with personality trait scores and various leader behaviour ratings. Only when situational factors are taken into account is there a correlation between task/relationship measures and interpersonal behaviours. A second criticism concerns the lack of a clear definition for situational control and, hence, a valid means of measuring the dimension. Situation control refers to the effects of the environment and how this psychologically affects leadership behaviour. There is a question as to whether this definition is too broad to be of considerable value. A third limitation is the lack of attention given to macro variables, such as size, structure, and technology. One such example is the adaptation of leadership behaviour based on organisational structure and culture. This adaptation of leadership behaviour suggests that leadership behaviours are externally driven as opposed to leaders using their preferred style of leadership. The most pertinent criticism of the contingency model is its inability to
predict performance from the interaction between task and relationship-orientated behaviour and situational control (Strube & Garcia 1981).

Path-Goal Theory

According to the path-goal theory of leadership (House, 1971; House & Dessler, 1974), leaders are effective because of their impact on subordinates’ motivation, which leads to satisfaction and the ability to perform effectively. There are two general propositions: (a) that leader behaviour is acceptable and satisfying to subordinates to the extent that the subordinate identifies immediate or future satisfaction, and (b) that leader behaviour will be motivational (i.e., subordinates’ needs are met in return for effective performance). The leader who provides a supportive environment may achieve these outcomes.

In path-goal theory, the strategic functions of the leader consist of: (a) recognizing subordinates’ needs for outcomes over which the leader has some control, (b) increasing personal rewards to subordinates for work-goal attainment, (c) clarifying the path to achieve those goals, (d) helping subordinates clarify expectancies, (e) reducing obstructions, and (f) increasing opportunities for personal satisfaction dependant on effective subordinate performance. Effective leaders vary their behaviour in accordance with the task, the personal characteristics of the subordinate, and the environmental pressures of the situation that the subordinates must deal with in order to accomplish work goals and satisfy member needs. Unlike other theories, in path-goal theory, House (1971) attempted to suggest not only what type of leadership style may be most effective in a given situation, but also to explain why it is most effective.

There has been strong support for the path-goal theory of leadership with regard to subordinate satisfaction, but not with regard to performance. The ideas
expressed in path-goal theory on the leader/subordinate relationship has markedly shaped leadership research (Dessler, 1973).

*Adaptive- Reactive Theory*

The adaptive-reactive theory (Osborn & Hunt, 1975) was an extension of path-goal theory. To be effective, leaders must also adapt to the individual needs of their subordinates and to the situations. By adapting to the situation and by meeting the needs, desires, and pressures of the subordinates, it is assumed that the subordinates will respond to the reactive behaviours of the leader. This adaptation becomes a two-way relationship; with leaders’ behaviours influenced by the preferences and needs of the subordinates, and the subordinates responsive to the behaviours of the leader. This theory assumes that the leader has the capacity to identify and respond to the subordinates’ needs, desires and pressures. Although an attractive proposition, it is hampered by issues of measurement and identification of subordinates’ motivations (Labey & Laskow, 2001).

*Normative Approaches to Leadership*

The normative leadership approach is prescriptive; it recommends leaders use specific types of leadership behaviour based on the situation and member knowledge. Leader behaviours and situational circumstances are identified; prescriptions are provided to assist in analysing the situation, after which the leader engages in an appropriate behaviour to achieve the optimal effectiveness in that situation. The normative model of decision styles in leadership (Vroom & Jago, 1974; Vroom & Yetton, 1973) and the discrepancy model (Yukl, 1971) have both been applied and adapted to the sporting environment.

*The Normative Model of Decision Making Styles*

Chelladurai and Haggerty (1978) proposed a normative model of decision-making styles for coaching, based on the original work of Vroom and Yetton (1973).
The model incorporates three styles of leadership: (a) autocratic, (b) participative, and (c) delegative. The premise of the model is that particular situations require a specific leadership style. The situational variables include: (a) the importance the decision, (b) what information is required and whether the leader possesses that information, (c) the complexity of the problem, (d) the degree of integration among group members, (e) the presence or absence of time restrictions, (f) the degree to which group acceptance of the decision is necessary or crucial, and (g) the amount of power the leader holds with regard to team members. For example, in sport, if there is time restriction and the coach has relatively high information, then an autocratic style of leadership is appropriate. Chelladurai and Haggerty (1978) stated that the premise of the model is that leaders do not, or should not, adhere to only one decision style. They should adapt their behaviour as a function of the situation and the characteristics of the group and its leader. The model provides a good representation of specific situations that can occur in the competitive situation it is not, however, definitive, as no two situations are the same.

The Decision-Style Questionnaire (Chelladurai & Arnott, 1985; Chelladurai & Quek, 1991) was developed to measure athletes’ preferences for context specific decision making styles. The questionnaire consists of a number of common problem cases or scenarios which need to be solved. The athlete identifies the decision making style they would prefer the coach to use in that case. Coaches preferred coaching style can also be measured. The coach reads the problem and responds with the decision making style they would use in that situation. Research investigating athlete and coach preferred decision making style is limited but does show promise for understanding the role of situational variables.
The Discrepancy Model

This model, as proposed by Yukl, (1971), describes satisfaction as being a function of the congruence between leadership behaviours preferred by the subordinates and the actual behaviour exhibited by the leader. Effective leaders must first be able to recognise the desires and needs of their subordinates and then deliver leadership behaviours that are consistent with those behaviours. The two leadership behaviours are: (a) consideration and initiating structure, and (b) decision-centralisation. Consideration refers to how and to what degree leaders act in a warm and supportive manner and show concern and respect for their subordinates. Initiating structure describes the degree to which leaders define and structure their own and the subordinates’ roles, as a method of achieving goal attainment. Decision centralisation describes the various decision-making procedures used by the leader, such as delegation, joint decision-making, consultation, and autocratic decision-making.

Yukl (1971) postulated that leader behaviours of consideration, initiating structure, decision-centralization, and various situational variables interact in their effects on several intermediate variables to determine leadership effectiveness. The intermediate variables are: (a) subordinate task motivation, (b) subordinate task skills, and (c) task-role organisation. The model predicts that subordinate task motivation is highest when the leader is high on both initiating structure and consideration behaviours; low decision-centralisation behaviours (participative styles) will cause high subordinate task motivation, and implicitly, greater subordinate performance, and leader initiating structure behaviours are positively related to subordinates’ task skill level. Yukl (1971) also hypothesized that even highly motivated subordinates will not perform well if they lack the necessary knowledge or skills to carry out their assignments. In this case leaders need to evaluate performance and correct deficiencies in subordinate task skills and knowledge through on the job instruction and improved
communication or task-relevant information. Task-role organisation refers to organisational skills, technical knowledge, and an understanding of subordinate knowledge. The relation between decision centralisation and task-role organisation is moderated by whether the leader or subordinate has greater organisational skills and task knowledge. When the leader has greater organisational skills and task knowledge but the subordinate lacks the necessary skills there is a negative relationship between participation and task-role organisation. When the subordinate has more relevant skills and knowledge than the leader, the assumption is there is a positive relationship between participation and task-role organisation. Decision centralisation therefore affects the relationship between subordinate motivation and participation. Thus, an intermediate degree of decision-centralisation will probably be best with respect to group performance.

In the discrepancy model, satisfaction is a function of the difference between a person’s preference for a particular dimension of leadership and their actual experience. The smaller the discrepancy between the subordinates’ leadership preferences and actual leadership experience, then supposedly, the greater is the satisfaction. One of the issues with the discrepancy model is that the discrepancy score, a score reflecting differences in subordinate satisfaction between preferred and actual leadership behaviour, may be affected by the importance placed on needs by the subordinate. If the needs are of little value, then the subordinate may not have a preference for a particular leadership dimension. Yukl (1971) suggested that, in the future, it may be necessary to build in a correction for importance; otherwise, discrepancy scores cannot be compared.

Yukl’s (1971) model specifies direct linkage between certain leader behaviours, subordinate behaviours, and expected outcomes. This model unravels and explores a number of components associated with leadership behaviour. Although the
measuring tool is designed to score subordinate satisfaction, it seems there is much to be gained from developing a tool to measure actual leadership behaviours.

The leadership research area has a long history; yet knowledge accumulation and theory construction are still in their infancy. As leadership research has evolved, it is evident that leadership is multifaceted. Although causal studies in leadership are rare, there is evidence that leadership style, disposition, or character do play some role and that there is a relationship between leadership behaviour and subordinate satisfaction. These early theories have provided the foundation and the direction for coaching and leadership research in sport.

Leadership in Sport

During the last 25 years, two major models of leadership in sport have emerged. The first of these is the multidimensional model of leadership (Chelladurai, 1980; Chelladurai & Carron, 1978) and this model was designed specifically for the sport domain. It theoretically represents and displays the components of leadership effectiveness and their interactions based upon the characteristics of both the members and the leader, and the parameters of the situation in which they find themselves. The multidimensional model (Chelladurai, 1980; 1990), unlike the previous theories, placed equal emphasis on the role of the coach, the athletes, and the situations, to account for performance and satisfaction in the sporting context. Smith, Smoll, and Hunt (1977) devised a second approach that investigates the ecology of the youth sport experience using a mediational model. The model’s foundation is that the relationship between the child athlete and coach is significant in determining the quality of the experience. It is distinct because its conceptual development is grounded in sport, and it takes into account the dynamic relationship between the coach and athlete, the situation, players’ and coaches’ perceptions of leadership behaviour, and the coaches’ overt behaviours.
Multidimensional Model of Leadership in Sport

Chelladurai (1978, 1990) recognised in the sport domain, that situational theories were unable to explain fully the components of effective leadership. He developed the multidimensional model of leadership (MML), based upon contingency theory (Fiedler, 1967), path-goal theory (House, 1971; House & Dessler, 1974), the adaptive reactive theory (Osborn & Hunt, 1975) and the discrepancy model of leadership (Yukl, 1971).

In the model, Chelladurai proposed that effective leadership is multidimensional and measured in terms of two outcomes, athlete performance and member satisfaction. The MML is a combination of three states of leader behaviour: required, preferred, and actual. The main supposition of the model is athlete satisfaction and performance are a function of balance between these three states of leadership behaviour (see Figure 1).

Figure 1. The multidimensional model of leadership (Chelladurai, 1991).
Leadership Behaviour Required By Situational Demands

The constraints and parameters of the organisation and its environment influence the leader’s behaviour. Factors such as the goals of the organisation, cultural values, and even government regulations encroach on leader behaviour. For example, the situational demands of a recreational coach and a professional coach are vastly different. The community basketball coach may only be concerned with factors affecting the athlete’s context, whereas the professional basketball coach would need to consider, at a minimum, the goals of the organisation, and the athlete and team context.

Leadership Behaviour Preferred By Group Members

The preference for particular leadership behaviours is determined by the characteristics of the individuals within the team or group. Variables such as goal orientation, perceived competence, and need for affiliation influence the members’ preferences for training and instruction, leadership style, social support, and positive feedback. An athlete with low perceived competence and a mastery goal orientation may prefer a coach who creates a mastery learning environment where performance is self-referenced and high levels of positive feedback behaviour are provided.

Actual Behaviour Displayed By Leader

The leader’s actual behaviour is determined by personal characteristics, including personality, ability, and experience. The other factor that influences actual behaviour is the situation. The requirements of the situation frequently dictate leadership behaviour. Therefore, when measuring the coach’s actual behaviour it is also necessary to identify the situational demands of the context.

Performance and Satisfaction

The athlete outcomes are reflected in performance and member satisfaction, and these are enhanced as a direct result of leadership behaviour. Chelladurai and
Carron (1978) pointed out that performance and satisfaction are not independent of each other, and are both enhanced as a result of leader behaviour. All three states of leadership behaviour jointly affect member performance and member satisfaction.

Chelladurai (1990) refined the MML to include the relationship between member characteristics and leader behaviour. He surmised that there were specific situations where athletes made poor decisions about their preferences for specific leader behaviour. These decisions encompassed situations where athletes lacked the intelligence, ability, experience, or personality dispositions needed to make judgements about their personal needs and desires and what was best for them in a specific situation. In these situations the leader would be required to make the decision for the athletes. Required leadership behaviour is influenced by the contingencies of the situation and by member characteristics (Chelladurai, 1990).

Research on the Multidimensional Model of Leadership in Sport

To date only segments of the MML have been tested. This research has concentrated on: (a) measurement of leadership behaviour, (b) factors affecting preferred leader behaviour, (c) factors affecting perceived leader behaviour, and (d) factors affecting the consequences of leadership.

Measurement of Leadership Behaviour in the Multidimensional Model of Leadership

The Leadership Scale for Sport (LSS; Chelladurai & Saleh, 1978, 1980) was designed to measure preferences and perceptions of coaching behaviour within a sporting context. The LSS measures five specified coaching dimensions. The five dimensions of leader behaviour are: training and instruction, social support, autocratic behaviour, democratic behaviour, and positive feedback (see Table 1 for behaviour definitions). The development of the LSS operationalised and allowed for measurement of the components of the MML. There are three versions of the scale,
measuring: (a) athletes’ perceptions of coaching behaviours, (b) athletes’ preferred coaching behaviours, and (c) coaches’ perceptions of their behaviours.

The LSS consists of 40 items representing the five dimensions of leadership behaviour. Of the 40 items, 13 measure training and instruction behaviour, nine assess democratic behaviour, five relate to autocratic behaviour, eight measure social support behaviour, and five report on positive feedback behaviour. Participants respond to each item by selecting one of five response categories, (a) always (100% of the time), (b) often (75% of the time), (c) occasionally (50% of the time), (d) seldom (25% of the time), and (e) never (0%). The three versions of the scale are differentiated through alteration of the item stem.

The LSS was developed using a two-stage process (Chelladurai & Saleh, 1978, 1980). In the first stage, the original pool consisted of 99 items derived from existing leadership scales; the items were modified to better reflect the sport context. Chelladuria and Saleh (1978) administered the scale to 160 physical education students (male = 80, female = 80) at a Canadian University. Following analysis, five factors were found to be the most meaningful: training, democratic behaviour, autocratic behaviour, social support and rewarding behaviour. Items were selected to represent the five dimensions based on high loading on one factor and low loadings on the other factors. The original pool was reduced from 99 items to 37 items.

In the second stage of development, several items were added to tap into the coaching behaviour of “teaching and training strategies in sport”, increasing the scale to 50 items. The revised questionnaire was administered to a sample of 102 physical education students (males = 45, females = 57) and to a male sample of varsity athletes...
Table 1

*Leadership Behaviour Dimensions in Sport (Chelladurai, 1989)*

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>Training and instruction</td>
<td>Coaching behaviours designed to improve athlete performance by creating a climate that emphasises hard and strenuous training, skill development, techniques, and tactics of the sport; role clarification of member relationships, and structuring and coordinating member activities.</td>
</tr>
<tr>
<td>Democratic behaviour</td>
<td>Coaching behaviours that encourage member participation in decision making pertaining to group goals, practice organisation, and game tactics and strategies.</td>
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<tr>
<td>Autocratic behaviour</td>
<td>Coaching behaviours where all authority and decision making power are exercised by the coach.</td>
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<tr>
<td>Social support</td>
<td>Coaching behaviours that reflects a concern for player welfare outside of the game or practice situation.</td>
</tr>
<tr>
<td>Positive feedback</td>
<td>Coaching behaviours that reward athletes for good performance within the game and practice situation.</td>
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</table>

*(n = 223) from different Canadian universities. The results supported a five-factor structure, but only accounted for a limited amount of variance across each data set (physical education students’ preferences, athletes’ preferences, and athletes’ perceptions of coaching behaviour). Ten items were excluded based on low loadings and whether the item surfaced across all three solutions. Although specific coach behaviour items were added to the scale, there may still be areas of leadership that the*
scale does not address. It is also possible that coaching does not reflect leadership at least as conceptualised with this instrument and requires the development of an alternative measuring tool derived from a different theoretical underpinning.

One example of an instrument derived from a different theoretical underpinning is the Coaching Behavior Scale for Sport (CBS-S; Baker, Cote, Hawes, 2000; Cote, Yardley, Hay, Sedgwick, & Baker 1999). Unlike the LSS (Chelladurai & Saleh, 1978, 1980), which was adapted from organizational psychology for the sport context, constructs and item scales for the CBS-S (Cote et al., 1999) were extracted from a series of qualitative studies with athletes and coaches and input of experts on coaching at the Institut National du Sport et de l’Education Physique. The input of coaches and athletes was valued for the authenticity and intimate knowledge they have of the training, competition, and organizational environment.

*Psychometric Properties of the Leadership Scale for Sport*

*Reliability.* The results from the test-retest reliability estimates from 53 physical education students after a four-week interval were .72 for training behaviour, .82 for democratic behaviour, .76 for autocratic behaviour, .71 for social support, and .79 for positive feedback (Chelladurui & Saleh, 1978, 1980). The reliability values are satisfactory and compare favourably to those reported in the literature for similar scales. Dwyer and Fischer (1988) investigated the psychometric properties of the coaches' version of the LSS. To increase the internal consistency of the coaches' version of the LSS, items were deleted from the democratic, autocratic, and the social support subscale. Although the three subscales did show improvement in their coefficient alphas, the results were less than the recommended level, so interpretation of data using these subscales should be carried out with caution.

Several authors have investigated the internal consistency of the LSS
(Chelladuria, 1986; Chelladuria & Saleh, 1980; Chelladurai, Imamura, Yamaguchi, Oinuma, & Miyauchi, 1988; Dwyer & Fischer, 1988; Isberg & Chelladurai 1990; Kechner, 1988;). The internal consistency estimates are adequate; however, the estimates for the athletes' perceptions version were higher than those for the athletes' preferences version. Of concern were the low internal consistency estimates for the autocratic behaviour scale, hence the recommendation to use the scale with caution.

Validity. Chelladurai and Saleh (1980) claimed factorial validity (i.e., construct validity) on the basis of replication of the five-factor solution over three different data sets (preferences of physical education students, preferences and perceptions of varsity level athletes). The percentage of variance explained by the five-factor solution was 41.2% for physical education students' preferences, 39.3% for athletes' preferences, and 55.8% for athletes' perceptions. This relatively limited amount of explained variance remains a source of concern.

The establishment of a five-factor solution and the fact that the leadership descriptions and subscales are similar to previous findings in leadership research (e.g., Fleishman, 1957; Halpin & Winer, 1957; House & Dessler, 1974) provide support for content validity (Chelladurai & Saleh 1980). Further support for the pre-specified subscales structure have been demonstrated in several contexts. The contexts were French Canadian hockey (Lacoste & Laurencelle, 1989), Greek soccer (Iordanoglou, 1990), Indian athletics (Chelladurai, 1986), Japanese athletics (Chelladurai, Imamura, & Yamaguchi, 1986; Chelladurai et al. 1988), Korean university athletics (Kim, Lee, & Lee, 1990), Swedish athletics (Isberg & Chelladurai, 1990), youth sports (Chelladurai & Carron, 1981), coaches' perceptions of their own behaviour (Dwyer & Fischer, 1988), and fitness leadership (Kechner, 1988).
Issues Concerning the Leadership Scale for Sport

There are several issues of concern with the LSS. The LSS has its roots in leadership scales designed for measuring leadership behaviour in business organisations. These may not reflect fully, or with appropriate emphasis, the sporting context. Leadership in business and coaching may be conceptually different. For example, Kellett (1999) conducted interviews with 12 Australian Football League coaches asking them the question, “are professional coaches leaders?” The coaches did not see themselves as leaders, although they readily described their players as leaders. They saw their role as facilitators responsible for developing and empowering others. Leadership had a negative connotation for these coaches and was strongly associated with autocratic behaviour. The term leadership, and its associated behaviours, may need to be redefined for sport.

A second major issue relates to context of the leadership behaviour. The scale measures the frequency of behaviour, but does not address the context in which it is occurring. Coaches may behave differently in training and game situations, depending on internal and external stressors. For example, a coach may exhibit different degrees of democratic behaviour across several training sessions depending on time of season and what happened in the previous game. The snapshot view is limited by time, and this restriction must be taken into consideration when interpreting results. In an Australian study (Sherman, Fuller, & Speed, 2000), investigating preferred coaching behaviours of athletes (N = 312) from three distinct Australian contexts in dual-and single-gender sports, the authors noted the importance of collecting relevant information about the context. For example, this study found few gender differences with reference to coaching preferences in an Australian sample. In a North American sample (Chelladurai and Saleh, 1978) gender differences were significant in influencing preferences for specific coaching behaviours. Sherman et al. suggested
that differences in results between their study and previous research were due to historical and cultural contexts. They explained the results of athlete gender on preferred coaching behaviour, and made the point that societal change over the last thirty years now mean that there is greater acceptance of females as athletes. Also highlighted in this study was the environmental context, specifically, that differences in sport participation and structure is likely to influence the results. Longitudinal data may provide a better account of consistency of behaviour and/or provide more knowledge of the effect of context on leadership behaviour. A further stage in the LSS development should involve ensuring context is considered within the scale.

It is evident in previous studies from the variance accounted for, that the LSS still requires further development. One of the subscales is unstable (autocratic) and comes with warnings regarding interpretation of results. The concept of the MML is farsighted and builds upon many of the models and theories presented in the business world. A future direction is to identify how to adapt and build the LSS to better reflect and measure leadership behaviour in sport. Or to develop a new measuring tool that better reflects and measures the coaching process. As Chelladurai (1990) suggested, “future research should focus on identifying and generating items based on experiences and insights of coaches and athletes” (p. 340).

Even with refinement, however, the scale may be better used in combination with qualitative methodologies that tap into why certain behaviours are preferred, perceived, or executed in specific situations. To date, the LSS is the only sport-specific scale designed to measure the relationships within the MML. All three versions of the LSS have been used extensively in research. The conceptual and measurement limitations of the LSS, however, are not the only issues facing researchers exploring leadership issues in sport. Further exploration needs to move beyond quantifying behaviour, and address issues of whether or not relevant behaviours have been
targeted. It is also important for coaches to interpret behaviours, so there is some understanding of what those behaviours mean. Coaches are in a position to situate their behaviours in the broader context and give meaning to those behaviours, whereas the athlete is in a position to identify the behaviour but the context is often limited to the athletes needs.

Factors Affecting Preferred Leadership Behaviour

Factors found to affect preferred leadership behaviour are the athlete's individual characteristics, the situation, and the outcome. Individual characteristics have been paid the greatest amount of attention in the research. The characteristics of gender (Bolkiah & Terry, 2001; Chelladurai & Arnott, 1985; Chelladurai & Saleh, 1978; Erle, 1981; Massimo, 1980; Serpa, 1990; Sherman et al. 2000; Terry, 1984; Terry & Howe, 1984), age (Serpa, 1990; Terry & Howe, 1984), experience and maturity (Chelladurai & Carron 1983), motivation, and cognitive structure, (Chelladurai & Carron 1981; Erle, 1981) have been examined. The situations explored were the type of sport (interdependent, independent), level of competition (high school, college, university), organisational goals (recreational as compared to elite teams), and cultural differences (international cultural comparisons) (Bolkiah & Terry, 2001; Chelladurai, 1978; Chelladurai, Malloy, Imamura, & Yamaguchi, 1987; Erle, 1981; Kim, Lee, & Lee, 1990; Terry, 1984; Terry & Howe, 1984). The outcomes, as operationalised by satisfaction and performance, have been investigated with reference to type of task (open, closed), player status (starters versus substitutes), and coach status (Chelladurai, 1978; Horne & Carron, 1985). The research to date is exploratory, with attempts to gather evidence in support of the MML, as opposed to using the model as a predictor of leadership behaviour.

Gender. The effect of athlete gender on preferred leadership has been tested across a wide variety of sports and across a number of sporting situations (Bolkiah &
Terry, 2001; Chelladurai & Arnott, 1985; Chelladurai & Saleh, 1978; Erle, 1981; Massimo, 1980; Sherman, et al. 2000; Terry, 1984; Terry & Howe, 1984). There are a number of inconsistencies in the results, some of which may be explained by time and cultural shifts related to gender roles in sport.

Early studies, conducted during the 1970s and 1980s, reported significant gender differences, with reference to preferred leadership behaviour. Chelladurai and Saleh (1978) examined gender as a determinant of preferred leadership using a sample of physical education students ($N = 160$) and discovered that males preferred more autocratic behaviour compared to females. In a similar study, Erle (1981) examined preferred leadership behaviour of male and female intramural and intercollegiate hockey players ($N = 335$) and found that males preferred higher levels of training and instruction, more autocratic behaviour, increased social support, and less democratic behaviour compared to their female counterparts. Chelladurai and Arnott (1985) investigated the decision-making style preferences of university level athletes ($N = 144$) and discovered that females preferred a more participatory style of decision-making, as compared to their male counterparts. Both the type and amount of research make it difficult to establish any conclusive results from these studies.

A study by Terry and Howe (1984), which also investigated preferred leadership behaviour of male and female varsity athletes ($N = 160$) across 16 sports, found much in common between the genders. Males and females preferred democratic behaviour, occasional social support, and limited autocratic behaviour. Terry (1984), in a similar study, examined elite male and female collegiate athletes ($N = 160$) in a number of dual gender sports (basketball, volleyball, track and field, gymnastics, swimming, and fencing), and found comparable results in elite level competition to Terry and Howe (1984). This finding was supported by Sherman et al. (2000), in a study investigating gender differences in an Australian context. In this study, athletes
from either a dual gender sport (basketball) or gender specific sports (netball and football) were compared for gender differences in preferred coaching behaviour. As in the study by Terry (1984), there were only small differences between the genders, with all groups, recording the same preference order for coaching behaviours. In contrast, Bolkiah and Terry (2001), investigating cross cultural differences between athletes participating at national level in Brunei Darussalam (n = 159) and athletes participating at university and club level in the London area (n = 220) found a main effect for gender, with males across both groups preferring autocratic behaviour.

The majority of the research on gender differences was conducted in the 1970s and 1980s, suggesting that the results may be more valuable as an historical snapshot of gender preference for specific coaching behaviours at that time. In the earlier research, the samples are narrow (sport oriented university students), which also makes it difficult to generalise the results. Later studies (e.g., Sherman et al., 2000; Bolkiah & Terry, 2001) used a broader representative sample. The effect of athlete gender effect on preferred coaching behaviours are still inconsistent. The one area of commonality is a preference by males for autocratic behaviour. Males’ preferences for autocratic behaviour are also questionable due to issues concerning the internal consistency of the autocratic subscale (Chelladuria, 1993). Problems with internal consistency suggest that the LSS is not capturing the essence of autocratic behaviour.

Gender issues may be identified more clearly by conducting qualitative research with coaches and athletes aimed at clarifying whether gender does play a role in athlete preferences for particular coaching dimensions, and, whether coaches behaviour is affected by gender.

*Age, maturity, and experience.* There is a limited body of knowledge on how age, maturity, and experience influence athletes’ preferences for specific coaching
behaviours. Questions also arise as to whether coaches behave differently according to the athlete's age, maturity, and experience.

An athlete's age is commonly used to determine level of competition. For example, in junior sport, age corresponds to level of competition. In sport programs embedded within an education system, age correlates with whether the athlete participates in midget, junior high school, high school, or university level competition, or year level equivalent. In club sport programs, athletes compete in under age competitions determined by birth date. In masters' and veterans' games, age is used to determine competition class.

Serpa (1990) investigated the effect of age on preferred leadership behaviour in women's basketball in Portugal. The study compared two age groups, 12 to 15 year-old \((n = 17)\) and 17 to 29 year-old female athletes \((n = 23)\). The younger athletes relative to the older athletes preferred coaches to be more socially supportive, and to display more democratic behaviour and less autocratic behaviour. In contrast, Terry and Howe (1984) reported that age was not a factor in determining coaching preference for specific leadership behaviours. No significant differences were found in the preferences of athletes participating in club sport \((N = 160)\) across a wide range of age levels \((17-40 \text{ years})\) in a variety of different sports. This study did not examine children and younger adolescents. More research comparing younger age groups with adults and within gender differences might be productive.

Maturity is more difficult to identify. Chelladurai and Carron (1983) defined it as "relative mastery of skill and knowledge in the sport, the development of attitudes applicable to the sport and a capacity to set high but attainable goals" (p. 372). In the research, however, maturity is assumed to be a function of the athlete's successful progression from one level of competition or achievement to the next, however, succession does not necessarily guarantee maturity. If years of participation are used
to determine experience there are problems associated with quantity and quality of participation. An athlete with five years experience may have competed and trained once a week, whereas another athlete with three years experience trained three times per week and competed twice a week. Based on years of participation, the player with five years experience is deemed more experienced, but has trained and competed less often.

Chelladurai and Carron (1983) investigated basketball players preferred leadership behaviours based on player maturity levels. The sample consisted of 67 high school midget, 63 high school junior, 63 high school senior, and 69 university level basketball players. There were two significant results. First, there was a progressive decrease in preference for training and instruction as players progressed from high school midgets to high school seniors. At the university level, this trend was reversed with university basketball players showing a preference for training and instruction. Further analysis investigating the effect of age and experience on preferred coaching behaviours yielded the same results. The results were not surprising, because these two variables have been used interchangeably as measures of maturity in situational leadership. Lack of differentiation between age, experience, and maturity is problematic and requires further investigation. Without clear differentiation it is difficult to draw meaning from research using these constructs.

An accurate measure and clear differentiation between the constructs of age, experience, and maturity is yet to be obtained. If progression is a measure of maturity, then it is assumed that all team members possess the same level of maturity. This is rarely the case in sport teams although team members may be of a similar age. The original definition of maturity, proposed by Chelladurai et al. (1983), made reference to psychomotor development (relative mastery of skills), cognitive development (knowledge of the sport), moral development (development of attitudes),
and the capacity for the athlete to control their destiny through setting high, but attainable goals (motivation).

To date, the research appears to have assumed maturity through successful progression to the next level of competition. This might reflect psychomotor maturity, but it certainly does not address or measure the other components of maturity. Even assuming that psychomotor development guarantees successful progression is questionable. Some athlete's progress based on limited numbers of people wanting to participate at the next level, or based on their physiological or physical advantage, for example, tall athletes are recruited in basketball; the athlete is not necessarily skilled or psychologically mature. Hence, although there is a definition (Chelladurai et al. 1983), it has not been operationalised in the research. Both experience and maturity require further investigation. The terms need to be clearly defined before the relationship between the constructs and leadership can be measured. These variables also need to be investigated from a coaching, as well as, an athlete perspective.

**Personality variables.** Early studies (Chelladurai & Carron, 1981; Erle, 1981) briefly explored personality as a variable associated with preferred leadership. Erle (1981), as cited previously, assessed the effects of motivation on leadership preference in intramural hockey players \( N = 335 \) and found that athletes high on task motivation preferred more training and instruction, whereas those high in affiliation preferred a high level of social support. In a study investigating cognitive structure (i.e., the need for more information and structure in one's environment) and impulsivity (Chelladurai & Carron, 1981), athletes high on cognitive structure preferred more training and instruction, and less autocratic behaviour from the coach than those athletes lower in cognitive structure. Athletes with high levels of impulsivity preferred higher levels of social support, as compared to athletes with low levels of impulsivity. Limited research in this area makes it difficult to draw any
conclusions. Research investigating personality variables in sport psychology has previously failed to reveal any consistent predictor of sport performance and behaviour (Morris, 1992). Vealey (1992) suggests this might reflect less precise theories and methods and there may be more benefit in studying personality by investigating self-worth, perceived ability, and achievement goal orientation of the coach and athlete.

Situational variables. There are several situational variables that have been investigated in the leadership context. They are categorized as follows: (a) type of sport, (b) organisational goals, and (c) culture.

The type of sport has, typically, been defined in terms of two particular task attributes, the degree of task variability, and the level of interdependence required between group members. Task variability in sport, as a factor affecting preferred coaching behaviours, describes the situation under which sports are performed. In open sports (e.g., football, basketball, tennis, netball), the situation is continually changing and athletes adapt their skills to the situational demands. Closed sports involve a static situation where athletes perform skills in an unchanging environment (e.g., diving, gymnastics, archery). The classification of different sports according to group interdependence is based on the degree to which athletes must work together to achieve success. Examples of highly interdependent sports include water polo, rugby, and netball, whereas diving, archery, and track and field individual events exemplify sports low on interdependence.

Chelladurai and Saleh (1978) found that task attributes of dependence and variability had significant effects on preferences for sport leadership. Male \( n = 80 \) and female \( n = 80 \) physical education students who were active participants in competitive sport took part in the study. The sports were categorized according to whether they were: (a) independent closed sports (e.g., diving, golf, gymnastics), (b)
independent open sports (e.g., badminton, fencing, swimming, track and field), (c) interdependent closed sports (e.g., rowing, synchronized swimming), and (d) interdependent open sports (e.g., baseball, basketball, hockey, soccer). The results indicated that athletes in interdependent sports preferred their coach to emphasize more training than athletes in independent sports. Athletes in closed sports preferred their coach to emphasize more training behaviour than athletes in open sports. The results, although significant, provided only speculation as to why athletes involved in sports differentiated by task dependence and task variability preferred certain coaching behaviours.

In another study, Bolkiah and Terry (2001) found contrasting results to Chelladurai (1978). In their study, investigating task variability and level of dependence in a cross-cultural situation, athletes \( n = 379 \), who participated in sports requiring independence and characterised by high task variability (open sports) preferred more training and instruction than those athletes who performed interdependently. Bolkiah and Terry also reported a difference in preferences for leadership behaviour based on dependence. Athletes participating in sports requiring high levels of independence preferred democratic and social support behaviour as compared to athletes participating in interdependent sports.

Terry and Howe (1984) found no significant differences between athletes’ preferences for specific leadership behaviour based on task variability. Interdependence was associated with athlete preferences for specific leadership behaviours. In a follow-up study, Terry (1984) replicated the findings with a sample of collegiate athletes \( N = 160 \). Interdependent sport athletes showed greater preference for high frequencies of training and instruction and rewarding behaviour and less preference for democratic and social support behaviour than did the independent sport athletes.
In reviewing the research on type of sport as a situational variable, the only consistent result is that athletes participating in independent sports prefer more democratic coaching behaviour, as compared to athletes participating in interdependent sports. These results are limited as the results depend on group data and do not take into account individual athletes perspectives of preferred leadership behaviour. There is no support for task variability influencing preferences for specific leadership behaviour. Either the LSS is not sensitive enough to differentiate between these groups, or there are no differences between these groups. Other research methods or combinations of research methods are required to extract more fine grained information about this variable.

Organisational goals reflect what outcomes are important for the group. For example, in recreational sports, enjoyment and affiliation may reflect the organisational goals, as compared with goals in professional teams, where high-level performances culminating in successful outcomes typically reflect the focus.

Research investigating organisational goals is limited. Erle (1981) investigated differences in preference for leadership behaviour between intercollegiate hockey athletes and intramural hockey athletes (N = 335), based on their organisational goals. The organisational goal of the intercollegiate hockey teams was the pursuit of excellence and, for the intramural teams, it was the pursuit of pleasure. The intercollegiate athletes preferred their coaches to demonstrate higher levels of training and instruction and social support, less positive feedback, and less democratic behaviour than the recreational athletes. Situational factors, such as organisational goals, are important issues for the coach, because athletes will expect different types of leadership behaviour in different settings (Chelladurai, 1984). A critical question is whether the organisation’s goals belong only to the team or whether they are
influenced by other macro variables, for example, parental influence, club owners, management, or National interest.

Research into leadership and culture examined preferred coaching behaviours based on cultural differences. In a number of studies, culture has been examined by comparing university athletes and physical education students from different nations. A limitation is the small amount of research that examines cross-cultural differences outside educational institutions, and the classification of cross-cultural groups. Exploration of coaching styles across true cross-cultures groups suggests that different models are successful in different cultures and become the socially accepted model of leadership.

Terry (1984) investigated athlete preferences for leadership behaviour by administering the LSS to elite athletes (N = 160) from Canada, Great Britain, the United States, and other nations competing at the 1983 Universiade. There were no significant patterns of preferred leadership across nations. Terry speculated that there were more cultural similarities as compared to differences between several of the nations, hence explaining the uniformity in results.

Chelladurai, Malloy, Imamura, and Yamaguchi (1987) examined cross-cultural differences between Japanese physical education students in modern sports (e.g., track and field, rugby, volleyball), Japanese in traditional sports (martial arts), and Canadian physical education students in modern sports. The researchers predicted that differences in culture and beliefs and values between the groups would be reflected in their preference for leadership behaviour. The other finding of interest and under investigation was the influence of type of sport on preference for leadership behaviour. The results confirmed significant differences between type of sport and cultural background. The Japanese physical education students in modern sports preferred more democratic behaviour than the Canadian physical education students;
the Japanese students in traditional sports showed greater preference for autocratic
behaviour than did the other two groups. Higher levels of social support were sought
by both Japanese groups, as compared to the Canadian athletes, and the Canadian
athletes preferred a larger quantity of positive feedback behaviour than Japanese
athletes competing in traditional sports.

Bolkiah and Terry (2001) investigated cross-cultural differences between
National level athletes in Brunei Darussalam and British athletes participating at club
and university level. The Bruneian athletes preferred more training and instruction,
democratic behaviour, and social support, as compared to their British counterparts.
An issue of concern was the comparison of athletes participating in different levels of
competition, which may have clouded the results. In the following two studies, which
further explored cultural differences, both preferred and perceived leadership
behaviours were investigated. In a follow-up study to Chelladurai et al. (1987),
Chelladurai, Imamura, Yamaguchi, Oinuma, and Miyauchi (1988) compared Japanese
(n = 115) and Canadian university male athletes (n = 100) on their perceived and
preferred coaching behaviours and member satisfaction with leadership behaviour and
personal outcome. The results demonstrated that Canadian athletes preferred
significantly more training and instruction, as compared to the Japanese athletes, who
preferred more autocratic behaviour and social support. The Canadian athletes also
perceived their coaches to provide more training and instruction, as well as more
democratic and rewarding behaviour, whereas the Japanese athletes perceived their
coaches to be autocratic.

In a Korean context, Kim, Lee, and Lee (1990) compared differences between
preferred and perceived leadership behaviours of three groups of athletes in
individual, combative, and team sports. There were differences between the three
groups in all dimensions, except in preferred training and instruction. The combative
sports athletes perceived and preferred their coaches to demonstrate autocratic, social support, and positive feedback behaviours, as compared to the other two groups. Athletes involved in individual sports perceived and preferred their coaches to exhibit more democratic behaviour as opposed to the other two groups. In both studies (Chelladurai et al., 1988; Kim et al., 1990), little difference was found between athletes’ preferred and perceived leadership behaviours.

An Australian study (Sherman et al., 2000) revealed widespread similarities in coaching preferences of males and females in dual and gender specific sports (basketball, netball, and Australian Rules football). In these Australian sport, there was low preference for social support that suggests these athletes do not rely on the coach for support outside of the sporting context.

Limited research makes it difficult to form any conclusions about the influence of cultural differences on preferred or perceived leadership behaviour. The definition of culture has been narrowly applied to differences between athletes from different nations.

Factors Affecting Perceived Leadership

Perceived leadership involves how people interpret behaviour, as opposed to reflecting actual behaviour. The research is diverse, but sparse and limited to the following areas: (a) the relationship between athlete ability and athlete perceptions of leadership behaviour (Garland & Barry, 1988; Luikkonen & Salmiminen, 1995; Salminen, Luikkonen, & Telama, 1990), (b) athlete and coach differences in perceptions of actual coaching behaviours (Gordon, 1986; Horne & Carron, 1985; Luikkonen & Salminen, 1995; Liukkonen & Salminen, 1990; Salminen, Liukkonen, & Telama, 1990), and (c) cultural differences in perceptions of coaching behaviours (Chelladurai et al., 1988).
Athlete ability has been identified as a variable that may affect perceptions of leadership behaviour. Some of the difficulties in evaluating and comparing research on this issue are the lack of a clear definition of ability and the divergent contexts where it has been operationalised. The majority of the research has either selected elite teams as a measure of high ability or ability grouped players of the same team according to allocated playing time. In a Finnish study (Liukkonen & Salminen, 1990) of 399 young athletes, high ability athletes, as determined by competition level, perceived their coaches to be more autocratic and less democratic, rewarding, and socially supportive as compared to low ability athletes. Using the same data set, Liukkonen (1999) investigated differences between athletes’ $(n = 399)$ and coaches’ $(n = 68)$ perceptions of the coach’s behaviour, based on competition level. The most significant differences occurred at the National level of competition; National junior level athletes perceived their coaches to be more autocratic, less socially supportive, and providing fewer rewarding behaviours as compared to the coaches perception of their own behaviours. In summary, athletes high in ability or playing at elite level appear to perceive their coaches as autocrats, who demonstrate low levels of supportive and rewarding behaviours.

Garland and Barry (1988) measured the effects of personality traits and length of time spent in the game situation over the season on perceived leadership behaviour of football players. Groups were established according to length of time athletes spent in the game situation over the length of a season. The athletes were identified as regulars $(n = 94)$, substitutes $(n = 94)$, and survivors $(n = 77)$. Unlike the previous studies, Garland and Barry investigated ability within the team as opposed to between teams. The more successful (regulars, who started and took part in at least 50% of plays during the season), as compared to the less successful athletes, perceived their coaches to emphasize training and instruction, to be more participative in decision
making, less autocratic, more socially supportive, and to provide additional positive feedback. In contrast to the Finnish studies (Luikkonen et al., 1995; Luikkonen, 1999), the results reveal that athletes high in ability perceive their coaches to demonstrate more rewarding behaviours and socially supportive behaviour, as compared to athletes with lower levels of ability. The research is yet to isolate whether high ability athletes perceive their coaches differently to low ability athletes, or whether coaches treat these athletes differently. Both sets of perceptions could be correct. Issues of perception aside, it is difficult to draw any conclusions based on this research, because the definitions of ability are diverse (between teams and within teams) and the context is specific to each data set. Consistency in the methodological approach and the operational definition of ability may deliver more conclusive results.

Solomon (1996) suggested that a more productive line of research is the investigation of coaches’ expectations of athlete performance. If the coaches’ expectations of athlete ability influence how the coach reacts to the player, Solomon argued that it would be logical to assume that athletes receiving more feedback will see their coach to be more rewarding and supportive.

Studies of athletes’ and coaches’ perceptions of actual behaviour (athletes’ perception of behaviour, not observed behaviour) have demonstrated that coaches have poor recall of their behaviours and overestimate their demonstration of specific behaviours. Horne and Carron (1985) found that Canadian coaches rated themselves higher on training and instruction, democratic behaviour, and positive feedback than did their athletes. Coaches’ perceptions of their own autocratic behaviour did match athlete perceptions. Gordon (1986) revealed that coaches’ self-reports on autocratic behaviour were positively correlated with all other behaviour dimensions, except democratic behaviour which would be expected. Coaches perceived themselves to be autocratic and benevolent. In contrast, athletes’ perceptions of autocratic behaviour
were negatively correlated with all other behaviour dimensions. Hence, autocratic coaches were perceived as less benevolent. In a Finnish context, Salminen, Liukkonen, and Telama (1990) reported that coaches ($N = 97$) perceived themselves to be more instructive, socially supportive, and rewarding, and less autocratic, than did their athletes. Coach gender and athlete age had no significant effect on the athletes’ perception of leader behaviour in coaches. Salminen et al. suggested that this discrepancy between coaches’ perceptions of their own behaviour and the perceptions of athletes arises because people have a tendency to overestimate their social desirability and underestimate socially undesirable behaviours. To date, the majority of the research has concentrated on athlete and coach perceptions of actual coaching behaviour. One of the questions arising from this research is how best to measure actual coaching behaviour. The MML has not defined clearly what actual behaviour represents or how to measure it. Until it is known exactly what it is that coaches do, and why and how they do it, it is very difficult to measure it.

Salminen and Liukkonen (1996) conducted a study examining the coach-athlete relationship and its connection with coach behaviour in training sessions. The researchers used an mixed methodology, whereby coaches ($n = 68$) completed a self rating version of the LSS, athletes ($n = 400$) were administered the perceived version of the LSS, coaches were videotaped and their recorded behaviour was content analysed using a systematic observation system consisting of 17 categories. Actual coaching behaviour was a measurement of observed coach behaviour in the field. The coaches’ and athletes’ ratings differed significantly. Female coaches’ self-ratings for democratic and autocratic behaviour were significantly closer to the athletes’ ratings, as compared to male coaches. Coaches and athletes from individual sports were closer in their perceptions of what leadership behaviours occurred during training sessions, as compared to coaches and athletes involved in team sports. Both the
coaches' and athletes' ratings of democratic behaviour were highly correlated with observed coaching behaviour. The affective component of the coaching behaviour and leadership style was significantly correlated. Salminen and Liukkonen proposed that the coach-athlete relationship depends on coaches being in tune with athletes' feelings, and listening to their opinions.

Using a similar methodology to the previous study (Salminen & Liukkonen, 1996), Liukkonen, Laakso, and Telama (1996) investigated the extent to which the training climate developed by Finnish youth coaches corresponded to the key challenges relating to children's growth and development. They also investigated the relationship between competition level and coaching behaviours. Coaches were observed and behaviour was coded during the training session; a rating scale was also used after the coaching session to measure teaching arrangements, communication skills, and working methods. Interaction and athlete participation, and coach behaviours were also assessed using the LSS. The overall result was that coaches perceived themselves to be educators, however, they were content oriented, rather than human relations oriented. The common form of delivery was direct teaching, and training consisted of one-sided, event-specific practices. There was very little input from athletes in the design of the training program, decision making, or in tasks that demanded initiative. The coaches tended to use an authoritarian style and paid little attention to individuality. As the level of competition became more competitive, there was a decrease in humanistic and responsive coaching behaviours. The emphasis on sport as a platform for social development in Finland seems to have influenced coaches’ perceptions of their behaviour. Influences beyond the coach-athlete relationships require consideration when exploring the coaching process. The results gleaned from the last two studies demonstrate the importance of exploring and combining different methodologies and leadership models to inform, enrich, and build
a body of knowledge in coaching science. The role of context is yet to be 
encapsulated within the LSS and systematic observation systems that are reduced to 
specific categories of behaviour.

To date, culture has been explored narrowly, with most research investigating 
differences between how university athletes or physical education majors living in 
different countries perceive leadership. Differences between athletes’ perceptions of 
leadership behaviour have been shown to differ according to cultural background. 
Chelladurai et al. (1988) examined Japanese (n = 115) and Canadian (n = 100) 
university male athletes’ perceived and preferred coaching behaviours, and member 
satisfaction with leadership behaviour and personal outcome. Canadian athletes were 
identified as perceiving their coaches to provide more training and instruction, as well 
as more democratic and rewarding behaviour, whereas the Japanese perceived their 
coaches to be autocratic. It is very difficult to draw any conclusions without a 
thorough understanding of the context, for example, are cultural differences between 
and within sports more or less influential than other cultural differences? This area 
requires further exploration if any conclusions are to be drawn regarding cultural 
differences in coaching behaviour.

Consequences of Leadership

The consequences of effective leadership as depicted by the MML are high or 
increased levels of athlete satisfaction and athlete performance. Athlete satisfaction is 
multifaceted and describes satisfaction with personal performance, team performance, 
type of leadership, and team climate. The various components of athlete satisfaction 
are measured using a Likert style questionnaire. Performance is a difficult construct 
to define as success and failure are often in the eye of the beholder. For example, 
athletes might perceive themselves to be successful through achieving a personal best 
in an event, whereas the observer may view this as failure, the athlete finished in third
place and did not win. The converse is also possible, where the athlete aims only for victory and coach may take a longer term view. Athlete satisfaction and performance have been measured using a myriad of approaches in an attempt to understand the various relationships within the MML. Researchers have attempted to measure performance typically using the following criteria: (a) team win-loss percentage (e.g., Weiss & Friedrichs, 1986), (b) playing time, starter status (e.g., Garland & Barry, 1988), and (c) individualized perceived performance outcomes (e.g., Horne & Carron, 1985).

**Athlete Satisfaction.** Although there is a breadth of knowledge on leadership behaviours that affect athlete satisfaction and performance, there is little more than general support for the role of athlete satisfaction and performance in the MML. Chelladurai (1978, 1984) investigated the congruence of leadership behaviour with athlete satisfaction and performance from a number of angles. He studied the individual as the unit of analysis, the situation, and cross-cultural effects on athlete satisfaction and performance. In his early research, Chelladurai (1978) investigated the leadership preferences and perceptions of 216 university level athletes from both team and individual sports. He found that congruence between preferred and actual behaviour in the autocratic behaviour and positive feedback dimensions affected satisfaction with the coach in a curvilinear manner. As actual leadership behaviour (as perceived by the athlete) shifted closer to preferred leadership behaviour, athlete satisfaction with the coach increased. If the actual behaviour deviated in either direction from the preferred behaviour, athlete satisfaction decreased. Chelladurai (1984) reanalysed the data from the study reported in 1978, using the individual as the unit of analysis, and found that the discrepancy between the athlete’s preferred coach behaviour and the athlete’s perception of leadership behaviour was linked with member satisfaction with leadership, team performance, and overall involvement.
The discrepancy scores (i.e., the difference in scores between perceived coaching behaviours and preferred coaching behaviours) that had the greatest impact on athlete satisfaction across all sports were for the training and instruction and positive feedback dimensions. The discrepancy scores between both sets of variables explained more of the increased variance in satisfaction scores than did either variable by itself. This supports the argument that, if the coach exhibits behaviour preferred by the athlete, the athlete is satisfied. This is common sense, but is does not guarantee that the behaviour is appropriate in an extended context (beyond the player-coach relationship) or that outcomes beyond satisfaction are achieved. It fails to expand on what are good coaching behaviours, it just adds to the literature on what makes certain groups satisfied.

Horne and Carron (1985) provided further support for Chelladurai’s (1984) findings. Their results showed discrepancy scores representing training and instruction, social support, and positive feedback predicted athlete satisfaction with coach leadership. As the coaches’ behaviours in these dimensions increased in relation to athlete preferences, there was an increase in athlete satisfaction. As the relationship between actual and preferred leadership behaviour increased, group satisfaction also increased. In Schliesman’s (1987) study of university track and field athletes ($N = 40$), perceived democratic behaviour and social support were related to general satisfaction with leadership. Discrepancy scores in training and instruction, social support, and positive feedback were significantly related to satisfaction with all three coaching behaviours. In support of Schliesman’s (1987) study, Dwyer and Fischer (1990) found that wrestlers, who perceived their coaches as having exhibited high levels of training and instruction and positive feedback, recorded higher levels of leadership satisfaction. This also demonstrated in theories of motivation and perceived competence (Nicholls 1984; Roberts 1992); if a coach invests time in
developing athlete’s skills that culminates in improved performance, the athlete is more likely to be satisfied with the coach. The wrestler also perceived coaches as more effective and affecting leadership satisfaction when lower levels of autocratic behaviour were displayed.

In a cross cultural context, Chelladurai et al. (1988) investigated athlete satisfaction based on leadership factors with Japanese and Canadian athletes. In opposition to previous studies, perceived leadership scores explained greater amounts of variance than discrepancy scores. There was a significant relationship between perceived leadership behaviour and satisfaction scores, however, the particular leader behaviours that were most predictive were different across cultural groups. The Japanese athletes preferred higher levels of autocratic behaviour and social support. In comparison, the Canadian athletes preferred higher levels of training and instruction. The Canadian athletes were more satisfied with leadership and personal outcome than the Japanese athletes. This provided support for cultural influence, however, more information on the broader context beyond cultural differences might have provided more fine grained information as to why these differences arose.

*Performance.* Few studies have isolated performance as a measure of coaching effectiveness. As discussed previously, it is very difficult to clearly define performance and have general agreement on the definition.

Weiss and Friedrichs (1986) investigated effect of athlete performance on member satisfaction, with 251 collegiate basketball players and their coaches, against a number of coaching variables, which included personal characteristics (age at time of coaching appointment, coaching and playing history, win-loss record), coach’s leadership characteristics, and situational factors (enrolment, size of school, basketball budget, number of scholarships, culture of winning, length of engagement, and effect on winning culture). Performance was measured by the seasonal win/loss record and
for satisfaction a self-report form was used that included dimensions associated with
the athlete’s sport situation. Weiss and Friedreich’s reported that coaching behaviours
that increased member satisfaction were rewarding behaviours, social support, and
democratic decision-making. Social support was negatively associated with win-loss
percentage. The personal characteristics of the coach that were allied with leadership
effectiveness and level of satisfaction were age at time of hire (hired at a younger
age), successful previous win/loss record, and less playing experience. Although the
research did highlight the relationship between the leader, the situation, and athlete
performance, it still accounted for a small percentage of the variance. This study
quantified behaviour and did little to expose why and how these relationships
occurred.

Individual performance also influences athletes’ perceptions of effective
leadership. Gordon (1986) investigated Canadian university soccer players and
discovered that those athletes from more successful teams perceived their coach to
display higher levels of training and instruction, autocratic behaviour, social support,
and positive feedback. Horne and Carron’s (1985) study revealed that athletes’
perceptions of positive feedback were positively correlated with their own
performance. Solomon (1999) questioned whether actual performance, as opposed to
the coach’s evaluation of performance, is more significant in influencing athletes’
perceptions of coaching effectiveness.

Chelladurai (1984) has grappled with defining and differentiating between
performance and satisfaction. He stated that winning and losing are not absolute
events and are contingent upon the perception of goal attainment, and therefore
should be considered a psychological state. In some ways, satisfaction has become a
catch all term that is difficult to define, and performance has not proven to be
significant in the research. The research has yet to tease out the difference and the
relationship between satisfaction and performance. In addition, there is still debate about how to measure them effectively. Future research needs to explore what these states really reflect from an athlete and coach perspective.

The Revised Leadership Scale for Sport

In an attempt to expand upon the MML, Jambor and Zhang (1997) measured differences between male and female coaches and among different coaching levels, using a Revised Leadership Scale of Sport (RLSS; Zhang, Jensen, & Mann, 1996). The scale was modelled after Chelladurai and Saleh’s (1980) LSS. The RLSS included a sixth behaviour dimension, named situational considerations. This leadership dimension describes setting up individual goals and clarifying ways to reach goals; differentiating coaching methods at different maturity stages and skill levels. Using the RLSS, Jambor et al. found no significant differences between male and female coaching styles. The results supported differences in leadership behaviour across levels of coaching (junior high, high school, and college). On the situational coaching dimension, high school coaches utilized democratic leadership behaviour to a higher degree than college coaches. Training and instruction were used to a lesser extent by junior high coaches compared to high school and college coaches. Junior coaches also reported significantly less social support leadership behaviour than high school and college coaches. The results support Chelladurai’s (1990) previous comments that leadership is only significant within the context of the group. Thus specific coaching behaviours are required in relation to environmental demands.

Summary

The athlete version of the LSS has proven to be valid and reliable in four of the five dimensions of leadership behaviour, however, the autocratic behaviour subscale remains unstable (Chelladurai & Saleh, 1980). The coaches’ version has proven more problematic with poor reliability results across three subscales (Dwyer & Fischer,
1988). Although the LSS may be valid and capable of measuring dimensions of leadership, leadership may not truly reflect coaching. To date, only segments of the MML have been tested, and some of that research is difficult to decipher due to poor delineation of constructs. There is evidence of strong correlations between elements of the MML but causal linkages still require further investigation. This requires testing using more sophisticated procedures. To date, the value, meaning and hierarchy of information accumulated in the research is still to be established. For example, which behaviours come into play regularly, and why do they do so? Serpa (1995) argues that there is too much emphasis on group results when the coach-athlete relationship is often based on one-to-one interactions. He also recommends going beyond athlete satisfaction and performance outcomes and considering the psychological implications of the coach-athlete relationship. The majority of the research has focused on athletes’ perspectives and preferences for coaching behaviour. The coaches, the pivotal figure in the coaching process, have played a very small role in decoding the complexity of the coaching process. Coaches are in a position to cognitively unravel their own behaviour and explain the interactions and priorities that occur in the coach-athlete relationship. Chelladurai (1990) and Horn (1992) have suggested that future research should focus on generating items based on the experiences and insights of coaches and athletes to determine if the LSS subscales really capture all the elements and nuances of effective leadership behaviour.

**Systematic Observation of Coach Behaviour**

Since the beginning of the 1970’s, systematic observation systems have steadily gained favour as a method for exploring coaching behaviour. The development of reliable and valid observation systems has provided researchers with a valuable method for describing and quantifying specific coach behaviours. These observation systems list coaching behaviours within distinct categories that trained
observers identify and record when observing the coach in a naturalistic setting.
Depending on the methodology, behaviours are recorded using either a time interval,
for example, recording the coach’s behaviour every 10 seconds, or event recording, a
procedure Hall (1971) and Scidentop (1976) described as the cumulative record of a
number of discrete events within a specified time.

Historically this form of describing and quantifying behaviour has its roots in
mainstream educational research (Douge & Hastie, 1993). A number of coding
systems designed for observing physical education teachers and their students have
been used to observe coaches and athletes in the sport setting. There are issues,
however, that need to be considered when using a coding system that is based on
research in a specific domain and context. The coding behaviours may not reflect the
sport context, and there may be other behaviours that warrant inclusion.

The seminal research of Tharp and Gallimore (1976) used direct observation
to study John Wooden, college coach of the UCLA Bruins. Wooden was selected
based on his outstanding basketball record. He led his team to an unprecedented 10
division one basketball championships in a 12-year period in the 1960’s and 1970’s.
The observation system developed to observe Wooden was the Coaching Behaviour
Recording Form (CBRF). It consisted of 11 categories derived from Tharp and
Gallimore’s (1976) clinical research and included the following categories:
instruction, hustles, modelling-positive, modelling-negative, praises, scolds,
nonverbal rewards, non verbal punishment, scold/reinstruction, other, and uncodable
behaviours. The results indicated that Wooden used a high percentage of instructional
behaviour (75% contained some form of instruction) defined as verbal statements
about what to do and how to do it. Most of the statements related to the basic,
fundamental skills of the game of basketball. Although Wooden seldom used positive
statements, he always followed up his negative statements with instruction and never used physical activity as a punishment.

Based on Tharp and Gallimore's research, the behavioural observation of coaches has been replicated by several researchers. Williams (cited in Lacy & Darst, 1985) studied a high school basketball coach, Langsdorf (1979) observed a university football coach, using a variation of the CBRF that provided more descriptive category terms, and Dodds and Rife (1981) examined the coaching behaviour of a winning, female, field hockey coach. A study by Lacy and Darst (1985) investigated the behaviours of a group of successful high school football coaches using the Arizona State University Observation Instrument (ASUOI; Lacy & Darst, 1984). This system is an extension of the CBRF that contained 11 specific categories of coaching behaviour, of which several are instructional categories, enabling a breakdown of the generic "instruction" category that has dominated the behaviours of coaches in previous studies. Segrave and Ciancio (1990) investigated the profile of a successful junior football coach using the CRBF and then compared his coaching behaviour profile to the coaching profiles of John Wooden (Tharp & Gallimore, 1976) and Frank Kush (Langsdorf, 1979). All of the above studies propose instruction as the predominant coaching behaviour. Other coaching behaviours varied between successful coaches.

Research based on systematic observation commonly identified and quantified behaviours of successful coaches. There are several problems, however, with this type of methodology. Coaching behaviours do not happen in isolation. By only profiling the coach, the coach-athlete interaction is devalued. The context is critical and is treated as unimportant in this type of research. Some of the research explores the game context, others the practice context and, in a minority a combination of both. There is no research using systematic observation that has explored the context in
relation to athlete performance level. A more systematic approach to the research is required that controls aspects of the context and allows for repetition of studies to validate results.

As research on coach effectiveness gained momentum, more inclusive instruments were designed to facilitate the study of the behavioural interaction between the coach and athlete. Rushall (1976) designed two schedules for sport and physical education environments. One schedule categorized coach/teacher behaviours, and the other categorized athlete/pupil behaviour. The coach/teacher schedule contained nine categories, and the athlete/pupil consisted of 11 categories. Crossman (1985) developed a similar schedule that also recorded both the coach’s and the athlete’s behaviour in the sport setting. The Athlete Observation Code (AOC) and the Coach Observation Code (COC) categorized the behaviour of the coach and the behaviour of the group (team) as a whole at the time of observation. It consisted of 17 athlete behaviours and 16 coach behaviours, thus, yielding more complex descriptions of behaviour than previous coding systems. The Lombardo Coaching Behaviour Analysis System (LOCOBAS; Lombardo, 1984) recorded and described the interaction between the coach, athletes, officials, and others within the sport context. The focus of the LOCOBAS was on the type of interaction between coach and other relevant participants in the sport context, and the quality of that interaction. The development of more inclusive observational systems has shifted the focus beyond a list of coaching behaviours deemed effective, based on the premise that successful coaches exhibit them. The results, however, raise more questions than they resolve. The systematic observation system, even with its emphasis on coach-athlete interaction, still does not isolate the individual interaction level between athlete and coach. The majority of the research conducted has investigated the coach athlete relationship within team sport that may not reflect what happens in individual sport.
Emphasis on context is still negligible. Context is narrowly defined and represented as either practice or game time, or the breakdown of the training session or season. In educational research, context is a major determinant in identifying effective teachers and understanding how context affects the teacher-student relationship. The context considers the student, teacher, school, and wider community, as well as the dynamic nature of interactions that occur between them (Jarman, 2002; Cripps-Clarke & Walsh, 2002). There are still questions with reference to identification of behaviours that reflect attitude and emotion, which few researchers in sport and education have chosen to tackle.

The best-known systematic observation system developed to observe overt coaching behaviour is the Coaching Behaviour Assessment System (CBAS; Smith, Smoll & Curtis, 1978; Smith, Smoll, & Hunt, 1977). Unlike other observational systems, it is part of an integrated approach developed to investigate the relationship between overt coaching behaviours, player perception of those behaviours, and player attitudes. This approach is based on a mediational model (MM; Smith, Smoll, & Curtis, 1978; Smith, Smoll, & Hunt, 1977). It assumes that players’ evaluative reactions to the coach’s behaviours are mediated by the player’s perceptions and recall of those behaviours, as presented in Figure 2. Only parts of the mediational model have been tested, but it does provide a paradigm for exploring the athlete-coach relationship and offers some direction for improving the experience.

Figure 2. The Mediational Model of Leadership (adapted from Smoll, Smith, Curtis & Hunt, 1978)
The Mediation Model of Coach-Player Relationships

The MM provides a framework for examining the cognitive and affective processes that mediate an athlete’s reaction to the coach’s behaviour (Smoll, Smith, Curtis, & Hunt, 1978). The original and basic model consisted of three elements; coach behaviour, player perception and recall, and players’ evaluative reactions. Based on research (Smoll & Smith, 1989) over a ten year period the model was expanded to include three sets of factors: (a) coach individual difference variables (for example, sex, gender, goals, behavioural intentions), (b) player individual difference variables (including, age, sex, gender, achievement motive, competitive trait anxiety), and (c) situational factors (such as, type of sport, level of competition, win/loss record, cohesion). The model is displayed in Figure 3.

The central premise of the MM is that the player’s evaluative reactions to the coach’s behaviour are mediated by their perceptions and recall of those behaviours (Kenow & Williams, 1999). That is, the coach behaves in a certain way, the athlete perceives and recalls these behaviours, and, based on the perception and recall, the athlete evaluates and responds. It is the meaning attributed to the behaviour that evokes a response, not the actual coaching behaviour. The mediational approach also allows for reciprocal interactions among relevant variables. For example, the athlete perceives and interprets the coach’s behaviour and makes an evaluative response, and the coach responds according to their perception and interpretation of the athlete’s behaviour (Curtis, Smith, & Smoll, 1979).

Many of the variables outlined in the model are yet to be confirmed and measured. The basic elements of the original model are: (a) the overt behaviours of the coach, (b) players’ recall of coaching behaviours, and (c) player reactions to
Figure 3. The Mediational Model of Coaching Behaviours (Smoll & Smith, 1989).

coaching in sport experience have been well-defined and measured (Chelladurai, 1993).

The conceptual basis of the MM requires independent measurements of overt coaching behaviours, player perceived coaching behaviours, coach perceived coaching behaviours, player attitudes, and coach perceptions of player attitudes. The CBAS was designed to permit direct observation and coding of coaches’ behaviour during practices and games. Perceptions of coach behaviour and player attitude have traditionally been measured using paper and pencil questionnaires.
Research on the Meditational Model of Coach-Player Relationships

Research investigating the coach-player relationship based on components of the MM has focused on: (a) developing and validating the CBAS and the observer training program, (b) measurement of athletes' perceptions toward coach behaviours, (c) coach's perceptions of coaching behaviour, (d) player attitude toward participation, and (e) measurement of coach behaviour. This research has identified multiple factors that influence the coach-player relationship. The level of influence and the interaction between various factors are yet to be clarified.

Measurement of Leadership in the Meditational Model of Coach-Player Relationships

The Coaching Behaviour Assessment System is a coding system designed to measure overt coaching behaviours in a naturalistic setting. Its purpose is to investigate the relationships posited by Smoll and Smith's (1989) MM of coach-player relationships. The CBAS and its variations have also been used to examine the coach's influence on children's psychological development through sport participation (Smith, Smoll, & Hunt, 1977).

Smith, Smoll, and Hunt (1977) developed the CBAS over several years through a process of using observers to record soccer coaches' behaviour in practice and game situations, and verbally recording their behaviours using a time sampling technique. Categories of behaviour were derived from content analysis of observers' verbal descriptions of coaches' behaviour. The categories consist of 12 types of behaviour, which can also be classified into either reactive or spontaneous behaviour classes, all of which are grounded in social learning theory (see Table 2). Reactive behaviours are the coach's immediate response to player or team mistakes, efforts, or misbehaviours. Spontaneous behaviours describe the coach's response to players during a game.
Table 2. *Response Categories of the Coaching Behaviour Assessment System*

<table>
<thead>
<tr>
<th>Class 1: Reactive Behaviours</th>
</tr>
</thead>
</table>

**Reponses to player desirable behaviours**

<table>
<thead>
<tr>
<th>Reinforcement</th>
<th>A positive, rewarding reaction, verbal or nonverbal, to a good play or good effort.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nonreinforcement</td>
<td>Failure to respond to good performance</td>
</tr>
</tbody>
</table>

**Responses to player mistakes**

<table>
<thead>
<tr>
<th>Mistake-contingent encouragement</th>
<th>Encouragement given to a player following a mistake.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mistake-contingent technical instruction</td>
<td>Instructing or demonstrating to a player how to correct a mistake.</td>
</tr>
<tr>
<td>Punishment</td>
<td>A negative reaction, verbal or nonverbal, following a mistake.</td>
</tr>
</tbody>
</table>

| Punitive technical instruction | Technical instruction given in a punitive or hostile manner following a mistake. |
| Ignoring mistakes | Failure to respond to a player mistake. |

**Response to player misbehaviour**

| Keeping control | Reactions intended to restore or maintain order among team members. |

*(table continues)*
Table 2 (continued)

<table>
<thead>
<tr>
<th>Class 2: Spontaneous Behaviours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Game-Related</strong></td>
</tr>
<tr>
<td>General technical information</td>
</tr>
<tr>
<td>General encouragement</td>
</tr>
<tr>
<td><strong>Organisation</strong></td>
</tr>
<tr>
<td><strong>Game-irrelevant</strong></td>
</tr>
</tbody>
</table>

*(Smith, Smoll, & Hunt, 1977)*

Reactive behaviours by the coach are driven by player behaviour and can occur in practice and game situations. They encompass the coaches’ immediate response to desirable performance, player mistakes or errors, or misbehaviour. For example, in a basketball game situation immediately after a player has made a poor passing decision, the coach might instruct the player to make a particular pass to a specific player. Spontaneous behaviour refers to responses that may be game related or game irrelevant. Citing the same example as above, during a time out the coach might suggest that the player vary their pass more often and think about the options that are available.

*Coding and training procedures.* CBAS observers undertake rigorous training procedures in preparation for observing coaches in the field and to ensure reliability of the coding procedure. As with any observational coding system, a major goal is to
ensure high inter-rater reliability. Smith, Smoll, and Hunt (1977) designed the training program to achieve that goal. The training program included: (a) extended study of a training manual and associated module, (b) group instruction on the use of the coding system, including viewing and discussion of a video-taped training module, (c) written exams in which trainees were required to define CBAS categories and score behavioural examples, (d) the scoring of video-taped sequences of coaching behaviours, and (e) extensive practice in the use of the CBAS in actual field settings.

Several studies have investigated inter-rater reliability (Smith, Smoll, & Hunt, 1977). In the first study, trainees (N = 31) viewed a videotape of 48 randomly-ordered sequences of coaches' behaviours. There were four examples of each of the 12 CBAS categories. Scoring accuracy was determined by comparing trainees' results with those of the authors. The number of scoring errors ranged from 0 to 5, with a mean of 1.06 errors per observer. The average agreement with expert scoring was 97.8%. Scoring consistency over time was examined by readministering the videotape displaying the 48 coaching behaviours to 24 of the trainees one week after the first viewing. No feedback was provided between the first and second viewing. Reliability and consistency of scoring was determined by the percentage of behaviours scored identically over time. The results ranged from 87.5% to 100%, with a mean of 96.4%.

Two studies were conducted to determine inter-rater reliability in a naturalistic setting (Smith, Smoll, & Hunt, 1977). In the first study, five trained observers independently and simultaneously coded the behaviours of a female little league baseball coach during part of a game. The correlation coefficients of the coding frequencies between coding pairs across the 12 CBAS categories ranged from .77 to .99. The average inter-rater reliability was .88. In a further extension of the study, two of the authors and 19 observers used the CBAS independently to code behaviours
of a male little league coach during a baseball game. The authors scored the
behaviours in consultation as a means of determining the accuracy of the observers.
Reliability coefficients were computed across all possible pairs of observers. The
mean inter-rater reliability was .88. The level of accuracy observed between the
observers and the criterion coding of the authors indicated high levels of agreement in
the coding of data. The reliability coefficients ranged from .62 to .98, with a mean
reliability coefficient of .86.

Smith, Zane, Smoll, and Coppel (1983) tested the inter-rater reliability and
accuracy of observers using the CBAS coding system by comparing the results of
trainees with those of the experts. Trainee observers ($N = 17$) participated in a 4-week
training program, previously established by Smith et al. (1977), with the exception
that field testing was conducted in a sport other than the one studied in the main phase
of their training [basketball]. The trainees and experts agreed on the video-taped
sequences 90% of the time. In the field setting, the correlation between experts’ and
trainees’ observations across 10 behavioural dimensions (two categories were
excluded due to difficulty in scoring them in the game of basketball) ranged between
.85 and .98, with a median of .96.

Measurement of actual coaching behaviour explores one component of the
MM. Data on athlete and coach perceptions of actual coaching behaviour and player
attitude help explain the coach-athlete relationship and the consequences of the
relationship.

*Measurement of athletes’ perceptions toward coach behaviours.* Data
concerning athlete perceptions and recall of coach’s behaviour is obtained either
through a structured interview or administration of a questionnaire. Athletes are
provided with a description and example of each of the 12 CBAS categories. In the
structured interview, the measure of an athlete’s perception of coach behaviour is
presented as a recall test, in which athletes are asked to give a verbal description and example of each of the 12 CBAS behaviours. The athletes respond on a 7-point scale ranging from 1 = never to 7 = almost always, as to how often the coach engages in the behaviour. When using a questionnaire, athletes were asked to indicate the extent to which the coach engaged in the 12 CBAS behaviours using a 7-point scale as described for the structured interview.

Coaches’ perceptions of coaching behaviour. As in the athletes’ case, the coaches are asked to indicate how often they engage in each of the 12 CBAS behaviours. The responses are made on the same 7-point scale used by the athletes to measure perceptions of behaviour.

Player attitude toward participation. Athletes are asked to respond to a questionnaire about various aspects of their participation. Athletes use a 7-point scale to answer the questions. The response stem changes according to the nature of the question asked. For example, questions related to liking range from 1 = dislike a lot to 7 = like a lot, questions relating to the coaches knowledge range from 1 = almost nothing to 7 = almost everything.

Measurement of coach behaviour. Within the structure of the mediational model, coach behaviour is measured in three ways: the measurement of overt coaching behaviours, the player’s perception of the coach’s behaviour, and the coach’s perception of their own behaviour. Smoll, Smith, Curtis, and Hunt (1978) investigated the relationship between the different measures and found the relationship weak, except in the case of observed overt behaviour and players’ recall of those behaviours. The results of the study involving athletes (n = 542) and coaches (n = 51) from Little League Baseball programs indicated that players’ perceptions of the coach’s behaviour corresponded closely to observed coaching behaviour, except in the frequency of keeping control behaviour. Athletes perceived a higher that actual
frequency of this behaviour. Smith, Smoll, and Curtis (1978) also investigated the
relationship between overt coaching behaviours, player perceptions, and player
attitudes. In investigating these relationships, male coaches ($n = 51$), were observed
and measured using the CBAS in a game context. Coaches also completed a series of
measures rating their own behaviours against the 12 CBAS categories. The athletes,
male little league baseball players ($n = 542$) aged between 8 and 15 years, were
interviewed and administered questionnaires relating to perceptions of coach
behaviour, attitude toward the coach, attractions toward their team mates, enjoyment
of the baseball playing experience, and their general self-esteem. Observed coaching
behaviour and player perceived coaching behaviour (apart from keeping control
behaviour), were closely correlated. The players’ perceptions of punitive behaviour
were the most accurate, although only representing 2.8% of behaviours players were
able to use this behaviour to differentiate between coaches. The overt behaviours and
player perceptions of these behaviours reflected player attitude toward coaches in an
organised athletic program. Player attitude were best predicted by whether the
players perceived that the coach demonstrated a supportive versus a punitive
orientation. These results suggest that players are focused on a self-related context
and therefore differentiate between coaches based on how they are treated personally.
This narrow player focus limits understanding as to why coaches engage in particular
behaviours.

Curtis, Smith, and Smoll (1979) demonstrated similar results in a study
investigating coach behaviour, team performance, and morale. Little league baseball
coaches ($n = 51$) were observed and their behaviours measured during games. Also
recorded were player ($n = 542$) and coach perceptions of the behaviour. Additional
data was collected on the win-loss record and players’ attitude toward the experience.
The data was collected over two seasons to allow replication of the first year results.
The strongest agreement on actual coaching behaviour amongst observers, players, and coaches concerned punitive behaviour. In the case of the coaches and perceptions of their actual behaviour, punitive behaviour was the only behaviour they could identify with accuracy, which supports the results of Smoll et al. (1978). Team perceptions of most behavioural categories were related to attitudes toward the coach, whereas only two CBAS categories (general communication and keeping control) exhibited such relationships. The behaviour that contributed most to intra-team attraction was keeping control. Curtis et al. suggested that the frequency of this behaviour may be an indicator of team harmony. The results support a relationship between coaching behaviours and morale, but questions remain regarding the causal nature of the relationships.

The type of coach behaviours exhibited during games was a key parameter in this research. In the game context, coaches of losing teams were more likely to engage in proportionately more reactions to player mistakes and misbehaviours than were winning coaches. The coaches of losing teams engaged in a higher percentage of punitive behaviours, as compared to coaches of winning teams, who were more likely to engage in more spontaneous behaviours. Curtis et al. suggested that the coaches of losing teams are more likely to be working with teams where players are making more mistakes than the winning teams. If athletes are sensitive to punitive behaviour, it could be surmised that belonging to a losing team increases the likelihood of developing a negative team attitude, which in turn may affect performance. Overall there was only a modest relationship between the team win-loss record and the team attitude toward the coach, which suggested that team attitude, is only partially explained by the coach’s game behaviour, or that the inventories used to identify team attitude were not sensitive enough to identify the relationship.
In summary, there are four major points that arise from the observational research that has employed the CBAS, relating to: (a) the validity of the CBAS, (b) coaches’ inability to accurately recall their own behaviour, (c) athletes’ recall of punitive behaviour, and (d) the influence of context on coach behaviour. There are a number of issues that do question the validity of the CBAS. The CBAS has predominantly been used in a North American context, with junior athletes participating in team sports. The team sports selected allow for better observational opportunities, due to their stop-start mode of play. It is questionable whether the CBAS has the same applicability to individual sports and whether results can be generalised between team and individual sports.

The second point referred to coaches’ inability to accurately recall their own leadership behaviours. An alternative explanation that explains coaches’ inability to recall their own coaching behaviour might be the notion that once coaches’ behaviour becomes automated, it becomes increasingly difficult for coaches to remember and identify specific behaviours that are isolated from the athlete context and the situation. A more strategic approach in future research would be to ask coaches to interpret specific examples of their overt coaching behaviour and identify the tacit knowledge that underpins the decision-making process. This might also provide insight into how coaches organise, locate, adapt, and communicate their knowledge to meet athlete needs. In the education literature, this is referred to as pedagogical content knowledge (Shulman, 1986, 1987).

It is worth noting that the behaviour that athletes recall most prescriptively and accurately is punitive behaviour. If players are best at recalling behaviours that affect them personally, then player recall and understanding of the coaching process is limited to coach-player interactions. Within a sporting context, team and outside factors may also influence coach leadership behaviour. Limiting the focus of coach
leadership behaviour to the athlete-coach relationship indicates that other factors, outside this relationship, have no impact on the coaching process.

The fourth issue was the importance of the context in relation to athlete attitude. Coaching behaviours in a game may not be as important to athletes as behaviours in a practice session. The athletes might perceive game behaviour reflected less on them as individuals and more on the immediacy of the context. Behavioural consistency is more likely to occur in training, where the coach has more control of the climate, as compared to a game situation. Future research needs to address the issue of context, and explore alternative methods of investigation where the individual is the unit under examination.

Research Investigating Leadership Behaviour Based on the Meditational Model of Coach-Player Relationships.

Research investigating coaching behaviour within the MM falls into three categories; (a) coach effectiveness training, (b) coach influence on athlete psychological development, and (c) coaches’ perceptions of athlete ability and its effects on coach and athlete behaviour. The research is limited to specific contexts such as type of sport, age of athlete, and level of coaching expertise.

Coach Effectiveness Training

Research (Smith, Smoll, & Curtis, 1979) investigating overt coach behaviour in the field examined the differences between coaches with and without coach effectiveness training (CET) on coach behaviour, player perceptions, attitudes, and self-esteem. Little league baseball coaches ($n = 18$) participated in the CET program that consisted of a verbal and written presentation of behavioural guidelines, modelling, behavioural feedback, and self-monitoring of coaching behaviours. Coaches’ behaviour was assessed using the CBAS during game situations, and compared to the behaviour a group of untrained coaches ($n = 16$) who were also
assessed. The male children ($n = 325$), aged between 10 and 15 years of age, completed questionnaires on perceptions of coach behaviour, player attitude toward themselves, the coach, team-mates, and the sport. There were no differences in behaviour rates between the untrained and CET trained coaches, however, there were differences in the type of behaviour in which they engaged.

The CET trained coaches, as compared to the untrained coaches, displayed higher behavioural frequencies of reinforcement, mistake contingent encouragement, and general instruction. The coaches also recorded lower frequencies of non-reinforcement, punishment, and punitive technical instruction. Children who played for the CET-trained coaches indicated their preference to play for the CET-trained coach in the future. The children coached by CET-trained coaches gave significantly higher ratings to those coaches as teachers as compared to the children taught by untrained coaches. There were also group differences in player perceptions. Children who played for the CET-trained coaches perceived a more positive interpersonal climate with the coach and team-mates. There were no significant differences between the two groups with reference to attitude to sport. Smith et al. (1979) proposed that player attitude toward the sport may be well established over a substantial period of time and not readily affected by a relatively short-term change in coaching behaviours. As suggested earlier research (Curtis, et al, 1979), significant changes may relate to the situation (game or practice), where the behaviour is exercised.

Children’s self-esteem was influenced strongly by the trained coaches’ behaviour. Children who played for the CET-trained coaches not only had higher levels of self-esteem than those who played for the untrained coaches, but those playing for CET trained coaches also rated the intra-team attraction more positively. There were no significant differences between the CET trained coaches and the untrained coaches.
based on win-loss percentages. These are always difficult constructs to measure, because performance and achievement are not always reflected by the scoreboard.

Based on results of the CET intervention program there is evidence that coach behaviour can be changed. More importantly, this study verified the role of significant others (coaches), in the determining quality of the youth sport experience. It is difficult to isolate whether specific behaviours or a combination of behaviours lead to changes in children’s perceptions, attitudes, and self-esteem, or whether certain coach behaviours resulted in specific changes in the children because of the number of coaching behaviours targeted in the intervention. In future research, intervention programs need to have narrower focus or else employ a mixed methodology that allows further drawing out of information, so that relationships can be examined between specific coaching behaviours and changes in athletes’ cognitive, affective, and psychomotor behaviour.

Coach Effect on Athlete Psychological Development

There have been very few studies that have established causal relationships between coaches’ behaviours and athletes’ psychological development. Relationships between individual variables have been identified, such as state and trait anxiety (Kenow & Williams, 1999), self-esteem (Smith & Smoll, 1990; Smith, Smoll, & Curtis, 1979), children’s perception of their physical competence (Horn 1984, Rejeski, Darracott, & Hutlair, 1979), and coach feedback (Horn, 1985, Wandzilak & Ansorage, 1988).

In an attempt to understand how athletes’ individual differences might influence athletes’ perceptions of coaching behaviour, Kenow and Williams (1999) investigated coach-athlete compatibility, and its interaction with athlete trait and state anxiety and state self-confidence. Female basketball players (N = 68) completed the Coaching Behaviour Questionnaire (Kenow & Williams, 1992), the Sport Anxiety
Test (Martens, 1977), and the Competitive State Anxiety Inventory 2 (Martens, Vealey, & Burton, 1990), which measures somatic and cognitive anxiety and self-confidence. Athletes were asked to rate how compatible they felt they were with their coach on a 9-point Likert scale. Compatibility was based on the degree to which the athlete’s goals, personality, and beliefs were consistent with the coach’s goals, personality, and beliefs.

The results indicated that high trait anxious athletes evaluated overall coaching behaviours more negatively, than did low trait anxious athletes. Athletes high in cognitive anxiety also evaluated overall behaviours, and the perceived cognitive/attentional and somatic effects of coach behaviour more negatively. Athletes high in state somatic anxiety evaluated the coach’s communication ability more negatively. Athletes low in self-confidence evaluated overall behaviours, the coach’s supportiveness, perceived cognitive/attentional and somatic effects of the coach’s behaviours more negatively. Athletes who were highly compatible with their coach evaluated overall behaviours and each behaviour factor more favourably than athletes who were less compatible with their coach. Kenow and Williams reported that the best predictor of athletic perception and evaluation of coaching behaviours was athlete-coach compatibility. Compatibility correlated only with self-confidence; however, the question remains, does compatibility lead to increases in self-confidence or does self-confidence lead to increases in athlete-coach compatibility?

An alternative explanation is that the compatibility measure employed in the study is not sensitive enough to tap into some of the more complex interrelationships surrounding compatibility, such as player anxiety. The results do provide support for inclusion of trait anxiety, state cognitive and somatic anxiety, and state self-confidence as individual difference variables, requiring consideration in Smoll and Smith’s (1989) model for leadership behaviours in sport.
Previously, Smith et al. (1979) demonstrated that players of trained coaches evaluated the coach and team’s interpersonal climate more positively than did players of untrained coaches. In an extension of this research, Smith and Smoll (1990) focused on the effect of self-esteem on children’s reactions to youth sport coaching behaviour. Of particular interest was the relationship between athlete general self-esteem and their liking of coaches who differed in supportiveness and instructional behaviour. Coaches ($n = 51$) and players (male; $n = 542$), participating in a little league baseball program, took part in the study. Coaches’ actual behaviour was measured across three games, using the CBAS, and players completed a player attitude questionnaire and a general self-esteem scale.

The results indicated that player self-esteem was unrelated to coach attraction. Significant links were found between player self-esteem and the instructiveness and supportiveness behaviour dimensions. The players were attracted to coaches who were high in these dimensions. Children with low self-esteem were the most sensitive to variations of these coach dimensions. This could indicate that children are sensitive to behaviours that are most likely to increase their competence, and can identify coaches who exhibit and practice these behaviours.

_Coaches’ Perceptions of Athlete Ability and its Influence on Coach and Athlete Behaviour_. Rejeski, Darracott and Hutslar (1979) were the first to explore whether the “pygmalion effect” operated in youth sport. In other words, does the coach’s perception of an athlete’s ability affect how the coach relates to the athlete, inadvertently controlling the athlete’s achievement behaviour? It is already evident from previous research (Smith & Smoll, 1990) that children with low self-esteem are particularly responsive to variations in supportiveness from significant others. Rejeski et al. raised the question as to whether coaching behaviours covary with the coach’s perception of children’s ability.
Rejeski et al. examined coaches' \((n = 14)\) game and practice behaviours and compared distribution and type of behaviours experienced by high and low expectancy children \((n = 71)\). The results revealed that low expectancy children received more general technical instruction and encountered fewer situations of non-reinforcement than high-expectancy children. High expectancy children experienced a higher rate of reinforcement and non-reinforced behaviours. In comparison to results reported in academic achievement (Brophy & Good, 1974), coaches acted more favourably to low as compared to high expectancy children. Rejeski et al. postulated that there were several possible reasons for the discrepancy between results in the academic achievement and sport contexts. In junior sport competitions where the rules stipulate equal time for all players it is to the coach’s advantage to work with low expectancy children, to help them contribute to the overall team success. Criteria for success may differ between the academic achievement setting with the youth sport setting, which affects the way teachers and coaches interact with children. In the academic achievement setting there are predetermined criteria which students are expected to achieve, whereas in the youth sport setting where coaches may perceive it acceptable to have alternative goals such as fun, performance is not necessarily the only criteria for success. Differences between academic and sport contexts may also be a result of the differing environments. In the youth sport setting, children are active participants, while in the academic setting they are confined to specific areas and behaviours are controlled. For example, students may be asked to sit and listen and put their hand up if they have a question. The low expectancy students are at a disadvantage in the academic setting because brighter students respond quicker and control a higher percentage of the teacher’s interactions. In the sport context, there are distinct divisions within the context; there are game and practice situations that are not evident in the classroom context. One of the methodological issues in this
research is the lack of differentiation between game and practice situations. Horn (1984, 1985) acknowledged this problem and addressed issues of context in her investigation of expectancy theory in the sport context.

In an effort to further explore and extrapolate information about expectancy theory in the sport context, Horn (1985) concentrated on addressing methodological problems arising from earlier research. The issues arising were control of the situation, direction of coach-athlete interaction, and the stability of the coach’s perceptions of athlete ability. In Horn’s study, the situation was controlled by separately recording practice and game behaviours. Coach and athlete initiated interactions were recorded to determine whether the coach or the athlete was responsible for increases in interactions. The stability of the coach’s initial expectations between pre- and post-season was assessed. The main objective of the study, apart from the methodological sub-purposes, was to assess the degree to which coaches’ expectations of athletes influenced their behaviour when interacting with individual athletes. The softball coaches (n = 5) ranked players’ (n = 72) expectations concerning potential softball ability at pre-season and during the last week of the competitive season. An extended version of the CBAS was used to record coach behaviours and player-initiated behaviours. Observations took place during four practice sessions and three games.

The results confirmed that patterns of coaching behaviour related to expectancy effects differed according to situation (i.e., game as compared to practice). In the practice situation, low expectancy athletes initiated fewer interactions with their coach as compared to high expectancy athletes, but in the game situation, low expectancy athletes initiated significantly more interactions with their coach as compared to high expectancy athletes. Coach interactions with athletes differed with respect to game and practice situations. During game situations, coaches initiated
more communication with high expectancy athletes as compared to interactions with low expectancy athletes, whereas in the practice situation there were no differences. Of note was the finding that the number of behaviours initiated by the athletes, not the coach, in both practice and games were the two most powerful discriminators of high and low expectancy group differences. There were also significant differences between the quality of coaching behaviours in reference to coaches’ expectations of player performance. The low expectancy athletes were given more technical instruction and feedback, both in general and in mistake contingent situations. Low expectancy athletes received more reinforcement after a successful performance than did high expectancy athletes, whose success was often ignored. Horn suggested that the coaches were trying to make the best of low ability players’ successful performances. This might reflect the importance of each athlete’s contribution in achieving success in a team game, hence the investment in all members of the team, a premise also supported by Rejeski et al. (1979). Whereas in the classroom, academic achievement is individualised in the majority of situations, and success is not measured by class academic achievement, many of the above propositions are based on research conducted with teams. A further extension of this research would be to repeat the study with athletes participating in individual sports, where success is individualised, and less dependent on intra-group co-operation. This research might provide some insight into why coaches invest time in coach-athlete interaction and whether or not it is driven by the nature of the sport, or is more reflective of how coaches perceive their role.

In an earlier study, Horn (1984) noted that the quality of feedback differed according to whether the coach perceived the athlete as low or high in ability. In an extension of that study, Horn (1985) examined whether coaches’ feedback influenced children’s perception of their physical competence, using the same data set that was
used in 1984. Coaches’ behaviours were assessed using an extended version of the CBAS, designed to elaborate on specific components of the reactive feedback category. Athletes’ self-perception was measured using the Perceived Competence Scale (Harter, 1982), the Multidimensional Measure of Children’s Perception of Control (Connell, 1980), and the Generalized Expectancy of Sport Success Scale (Coulson & Cobb, 1979). An estimate of each player’s level of softball ability was determined through peer ranking in pre- and post-season. Horn controlled the context by differentiating between coaching behaviours in both practice and game situations, which has generally been poorly controlled in the research.

The results revealed that coaching feedback in response to desirable performance was a significant contributor in altering athletes’ perceptions of competence, but it was negatively related to increases in player perceptions of perceived competence in the physical and cognitive domains, whereas punishment received in response to player mistakes was positively associated with increases in perceived competence. Horn proposed that feedback that is non-contingent on actual performance sets lower expectations for player performance. When successful performance is ignored, or when punishment occurred following poor performance, athletes perceived that the coach had higher expectations of their ability and that an investment in effort was required. This has implications for interpreting results from systematic coding systems where positive feedback has been classified as a positive coaching behaviour.

Important situational differences were identified between practice and game behaviour in Horn’s research. Coaches’ behaviour differed qualitatively between practice and games, and, significantly, players perceived coaches’ practice behaviours to be more salient indications of their ability than coaches’ game behaviours. Peer-
assigned ability was also a significant predictor of changes in players’ perceptions of competence.

A study by Wandzilak, Ansorge, and Potter (1988) also investigated feedback practices in practice and game situations. Soccer coaches ($N = 17$) were observed, using specific behaviours from the Coaching Behaviour Assessment Inventory (CBAI). The four sections of the inventory analysed were: encouraging remarks, instructional/organisational comments, positive reactions to participants’ actions, and negative reactions. In the practice situation, coaches used a high percentage of instructional/organisational comments, followed by an equal percentage of encouraging remarks and positive reactions. In the game situation, there was an equal percentage of encouraging and instructional/organisational comments. Thus, in the game situation, coaches were more encouraging as compared to the practice situation. Of note, and in line with previous research, coaches perceived themselves as displaying higher levels of encouraging behaviour than those which actually occurred in the practice and game situations. The results also identified inverse relationships between the percentage of encouraging remarks and instructional/organisational comments made in the game. This also occurred between instructional organisational statements and positive remarks in practice. Wandzilak et al. suggested that coaches who provide information may not encourage athletes to a great extent. They further hypothesized that coaches who lack competence in sport discipline knowledge may compensate by using encouraging statements, because they have little else to offer.

In conclusion, both Horn (1984, 1985) and Rejeski et al. (1979) uncovered interesting and unexpected results in expectancy patterns in the sport context. Low expectancy athletes were treated more favourably than high expectancy athletes. High expectancy athletes interpreted criticism and lack of acknowledgement by the coach as an indication of the coach’s belief in their ability. This has implications for
systematic coding systems and the interpretation of behaviour. Wandzilak et al. (1988) surmised that the quality of feedback might be a reflection on the coach’s knowledge of the sport. Horn (1985) reported that high ability athletes positively responded to no feedback or performance criticism. Thus, to differentiate feedback quality based on individual athlete characteristics may be a misnomer. Horn (1985) highlighted the importance of situation, for example differentiating between game and practice behaviour. As practice behaviours are the more salient behaviours from an athlete perspective, perhaps it is time to devote energy to this area. A more systematic approach to the research is required, for example, control of situation, in order to build up a body of knowledge that also has practical implications for coach education.

The two predominant theoretical models, the MML (Chelladurai, 1978; Chelladurai & Carron, 1978) and the MM (Curtis, Smith, & Smoll, 1979; Smith & Smoll, 1990; Smith, Smoll, & Curtis, 1978, 1979; Smith, Smoll, & Hunt, 1977) are conceptually driven by different research agendas, however, both provide a working description of the coaching process, and have much in common. Although the models have their roots in different conceptual frameworks and use different research methodologies, there is much commonality in the behaviours and relationships identified. In an evolving domain, this type of research provides a starting point and some insight into what is happening in a specific field. It has been pointed out by several researchers (Horn, 1985; Rejeski et al., 1979; Wandzilak et al., 1988), however, that some commonly held beliefs about specific coaching behaviours may be incorrect, and that has implications for how results are interpreted. Due to the dynamic nature of coaching no one model may ever be able to unravel the complexity of the coaching process where human interactions dominate.
Summary

One of the major limitations of the research is that, like a checklist, the behaviours can be ticked off and quantified but they provide little information about what interactions are occurring and why coaches are using specific behaviours. The coach is the only person who can provide the answer to the “why” question. It is evident from the research that the methodologies used do not to tap into the coach’s knowledge of the coaching process. The analysis of data has typically relied upon inferential correlations and tests of significance, all of which have difficulty capturing the quintessence and richness of the coaching process. The research (e.g., Horne & Carron, 1985; Smith et al., 1978) suggests that coaches have poor recall of their own behaviour. It may be the case that the limited number of behaviours, (e.g., the CBAS reduces coach behaviour to 12 behaviours), do not account for some of the most important coaching behaviours (e.g., non-verbal behaviour) or that the categories are not meaningful to coaches. Expertise research (e.g., Abernethy, 1993; Bloom 1995) suggests that experts cannot accurately self-report on their own expertise. Abernethy (1993) proposed that expert athletes have difficulty self-reporting on those processes which are under automatic control. If this also resonates with expert coaches it may be that coaches cannot recall with accuracy how they have developed expertise. Hence, it is necessary to investigate other methodologies that are capable of tapping into, capturing, and deciphering the richness of the coach’s knowledge of the coaching process.

During the 1990’s coach research was revisited and examined using a variety of research methods. Coach expertise was explored using qualitative research methods. This allowed researchers to understand the coaching process from the
coach’s perspective and develop theory from the data. The following section investigates expertise research using qualitative research methods.

Qualitative Research

Previous research in leadership has predominately used quantitative methods to investigate the role of the coach in sport. The questionnaire-based research (e.g., Chelladurai, 1978) and classification-based research (e.g., Smith, Smoll, & Hunt, 1977) have limitations in terms of the richness and information gathered and the condensing of information into limited categories. Some researchers (e.g., Horn 1992) have argued that, to understand coaches, more in-depth approaches are required that do not predetermine what coaches can say or how the information is categorized. Researchers (e.g., Côté, Salmela, & Russell, 1995b; Salmela, 1995) have recently adopted alternative methods to explore the coaching process in more depth.

As compared to quantitative research, qualitative or applied research does not focus on quantitative, generalisable results, and statistical validity. As described by Peshkin (1983), “Qualitative research is based on a coherence theory of knowledge that encourages exploring phenomena from a number of angles to illuminate the previously or tenuously unknown through rich description, and to obliterate faulty understanding”. Nicholson (2001) notes, in qualitative research the viewpoints are broader on the issue of what constitutes ‘research’ and have a less rigid theoretical framework, in which qualitative and interpretive research are both valued and legitimised. For example, researchers are no longer outsiders; they locate themselves within the research process alongside the participants. The tacit knowledge the researcher brings to the research is valued and integral to the process of knowing (Martens, 1987). The research methodology is driven by the nature of the problem, and the knowledge, understanding and skills that the researcher brings to the task. There is a strong emphasis on contextual delineation; behaviours do not happen by
themselves, the context changes and shapes behaviours, hence the need to understand the impact of context. Qualitative research is not about trying to prove something. Instead, the heart of the research is about understanding the broader social context and all that it entails (Dewer & Horn, 1992; Strean, 1998).

In leadership research, there are several studies that have applied a qualitative or heuristic approach to exploring leadership behaviour in sport. The methodology is typified by a grounded theory approach using in-depth interviews. The knowledge arising from the research is categorized according to the following areas: (a) expertise development, (b) elite athlete development, and (c) sport specific theories of coaching.

*Expertise Development*

Although the development of expertise has been investigated in other disciplines (e.g., education, business), it has only recently been explored in sport. In education, types of knowledge required, and the process of acquiring that knowledge, have been targeted as important areas of investigation for informing pre-service teacher education, and for establishing standards for teacher evaluation. In many ways, the role of the teacher and coach are similar, hence it is worth summarizing some of the findings from the education field.

Bloom (1985) was one of the first educational researchers to investigate the development of expertise. He examined expertise across several domains including the arts, science, and sport, and identified three stages of development culminating in expertise. According to Bloom, the three developmental stages leading to expertise were: (a) initiation into the specific domain (e.g., tennis), (b) technical development of talent, and (c) full time commitment to the development of talent. In the first stage, there was a close interaction between the performer and mentor, the experience was positive, and the emphasis was on developing a love of the activity in contrast to
achievement. Stage 2 involved participation in specific practice with increased levels of technical development. The performer was achievement oriented and welcomed constructive criticism that lead to enhanced performance. Competition was then used as a measure of success. The performer’s mentor or coach possessed superior levels of technical knowledge and also took a personal interest in the performer as well as their performance. When the performer reached stage 3, developing and fine-tuning expertise in their domain dominated their life. Performers understood the dimensions of their own knowledge base and how they self-regulated. They were willing to put the required effort into the performance in order to achieve success. The relationship between the mentor and performer was further strengthened through strong emotional ties. The research highlighted the role of significant others and/or mentors in the development of expertise. Of interest, was the changing role of the mentor through the different stages of expertise development.

Berliner (1989) used a five-stage model, based on the model developed by Dreyfus and Dreyfus (1986), to describe the stages of teacher development. Berliner reported that during the novice stage of teacher development, which is stage 1, context-free rules were learned. Performance at this stage was rational and relatively inflexible. During the second stage, the advanced beginner started to be guided by context, and procedural knowledge was further developed. The competent performer, which is the third stage, was where the individual developed priorities and drew up flexible plans to meet reasonable goals. They knew what to attend to and could prioritize according to importance. A smaller group of teachers progressed to the proficient stage, stage 4, which was demonstrated by pattern recognition and possession of an intuitive, holistic sense of the situations they faced. An even smaller number of proficient teachers became experts, which is stage 5. These teachers possessed good perceptual ability and could respond intuitively when faced with
complex situations. They appeared to respond effortlessly, smoothly, and appropriately. Berliner also emphasised that knowledge growth took place over an extended period of time.

In a later study, Berliner (1991) investigated sources of knowledge required by the experienced teacher. The three sources of knowledge identified were: (a) content knowledge, (b) pedagogical content knowledge, and (c) pedagogical knowledge. The first of these sources, content knowledge, referred to the teacher's understanding of the structure, salient concepts, relations among concepts, and ways of thinking that were characteristic to specific curriculum areas. Pedagogical content knowledge, the second form of knowledge, was the teacher's ability to transform content knowledge into an appropriate form that students could understand. The third form of knowledge was pedagogical knowledge, best described as classroom management, assessment, personal knowledge of students and their families, and social interaction skills.

Morris and Thomas (1995) used Berliner's (1988) knowledge development theory as a framework for understanding the professional development of applied sport psychologists. Like teachers, in the early stages of developing competence, sport psychologists work with context-free rules and procedures and are inflexible. As the sport psychologist developed, the context played a more significant role, they could draw on experience to make decisions, became more intuitive and developed a holistic awareness and recognition of similarities and patterns. The expert sport psychologist was characterised by the ability to perform tasks fluidly. The sport psychologists were proficient performers, who were intuitive and arational, in that their behaviour did not employ calculation or deliberate thought. Deliberate analytical thought process only came into play when anomalies occur. It was important to note that few performers, whether they were athletes, coaches, teachers, or sport psychologists become experts.
Much of the teacher expertise research in education was mirrored within the sport context, although the amount of research was limited. McCullick, Cumings, and Demarco (1998), drawing on Berliner’s (1994) research, described the developmental stages of coaches as: (a) beginner, (b) competent, (c) proficient, and (d) expert. Their description of the different stages of coaching reflected a shift from an authoritarian, rule-focused environment to an athlete, context-focused, and empowering environment. The importance of experience was noted, and discussed in terms of developing schemas that enabled the coach to change and adapt to different contexts. Although McCullick et al. (1998) discussed experience with some reference to type of experience, they never really addressed the quality of the experience. Some coaches have a great deal of experience, however, it has a narrow focus or exposure and it does not provide a foundation for further growth. Through the use of qualitative research, it has been possible to explore some of these issues in depth and develop a greater insight into what, why, and how coaches evolve, communicate, develop athlete expertise, and adapt according to different sport contexts.

The Development of Coach Expertise

Salmela (1995) appears to be the first researcher to have explored how expert coaches evolve across their career, using a qualitative research methodology. He interviewed expert coaches (N = 21) from a selection of team sports (basketball, volleyball, ice hockey, and field hockey), in an attempt to examine in detail the nature and evolution of their applied coaching knowledge. The results provided a road map that described and provided insight regarding the coaches’ career transitions from player through to expert coach, and crystallized and clarified specific coaching behaviours.

The themes arising from Salmela’s (1995) study provided a chronological description of the development of coaches he interviewed, from player to expert
coach, and highlighted the behavioural, cognitive, and affective changes in coaching behaviour over time. All the coaches in Salmela’s study cited having had an opportunity to participate in high-level sport from a young age, but not necessarily in the sport that they coached when Salmela interviewed them. The coaches in Salmela’s study believed it was their passion and leadership that separated them from others, not necessarily their player ability. Salmela (1995) identified specific behaviour patterns associated with different stages of coach development. When the respondents in his study were novice coaches they struggled with communication, and as a consequence, so did their athletes. When Salmela’s participants were novice coaches, mentors played an important role, and helped pave the way to significant success. With experience, according to these coaches, personalized models of coaching developed and became more flexible and athlete centred. As expert coaches, the individuals in Salmela’s study communicated and clarified the climate with all athletes, so the athletes understood the coach’s role. These coaches maintained high standards and principles and a high passion for the game that was moderated by caring for the athlete, and understanding of the individual and organisational needs. Training was focused and directed by long-term plans involving technical, physical, tactical, and mental components. The coaches that Salmela examined emphasized the need for creating learning environments that were exciting, and provided opportunities for constant communication and problem resolution. Competition was used to evaluate training and to control personal and training intensity. These coaches did very little teaching in the competition situation, making small adjustments for already well-learned strategies. Stable competition strategies were designed to provide confidence in training, while not overloading the athlete. The competition results were used to direct the next training session. In relation to coach education and training, the coaches in Salmela’s study emphasized the need for
a formalized educational experience that also involved some form of mentorship and experiential learning.

Salmela (1996), in an extension of the previous study (Salmela, 1995), investigated the strategies expert coaches used to develop expert athletes. Previous research (Berliner, 1989) cited number of hours in practice as explaining a high percentage of variance in expertise. The coaches in this study \( N = 21 \) were experienced, elite coaches from across a number of team sports (basketball, volleyball, ice hockey, field hockey). The strategies that emerged were: (a) setting the direction, (b) teaching skills, (c) work ethic, (d) simulation, and (e) the next practice.

Salmela (1996) cited the coaches’ ability to set the long-term vision for the team and to progressively translate the vision into specific attainable short-term goals as the most important human resource provided by expert coaches. This was achieved through building a roadmap and establishing individualized goals for each athlete, so that they could navigate their way. As a strategy to encourage athletes to buy into the goals, coaches in this study reported that they empowered athletes by giving up some of their own control as part of the process. Once the goals were agreed upon, the next task was monitoring them. The coaches Salmela interviewed in this study related goals, not only to the outcome of the game, but also to the process of achieving goals during practice. Salmela (1996) described the central coaching role as keeping athletes on task and committed to providing the effort required for the development of expert performance. To achieve the agreed goals, the coach provided the physical resources, for example, facilities, sports equipment, and access to the practice and playing environment, so that athletes were able to develop their skills. Salmela (1996) attributed successful teaching to a flexible and creative outlook, and providing training situations that simulated the demands of the sport. Salmela proposed that skill development was progressive, with a mix of tactics and strategies. He reported
that coaches emphasized the need for a strong work ethic in elite level sport. At this
level of performance, enjoyment had to be carefully blended with hard work.
According to these coaches, there are also certain non-negotiable rules regarding
specific behaviour.

In summary, Salmela (1996) noted that it was a combination of skills and
knowledge that the coaches required and employed when building effective learning
environments. The coaches were required to train smart by controlling the mix of
deliberate practice with periods of recuperation. Salmela (1996) also made it clear
that training smart required a different set of skills to competing smart. Salmela’s
study emphasised the complex web of skills and knowledge required by expert
coaches to perform their role. While emphasising the complexity of the coaching
process, Salmela (1995, 1996), in extracting the themes did very little in the way of
theory development. Salmela’s research did unearth the lack of knowledge and
understanding of the important milestones in coach development and their
implications for coach education.

*Expert Professional Coaches.*

Kellett (1999) conducted a study to understand coaching and leadership from
the professional coach’s perspective. Professional Australian Rules Football League
coaches (N = 12) were interviewed to investigate how they viewed coaching and
leadership, terms that are often used interchangeably, and how they viewed their role
as coaches. Kellett (1999) found it noteworthy that these coaches did not feel
comfortable using the term leadership as a descriptor of their own behaviour, although
they believed one of their roles was to develop leadership skills in their athletes. The
coaches preferred the term facilitator or people manager, the term leadership had
negative connotations attached, such as dictatorial behaviour.
Kellett (1999) described the coaches as being explicit in the description of their tasks. The tasks were categorized as: (a) empowerment, (b) communication, (c) planning, and (d) providing a supportive environment. Empowerment was defined as giving players and staff responsibility, so that each can carry out specific objectives, based on their area of expertise. Communication was narrowly defined by the coaches as having a feedback role, providing counseling, and listening to players and assistant staff. Kellett (1999) reported that the communication between the coach and player was highly personal, and used if to evaluate the player's psychological state. The coaches in Kellett's study emphasised the importance of planning both short- and long-term goals, and strategies for putting such planning into action. Most important was ensuring that flexibility was built into the planning process, and creating opportunities for players and assistant coaches to contribute to the planning process. Kellett (1999) described the coaches as being very articulate in highlighting the requirements of a supportive learning environment. The coaches that Kellett interviewed described the learning environment as a place where players worked on skill and teamwork; it was an environment that provided opportunities for players to develop themselves. The coach intervened only when the learning environment was compromised. The coaches indicated that they were not there to teach or direct, but to maintain the environment that supports shared development of skills and teamwork. All tasks were embodied by an overall philosophy of developing players as athletes and as people. Kellett's research suggested that the coaches' earlier claim of being people managers sits comfortably within their humanistic philosophy. Their actions were directed to clarifying the goal, creating the climate, and providing opportunities for athletes to control their own destiny. As Kellett emphasized (1999), it is worth noting that the coaches did work with elite athletes who were expected to have a high level of skill development and knowledge of the game by the time they reached this
level of competition. This study draws attention to how leadership is defined, and the way in which expertise is measured. One of the limitations of qualitative research is the inability to generalize results, hence coaching expertise at recreational or junior level sport may not correspond to expert coaching behaviors identified at the elite level of competition.

*Development of communication expertise.* The role of coach communication was highlighted in the research (Kellett, 1999, Salmela, 1995) and in popular literature as being a predictor of effective coaching. There is, however, very little research to support this supposition in the sport context. Bloom, Schinke, and Salmela (1997) conducted an in-depth study on coach communication and examined changes in communication styles over time, according to the four stages of Schinke, Bloom and Salmela's (1995) developmental model of coaching. The four stages of coaching were: (a) novice coach, (b) developmental coach, (c) national elite coach, and (d) international elite coach. In interpreting the data, Bloom et al. (1997) reported that, when coaches recalled different stages of their development, they were able to clearly articulate changes in their communication style. The coaches indicated that as novice coaches, they were autocratic and tended to alienate athletes. During the developmental stage, the coaches reported that they started to understand the importance of the training climate and its impact on the athlete. A structured and enjoyable climate was considered to be important for the athlete. Bloom et al. (1997) reported that it was also a time during which the coaches were prepared to take risks with their interpersonal approaches to communication. At the national, elite level, coaches moved beyond technical preparation of the athlete and considered areas such as nutritional, social, and scholastic development as also important. The feedback they gave to athletes was reported to be constructive and caring; the coach also understood the impact of how, as well as what, they communicated to the athlete. Coaches were
also aware of their responsibility for team success and ensured this through the environment they created for the athletes. Bloom et al. reported that these coaches recognized the transition to international, elite coaching involved a further commitment to national sport federations, the media, and the public. At this level, coaches were aware that job security was contingent upon their success. Coaches communicated the realities of the situation to the athletes, so that all members understood their roles and commitments. The coaches that Bloom et al. interviewed understood the importance of empowering athletes by involving them in the decision-making process. They also understood that two-way communication was essential, if the team vision was to succeed. Coaches stated that feedback, clear communication, fairness, and honesty were required of them. Athlete life balance was a high priority, and experience outside sport was valued. The coaches emphasised the need to communicate across all facets of their athletes’ lives. The study by Bloom et al. established a pattern of communication styles across the four stages of coach development. Issues arising from the research are whether communication is classified as one of many behaviours required by the coach, or whether it plays a bigger role as an enabler for expressing and filtering other behaviours. This has implications for coach education. If communication is the key to good coaching, then communication skills need to be part of the coach education program at all levels and given the same priority as technical game skills. It was evident from this study that coaches shifted from a coach-centric position, to a more open form of communication that was athlete focused. There was little information, however, regarding what triggered change in communication styles, what strategies the coaches used that were effective, and what underpinned those strategies.

*Deliberate Practice.* Ericsson, Krampe, and Tesch-Römer (1993) were the first to coin the term “deliberate practice”. Deliberate practice refers to the quality,
specificity, and quantity of practice. Ericsson et al. explored expertise from the perspective of deliberate practice as opposed to ability based on natural talent. Although the research Ericsson et al. conducted used a quantitative methodology, the framework deserves further explanation as it is now being used in different contexts, such as sport, using qualitative research methods.

Ericsson et al. developed an expertise framework driven by amount, specificity, and quality of practice, not generic attributes. Ericsson et al. did concede however that initial entry to the domain occurred because a parent, teacher, or significant other identified exceptional promise that lead to the onset of early training, so there is the possibility of talent identification during the early stages of development. Expertise is not attained automatically through extended hours of practice, it occurs slowly over at least a 10 year period, and requires guidance and direction from significant others (practice design), which supports previous research on expertise (Berliner, 1989, 1991; Bloom, 1995; Dreyfus & Dreyfus, 1986).

Deliberate practice differentiates itself from other forms of work and play by the type and specificity of practices designed to improve the current level of performance. The learning environment is characterised by repeated experiences whereby the individual attends to critical components of the situation to improve his or her performance in response to knowledge of results, feedback, or both, from a teacher or coach.

The outcomes of deliberate practice differ from other activities, as does the frequency with which individuals pursue the activity. Engagement in deliberate practice requires high levels of intrinsic motivation because it is effortful and not always enjoyable. Deliberate practice also requires time and energy for the individual as well as teachers, training material, and training facilities. Research conducted by
Ericsson et al. (1993) investigating music expertise, (violin and piano players), supported the theoretical framework that expert performance is the result of extended daily amounts of deliberate practice. Although the research demonstrated support for the role deliberate practice plays in physiological and physical adaptation, and cognitive memory organisation, the results highlight the possibility that an individuals' motivation to practice may be influenced by hereditary factors. The role of deliberate practice has many implications for sport. To date, the research exploring the connection between deliberate practice and sport expertise is limited but it does hold promise for understanding athlete and coach expertise and improving coach education programs.

Kitamura, Salmela, and Moraes (2001) investigated coaches' perceptions of expert coaching in a Japanese soccer context. Professional Japanese football coaches ($N = 4$) coaching soccer at the Division 2 league level were interviewed about their perceptions of concepts related to teaching practice and the policy of their team management. Kitamura et al. (2001) reported that the coaches divided their role into three components, they were: (a) play, (b) work, and (c) practice. Play referred to the players' flow state or experience when playing soccer, work described intensity of training and all it entails, such as player commitment and concentration, and practice encompassed task analysis, training design, and implementation of deliberate practice. The coaches indicated that there was a strong relationship between all three components and that by encouraging players to commit to deliberate practice, it overcame the constraints of talent development, motivation, effort, and resources.

As in previous research, the coaches in the study by Kitamura et al. (2001) emphasized creating an environment where athletes had the opportunity to express their ability and shift into a strong flow experience. The coaches in the study indicated that they understood that enjoyment of the game was important and they needed to
structure that into the practice environment. In their coaching, they experienced a constant dilemma between coaching and teaching, and the coach sometimes had to stand back and provide opportunities for athletes to make decisions. The participants in the Kitamura et al. study of Japanese soccer coaches indicated that, in the competition situation, the coach had less chance to influence the athletes, but the coaches believed that the athletes were more focused on the game, hence, concentration and effort on the part of the athletes increased. Work practice was described as “…effortful, continuous training” (p. 219). Rules were established, to enhance team-building and as necessary measures for protecting player health (e.g., physical and mental rest). Practice was designed with a deliberate focus, based on task analysis. Team vision needed to be incorporated into the seasonal plan and physical and team resources needed to be maintained in good order to ensure deliberate practice could always take place to ensure that the team reached its ultimate goal. An emphasis on deliberate practice seems to be a constant theme throughout the literature. The need to develop an understanding of deliberate practice also suggested that coaches required deliberate experience, so that they are in a position to effectively create appropriate learning environments.

*Characteristics of expert high school coaches.* Hardin (2000) investigated the characteristics of expert high school coaches ($N = 5$) using ethnographic techniques; these techniques included interviews, field observations, and document analysis. Using a pedagogical framework, Hardin identified the following themes: (a) planning, (b) experience, and (c) continuing education, as reflecting expert high school coaches. The coaches in Hardin’s study used planning as an organisational strategy, and all coaches used written plans in practice; plans were flexible and adaptable to the context. Experience as a player was viewed by the coaches in the study as supplementing their coaching. All the coaches in Hardin’s study elaborated on the
importance of further education to enhance coaching performance. From a pedagogical point of view it would have been interesting to explore what knowledge base underpinned the coaching process. This surely effects the quality of the planning, the ability to extract pertinent experience and transform it to suit the present context, and determines what type of further education is required.

Hardin and Bennett (2002) used ethnographic techniques to investigate the instructional attributes of a successful college baseball coach. Using structured interviews, field observation, stimulated recall, and document analysis, Hardin and Bennett found that several purposeful strategies emerged. These strategies, demonstrated by the coach in Hardin and Bennett’s study were: (a) deliberate practice or practicing at game speed to simulate the challenges of a real game situation, (b) detailed planning, (c) ability to provide information succinctly through cueing, and (d) questioning techniques designed to elicit whether or not athletes understood a concept or skill. Themes reflecting deliberate practice, planning and communication have surfaced in most of the qualitative research investigating the coaching process. If viewed as components of an expert coach, there are still questions relating to what elements make up the components. For example, very few studies have elaborated on what planning means both structurally and conceptually in a sport context.

The majority of research to date has concentrated on elite coaches working with elite athletes. Research on elite coaches does provide a benchmark for comparing type, range, depth and application of knowledge at the elite level of competitive sport. The study discussed next provides an insight into how novice coaches progress through the early stages of their development.

Novice coaches. In order to better understand what processes occur during the novice stage of coaching, Weiss, Barber, Sisley, and Ebbeck (1991) focused on the development of competence and confidence in novice female coaches involved in a
season-long coaching internship. This study provided an interesting perspective regarding novice coaches’ perceptions of themselves and the role of the coach. It also provided insight concerning what novice coaches believed they needed to acquire and develop to become confident and effective coaches. In this study, female, novice coaches (N = 28) from a number of sports (basketball, volleyball, track and field, soccer, cross country running, tennis, tai kwon do) attended a coaching workshop and then completed a season-long internship under a mentor coach. Weiss et al. (1991) reported the personal coach outcomes for the novice coaches as: (a) satisfaction working with children, (b) development of coaching skills, (c) social support via positive feedback from the mentor, and (c) fun, which the novice coaches had difficulty articulating. The novice coaches often identified the same behaviour as their strength and weakness. For example, the coaches felt more confident about their game knowledge but also saw their lack of sport specific knowledge and skills as a weakness. It was clear that these coaches believed that, to be effective, the most important behaviours and knowledge were sport-specific discipline knowledge, planning and management skills, an understanding of athlete motivation, development of communication and interpersonal skills, as well as injury prevention techniques. These were explicitly connected to the development of their own self-confidence. It was interesting that Weiss et al. (1991) identified behaviours of novice coaches that were similar to those identified by elite coaches (Kellett, 1999; Salmela, 1995). The elite coaches were, however, better able to articulate and give greater meaning to the behaviours.

The majority of the coaching expertise research provided insight into the different stages of coach development, but the research is still to explore the complexity of the coaching process, for example, understanding the interaction between coaches’ beliefs, goals and knowledge base. To truly understand the novice
and expert coach, it is necessary to not only investigate their history but also to
examine what role experience plays, and how it manifests itself in stressful situations.
Research attempting to differentiate between levels of expertise needed to use
methodologies that asked questions about how expertise and experience effects
decision making. Although the novice and expert coach may speak the same
language, and demonstrate similar behaviour patterns under normal training and game
conditions, in stressful situations it may become more apparent as to what
differentiates the novice from the expert coach.

*Contextual Influences*

Context has been acknowledged as having the potential to influence the
coaching environment (Horn, 1985). Previous research has investigated the coach –
athlete relationship, but has rarely examined the physical and social environment and
the ecological relationships between the coach and these contexts (Strean, 1995).
The following research reveals the impact context has on coaching behaviour.

Strean (1995) explored the youth sport context, specifically investigating the
impact of contextual factors in coach experience. The four contextual factors
identified by coaches ($N = 8$), were: (a) parents, (b) spectator location, (c) rules, and
(d) time. Strean’s study indicated that coaches recognized that parents play an
important role in the youth sport context. They support the organisation, deliver
children to practice and training, and perform some of the administrative roles, such
as scoring and timekeeping during competition. Parents also pose significant
problems for the coach. The level of support for the coach is often dependent on the
relationship between the coach and parent. The coaches in Strean’s study reported
feelings that they were better off when the parents knew little about the game. The
coaches questioned whether educating the parents, was more detrimental than helpful.
The coaches often manipulated spectator location at practice and in competition
situations. The coaches stated that keeping the spectators away from the coach and players avoided many of the problems spectators created. Coaches reported that the rules of conduct influenced their choices. Rules in place ensuring all players received equal playing time ensured that coaches were in line with the league’s philosophy regarding equal participation for all players. Some coaches saw it as a constraint, for example, one coach felt he should be able to bench players in response to poor performance to help teach them that hard work was required. The last factor proposed by coaches, time, was viewed as a commodity that limited the coaches’ ability to achieve their objectives.

Within the youth sport context, Strean (1995) reported that the coaches were influenced by significant others, the rules of the league or specific game rules, and limited in their ability to achieve their objectives due to time constraints. Research investigating the coach-athlete relationship has often had a very narrow focus, Strean’s research suggests that the coach-athlete relationship does not happen in isolation from the social context, and that it is difficult to predict causal relationships without understanding the context and the interrelationships within those contexts.

Sport, as an institution, is as diverse as the people that participate in it. The research presented next highlights differences between sport cultures and contexts and how it influences coach behaviours. Both individual and team sports are represented. Although there are major cultural differences, the common themes arising from the research are use of deliberate practice, and the monitoring of competition to inform practice and evaluate outcomes.

The Knowledge base of expert gymnastic coaches. The ground-breaking research of Côté and associates (Côté, Salmela, & Russell, 1995a,) has provided an insight into how expert, high performance, gymnastics coaches construct their work environment, organize, and use appropriate knowledge to ensure that athletes reach
their potential. In the study by Côté et al. (1995a), the focus was on identifying the types of knowledge used by high performance gymnastic coaches \((N = 17)\) during training and competition. Côté et al. reported that coaches responded differently during competition and training. The coaches divided competition into three categories: (a) competition site, (b) competition floor, and (c) trial competitions. Competition site referred to the time on the competition day, excluding the actual competition period, competition floor was the actual competition time, trial competitions were real competitions designed to help the gymnasts develop confidence and improve performance. Côté et al. reported that coaching behaviours varied according to the competition category. During the floor competition coaches cited using intervention behaviours but only when deemed necessary. The coach’s preference was to play the role of spectator during the competition and not overload athletes with technical information prior to competition. At the competition site, coaches of male gymnasts discussed helping gymnasts to control distractions and supervising the execution of routines. At trial competitions, coaches of female gymnasts indicated the importance of real competitions to build athlete confidence and improve the execution of skills, with learning being the major aim. Côté et al. (1995a) attributed differences in behaviour between coaches of male and female athletes to differences in physical maturity between males and females. There was no acknowledgement that cultural differences might exist between the male and female gymnastic programs.

Côté et al. (1995a), in examining the training component, identified how coaches’ knowledge was used to help gymnasts develop and perform different skills in training. The categories identified by Côté et al. were: (a) involvement in training, (b) intervention style, (c) technical skills, (d) mental skills, and (e) simulation. Involvement in training was a measure of hours spent coaching athletes. Coaches
reported spending between 20 and 60 hours per week coaching gymnasts. The intervention style was defined as a coach’s knowledge concerning preferred intervention style in training. The four styles mentioned by coaches of both genders encompassed being supportive, giving responsibilities, providing instruction, and providing positive feedback. The technical skills referred to the coaches’ pedagogical knowledge. All the coaches highlighted the importance of skill progression in their teaching. The coaches in the study by Côté et al. mentioned the need to be conscious of the gymnast’s state of readiness to perform a skill and to keep the skill safe. Mental skills were defined as the coach’s knowledge used to develop mental skills in their gymnasts. Coaches of male and female gymnasts emphasized the need to develop the athlete’s ability to deal with stress, enhance athlete motivation, and improve athlete self-awareness. The last category reported by Côté et al. is simulation. This describes the coaches’ ability to develop appropriate scenarios that simulate the technical demands of competition. The coaches that Côté et al. studied exposed their athletes to all possible competition conditions to prepare the gymnasts for competitive challenges.

This detailed investigation not only provided rich information about the coaching process it also described strategies coaches use to enhanced athlete performance. It provided valuable information for coaches working with a gymnastics cohort. Many of the behaviours and knowledge identified in the study were well supported by research (e.g., Chelladurai, 1993; Smith, Smoll, & Christensen, 1996). Until this study is repeated across sports, it is difficult to generalize the information.

Côté, Salmela, Trudel, Baria, and Russell (1995), in an extension of the previous study (Côté, et al. 1995) investigated how expert coaches build mental models to enhance athlete development and solve problems. Mental models are internal representations of a problem and possible solution. In creating a new mental
model, specific knowledge structures are manipulated to represent new situations through the use of generic knowledge. In the coaching context, it is assumed that the coach would develop a new mental model for each athlete, which is in contrast to adjusting a schema which consists of precompiled generic knowledge that is adapted to meet the athlete’s needs.

Using information gleaned from the previous study about the type of knowledge coaches elicit in training and competition, Côté et al. (1995) examined the conceptual links between the components and developed a heuristic model to explain the coaching process used by high-performance, gymnastic coaches. The components of the Coaching Model (CM) and their dynamic relationships are illustrated in Figure 4.

Côté et al. (1995) found that coaches required a broad base of knowledge to be able to create a mental model of the athlete’s potential. According to Côté et al., the

![Figure 4. The Coaching Model (Côté et al. 1995).](image-url)
coaches used organisational knowledge to establish an optimal learning environment for training and competition by structuring and coordinating the tasks involved in reaching the goal of developing the elite gymnast. At training, coaches reported using knowledge to assist athletes to develop the necessary technical and mental skills. In competition, coaches reported using knowledge to help athletes perform to the best of their competition ability. Competition, training, and organisational skills were constantly monitored and adjusted in line with the coach’s mental model of the athletes’ potential.

The central process of the model is the development of elite gymnasts. According to Côté et al. (1995c) the coaching process revolves around competition, training, and organisational components. These in turn are influenced by the coaches’ personal characteristics, the athletes’ personal characteristics and level of development, and some contextual factors. The coach’s mental model of the athlete’s potential and the goal, which represents the most obvious task of the coach, were proposed to be additional factors that complete the model. A number of these components, such as the athletes’ and coaches’ individual characteristics, have appeared in other models (e.g., MML; MM).

According to the Côté et al. (1995) model, the coach’s mental model of the athlete is influenced by the peripheral components of the model, as well as the coach’s mental representation of what is required for the athlete to reach their potential. The athlete’s potential can be raised or lowered, depending on the peripheral components. The peripheral components can have a positive or negative impact on the coach’s mental model of the athletes’ potential. The coach’s personal characteristics, for example, philosophy, perceptions, or beliefs, can influence the training, organisation, or competition components. The athletes’ personal characteristics, which may include variables such as the athlete’s stage of learning,
age, personal abilities, and characteristics, could affect the coaching process. Contextual or unstable factors, aside from those related to the coach and athlete, such as sport politics or poor training facilities, can have a positive or negative affect on the coaching process.

Of interest to Côté et al. (1995) was how coaches developed the mental model of athlete potential. Rather than using schemas, they found that coaches considered the athletes’ personal characteristics, level of development, and contextual factors. From that information, coaches built a new mental model of what needed to be done to develop particular athletes. The model was then used by the coach to determine which knowledge was required for use in competition, organisation, and training components. The combination of the model, and the coach’s estimation of the athlete’s potential, served to create an action plan for the development of a particular athlete.

The Côté et al. (1995) model, although promising, has been based on a limited number of studies. These studies have also been within the confines of one sport, gymnastics, that may have its own cultural and sport specific anomalies that are not reflected across all sports. As in all qualitative research, it is important not to generalize beyond participants in particular studies. The model, like some of the previous coaching models (e.g., MML; MM), identified the peripheral components and their impact on the coaching process but has identified limited variables within these components. As a model it has provided some theory of the components and the relationship among components; as a predictive power it is still in its infancy, and as far as scope is concerned, it is narrow and needs to move beyond the realm of gymnastics. The CM, and the notion of mental models, however, provides a new pathway for investigating the coaching process. Still to be identified are the range of
variables within each component, the applicability of the model to other sports, and an understanding of how coaches develop and use mental models.

*Cultural influences.* A study by d’Arripe-Longueville, Fournier, and Dubois (1998) investigated coaches’ and athletes’ perceptions of coach-athlete effective interactions and the reason for their effectiveness. d’ Aripple-Longueville et al. used in-depth interviews to explore expert French judo coaches’ \( n = 3 \) and elite female athletes’ \( n = 6 \) behaviours and strategies used in training and competition settings.

d’Arripe-Longueville et al. (1998) set the contextual scene highlighting the influence of the broader social context on coach and athlete behaviour. d’ Arripe-Longueville et al. reported that coach and athlete perceptions of effective interactions within the judo culture are limited by a history of international success and associated national pride and passion. Attached to this success are cultural norms for both coach and athlete behaviour. Coaches follow in the footsteps of their predecessors, perpetuating behaviours and strategies that were associated with success.

d’Arripe-Longueville et al. (1998) concluded from the interviews with the coaches that, for interactions to be effective a coach was required to exhibit an authoritarian coaching style. This was manifested by exerting control over the athletes, unilateral decision making, maintaining a continuous presence at training and competition, creating a rigid training environment, and use of negative feedback. Strategies emerging from the autocratic coaching style were: (a) encouragement of interpersonal rivalry between players, (b) provoking athletes verbally, (c) displaying indifference to athletes, (d) entering into direct conflict with athletes, (e) exhibiting favoritism to successful athletes, and (f) developing specific team cohesion.

d’Arripe-Longueville et al. (1998) reported that each strategy was designed to elicit a particular response from the athlete. Stimulating interpersonal rivalry between the athletes was manifested to encourage social comparison between athletes, and
create a competitive climate to increase athlete motivation. The second strategy, provoking athletes verbally, was viewed by the coaches as essential for developing each athlete's technical, tactical, and mental skills and knowledge. It was also viewed as a positive stimulant for optimizing performance. The coaches reported displaying indifference to athletes to encourage athletes to acclimatize to the situation. This was mainly used when athletes were injured or had lost a competition. Entering into direct conflict with athletes was deemed effective by coaches, because it would either force athletes to give up and quit or adapt and win. Coaches also displayed favoritism and preferential treatment for athletes they supported. This manifested itself in increased feedback and instruction during training. Developing specific team cohesion through challenging situations was achieved by engaging the athletes in dangerous physical activities in pre-competition training camps. The program was developed to build team spirit through the shared experience. The outcome, team cohesion, was designed to intimidate adversaries and maintain the French tradition of excellence in judo. d'Arripe-Longueville et al. concluded that athletes adhered to the system because it was effective and produces results, however, it is in opposition with the athletes' needs for self-determination. d'Arripe-Longueville et al. proposed that the strategies athletes used were designed to protect their autonomy while still allowing them to survive the system through tacit cooperation.

Autonomy was the dominant interaction style used by athletes. d'Arripe-Longueville et al. described autonomy as a sense of independence that satisfied the athletes personal needs, while alleviating the pressures of obligation to the sport. The five strategies within the autonomous interaction style that emerged from the study were: (a) showing diplomacy, (b) achieving exceptional performance, (c) soliciting coaches directly, (d) diversifying information sources, and (e) bypassing conventional rules. Showing diplomacy provided athletes with a sense of autonomy, while
maintaining harmony and avoiding conflict in the teacher-student relationship. By achieving exceptional results, athletes overcame the subjective selection procedure ensuring their place on the team. Soliciting the head coach directly was motivated by the athletes' need for feedback and resulted in positive consequences for their personal self-determination and well-being. By diversifying sources of information, athletes were able to obtain information from a variety of coaches with different competencies that catered for their specific needs. The last strategy was bypassing conventional rules; seeking and utilizing other assistance related to auxiliary assistance, for example, personal trainers, or sport psychologists, based on perception of their needs. d'Arripe-Longueville et al. concluded that athletes' subsequent autonomous strategies and subsequent displays were perceived as effective, because they were a way of exerting self-determination, while maintaining their position in the national team. Overall, athletes behaved in a way that maintained the status quo and avoided conflict.

The aim of the research by d'Arripe-Longueville et al. (1998) was to investigate coaches' and athletes' perceptions regarding effective interactions, although it is still not clear what are the main factors required for successful interaction. Athletes cited the development of autonomy and coping strategies as essential for survival at the elite level. From the coaches' perspective, it is not evident whether they identified the development of autonomy and copying skills as necessary for success and hence used specific strategies to promote the development of these skills, or whether the development of these skills was a serendipitous outcome of how the coaches worked with their athletes. The study does highlight the importance of taking into account the cultural and sport context when investigating the coaching process. In the French judo culture at the elite level of competition d'Arripe-
Longueville et al. (1998) concluded that female athletes who achieved success are those athletes that can independently establish and navigate their own pathways.

In another study, Cross (1995), using interviews, investigated coaching effectiveness in hockey within a Scottish perspective. Six elite hockey coaches and six national hockey players participated in the study. The coaches cited a number of limitations that impacted their effectiveness. The limitations were finance, and time available for preparation and planning. All coaches had to earn a living outside coaching, which reduced time available for planning. Some coaches also mentioned low personal confidence as a limitation affecting effectiveness.

Cross (1995) reported that athletes and coaches measured effectiveness against competition outcomes. Team cohesion was also mentioned as reflecting coach effectiveness. It is worth noting that, in previous research (Curtis, Smith, & Smoll, 1979), team cohesion was associated with “keeping control” behaviour. In the study by Cross (1995), self-appraisal through personal reflection was used by half the coaches as a measure of coach effectiveness. The importance of planning was emphasized by the coaches, and, in the majority of cases, was based on intuition and scientific principles. Feedback was given immediately, if appropriate. Following a loss, most coaches delayed the feedback to allow for emotional recovery to take place. Behaviours coaches admired in their colleagues were knowledge of the game, commitment, and success.

Athletes identified the main limitations to be restricted training, player availability for training, standard of umpiring, and issues related to national selection in the British team when you play in Scotland. Important elements of the coaching process were split between the need for collaboration between coach and athlete, and trust, where players trusted the coach to make the correct decision. Social support was not important for the majority of players. This is a recurring theme; social support
does not seem to be as important in sports outside the boundaries of an education system (Sherman et al., 2000). Players considered that athletic success is measured by whether the athlete made the national team.

In the study by Cross (1995), coach behaviours that athletes valued were good communication skills, honesty, and consistent behaviour. According to the players, coaches needed to be flexible in their interpretation of plans, and to provide lots of feedback, not only on performance, but also on coaching decisions. Players thought that coaches required skills in program evaluation and needed to have good crisis management skills.

Apart from its exposition of the Scottish hockey context, the research by Cross (1995) provided an insight into the lives of part-time coaches; what they struggled with and how they measured success. The athletes were focused on behaviours that had a direct impact on their future. This highlights the importance of relying only on athletes’ perceptions of coach effectiveness. Because they often have a single focus, they sometimes do not take into account all the stakeholders that the coach is answerable to at the elite level of competition. Of importance, was the need for coaches to display consistent behaviour and honesty, and to provide feedback on game decisions, as well as on individual performance. The athletes emphasised the need for clear communication as they do not have time to interpret and decipher inconsistent coaching behaviour.

Comparisons between Expert and Novice Coaches

Ahlgren, Housner, and Jones (1998) evaluated expert experienced \((n = 10)\) and inexperienced \((n = 10)\) basketball coaches as they executed a 30-minute practice session of the “give and go” play in basketball. The focus of the study was to investigate the quality of practice sessions conducted by experienced and inexperienced coaches. The criteria for selecting experienced coaches were related to
coaching experience, success, peer recognition, professional involvement, and teaching certification. Inexperienced coaches were identified as having two or less years of experience.

The methodology consisted of three phases. In the first phase, coaches were asked to think aloud as they designed a training session on the “give and go” play. In the second phase, they had 30 minutes to execute the practice session with a group of volunteer players. This phase was video-taped. At the end of the practice session, coaches took part in the third or debriefing stage. They viewed the video and were asked a standard series of questions related to their interactive decisions. All verbalizations were audio recorded and transcribed.

The data was analysed using quantitative and qualitative research methods. Five observer coaches were selected to evaluate the effectiveness of the training session. They were selected based on years of experience and coaching record. Each observer coach viewed and analyzed five practice sessions. The observer coaches were provided with a conceptual framework to guide their observations, but were not constrained to the guide. Observer coaches were instructed to verbalize their evaluations of the training session. All verbalizations of the observer coaches were recorded and transcribed for analysis. The quantitative results indicated that the expert coaches made 83 summary statements; 64.55% were positive and 34.9% were negative summary statements. In contrast, the inexperienced coaches made 52 summary statements, 28.8% were positive and 69.2% were negative summary statements. The aim of the analysis was to gain insight into the perceptions of the observer coaches.

Ahlgren et al. (1998) reported the following profile on effective coaching based on the qualitative analysis of the observer coaches’ verbal protocols. Effective coaching was characterized by practice sessions that concentrated on skill instruction.
According to the observer coach, effective coach clarified the climate and made students aware of the objectives and purpose of practice. Detailed explanations and demonstrations were characterised by the use of instructional cues. Student engagement was guaranteed through well organised and sequential instructional tasks. Specific feedback and checks for understanding were used to ensure students understood the task and were performing the skill correctly. The climate was positive, the coach established rapport, and students demonstrated enthusiasm.

Experienced coaches exhibited significantly more technical instruction and feedback whereas inexperienced coaches exhibited significantly higher frequencies of silent observation. The experienced coaches and inexperienced coaches both demonstrated similarity in the implementation of practice according to their plan. Inexperienced coaches, however, were less inclined to alter their plan when problems arose.

In a practice context, the findings of the study by Ahlgren et al. (1998) provided an insight into some effective coaching behaviours. The level of exploration, however, was shallow. It condensed the role of effective coaching to the basic execution and teaching of skills and was more reflective of a training environment. By providing such a controlled environment, the people or relationship element was removed, which many would claim is central to good coaching. In the planning phase, it may have been informative to ask coaches what they needed to know to make informed decisions about planning, for example, was the context important. Previous research (e.g., Berliner, 1989) on the development of teacher expertise suggested that novice teachers work with context free rules and are inflexible. As teachers develop they are guided by the context.

In some ways, the methodology used in the study is not very different from systematic observation. In this research design, however, the observer coach was part of the process and was not required to demonstrate their objectiveness. The observer
coach’s opinion and experience was valued in this research. The method by which judgements were made by observer coaches also allowed for the identification of behaviours not necessarily contained in observation inventories. There are, however, other areas of methodological concern that are problematic with this type of research (Bereiter & Scardamalia, 1993). Comparisons of experienced and inexperienced coaches provide a very static picture. Although the study may indicate what experienced coaches know and do at a specific point in time, there is little information about how the experienced successful coach got to where they are and how they maintain their expertise. A second concern is the choice of task. The “give and go” task is easy for the experienced coach and well within their comfort zone and competence. The choice of task allowed the novice to handle the task but it did not really call on the experienced coach to demonstrate expertise. To do this required a task that challenged them, and is therefore at the leading edge of their competence.

Summary

In summary, research investigating the coaching process using qualitative methodologies has shed light on elements of the coaching process previously unattainable using other methods. Of significance, the coach has been a central figure in the research investigating the coaching process, and provided views that are rich in description and detail. The use of qualitative methods has enabled researchers to investigate coaching using an alternative lens. This lens has given power to the participants to tell their story, to discuss coaching behaviour and decision making, to explain what is valued, and to put it into context.

The majority of the qualitative research has investigated the history and performance of expert coaches working with elite athletes. This has provided a rich description of how coaches developed expertise and communication skills over time, and how coaches behaved and construct their work environment. There is limited
research investigating the coaching process from a novice coach perspective. The research conducted investigated novice coach perceptions of the coaching process including evaluation of their strengths and weaknesses. Other research has compared the novice and the expert coach in tasks that fail to test both participants or simulate a true coaching environment. There are still gaps in the literature investigating coaches working with athlete cohorts other than elite mature athletes, and information on the coaching process relative to the coach's stage of development in real time rather than through recollection. Some of the more interesting information about the coaching process has been gleaned from research focusing on the context. It has highlighted the importance of considering the role of the physical, social, cultural, and ecological environment in the coaching process.

Literature Review Summary

The review of literature, investigating the role of the coach, has highlighted a number of gaps in the research. In most cases the research has created more questions that it has answered. Questions arising from the research relate to whether or not the coach is a leader; if there is no relationship between leadership theory and the role of the coach, then, this type of research is unlikely to uncover relevant information about the coaching process. The observation of coaching behaviour provides information about what actually happens in practice but questions remain about what that behaviour represents. De-contextualized behaviour may be of no value as the behaviour executed may be based on families of strategies, which are not explicit through action, understanding the decision making process that culminated in the choice of the behaviour may be more informative. Unpacking expertise is difficult (Abernethy, 1993). If the measuring tools (e.g., LSS, CBAS) limit choice and restrict further elaboration by the participant, unravelling the complexity of the coaching process is not easy. Qualitative research utilizing interview techniques has provided a
richer understanding into some segments of the coaching process (e.g., Salmela, 1995; Côté et al., 1995b). The development of the expert coach working with elite mature athletes has been explored, but what does this mean for the greater percentage of coaches working with athletes that are still in the developmental stage of their career? Understanding the context has surfaced as a key component of the coaching process (e.g., Strean, 1995; d’Arripe-Longueville et al., 1998). If this is the case then it is important to explore how different contextual components influence different coaching situations. With innovative approaches to research design investigating the coaching process, there are opportunities for gaining new insights that will help contribute to the establishment of a recognised body of coaching knowledge.

The literature review indicated that coaching as a domain still lacks a theoretical underpinning. This means that coaching, unlike teaching, is left to flounder as a profession. The implications are that without a knowledge platform it is difficult to move forward. Education and professional development programs become hit and miss when they fail to build upon and make connections with the profession. This requires an understanding of what knowledge and experience underpins the profession.