

COACH FEEDBACK AND ADOLESCENT FEMALE
ATHLETES PERCEIVED COMPETENCE

by

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ABSTRACT

The purpose of this study was to determine adolescent female athletes' perceived and preferred frequency of types of coach feedback in response to desirable and undesirable performances. A second purpose was to examine the relationship between coach feedback and perceived competence, ability and satisfaction. A questionnaire, based on the Coaching Behaviour Assessment Scale (Smith, Smoll & Curtis, 1979), was employed to assess adolescent female field hockey player's ($N = 143$) perceptions and preferences for particular coach feedback. Harter's (1989) Perceived Physical Competence Subscale was modified to assess perceived field hockey competence. Satisfaction with the coach and satisfaction with overall team involvement as well as coaches' ranking of each of their athletes' ability were measured. The participants perceived their coaches' feedback following desirable and undesirable performances to be positive and encouraging. Further, they perceived that the feedback frequently contained skill-related information about aspects of good performances and instructions on how their performance might be improved. Participants' preferences were similar. Multivariate analyses revealed a significant relationship between perceived coach feedback variables and perceived competence and satisfaction (Wilks's $\lambda = .67$, $F(15,321) = 3.33$, $p < .01$). A significant relationship was also found between preferred coach feedback and satisfaction with the coach and overall team involvement (Wilks's $\lambda = .60$, $F(30,329) = 2.12$, $p < .001$). No relationship was found between perceived or preferred coach feedback variables and ability. Post-hoc analyses revealed differences in perceived and preferred feedback for athletes categorised as 'high' and 'low' in perceived

competence. Specifically, frequent information only, information combined with praise and non-verbal praise in response to a good performance and lower corrective information in response to a mistake were predictive of higher perceived competence. The negative relationship between corrective information and perceived competence was a different finding to previous research and it was suggested that this type of feedback highlighted the fact that a mistake had been made and indicated failure and a lack of ability. The results are discussed in light of Harter's (1978) competence motivation theory, current leadership in sport theories and related research in participation motivation in youth sport. Practical implications for coaches of adolescent female athletes are discussed.

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DEDICATION

To my parents
Mum and Dad - thanks for all your
support and encouragement.
You're the best!

CHAPTER I

INTRODUCTION

"A voyage of discovery and development from uncut child to finished, polished, glittering jewel" is how Sebastian Coe and his coauthors described sport in their book *"More than a game"* (Coe, Teasdale, & Wickham, 1992, p. 14). Such advocates of sport clearly see the potential positive impact of sport on all participants, particularly children. This positive view of sport is reflected in the number of children involved in organised youth sport. For example, almost three - quarters (72%) of the 4.2 million Canadians aged between 10 and 19 years are physically active in their leisure time. Excluding physical education and job - related activity 73% of males and 70% of females are "active". While these figures are not exclusive to participation in organised sports, of the 20 top activities these young people are involved in, over half of the activities are organised sports (Canada Fitness Survey, 1983). In the US approximately half of all children aged 10 to 18 years (nearly 20 million) participate in agency - sponsored programmes, community - based programmes and numerous other individual and team sports (Ewing & Seefeldt, 1995). Similarly, in Australia, the participation rates for organised sport among preadolescent children is estimated at 67% of girls and 75% of boys (Robertson, 1986). Even more impressively, of New Zealanders aged 5 to 15 years, 81% of boys and 79% of girls participate in sporting activities (Russell, Allen, & Wilson, 1996).

Sport can also be seen as an important life experience. Coe, Teasdale, and Wickham (1992) expressed this positive attitude toward sport with their statement: "For the vast majority of us sport kindles memories of triumphs and tragedies in childhood, adolescence and adulthood; it cloaks a field of dreams" (p. 7). However, despite the fact that sport is frequently viewed as a

"wonderful" experience, it has been estimated that 80% of children drop out of organized sport programs, at all levels, between the ages of 12 and 17 (Seefeldt, Blievernicht, Bruce, & Gilliam, 1978). In the late 1970s, the Michigan Youth Sport Institute conducted what are probably the most systematic attempts to examine age - related participation patterns in North America (Brustad, 1993). These studies have shown that a dramatic decline in participation becomes apparent at age 11 years and this decline in involvement continues through adolescence. A similar decline in physical activity beginning from age 10-11 years has been found in young Canadians (Canada Fitness Survey, 1983) and Hodge and Zaharopoulos (1991) noted that nearly 450,000 children aged 5-19 years participate in organised sport in New Zealand but there is a significant drop in adolescent (15-19 years) participation (exact figures not available). In light of these data it would appear that sport may not be meeting or fulfilling the needs and dreams of these children.

How children become involved in sport initially and what contributes to their continued or discontinued participation are two of the central questions that continue to be a focus of research for sport psychologists interested in youth sport. Research has been guided by several prominent theories that have been proposed to explain motivation and sport behaviour. Three of these theories are: competence motivation theory (Harter, 1978), self-efficacy theory (Bandura, 1977), and achievement motivation theory (Nicholls, 1984). Although these models differ in their approach and explanation of motivational behaviour, each emphasize the importance of perceived competence. Generally they hypothesize that "children who have high perceptions of their ability in a particular achievement domain, will work hard to achieve competence and will enjoy their participation" (Horn, Glenn, & Wentzell, 1993; p. 263).

Based on research in the area, one of the most important sources of information children and adolescents use to determine their competence has been the attitudes and actions of coaches and other adults (Horn & Hasbrook, 1986; Horn, Glenn & Wentzell, 1993). There is general agreement that the relationship between the coach and athlete is an important determinant of the effects of participation (Seefeldt & Gould, 1980; Smoll & Smith, 1989; Smith & Smoll, 1995). Through the coaches' impact on the structure of the sporting environment, the goals, attitudes and values transmitted, and their behaviours, they can influence the outcomes of sport participation for children (Smoll & Smith, 1989). However, very little empirical research has focused on the coaching behaviours, factors affecting them and the impact of these behaviours on athletes (Smoll & Smith, 1989; Brustad, 1992). While the relatively small amount of literature in this area discusses "coaching behaviours", the focus is primarily on coaches communication with their athletes, specifically the feedback given to athletes. While not dismissing the importance of other forms of behaviour coaches display, such as decision style, for the purpose of this study the terms coach behaviour and coach feedback were used synonymously to indicate coach feedback.

There are several dimensions of feedback which need to be considered when investigating its impact on athletes. The frequency and quality of feedback appears to be important in children's perceptions of ability in sport (Horn, 1985; Smith, Smoll, & Curtis, 1978, 1979). In addition, the perceived information feedback contains is critical to the impact it will have on perceived competence (Horn, 1985). This area requires further study to better understand the relationship between coaches' feedback and athletes' perceived ability.

Finally, an important issue in youth sport is female participation. While it is recognised that less girls are involved, there is a paucity of research concerned with female athletes' perceived competence and perceptions of coaching behaviours. The limited research on gender comparisons has shown different perceptions of ability (Black & Weiss, 1992), sources of competence information used to judge ability (Horn & Hasbrook, 1986; Horn, Glenn & Wentzell, 1993), preferred coaching behaviours (Wentzell & Horn, 1993, cited in Horn, Glenn, & Wentzell, 1993), and coaching behaviours related to perceptions of ability and motivation (Black & Weiss, 1992). Specifically, girls have been found to have lower perceived competence than boys (Black & Weiss, 1992). Girls also use self comparison/internal information and evaluative feedback from a variety of individuals (coaches, peers, parents) to assess their ability more than boys (Horn, Glenn & Wentzell, 1993).

Definition of Perceived Field Hockey Competence

Perceived field hockey competence refers to the female adolescents' perceptions of their field hockey ability and competence. This is based on Harter's (1988) perceived physical competence domain definition. Perceived physical competence "taps the athlete's perceptions of his/her athletic ability and competence at sports" (Harter, 1988; p. 3).

Definition of Coach Feedback

Coach feedback as used in the present study was defined as a response from the coach, after a performance attempt, which "provides information about the quality of the performance attempt" (Bird & Cripe, 1986; p. 40). The feedback could be general (e.g., "good job") or specific (e.g., "well done, you kept your head down in that hit"), verbal or non-verbal.

Statement of the Problem

The purpose of this study was to examine adolescent female athletes' perception of coach feedback and the feedback they prefer. A second purpose was to examine whether differences exist in the perceived and preferred coach feedback of athletes higher and lower in perceived field hockey competence, ability and satisfaction.

Delimitations

The study was limited to the athletes of the field hockey teams ($N=10$), participating in the 1995 British Columbia Under 18 Girls Zone Championship, Oliver, BC. The participants' perceptions and preferences were assessed only once, at the end of the playing season. This allowed players within each team to have at least one season's experience with the coach they were assessing. However, it did not take into account changes in perceived competence over the season and the impact team or individual success had on perceptions of coaching behaviours and perceived competence.

Limitations

Perceived rather than actual coach feedback was assessed as no direct observations of coaches were made. However, it was assumed these were similar because, the two known studies which have compared observed coach feedback with players' perceptions of this feedback have found them to be highly correlated (Smith, Smoll, & Curtis, 1979; Horn, 1985).

CHAPTER II

LITERATURE REVIEW

This chapter is a review of the theories and research related to coaching behaviour and athlete perceived competence. For convenience, the review is divided into three sections. Section one identifies and discusses three prominent theories of motivated behaviour, the relevance of perceived competence to performance, motivation, and affect in sport, and the influence of socialising agents (i.e., parents, peers and coaches) on the development and maintenance of perceptions of ability. Section two describes two theories of leadership in sport and the impact of coach behaviour on children's and adolescents' sport experience. Research related to both perceived and preferred leader behaviour is reviewed. Section three discusses the relationship between coach/leader behaviour and perceived competence.

SECTION ONE: Motivation in Youth Sport

Theories of Motivation

A number of theories have been proposed to explain motivated behaviour and have prompted research in sport and physical activity. In particular, Harter's (1978) competence motivation theory has been the basis of much youth sport research (Feltz & Petlichkoff, 1983; Horn, 1985; Klint & Weiss, 1987; Roberts, Kleiber, & Duda, 1981). This theory is a refinement and extension of White's (1959) model of effectance motivation. The basic premise is that people are motivated to engage in an activity (mastery attempt) in order to deal effectively with the activity/situation or produce some effect. According to the model, if a child is successful at an optimally challenging task and feels responsible for his or her success, this leads to a

high perception of competence which in turn leads to intrinsic pleasure and increases competence motivation. Harter proposed that this would result in an increased likelihood of the child engaging in further mastery attempts. Further, positive responses from significant others would enhance perceived competence and control through increased intrinsic motivation. In contrast, repeated failure, negative responses from significant others, and not knowing who was responsible for the performance or attributing performance to powerful others would decrease perceived competence and perception of control, with the consequence of decreasing competence motivation. This, in turn, would decrease the likelihood of engaging further mastery attempts.

In contrast to White's (1959) unitary trait view of perceived competence, Harter (1978) believed perceived competence to be multidimensional. She identified three domains (cognitive, physical, social) in which competence motivation could be distinctly different. The distinction between competence areas was considered important because there may be both individual and developmental differences in the efforts exerted in different domains. Although Harter's model was developed and refined through a series of studies based in the academic domain, it has been seen to have potential in explaining behaviour in youth sports (Weiss, Bredemeier, & Shewchuk, 1986). As youth sport deals with and researchers attempt to better understand a population going through ontogenetic changes, the developmental approach of this model would seem appropriate.

Closely related to the above theory is Bandura's (1977) self-efficacy theory. Central to the Bandura theory is the role self-efficacy plays in mediating motivation and behaviour. The judgements people make about their capability to perform at a given level affects their behaviour, thought patterns and emotional reactions, however, the individual must also have the

required skills available to them. Bandura's theory posits that four principle sources of information determine self-efficacy. These are performance accomplishments, vicarious experiences, verbal persuasion and physiological arousal. Significant others commonly use feedback and verbal persuasion to influence behaviour in sport.

The third theory to be discussed in explaining motivation is Nicholls (1984) achievement motivation theory. Although this theory is based in the academic domain it has been seen to be useful in sport research (see Roberts, 1982 for a review), particularly for young children. Nicholls believed that perceived competence was the critical mediator of performance and persistence. His basic assumption was that people are motivated by a desire to demonstrate high ability and to avoid demonstrating low ability and that their perception of success or failure is related to their demonstration of competence. According to Nicholls, individuals can demonstrate competence via two goal orientations: (a) task orientation, where ability is assessed relative to learning, improvement and effort and; (b) ego, where ability is conceived based on performance relative to the performance of others. Research has demonstrated a positive relationship between task but not ego goal orientation and perceived competence (Duda & Nicholls, 1992; Williams & Gill, 1995). Further, Nicholls believed that perception of ability differed at different stages of development and that it was not until approximately 12 years of age that children were able to distinguish between effort and ability and hence form a realistic perception of ability. Despite the potential usefulness of Nicholls' theory and without dismissing the importance of goal orientation and its demonstrated relationship with perceived competence and effort, it was not the focus of this study. For a review of achievement motivation research, the reader is directed to Roberts (1982).

Similarities and Differences of the Models

All three models view perceived ability (or efficacy) as central to explaining motivation and behaviour. Both Bandura (1977) and Nicholls (1984) posited that high perceived self-efficacy (or ability) would influence task choice and lead to increased effort and persistence. Harter (1978) hypothesized that high perceived competence would lead to intrinsic pleasure and increased motivation to be competent. This in turn would increase the likelihood of engaging in future mastery attempts. Bandura and Harter acknowledged the direct influence of socializing agents and past experience on confidence but differed in what they considered a social influence. For example, Harter focused on reinforcement from significant others (approval or disapproval) while Bandura included vicarious experiences (e.g., modelling) as well as feedback and verbal persuasion. Harter also believed that previous mastery attempts initially influence the reinforcement given by socializers. Nicholls has not incorporated social influences to the same extent as Bandura or Harter. However, he did suggest that social influences become important with respect to situational factors; for example, he posited that an audience can effect goal orientation. That an individual performs differently when by themselves and when others are present. Bandura and Harter included perceptions of control or attributions in their models, Nicholls did not. Harter believed perceptions of competence and control are simultaneously influenced but not necessarily influenced by each other. In contrast, Bandura posited that self-efficacy directly influenced thought patterns (i.e., attributions).

While Harter's model suggested that perceived competence is domain specific, it is still a more global construct than Bandura's self-efficacy microanalytic model. Harter's model has been criticized for not taking contextual factors into account (Bandura, 1986, Duda, 1987). For example, a

child's perceived competence may change depending on the structure of the sports organization (e.g., competitive orientation) or the peers with whom they compare themselves. Self-efficacy, by definition, is situation-specific and therefore the context must be considered in its assessment. While Nicholls' theory was based on the more global construct, perceived competence, it did include situational factors and their influence on goal orientation.

Finally, both Harter's and Nicholls' theories provided a developmental approach to explaining achievement behaviour, Bandura's theory was situationally rather than developmentally based. Harter stressed the importance of developmental changes and individual factors as they relate to a child's perception of competence and control, and motivational orientation. Similarly, the cornerstone of Nicholls' theory was that the conception of ability and goal orientation changes with cognitive development and that this influences affect and behaviour.

Horn & Harris (1995) provide a review of research findings with regard to changes in perceived competence, accuracy of competence judgements and processes employed to judge ability for children and adolescents. Briefly, this research suggests that in early childhood (3 to 6 years) children's perceptions of competence are generally high, although not always accurate. These high perceptions of ability decrease toward middle childhood but then remain fairly stable from 8 to 12 years. Although educational and psychology literature has found a rather significant decline in perceived competence from late childhood to early adolescence, research to date in sport has found no comparable age-related declines in perceived competence. However, gender differences are apparent and consistent in their finding that males have higher perceptions of physical competence than females. Further, it is important to note that much of this research has been cross-sectional.

In attempting to better understand children's and adolescents' motivations for initial involvement, continued or discontinued participation in sport, theories that are developmentally based and have sound psychological constructs are important for youth sport researchers. However, it is essential that the general psychological constructs are validated within the world of youth sports (Weiss & Bredemeier, 1983; Duda, 1987). As outlined above Harter's and Nicholls' theories were developed to explain behaviour in the classroom which has meant that much of the research in their development and refinement has utilized cognitive tasks. As Duda (1987) indicated, there are several distinctions between cognitive and physical tasks which may impact differently on the development of one's conception of ability in sport as opposed to in the academic domain. First, within the sport domain, participants appear to distinguish between natural athletic ability and the more unstable and changeable sport skill level. Second, the performance outcome is observable by the performer and spectators but so is the performance process. Finally, the amount of effort exerted during a performance is more easily observed during a sports performance than during a cognitive task such as solving a math problem. While social comparison does occur in the classroom, it is implicit in the nature of any game no matter what the age of participants (Scanlan, 1982; Eccles, Midgely, & Adler, 1984), and evaluation and competition against others is central to most sports (Duda, 1987)

In conclusion, although these models differ in their approach and explanation of motivational behaviour, each emphasize the importance of perceived competence. Generally these theories hypothesize that "children who have high perceptions of their ability in a particular achievement domain, will work hard to achieve competence and will enjoy their participation." (Horn, Glenn, & Wentzell, 1993; p. 263).

Importance of Perceived Competence

Research based on the self-efficacy (Bandura, 1977) and perceived competence (Harter, 1978) theories has taken relatively separate (but not exclusive) paths. Much of the self-efficacy research has focused on; (a) the effects of various methods used to create self-efficacy and, (b) the relationship between self-efficacy and performance (Feltz, 1988). In contrast, the studies that have been conducted to test Harter's model have examined; (a) the relationship between perceived physical competence and participation motivation, (b) sources of competence information and, (c) the relationship of perceived competence to actual competence (Feltz & Brown, 1984; Ulrich, 1987; Weiss, Bredemeier & Shewchuk, 1985).

A significant positive relationship has been demonstrated between self-efficacy and motor performance (see Feltz, 1988 for a review of these findings). This positive relationship has also been shown between perceived competence and motivation (Feltz & Petlichkoff, 1983; Klint & Weiss, 1987; Roberts, Kleiber, & Duda, 1981; Ryckman & Hamel, 1993; Weiss, Bredemeier, & Shewchuk, 1986) and affect (Csikszentmihalyi, 1975; Harris, 1984; Scanlan & Lewthwaite, 1986; Scanlan, Stein, & Ravizza; 1989; White, 1959). Positive perceptions of ability, a desire to participate and positive affect, as well as enhanced performance, are all desirable outcomes of sports participation. This section reviews the literature supporting the positive influences of high perception of competence on performance, motivation, and affect.

Performance

Researchers who examined the causal relationships between self-efficacy and performance have found that self-efficacy is indeed a significant determinant of performance. Feltz (1988) reviewed 20 studies which found this result.

Among these, Feltz (1982), in a study of diving performance, found there was a significant positive relationship between self-efficacy and performance, particularly for novel tasks or in early performances. Further, that as subjects performed more trials, performance rather than self-efficacy had a stronger influence on subsequent performances. Woolfolk, Murphy, Gottesfeld and Aitken (1985) with golf putting accuracy and McAuley (1985) with a gymnastics balance beam test showed similar findings. Interestingly, it has been hypothesized that self-efficacy may be a better predictor of performance under variable conditions such as those in the field, rather than within the invariant conditions often used in experimental studies (Feltz, 1988).

Only a small number of studies have directly examined the relationship between perceived physical competence and actual performance, based on Harter's (1978) competence motivation theory (Feltz & Brown, 1984; Horn, 1985; Ulrich, 1987; Weiss, Bredemeier, & Shewchuk, 1986). However, these studies all demonstrated a significant positive relationship between perception of ability and actual performance. Using causal modelling techniques Weiss, Bredemeier and Shewchuk (1986), demonstrated that perceptions of competence in sport and perceived control causally influenced sports achievement and motivational orientation of children aged 8 to 12 years who were involved in summer sports program.

Motivation

Perceived competence in sport appears to be a critical mediator of motivation for participation in sport. Roberts, Kleiber, and Duda (1981) investigated this relationship in fourth and fifth grade children (9-11 years). The subjects completed Harter's (1982) Perceived Competence Scales (cognitive, physical, social, general) and were interviewed to determine their involvement in organized sport activities. The authors found that participants in organized

sport had higher perceptions of competence and had higher expectations of future success than nonparticipants. The sport participants were significantly higher in perceived competence on three of the four subscales (cognitive, physical, general).

Feltz and Petlichkoff (1983) investigated perceived competence among interscholastic sport participants and dropouts. The subjects were high school athletes ranging in age from 12 to 18 years. A dropout was defined as "any athlete who has competed on an interscholastic team in the last two years, was still eligible to compete, but no longer did so" (p. 233). The athletes and former athletes represented a wide range of sports including both team and individual sports. The subjects completed Harter's (1982) Perceived Competence Scale. The results indicated that current participants were significantly higher in perceived physical competence than former participants. Ryckman and Hamel (1993) investigated the sports participation motives of high school athletes who differed in their perceived physical abilities. The results indicated that athletes higher in perceived ability considered skill development, team affiliation, and having fun as more important reasons for participating than athletes lower in perceived ability. They further suggested that perceived competence was related to motives to participate in sport. Specifically, high perceptions of ability were related to intrinsic motives (e.g., skill improvement) and a desire to participate in sport. However, it should be noted that, the relationships demonstrated in the above studies are correlational only.

Weiss, Bredemeier, and Shewchuk (1986) demonstrated a causal relationship existed between perceived competence and motivational orientation in the physical domain. In this study, children 8 to 12 years involved in a summer sport program were administered Perceived Competence, Perceived Sport

Specific Competence, Perceived Control and Motivational Orientation scales. Actual physical achievement was assessed by teachers' ratings of the children's abilities in specific sports. The results supported the view that individuals act in ways that are consistent with their perceptions of self. Specifically, perceived competence in particular sports and overall perceptions of competence in physical activity causally influenced actual competence directly and indirectly through motivational orientation. Perceived physical competence positively influenced two motivational measures: challenge and criteria. This suggested that a higher level of perceived competence directly enhances a child's preference for challenging tasks as opposed to easier tasks and higher levels of perceived competence encourages the child to develop an internal sense of whether they have been successful or not rather than relying on evaluation from other sources.

Much of the research examining perceptions of ability and motivation has focused on the relationship between perceived physical ability and achievement motivation. This is based on the assumption that children participate in sport to demonstrate physical competence. However, descriptive studies have shown that children have multiple motives for their involvement in organized sport (Gill, Gross, & Huddleston, 1983; Gould & Horn, 1984; Passer, 1981). The categories of motives that consistently emerge in the literature are competence, affiliation, fun, fitness, ego/competitiveness, team factors, and success/status. When examining the relationship between perceptions of competence and motivation a more reliable test may be required to examine competencies in different domains with particular motives. For example, a child who perceives her/himself as having low ability in sports may still participate in sports if their motivational orientation is toward affiliation, that is making new friends.

Klint and Weiss (1987) confirmed this with their study of perceived competence and participation motives of youth gymnasts. They administered Harter's (1982) Perceived Competence Scales (cognitive, physical, social) and a motives for gymnastic participation inventory to 67 youth gymnasts (8-16 years). They found that children high in perceived social competence were more motivated by affiliation aspects of sport in comparison with children low in perceptions of social competence. Children high in perceived physical competence rated skill development motives as more important than those with a lower perception of physical ability.

Research examining the relationship between competitive orientations and self-efficacy is lacking (Martin & Gill, 1991). However, a small number of studies have examined the relationship of self-efficacy and sport and exercise behaviours, such as adherence to a fitness program and approach/avoidance to an activity. In a study of adherence to exercise in an 11-week physical fitness program, self-efficacy best distinguished adherers from dropouts (Desharnais, Bouillon & Godin, 1986). In Feltz's (1982) diving study self-efficacy was the major predictor of approach/avoidance behaviour of performance on the first of four diving attempts. Specifically, higher self-efficacy was related to approach behaviour.

Research has demonstrated that Harter's (1978) competence motivation model represents at least some of the causal mechanisms underlying motivation and achievement behaviour. However, not all components of her model have been subject to this type of analysis. The role of affect (specifically intrinsic pleasure and anxiety) in developing perception of ability and competence motivation has yet to be examined fully. The evaluation and feedback from significant others is a second component in the model that

is linked with the development of perceptions of competence, perceptions of control and intrinsic motivation, but has received little research attention.

Affect

A significant focus in youth sport research is the role of enjoyment in motivation to participate in sport. "Some people play because they have been inspired by their sporting heroes or heroines, some because it is good for their own health and fitness. Some play for the sense of achievement and some to relieve aggression. All describe it as 'fun' - although it can sometimes look more like pain" (Coe, Teasdale, & Wickham, 1992, p. 13). The construct of sport enjoyment has been operationally defined as "a positive affective response to the sport experience that reflects generalized feelings such as pleasure, liking and fun." (Scanlan & Simons, 1992, p. 203). Studies on children and adolescents involved in sport have consistently demonstrated that enjoyment or fun is a major motive for participation in sport. Further, lack of enjoyment is a commonly stated reason for dropping out of sport (Gould & Horn, 1984; Scanlan & Lewthwaite, 1986; Weiss & Petlichkoff, 1989; Scanlan, Stein, & Ravizza, 1989).

Investigations of the sources of sport enjoyment have repeatedly shown the importance of items related to perceptions of competence. For example, Scanlan and Lewthwaite (1986) examined predictors of seasonal enjoyment for male wrestlers aged 9 to 14 years. Five factors significantly predicted seasonal enjoyment - perceived ability, adult satisfaction with seasonal performance, age, negative maternal interactions (i.e., lower negative interactions predicted greater enjoyment), and positive adult involvement and interactions. In an in-depth study of former elite figure skaters, perceived competence, social and life opportunities, social recognition of competence, and the act of skating emerged as sources of enjoyment (Scanlan, Stein, &

Ravizza, 1989). Other similar findings have also been reported (Wankel & Kreisel, 1985; Harris, 1984, Csikzentmihalyi, 1975).

As noted, perceived competence repeatedly has appeared in the literature as a source of sport enjoyment, although two recent studies have failed to support the relationship between perceptions of ability and sport enjoyment. Brustad (1988) examined sources of season-long enjoyment, using concepts from Harter's (1978) competence motivation theory. Boys and girls aged 9 to 13 years from a youth basketball league were the subjects of this study. The results showed that competence motivational orientations (i.e., preference for challenging as opposed to easy skills) was associated with greater basketball enjoyment. This result supports predictors within Harter's theory. However, perceived competence was not a significant predictor of season-long enjoyment. A study of sources of enjoyment of 1,342 youth sport participants aged 10 to 19 years (Scanlan, Carpenter, Lobel, & Simons, 1993) found greater effort and mastery, positive team interactions and support, and positive coach support and satisfaction with the players' seasonal performance were significant sources of enjoyment. Perceived ability, and positive parental involvement, interactions, and performance satisfaction were not significant predictors of enjoyment. While perceived competence appears to be a source of sport enjoyment, how this relationship manifests itself in the sport setting has yet to be conclusively determined.

The research outlined here demonstrates the important mediational role perceived competence has in performance, motivation and perhaps affect in sport. Within Harter's (1978) competence motivation theory perceived competence and perceived control are believed to be influenced by social support factors. To help understand the development of perceived competence it is important to consider the role of socializing agents. The

following section reviews the research that has examined the relationship between socializing agents and perceived competence.

Importance of Socializing Agents

Significant others are important sources of competence information, also their expectations have a significant influence on children's perceptions. The need to include socializing agents in youth sport research was emphasized by Brustad (1992) in his statement that "by failing to more directly address the social environment youth sport psychologists are unable to fully appreciate children's perspectives on their participation" (p. 59).

As noted above, perceptions of competence have a central role in a number of theories that have been proposed to explain motivation and behaviour. Harter (1978) identified the socializing environment as an important component of her competence motivation theory. Specifically, it's influence on development and maintenance of motivation orientation, perceived competence and locus of control. With regard to the role of social reinforcement she hypothesized that reinforcement should be given for *independent mastery attempts*, not simply outcomes, in order to positively influence motivation orientation and perceived competence. Bandura (1977) also believed the social environment was an important source of perceived competence and suggested that vicarious experiences (modelling) and verbal persuasion would directly influence one's self-efficacy.

Two recent studies have investigated the sources of information children and adolescents use to evaluate their ability in sport. Horn and Hasbrook (1986) administered a modified version of the physical subscale of Minton's (1979)

Competence Information Scale to soccer players aged 8 to 14 years. A factor analysis of the 48 item Sport Competence Information Scale yielded a six-factor solution. Two factors were related to evaluation from significant others: social evaluation - coach, peers (e.g., use of feedback from the coach and teammates), and social evaluation - parents, spectators (e.g., use of feedback from parents and spectators). The results showed that the older children (12-14 years) rated social comparison of greater importance than the younger children (8-11 years). Children aged 8-11 years rated evaluative feedback from parents or spectators and game outcome as more important sources of competence information than older children (12-14 years).

A similar study was conducted with high school athletes (14 to 18 years) from a variety of sports (Horn, Glenn, and Wentzell; 1993). This study used a further modification of the scale used by Horn and Hasbrook (1986). A factor analysis revealed a 10-factor solution. Again social evaluation was a prominent source of competence information, with four factors related to evaluative feedback from significant others: parental evaluation/feedback, spectator evaluation, coach evaluation/feedback, and peer evaluation. For further analysis the subjects were divided into two groups based on age. The results showed that the older group (\bar{M} age = 16.8 years) were predominantly high school juniors and seniors competing at the varsity level and the younger group (\bar{M} age = 15.3 years) were predominantly freshman and junior varsity athletes. Peer evaluation was rated as more important by the younger group than the older group.

There are several factors which may account for the age-related differences apparent in these two studies. Ontogenetic changes in cognitive ability are likely to be associated with preferences for different sources of competence information. Also other factors such as degree of sport experience, previous

levels of performance success, and psychological characteristics such as perceived competence, locus of control and trait anxiety may influence the informational sources an athlete depends on for self-assessment of ability. Past levels of social reinforcement and exposure to modelling are two further factors which may influence an individual's preference for sources of competence information.

It is clear from this research that significant others (parents, coaches, peers) are important informational sources whom young athletes use to judge their ability. Children who have withdrawn from sport have been shown to have a lower perception of competence in sport than current participants (Feltz & Petlichkoff, 1983). However, the research to date has not examined whether differences exist in the sources of competence information available to or used by current participants or dropouts. If the quality, quantity and frequency of feedback children receive from significant others conveys to them they are not competent, it may contribute to their withdrawal from sport. This may be particularly important for children and early adolescents who have not developed an internalized self-reward system and still rely heavily on external feedback to assess their ability.

Significant others are socializing agents. They may influence children's self-perceptions through a variety of socialization processes, including modelling and expectancy socialization effects (Brustad, 1992). Research has demonstrated a relationship between parents' expectations and children's self-perceptions of competence in academics and sport (Greendorfer, 1977; Philips, 1987; Duda & Hom, 1993; Brustad, 1993b). In the following pages the role that parents, peers, and coaches play with respect to children's and adolescents' perception of competence are discussed separately.

Parents

Philips (1987) studied academically competent third grade children and their parents with respect to perceptions of academic competence. They found support for a model in which children's perceptions of competence are influenced more by their parents' appraisals than by objective evidence of their achievements. In the youth sport setting, Duda and Hom (1993) examined the interrelationships between children's and their parents goal orientations. Interestingly, while they did not find a significant correlation between children's and parents' goal orientations, the children's goal orientation was significantly related to their view of the goal orientation held by their parents. This suggests that the child's perception of information they receive from socializers may be more important than the actual information given.

Brustad (1993b) examined the interrelationships between children's perceived competence, attraction to physical activity and their parents' physical activity orientation and level of encouragement of their child's physical activity. The children were in the fourth grade (M age = 10.4 years) and were receiving physical education instruction every day for 30 minutes. According to their parents, most children were actively involved in organized sport activities. The results indicated that parents who said they enjoyed physical activity reported encouraging their children's physical activity more than parents who expressed less enjoyment. Higher parental encouragement was related to greater perceived competence for children and the perceived physical competence was an extremely important variable in explaining differences in children's attraction to physical activity. Specifically, these children with higher perceptions of competence were more attracted to physical activity.

In a study of young male wrestlers (9-14 years) Scanlan and Lewthwaite (1986) found that high generalized expectation of success in a wrestling tournament was predicted by high self-esteem, greater outcome successes in preceding tournaments and perceptions of greater adult (parent and coach) satisfaction with their season performance. Higher specific expectancy (their performance in second round of the tournament) were predicted by high generalized expectancy and high perceived wrestling ability.

Peers

The second group of significant others who may be involved in shaping children's perceptions of competence in sport is the peer group. While this group has been identified as a source of competence information (Horn & Hasbrook, 1986; Horn, Glenn, & Wentzell, 1993) it has almost completely been ignored in both academic and sport-related research on motivation. Developmental psychology literature also suggests the importance of peers as a socializing agent, particularly during adolescence (Santrock, 1992). It is not known whether all peers within the group have the same potential to influence other's perceptions of competence, or whether player status and experience are important factors. Further, the types of reinforcement and information peers provide is not known, nor if peers from outside sport are significant for the development of perceived sport ability and participation motivation? These are just some of the questions remaining with respect to peer influence on perceived competence.

It has been claimed that late childhood and early adolescence is the time when peers appear to be important sources of competence information (Horn & Hasbrook, 1986; Horn, Glenn, & Wentzell, 1993), which is also the age when a significant number of children dropout of sport (Roberts, 1986). Further research is needed to better understand the role peers play in the

development and maintenance of perceived competence of teammates and friends.

Coaches

Coaches are a very important group of significant others who have the potential to influence children's perceptions of competence and have received only limited research attention (Brustad, 1992). The quality and frequency of feedback children receive from their coaches as well as the positive nature of interactions they have with their coaches appear to be important in children's perceptions of ability in sport. Two studies of youth baseball players (Smith, Smoll, & Curtis, 1978, 1979) found that coaches who emphasized positive communication with players were most beneficial for players with low self-esteem (i.e., these players showed greater improvements in self-esteem). They also showed that players of coaches who received training to improve their communication effectiveness showed significant increases in self-esteem from the previous year and were more likely to anticipate playing again the following year.

Horn (1985) examined the frequency and quality of coaches feedback and its relationship to perceived competence of female softball players. The results showed that those children receiving the greatest amount of feedback from the coach following a successful performance in practice demonstrated lower perceived competence than players who received less feedback. In contrast, those who received greater amounts of criticism following errors in practice showed greater perceived competence than those receiving less criticism. While this might appear contradictory to the theory of competence motivation, it is consistent with research in the academic domain. Cooper and Good (1983) suggested that the feedback from teachers following success is different for low-expectancy students, in that they receive more frequent, but

less specific feedback. The informational component of feedback may be very important in self-assessment of one's ability.

SECTION TWO: Leadership in Sport

As shown above, social evaluation and feedback, particularly that of parents, peers, and coaches are important sources of competence information. Section two, now, looks more closely at leadership in sport, specifically the role of the coach.

Theories of Leadership

With the interest in the role of the coach and leaders in sport, several theories have been proposed to describe coaching behaviours and leadership in sport. Two prominent models of sport leadership are the multidimensional model of sport leadership (Chelladurai, 1978) and the mediational model of leadership in sport (Smoll & Smith, 1989). The basic premise of the Chelladurai model is that group performance and member satisfaction are a function of the congruence among three states of leader behaviour: required, preferred and actual behaviour. A strength of this model is that it inherently assumes that effective leader behaviours will vary as a function of the athletes, coach, and the particular sport context.

In contrast the Smoll and Smith model proposes that "the ultimate effects of coaching behaviours are mediated by the meaning that athletes attribute to them; what athletes remember about their coaches behaviours and how they interpret these actions affect the way that athletes evaluate their sport experiences." (Smith & Smoll, 1995, p. 127) Athletes perceptions and

reactions are likely affected not only by the coaches actual behaviour but also by other factors such as their age, expectations of the coach, and personality variables such as self-esteem and anxiety.

Similarities and Differences in the Leadership Models

In order to assess the applicability of the Chelladurai (1978) model, a 40-item paper-and-pencil scale, the Leadership Scale for Sports (LSS) (Chelladurai & Saleh, 1978; 1980), was developed. This scale assesses five dimensions of leader behaviour: training and instruction, positive feedback, social support, democratic behaviour, autocratic behaviour. There are three versions of the scale: athletes perceptions of coach behaviour, their preference for specific leader behaviour, and the coach's perception of their own behaviour. The Smoll and Smith (1989) model suggests that both actual and perceived leader behaviour be measured. To achieve this the Coaching Behaviour Assessment Scale had been developed (Smith, Smoll, & Hunt, 1977). Twelve dimensions of leader behaviour have been assessed through both observation and paper-and-pencil report.

Chelladurai (1993) suggests "a comparison of leadership behaviour categories of the two systems (LSS and CBAS) shows that they are to a large extent similar in content, although the titles are different" (p. 661). However, on examination of the five dimensions of the LSS it can be argued that there are in fact two distinct areas. The first is leadership decision style: autocratic or democratic. Leadership decision style can be considered a continuum with autocratic and democratic behaviours as the anchors. A coach's behaviour will place them somewhere along this continuum but they can not be both at the same time. If the coach is high in autocratic behaviours then they will be low in democratic behaviours and vice versa. The second area is leader behaviours: social support, positive feedback, technical instruction. A coach

who displays either style of decision making can display high, moderate, or low frequency of these behaviours. This distinction, between leader decision style and leader behaviour, is not apparent in the CBAS. In fact there are no equivalent categories for leader type in the CBAS, except perhaps behaviours directed towards keeping control or general communication and organization. It would depend on how these behaviours were displayed as to whether the coach would be classified as autocratic or democratic. However, the CBAS makes no attempt to categorise leader decision style in this way.

Although the CBAS does not emphasize leader decision style categorisation, the larger number of categories in the CBAS permits a more thorough analysis of leader behaviours in sport. Leader behaviour is measured in more specific situations, providing a more elaborate and situation-specific categorisation. The CBAS makes an important distinction between reactive behaviours and spontaneous behaviours as these behaviours are different and are likely to have different effects on athletes' perceptions and evaluation of the coach. Feedback provided by the coach is of primary interest in the present study, consequently, the assessment of players' perceptions of coaches' reactive behaviours is a desirable feature of the CBAS. The LSS makes no distinction between reactive or spontaneous behaviours, nor is there a distinction made between leader behaviours following a desirable performance or an undesirable performance. In this respect there are a number of CBAS categories for which there is no equivalent LSS dimension (eg., mistake-contingent encouragement). Finally, the CBAS provides a more precise description of leader behaviour, in that praise and encouragement (two categories from CBAS) would both be classified as positive feedback under the LSS. This precision is important from an applied perspective because in order to make specific recommendations to coaches it is important

that the research itself is specific in the content of feedback and concrete examples can be given.

Neither assessment system is without limitations. The methodological limitations outlined by Smith and Smoll (1990) with regard to the CBAS equally apply to the LSS:

"The CBAS is a broadband coding system that does not presently make distinctions between other potentially important aspects of coaching behaviours, such as verbal and nonverbal responses, magnitude of reinforcement, quality and duration of instruction and so forth" (Smith & Smoll, 1990, p. 991)

Another limitation of the LSS and CBAS is that both coding procedures assess the coach's behaviour toward the team as a whole, rather than to each individual. Chelladurai (1978) suggested that coaches may behave in the same manner in certain situations (e.g., those required by the situation) and heterogeneously in others (e.g., reactions to players needs). It may be that systems need to be modified to assess individual and group oriented leader behaviours. This issue has yet to be addressed.

A number of studies have investigated athletes' preferences for particular coaching behaviours. Almost exclusively this work has used or has been based on the LSS - preferred version. The results have been consistent in a number of areas "In general, the foregoing results, indicate that athletes are satisfied with leadership to the extent that the coach emphasizes (a) training and instruction that enhance the ability and coordinated effort by members, which in turn contribute to the task accomplishment and (b) positive feedback that recognises and rewards good performance" (Chelladurai, 1993, p. 654). As mentioned earlier while training and instruction and positive

feedback are preferred coaching behaviours these categories are very general and do not provide a clear distinction between different types of feedback. Training and instruction and positive feedback to good performances can be conveyed in many ways. Also there may be a difference between the training and instruction provided following a desirable performance and that following an undesirable performance.

It should be noted that with the exception of one study (Chelladurai & Carron, 1983) the studies on preferred leadership behaviour have been university-age or older athletes. Considering the similar level of competition of these subjects it is not surprising that many of the studies have revealed similar preferences for certain leadership behaviours. To date, the preferences of high school-aged and younger athletes for certain leader behaviours has received very little empirical attention.

Research Based on the Models

The following paragraphs and tables provide a brief summary of the research based on the Leadership in Sport Scale (LSS) and the Coaching Behaviour Assessment System (CBAS). For a more detailed review of this literature the reader is directed to the reviews by Chelladurai (1993), Smith and Smoll (1990) and Horn (1992).

Leadership in Sport Scale.

The Leadership in Sport Scale has been used in a variety of sports (see Table 1). These have been predominantly team-oriented sports, although a small number have involved "individual" sports. One distinct feature of this line of leadership research is that it has focused on the perceptions and preferences of male athletes and their male coaches. The few studies that have included female subjects have found gender differences in both perceived leadership

Table 1

Summary of Leadership Research Based on the Chelladurai (1978)Multidimensional Model of Sport Leadership and Leadership Scale for Sports

Study	Subjects	Sport	Variables
Chelladurai (1978), (1984)	M (university) (n=216)	Team vs Individual sports	Perceived & Preferred LS, Satisfaction, Task variability
Chelladurai & Saleh (1978)	M/F (university) (n = 160)	PE students	Preferred LS
Erle (1981)	M/F (university) (n = 335)	Hockey	Preferred LS, Motivation, Experience
Robinson & Carron (1982)	M (high school) (n = 98)	Football	Perceived & Preferred LS, Ability, Satisfaction
Chelladurai & Carron (1983)	M (high school midget, junior to senior&university)	Basketball	Preferred LS
Summers (1983)	(n=128)	Lacrosse	Perceived LS, Perceived ability, Satisfaction
Terry & Howe (1984)	M/F (university) (n = 160) (17-21 yrs)	Variety	Preferred LS, Culture
Horne & Carron (1985)	F (college) (n=77)	Variety	Perceived & Preferred LS, Satisfaction
Gabriel & Brooks (1986)	M/F(n=49 coaches) (college)	Tennis	Self-perceived LS
Rebish (1986)	F (high school) (n=36)	Volleyball	Perceived & Preferred LS, Cohesion, Motivation, Ability
Weiss & Fredrichs (1986)	M (university) (n = 251)	Basketball	Perceived & Preferred LS, Satisfaction
Schliesman (1987)	M (university) (n = 40) (18-23 yrs)	Track & Field	Perceived & Preferred LS, Satisfaction
Serpa & Antunes (1989)	F (elite) (n= 80)	Volleyball	Perceived LS
Dwyer & Fischer (1990)	M (high school) (n = 152) (15-19yrs)	Wrestlers	Perceived LS, Satisfaction
Luikkonen & Salminen (1990)	M/F (Finnish youth) (n=399)	Variety	Perceived LS Ability

continued

continued

Study	Subjects	Sport	Variables
McMillin (1990)	M (university) (n = 131)	Soccer	Perceived LS, Sport confidence, Satisfaction
Salminen, Liukkonen, & Telma (1990)	M/F coaches (n=97)	Variety	Perceived LS
Serpa (1990)	F 12-15yrs (n=17) 17-29yrs (n=23)	Basketball	Preferred LS
Serpa, Pataco & Santos (1991)	M (elite) (n = 87)	Handball	Preferred LS
Hume, Hopkins, Robinson, Robinson, & Hollings (1993)	F (7-27 yrs) (n=106)	Gymnastics	Physical Attributes Perceived LS, Psychological Skills, Anxiety, Motivation, Enjoyment
Eichas (1994)	M/F (high school) (n= 156)	Basketball	Perceived LS, Cohesion Satisfaction
Laughlin & Laughlin (1994)	(college) Teachers (n=12), Students (n=162) Coaches (n=11), Athletes (n=125)	Variety	Perceived LS Teacher/coach effectiveness
Schubiger (1994)	M (high school & college athletes)	Football	Perceived & Preferred LS, Satisfaction, Player status, Competitive level

Note. M = male; F = female; LS = leadership style.

and preferred leader behaviour. Liukkonen and Salminen (1990) found that female coaches were perceived to be more democratic and socially supportive than male coaches. With regard to preferred leadership, male physical education students indicated they preferred autocratic yet supportive coaches more than female students (Chelladurai & Saleh, 1978). Erle (1981) found that females preferred more democratic behaviour from their coaches than males, while males preferred more training and instruction, autocratic behaviour

and social support than the females. It is important to note however, that both males and females prefer rewarding and training behaviours over other aspects of leader behaviour (Terry & Howe, 1984; Naylor & Howe; 1990).

A notable aspect of the Chelladurai model is that it was developed specifically for the sport domain. The LSS was developed, tested and validated with university students and athletes. Research utilising this scale has been conducted predominantly using university students, university athletes or elite athletes. In this respect it is not surprising that the results have been very similar across many studies. However, the few studies examining the perceptions and preferences of younger populations have found differences between younger and older athletes. For example, Serpa (1990) found that 12-15 year old women basketball players preferred more social support and democratic behaviour and less autocratic leadership than older (17-25 years) players. In a study of male basketball players, Chelladurai and Carron (1983) found their preference for training and instruction progressively decreased from high school midget through junior to senior levels and increased again when they reached the university level. At the same time the preference for social support increased from high school midget to university.

With regard to the influence of athlete ability on coach behaviour, it appears that as athletes gain experience and/or ability "they seem to prefer their coaches to be more autocratic and socially supportive" (Chelladurai, 1993, p. 652). This is also supported by the finding that higher ability athletes perceived their coaches to be more autocratic, rewarding and socially supportive than athletes of lower ability (Liukkonen & Salminen, 1990).

This research demonstrates that perceptions of and preferences for leadership in sport are not uniform across all individuals. Rather that individual

differences such as gender, age and ability are important variables which influence the style of leadership and leader behaviour that is appropriate for any given group of athletes. This suggests that a coach may be required to exhibit different behaviours when working with children, adolescents and adults. To date little empirical information is available on the leader behaviour perceived and preferred by adolescent women, or the consequences (eg. satisfaction, perceived competence) of this leadership.

Coaching Behaviour Assessment Scale.

In comparison, nearly all the research based on the CBAS and Mediation Model of Leadership in Sport (Smoll & Smith, 1989) has focused on children and young adolescents (8-15 years) involved in sport (see Table 2). Very few studies have included 16-18 year olds, particularly female athletes' perception of coaching behaviours. Further, adolescent females' preference for particular coaching behaviours has received little attention.

Although the CBAS emphasis is different from that of the LSS, age and gender-related differences have been found in players perceptions of coaching behaviour. Black and Weiss (1992) found female swimmers who perceived a higher frequency of contingent information, praise, encouragement and encouragement plus information reported higher levels of perceived success, enjoyment, perceived competence, effort and preference for challenging activities. In comparison, the male swimmers who perceived a greater frequency of only information, praise, and encouragement plus information were associated with higher levels of perceived competence, perceived success, and a preference for challenging activities. They also found that older swimmers (15-18 years) were more sensitive to the frequency of praise and criticism than younger swimmers (12-14 years). The older swimmers perceived higher frequencies of information, praise, encouragement plus

Table 2

Summary of Leadership Research Based on the Smoll and Smith (1989)
Mediational Model of Leadership in Sport and the Coaching Behaviour
Assessment Scale

Study	Coaches	Subjects	Sport	Variables Measured
Smith, Smoll & Curtis (1978), (1979)	M (n=51)	M (8-15 yrs) (n=542)	Baseball (Little League)	CBAS, C - recall, P- recall C goals & values, perceived P motives; P- attitudes, attraction, self-esteem
Rejeski, Darracott, & Hutslar (1979)	M (n=14)	M (8-12 yrs) (n=71)	Basketball (youth)	CBAS C - expectancy
Horn (1984), (1985)	F (n=5)	F (12-15yrs)	Softball (junior high)	CBAS; P - perceived competence, control, success expectancy, rank ability
Horn & Hasbrook (1986), (1987)		M/F (8-14 yrs)	Soccer (youth)	P - SCIS, PC, perception of control
Sherman & Hassan (1986)	M/F (n=101)	M/F (youth)	Baseball, Soccer, Tennis	CBAS
Chaumeton & Duda (1988)	M (n=12)	M (n=124)	Basketball (elementary, junior high, high school)	CBAS; C - goals, perceived player goals; P - goals
Wandzilak, Ansoerge & Potter (1988)	M/F (n=17)	M/F (11-14 yrs)	Soccer	CBAS, C - recall
Senne (1989)	F (n=9)	F (n=73)	Softball (youth)	CBAS, P - attitudes, self description
Perkins (1990)	M (n=9)	M/F	Basketball (high school)	CBAS
Black & Weiss (1992)		M/F (10-18 yrs)	Swimming	P - CBAS, PC, success, motivation
Horn, Glenn & Wentzell (1993)		M/F (14-18 yrs)	Variety (high school)	P - SCIS
Smith, Aicinena, Stafen (1994)	M (n=20) F (n=2) (coaches)	M /F	Basketball	CBAS

Note. M = male; F = female; CBAS = Coaching Behaviour Assessment Scale; P = player; C = coach; PC = perceived competence; SCIS = Sources of Competence Information Scale. Coach description is not provided for studies in which coach population was not specified.

information, and lower frequencies of criticism had higher perceptions of ability, enjoyment, effort and challenge motivation. For younger swimmers (12-14 years) only information, encouragement and encouragement plus information were predictive of perceived competence and motivation.

Coach behaviour has been associated with players' self-esteem, enjoyment and a desire to play that sport again the following season (Smith, Smoll & Curtis, 1978). Further changes in perceived competence over a season have been related to coaching behaviours (Horn, 1985). It has been shown that a basic training programme for coaches emphasizing appropriate coach-athlete communication has been shown to be associated with changes in self-esteem of children over a season (Smith, Smoll & Curtis, 1979). For further discussion, see section three of this chapter.

As with the LSS studies, for the majority of CBAS studies, boys and young men have been the subjects (see Table 2). From an applied perspective, if we are to provide appropriate recommendations for coaches of girls and young women, to ensure these athletes have the opportunity to obtain positive sport experiences, it is important that empirical data on the perceptions and preferences of young women is available.

Conclusion.

As previously mentioned, the CBAS provides a more detailed description of the types of feedback coaches are providing their athletes, than the LSS. The CBAS system was originally designed for direct observation of coaches' behaviour and has subsequently been modified to include athletes' and coaches' perceptions of coaching behaviour. However, athletes' preferences for different types feedback in different situations have not been assessed using this detailed description of coach behaviour.

SECTION THREE: Leader Behaviour and Perceived Competence

There is a growing interest in the role adults play in youth sport and their impact on the experiences of the children (Brustad, 1988; 1992; 1993a; 1993b; McCullagh, Matzkanin, Shaw & Maldonado, 1993; Smith, Smoll & Curtis, 1978; Horn & Hasbrook, 1986; Horn, Glenn & Wentzell, 1993; Horn 1985). The relationship between the coach and the athlete is believed to be an important determinant of the effects of sport participation (Horn & Hasbrook, 1986; Horn, Glenn & Wentzell, 1993; Smoll, Smith & Curtis, 1977; Martens, 1977). It has been assumed that through the coaches impact on the structure of the sporting environment, their transmission of the goals, attitudes and values, and their behaviours, they can influence the outcomes of sport participation for children (Smoll & Smith, 1989). However, very little empirical research has focused on the coaching behaviours, factors affecting them and the impact of these behaviours on athletes (Smoll & Smith, 1989; Brustad, 1992).

Smoll and Smith (1989) suggested several empirical questions worth pursuing in this area are: "What do coaches do, how frequently do they engage in such behaviours as encouragement, punishment, instruction and organization? Also what are the psychological dimensions which underlie such behaviours? And, finally, how are observable coaching behaviours related to children's reactions to their organised athletic experiences?" (p. 1527). Answers to such questions may not only tell us the current status of leadership behaviours and their impact in the youth sport-setting, but also provide an empirical basis for the development of intervention programmes designed to assist coaches in providing a positive experience for children.

The quality and frequency of feedback children receive from their coaches as well as the positive nature of interactions they have with their coaches appear to be important in children's perceptions of ability in sport (Horn, 1985; Smith, Smoll, & Curtis, 1978, 1979). Two studies of youth baseball players (Smith, Smoll, & Curtis, 1978, 1979) found that coaches who emphasized positive communication with players were most beneficial for players with low self-esteem. Also players of coaches who received training to improve their communication effectiveness showed significant increases in self-esteem from the previous year and were more likely to anticipate playing again the following year. Horn (1985) found that coaching behaviour was related to changes in perceived competence of junior high school female softball players over a season. Specifically, children who received the greatest amount of feedback following a successful performance in practice demonstrated lower perceived competence when compared with players receiving less frequent feedback. In addition athletes who received greater amounts of criticism following errors in practice showed higher perceived competence than those receiving less criticism. To explain these results, Horn suggested that if this feedback contained little information it may infer low ability because other children achieving the same level of skill performance are not praised. Furthermore, athletes receiving technical information following an error in their performance may infer high ability because this information implies that they have the capacity for a higher level of skill performance. This dilemma over the quality and quantity of feedback and its impact remains unanswered.

Harter (1978) believed that the precise functions of reinforcement were very important in the development of perceptions of competence. She agreed with Bandura (1977) that there are two general categories of the functions of reinforcement; motivational/emotional and informational. Harter also

posited that within the motivational/emotional category there was a distinction between *incentive* function (reinforcement that encourages a child to engage in a particular activity in anticipation of reward) and *affect* function (properties of reward which make the child feel satisfied). A distinction was made between *general* informational function (information that helps a child determine his or her goals and defines certain behaviours and outcomes as important) and *specific* informational function (information given with regard to the evaluation of success and failure). She hypothesized that each category of reinforcement has different implications for different constructs in her model. This approach of assessing the function of feedback provided by significant others may be useful in helping researchers to better understand the influence socializing agents have on children's perceptions of competence.

Smith, Smoll & Curtis (1978, 1979) studied the coaching behaviours of 51 male Little League baseball coaches and the perceptions and reactions of their players. Coaches self-reported behaviours were related to their coaching goals and the behaviours they believed to be instrumental in achieving these goals. However, there was little or no significant relationship between these self-reported behaviours and actual observed behaviours. Also it was found that players' perceptions of their coaches' behaviours were highly correlated with actual observed behaviours. This has led to the conclusion that coaches' awareness of their own behaviours is poor and has resulted in few subsequent studies assessing coaches' perceptions of their behaviour. To date, there has been no investigation of female coaches perceived behaviour or any assessment of the accuracy of their perceptions. Further, the accuracy of male or female coaches' perceptions of their behaviour have not been investigated for coaches who have different levels of experience or are coaching at different levels of competition.

The information athletes use to determine their perception of ability has been the focus of two recent studies. Horn and Hasbrook (1986) investigated the sources of information children use to evaluate their ability in sport. They found that multiple sources of information were used and there were differences related to age. A modified version of the physical subscale of Minton's (1979) Competence Information Scale was administered to soccer players aged 8 to 14 years. A factor analysis of the 48 item scale yielded a six-factor solution which were labelled, social comparison (e.g., use of performance of teammates or opponents to judge ability), social evaluation - coach, peers (e.g., use of feedback from the coach and teammates), social evaluation - parents, spectators (e.g., use of feedback from parents and spectators), internal information (e.g., amount of effort, skill improvement, ease of acquiring new skills), game outcome, and affect (e.g., liking for sport).

In a similar analysis Horn, Glenn and Wentzell (1993) found gender differences were apparent in the sources of information adolescent women and men used to assess their competence. Specifically, high school girls used self-comparison/ internal information, and feedback from peers, coaches, parents more than males, who tended to be higher in the use of competitive outcome, and speed of learning to assess their perceived competence. Females showed greater use of evaluative feedback from a variety of individuals. This is consistent with a recent study on high school athletes preferences for particular coaching behaviours (Wentzell & Horn, 1993). Preliminary analysis of these data indicate that high school female athletes showed a significantly greater preference for coaches who provide frequent reinforcement, praise, and social support. While males were more comfortable with coaches who provided no feedback in response to performance errors. One suggested reason for this was that females receive less contingent and performance-oriented feedback from teachers, coaches,

and parents throughout youth sports. Consequently, as adolescents they place greater value on feedback and prefer more of it than their male peers.

Examining the age-related differences in perceptions of coaching behaviours and perceived ability, Black and Weiss (1992) found no relationship for 10-11 year old competitive swimmers. However, for both groups of older swimmers (12-14 years & 15-18 years) there was a significant relationship between perceptions of their coaches' behaviour and their perception of swimming ability. Horn and Hasbrook (1987) found a similar age-related pattern in the sources of information 8-14 year old soccer players used to judge their competence. For the 8-9 years olds there was no significant relationship between perceived competence and preference for particular sources of competence information. The 10-11 year olds demonstrated a positive relationship between perceived competence and the use of peer comparison, internal criteria and affect. The oldest group (12-14 years) showed a positive relationship between perception of ability and the use of coach and peer feedback, peer comparison, and internal criteria.

The emergence of the use of coach feedback as a source of competence in 12-14 year old children and not in younger children suggests that perhaps children younger than 12 years have not reached a sufficient level of cognitive maturity to effectively use the information that is conveyed to them by the coach. Or perhaps they are not receiving sufficient specific and contingent feedback from their coaches to enable them to use the information to judge their ability. Further, at about this time (12-14 years) cognitive-development is such that children are beginning to internalise achievement standards and use the internal standards to evaluate personal performance (Harter, 1978) and are better able to distinguish accurately between effort and ability (Nicholls, 1984). This would decrease the need for and use of external sources

of competence information. However, it is apparent from the research that the coach and peer feedback emerge as an important source as of competence information and this use of coaches' feedback appears to continue through adolescence, particularly for females (Horn, Glenn, & Wentzell, 1993).

SUMMARY

Individuals interested in the experiences of children and adolescents in sport have two prominent questions: how do children become involved in sport initially and what contributes to their continued or discontinued participation? Several theories have been developed to explain motivation and behaviour. These generally hypothesize that children who have a positive perception of their ability, will be motivated to become more competent and will enjoy their participation. Coaches are one of the most important sources of competence information in sport. Through their feedback and communication, they have a great potential to positively or negatively influence the experiences of children and adolescents in sport. Both perceived and preferred leadership style have been the focus of a number of studies and gender and age-related differences have been identified. Coaching behaviours have also been associated with perceived competence, enjoyment, satisfaction and a desire to play sport the following season. However, the majority of research into leadership in sport has been with male athletes and their male coaches. While both elite athletes and children have been subjects of research, little empirical information is available on adolescent females' perceptions of and preferences for coach feedback. This is an important group because it is at this age where there is a large decline in young women participating in organised sport. In order to better understand the affect of sport on these young women and to provide

appropriate recommendations for leaders in sport the athletes perceptions of their sport experiences should be explored further.

Research Questions

1. What coach feedback do adolescent female field hockey players perceive they are receiving in response to desirable and undesirable performances?
2. What coach feedback do adolescent female field hockey players prefer in response to desirable and undesirable performances?
3. Do athletes higher in perceived competence, ability or satisfaction have different perceptions of and preferences for coaching feedback compared with athletes lower in perceived competence, ability, or satisfaction?

CHAPTER III RESEARCH METHODS

Participants and Setting

The participants were adolescent female field hockey players ($N = 143$) representing 10 British Columbia Womens Field Hockey Zone teams. The athletes ranged in age from 14 to 18 years ($M = 17.09$, $SD = .83$) and had played field hockey for 1 to 12 years ($M = 5.08$, $SD = 2.06$). The study was conducted at the 1995 British Columbia U18 Zone Championship Tournament, Oliver, BC.

Instrumentation

Questionnaire components

The questionnaire was organised into two sections, each section contained three parts. Section one consisted of questions assessing perceived coach feedback and perceived competence relative to field hockey. Section two contained questions designed to examine preferred coach feedback and satisfaction with the coach and team involvement (see Appendix A).

Perceived coach feedback.

The Coaching Behaviour Assessment Scale (Smith, Smoll & Curtis, 1979) for baseball, modified by Black and Weiss (1992) for swimming, was used to assess athletes' perception of their coach's feedback in response to desirable and undesirable performances. The scale was further modified in this study to be specific to field hockey (see Appendix A). While the name of this scale suggests it assesses coaching behaviours, in general, it primarily focuses on the nature of coaches' feedback.

The Coaching Behaviour Assessment Scale included 10 categories of coaching behaviours. Four categories represented behavioural responses to athletes good performances or efforts (praise only, no response, information only, and praise combined with information about the performance) and six categories represented behavioural responses to poor performances or errors (encouragement only, no response, criticism, corrective information about the performance, encouragement combined with corrective information, and criticism combined with corrective information). Two exploratory categories were added to the scale, both were related to non-verbal communication (non-verbal praise in response to desirable performances and non-verbal criticism in response to undesirable performances). Each of the 12 items was represented three times, generating a 36 item questionnaire. The responses to the 36 items was rated on a seven point Likert scale from (7) *always* to (1) *never* (see Appendix A).

Preferred coach feedback.

The above scale was modified to enable measurement of athletes preferred coach feedback in response to desirable and undesirable performances. As with the perceived version, this scale contained 12 categories of feedback represented three times, generating a 36 item questionnaire. The responses to the 36 items were rated on a seven point Likert scale from (7) *always* to (1) *never*. The difference between the two scales was that in the preferred version the athlete is asked to rate how often they would like their coach to respond to their performances in particular ways (see Appendix A).

Self-perceptions of ability.

Perceived field hockey competence were measured using the athletic competence subscale from Harter's (1988) Self-Perception Profile for Adolescents. The subscale was modified to be specific to field hockey. The

measure included five items in a structured-alternative format, where subjects first choose which of two statements is more like them and then indicate whether the chosen statement is "sort of" or "really" like them. High perceived competence was scored (4) and low perceived competence (1) (see Appendix A).

Satisfaction with coach and team involvement.

Two categories of satisfaction were measured in this study - satisfaction with the coach and satisfaction with team involvement. In the past satisfaction variables have been assessed using a single question. In this study each of the two satisfaction categories were represented by three items to increase measurement reliability. The responses to the 6 items were rated on a seven point Likert scale from (7) *very satisfied /happy* to (1) *very dissatisfied /unhappy* (see Appendix A).

Validity and reliability

Scale reliabilities.

Internal reliability of each of the measures was assessed by calculation of Cronbach's (1951) alpha coefficient. Acceptable internal reliability of scales was set at .60, a level that has been employed in previous studies in the field (Brustad, 1988; Gould, Weiss & Weinberg, 1981).

Predictor variables.

The validity and reliability of the coaching behaviour scale has been demonstrated in its use in research (Black & Weiss, 1992) but was modified to be specific to field hockey. It was reviewed by an independent researcher and a university field hockey head coach for content appropriateness, face validity and grammatical structure. The questionnaire was piloted using 15 university level field hockey players as the subjects. Based on the feedback of

the reviewers and on the comments of the pilot study subjects minor changes were made to some items and to the wording of instructions. Reliability was assessed by calculation of Cronbach's (1951) alpha coefficient for both the pilot study and the main investigation. The coefficients ranged from .59 to .92 (perceived data) and .59 to .88 (preferred data) in the pilot study and .41 to .76 (perceived data) and .64 to .83 (preferred data) in the main investigation. An a priori alpha coefficient criterion level was set at .60 for inclusion of that variable in further analysis, variables found to have a coefficient below this level were considered unreliable and excluded from subsequent analyses.

Criterion variables.

Harter (1988) Perceived Competence Scale for Adolescents has demonstrated validity and reliability in the original research (Harter, 1989). Due to the relatively new development of the adolescent version of the scale validity or reliability data are not available from subsequent testing. The children's version of the scale, on which the adolescent version is based, has been used in a number of studies in sport psychology and found to be reliable (Weiss & Duncan, 1992; Black & Weiss, 1992). In both a pilot study, conducted with university level field hockey players, and in the present study, reliability, assessed through the calculation of Cronbach's (1951) alpha coefficient, was acceptable. The coefficients were .86 and .63 from the pilot study and main investigation, respectively.

Previously, satisfaction has been assessed by a single question (Chelladurai, 1993). This does not allow for any measure of reliability of the scale. In this study each satisfaction scale was assessed by 3 items. Reliability of these scales was assessed by calculation of Cronbach's (1951) alpha coefficient. The coefficients from the main investigation revealed acceptable reliability;

satisfaction with coach ($\alpha = .74$) and satisfaction with team involvement ($\alpha = .82$).

Estimate of Player Ability

In order to assess if there were differences in perceived coaching behaviours between highly skilled athletes and less skilled athletes an estimate of each player's ability was required. This was achieved by having each coach rank their players relative to the other players at the tournament. This ranking was according to a four point scale ranging from the "Top 25% of players" to the "Bottom 25% of players". The top 25% will be scored (4) and the bottom 25% (1).

Coaches' rating of players ability was used rather than field hockey skill testing, for four reasons. First, skills testing has not been validated as a measure of overall field hockey ability because as yet a test has not been developed that adequately captures all dimension of this interactive sport (Reilly & Borrie, 1990). Second, research in developmental psychological literature contains considerable evidence of the use of teachers' ratings as one measure of actual competence (Connell & Hardi, 1987). Third, Harter (1982) had used teachers' ratings to assist in validating her measures of perceived competence. Finally, coaches' rating spanned the entire season they had coached the athlete rather than a one time assessment of the athletes ability (Weiss & Duncan, 1992).

Definitions of Variables

Predictor variables.

Based on previous work using the Coaching Behaviour Assessment Scale (Smith, Smoll & Curtis, 1979; Horn, 1985; Black & Weiss, 1992), 10 categories of coaching feedback were chosen for inclusion in this study. Four categories

representing feedback in response to a desirable performance (praise only, no response, information only, praise plus information) and six categories representing feedback in response to an undesirable performance (encouragement only, no response, criticism only, corrective information only, encouragement plus corrective information, criticism plus corrective information). As noted by Smith and Smoll (1990) a limitation of the CBAS is that it does not distinguish between verbal and non-verbal communication. In light of this limitation, two additional categories of feedback were added as exploratory variables. These two variables attempted to identify the prevalence of non-verbal feedback from coaches which may be related to athletes perception of ability and satisfaction. The variables were labeled non-verbal praise in response to a desirable performance and non-verbal criticism in response to an undesirable performance. The definitions of the coaching feedback variables are presented in Appendix B.

Criterion variables.

Four criterion variables were chosen for inclusion in this study. These were perceived competence, satisfaction with coach, satisfaction with overall team involvement, and athlete ability.

Data Collection Procedures

The British Columbia Womens Field Hockey Federation (BCWFHF), the governing body for womens field hockey in British Columbia, was contacted to obtain permission for the study. Representatives from each of the 10 BC regional zones were contacted by phone to gain contact addresses and phone numbers of the under 18 coaches. A letter was sent to the head coaches of each zone team. The letter explained the purpose of the study, what the study

involved, and requested permission to have their athletes participate as subjects in this study. The coaches were also contacted by phone, giving them an opportunity to discuss the study and have any questions answered. Permission was given by all coaches.

Following the coaches consent to have athletes participate in the study, the coaches were sent informed-consent forms. They were instructed to have the athletes' parents or guardians complete the form and return them at or before the tournament. In the week prior to the tournament, coaches were contacted by phone to remind them of the importance of the consent forms and to set up testing times to fit with each team tournament schedule. At the tournament, each coach was contacted by the main investigator to finalise testing times and collect consent forms. Examples of the consent forms for involvement in this study are provided in Appendices C through F.

At the time of questionnaire administration, coaches were asked to leave the immediate area and the purpose of the study and what was involved in the study was explained to the athletes. It was stressed that participation was voluntary and that a decision not to participate would have no bearing on their status on this team or future teams. Also it was emphasised that no one, except the main investigator, would see the responses, coaches would not have access to the completed questionnaires and their names would not appear on the questionnaire. Following this explanation, the athletes who chose to participate were instructed to read and sign the informed-consent form and hand it to the investigator, then to proceed with the questionnaire. The main investigator was present to help answer questions and collect the questionnaires. The coaches were not present during questionnaire administration.

Data Analysis

Because of the small number of teams ($N = 10$), the individual was used as the unit of analysis. This was accomplished by standardising all variables, with the exception of the ability score, in relation to the team mean (Horn, 1984, 1985; Black & Weiss, 1992). The scores were converted to z scores, which reflect the number of standard deviations each score is away from the team mean. This allows for comparison among players but also controls for the social context, particularly coach behaviour, of each team. It was not considered appropriate to convert the ability scores to z scores because this score was the coaches' ranking of each player's field hockey ability relative to the other athletes at the tournament.

Correlations Among Variables

Pearson's product-moment correlations among all coaching feedback variables were calculated to check for multicollinearity. Correlations above .70 were considered colinear (Tabachnick & Fidell, 1989) and composite variables were created by averaging each subject's score on the pair of variables, where appropriate.

Multivariate Multiple Regression Analysis

The relationship between the set of coaching feedback categories and the four criterion measures was assessed through a multivariate multiple regression procedure for perceived and preferred feedback separately. The ratio between the number of subjects and the number of variables (8.9:1) was sufficient to meet the recommended minimum ratio of 4:1 for regression analysis (Pedhazur, 1982).

The strength of the relationship between the criterion variables of perceived competence, ability, satisfaction with coach and satisfaction with team involvement was assessed. Intercorrelations of .30 or greater were found between criterion variables, indicating that a canonical correlation was the most appropriate method to interpret the relationships between the predictor variables and the set of three criterion variables. Loadings of .30 or greater were considered to be a significant contributor to the multivariate relationship (Pedhazur, 1982; Tabachnick & Fidell, 1989). Player ability had only low intercorrelations with the other three criterion variables. Consequently, separate stepwise multiple regression analyses were used to interpret the relationship between player ability and the predictor variables.

Post-Hoc Analyses of High- and Low- Perceived Competence and Ability

To further investigate the relationship between perceived competence and coach feedback players were classified into either a high or low perceived competence group according to their score on the perceived competence (PC) scale. The high-PC group ($n = 78$, $M = 3.07$) was composed of those players whose level of perceived competence was above the mean PC for this group ($M=2.7$). The low-PC group ($n = 61$, $M = 2.23$) was composed of those players whose PC score fell below the mean for the group. The results of these analyses should be viewed cautiously as the interrelationship of perceived competence and satisfaction variables has not been taken into account.

In light of the lack of a significant relationship between ability and perceived or preferred coach feedback, players were classified into high-ability (those ranked '4' by their coaches) ($n = 45$, 31.3% of original sample) and low-ability (those ranked '1' or '2' by their coaches) ($n = 45$, 31.3% of original sample). The middle 37.5% ($n = 54$) were excluded from the analysis to ensure there was a distinct separation between the groups.

CHAPTER IV

RESULTS

Descriptive Results

Perceived and Preferred Frequency of Feedback

To determine the frequency of each type of feedback the female adolescent field hockey players perceived they were receiving, the scores for each feedback category were averaged across all subjects. This gave frequencies which could be interpreted on the same seven-point Likert scale used in the questionnaire. The same procedure was used to determine the frequency for the preferred types of feedback. The frequencies of perceived and preferred coaching feedback are discussed below and presented in Appendix G.

Perceived feedback in response to good play/effort.

Praise was perceived to be given most frequently ($\underline{M} = 5.59$, $\underline{SD} = 1.02$), followed by praise plus information ($\underline{M} = 4.99$, $\underline{SD} = 1.13$), non-verbal praise ($\underline{M} = 4.78$, $\underline{SD} = 1.25$), information only ($\underline{M} = 3.83$, $\underline{SD} = 1.40$), and lastly no response ($\underline{M} = 1.85$, $\underline{SD} = 0.77$), in response to good play. These athletes' perception of their coaches feedback was that they seldom had no response to a good performance and were frequently praised (verbally and non-verbally) and provided information in response to a good play/effort.

Perceived feedback in response to poor play/mistake.

In response to a poor performance or mistake, encouragement ($\underline{M} = 4.74$, $\underline{SD} = 1.38$) was given most frequently, followed closely by encouragement plus corrective information ($\underline{M} = 4.62$, $\underline{SD} = 1.39$), and corrective information only ($\underline{M} = 4.50$, $\underline{SD} = 1.35$). Criticism plus corrective information ($\underline{M} = 2.80$, $\underline{SD} = 1.27$) and no response ($\underline{M} = 2.61$, $\underline{SD} = 0.95$) were perceived to be given with

moderate frequency in response to an error, while non-verbal criticism ($\underline{M} = 1.66$, $\underline{SD} = 0.97$) and criticism ($\underline{M} = 1.41$, $\underline{SD} = 0.62$) were occurred only rarely.

Preferred feedback in response to good play/effort.

A similar pattern to that of the perceived frequencies emerged with regard to these athletes' preferred frequency of each type of feedback. After a good play or effort praise was preferred as the most frequent response ($\underline{M} = 6.09$, $\underline{SD} = 0.95$), followed by non-verbal praise ($\underline{M} = 5.49$, $\underline{SD} = 1.20$), praise plus information ($\underline{M} = 5.15$, $\underline{SD} = 1.30$), information only ($\underline{M} = 4.77$, $\underline{SD} = 1.37$), and lastly no response ($\underline{M} = 1.48$, $\underline{SD} = 0.72$). The only difference between the perceived and preferred frequencies of feedback was that non-verbal praise was preferred more frequently than praise plus information, however, it should be noted that the difference between the preferred frequencies of these two categories was very small and they were both rated as desirable responses to a good performance.

Preferred feedback in response to poor play/mistake.

As with the responses to good play the pattern of preferred feedback followed a similar one to that of the perceived feedback frequencies. The only difference between perceived and preferred order was that criticism and non-verbal criticism changed places, however they remained the least favoured responses to a mistake or poor performance. Therefore, in response to an error these athletes preferred to be given encouragement ($\underline{M} = 5.59$, $\underline{SD} = 1.30$), followed by encouragement plus corrective information ($\underline{M} = 5.46$, $\underline{SD} = 1.24$), corrective information only ($\underline{M} = 5.148$, $\underline{SD} = 1.25$), and lastly criticism ($\underline{M} = 1.70$, $\underline{SD} = 0.85$) and non-verbal criticism ($\underline{M} = 1.31$, $\underline{SD} = 0.49$).

The other important feature to note when comparing perceived and preferred frequencies of each type of feedback is that for all but three categories these

athletes preferred more frequent feedback than they perceive they were receiving (see Figures 1 & 2). This desire for more frequent feedback is also reflected in the preference that no response to either a good or poor play should be less than they perceived they received. The only other category of feedback that these athletes would prefer less of was non-verbal criticism. While this important to mention, it should also be noted that this type of feedback was perceived to be given relatively infrequently.

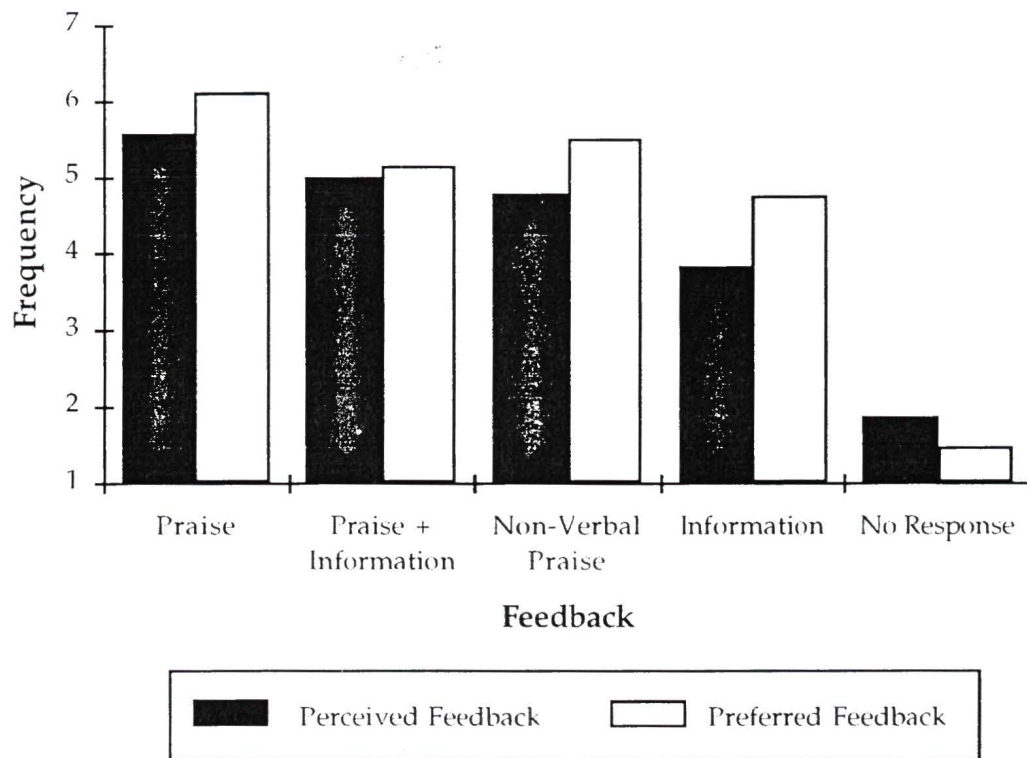


Figure 1. Frequency of Perceived and Preferred Feedback in Response to a Good Performance or Effort.

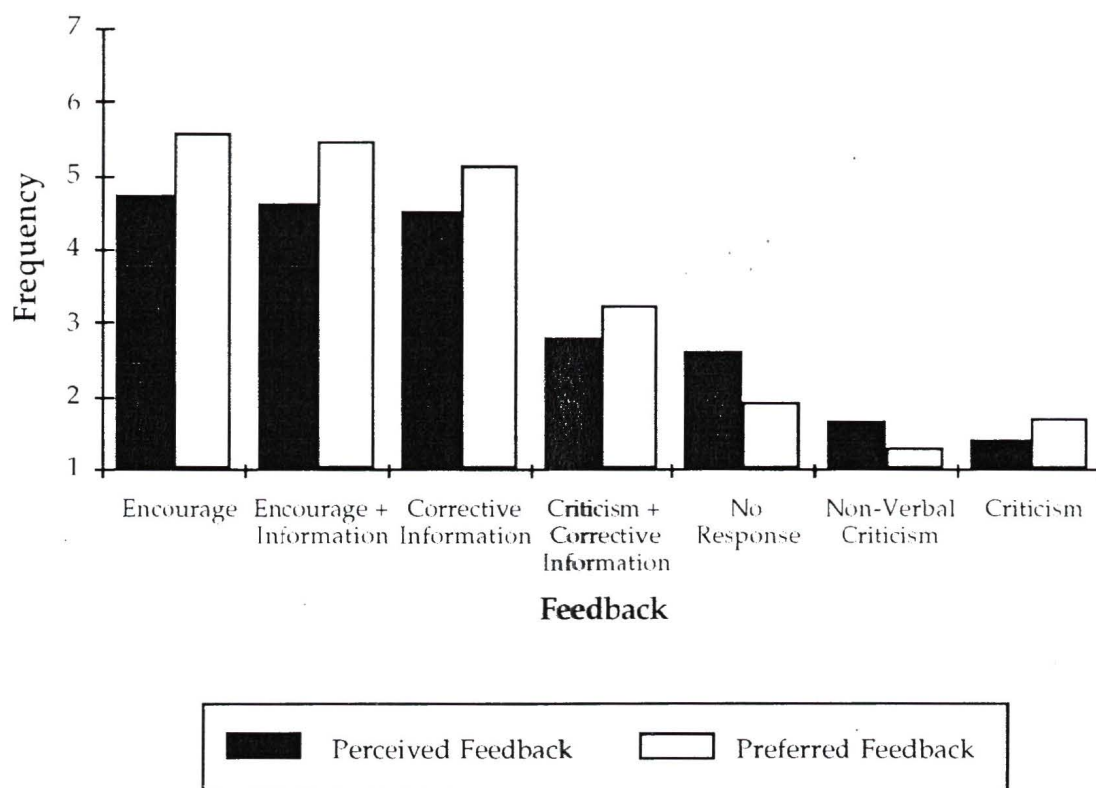


Figure 2. Frequency of Perceived and Preferred Feedback in Response to a Poor Performance or Mistake.

Perceived Competence and Satisfaction

Mean satisfaction with the coach and satisfaction with overall team involvement were expressed as a score out of seven. This enabled the values to be interpreted on the same seven-point scale used in the questionnaire from (7) *very satisfied* to (1) *very dissatisfied*. In general, these athletes were very satisfied with their coach ($M = 6.18$, $SD = 0.92$) and with their overall involvement with their team ($M = 5.97$, $SD = 0.91$) this season. Mean perceived competence was expressed as a score out of four, where (4) is high perceived field hockey competence and (1) is low perceived field hockey

competence. It is apparent from the descriptive data that these athletes have a moderate to high perception of field hockey competence ($M = 2.70$, $SD = 0.56$).

Preliminary Analysis

As noted in chapter three, because of the small number of teams ($N = 10$), the individual athlete was used as the unit of analysis and with the exception of the ability scores, all variables were standardised in relation to the team mean (Horn, 1984, 1985; Black & Weiss, 1992). These z scores allowed for comparisons among players but also controlled for the social context, particularly coach behaviour, of each team.

Perceived Feedback

Scale reliabilities.

Internal reliability of each of the measures was assessed by calculation of Cronbach's (1951) alpha coefficient. Acceptable internal reliability of scales was set at .60, a level that has been employed in previous studies in the field (Brustad, 1988; Gould, Weiss & Weinberg, 1981). The alpha coefficients for each of the perceived feedback variables are shown in Appendix H. Five variables were found to be unreliable. Two were, subsequently, excluded from further analyses: praise only (.45) in response to a good play/effort and criticism only (.41) in response to a mistake/poor performance. The other three variables approached the a priori level of reliability, however it was decided to retain these variables in subsequent analyses as they add to the depth of understanding of feedback from coaches. These variables were non-verbal praise (.57) in response to a good play/effort and no response (.57) and criticism plus corrective information (.58) in response to a mistake/poor performance.

Correlations among perceived variables.

Pearson's product-moment correlations among all predictor perceived variables were calculated to check for multicollinearity (see Tables 3 & 4). Correlations above .70 were considered collinear (Tabachnick & Fidell, 1989) and shown between information only and praise plus information in response to a good play/effort ($r = .806$), and between encouragement only and encouragement plus corrective information in response to a mistake/poor performance ($r = .699$). When there are a number of predictor variables it is likely there is much overlap in the variance shared between each variable and the criterion variables. It has been suggested that items that relate highly with one another may be measuring the same thing (Thomas & Nelson, 1990). Based on this premise and due to the high intercorrelations between several of the predictor variables it was appropriate that highly correlated variables be represented by composite variables. Consequently, composite variables were created by averaging each subject's score on these pairs of variables.

Athletes responded similarly to information only and praise plus information in response to a good play/effort, suggesting that the athletes focused more on the information contained in the coach's feedback and less on praise that was given concurrently. Black and Weiss (1992) also found information and praise plus information in response to desirable performances to be highly correlated for youth swimmers. For encouragement only and encouragement plus corrective information in response to a mistake/poor performance, the encouragement was common to both variables. Thus, the encouragement seemed to be the athletes focus more than the corrective information.

Table 3

Intercorrelations between Perceived Predictor Variables in Response to a Good Play/Effort

	Praise	Praise + Information	Non-verbal praise	Information	No response
Praise	1.000				
Praise + Information	.611	1.000			
Non-verbal praise	.554	.556	1.000		
Information	.597	.806*	.513	1.000	
No response	-.344	-.219	-.289	-.248	1.000

Note. * Denotes correlations > .70 (criterion level for multicollinearity).

Table 4

Intercorrelations between Perceived Predictor Variables in Response to Poor Play/ Mistake

	Enc	Enc + CI	Cor Info	Crit + CI	NR	NVCrit	Crit
Enc	1.000						
Enc + CI	.699*	1.000					
Cor Info	.498	.646	1.000				
Crit + CI	.082	.029	.268	1.000			
NR	-.197	-.195	.035	.189	1.000		
NVCrit	-.025	.022	.006	.319	.193	1.000	
Crit	-.060	-.031	.067	.424	.113	.372	1.000

Note. * Denotes correlations > .70 (criterion level for multicollinearity).

Enc = encouragement, Enc + CI = encouragement plus corrective information, Cor Info = corrective information, Crit + CI = criticism plus corrective information, NR = nor response, NVCrit = non-verbal criticism, Crit = criticism.

The new composite variables were labelled *information/praise* and *encouragement/corrective information* respectively. The alpha coefficients for these newly created variables were information in response to a good play/effort ($\alpha = .84$) and encouragement in response to a mistake/poor performance ($\alpha = .84$).

Preferred Feedback

Scale reliabilities.

Internal reliability of each scale component was assessed by calculation of Cronbach's (1951) alpha coefficient. As with the perceived data, acceptable internal reliability for scale components was set at .60. All variables were found to be reliable (see Appendix H) and were included in subsequent analyses.

Correlations among preferred variables.

As with the perceived data intercorrelations between preferred variables were assessed by calculation of Pearson's product-moment correlations (see Table 5 & 6). Correlations above .70 (criterion level for multicollinearity) were found between praise plus information and information only following a good play/effort ($r = .772$) and between encouragement plus corrective information and corrective information only following a poor play/mistake ($r = .792$). Consequently, composite variables were created by averaging each subjects' score on these pairs of variables.

Athletes responded similarly to praise plus information and information only following a desirable performance. The information the feedback contained appeared to be the focus, which led to the composite variable being labelled *information /praise*. The alpha coefficient for this newly created variable was .87.

Table 5

Intercorrelations between Preferred Predictor Variables in Response to a Good Play/Effort

	Praise	Praise + Information	Non-verbal praise	Information	No response
Praise	1.000				
Praise + Information	.530	1.000			
Non-verbal praise	.671	.400	1.000		
Information	.614	.772*	.468	1.000	
No response	-.275	-.161	-.291	-.293	1.000

Note. * Denotes correlations > .70 (criterion level for multicollinearity).

Table 6

Intercorrelations between Preferred Predictor Variables in Response to Poor Play/ Mistake

	Enc	Enc + CI	Cor Info	Crit + CI	NR	NVCrit	Crit
Enc	1.000						
Enc + CI	.671	1.000					
Cor Info	.568	.792*	1.000				
Crit + CI	.054	.211	.308	1.000			
NR	-.040	-.069	-.096	.124	1.000		
NVCrit	-.237	-.188	-.104	.278	.198	1.000	
Crit	-.072	-.042	.039	.490	-.026	.436	1.000

Note. * Denotes correlations > .70 (criterion level for multicollinearity).

Enc = encouragement, Enc + CI = encouragement plus corrective information, Cor Info = corrective information, Crit + CI = criticism plus corrective information, NR = nor response, NVCrit = non-verbal criticism, Crit = criticism.

The focus on the information in feedback was apparent in the athletes' similar preference for encouragement plus corrective information and corrective information only following an undesirable performance. Corrective information was common to both variables, consequently, the new composite variable was labelled *corrective information /encouragement*. The alpha coefficient for this newly created variable was .90.

Criterion Variables

Scale reliabilities.

Internal reliability of the criterion variables was assessed by calculation of Cronbach's (1951) alpha coefficient. All variables reached acceptable internal reliability ($\alpha \geq .60$) (see Appendix H).

Correlations among variables.

Correlations between criterion variables were assessed by calculation of Pearson's product-moment correlations (see Table 7). Intercorrelations of .30 or greater were found between satisfaction with overall team involvement and perceived competence ($r = .316$) and between satisfaction with overall team involvement and satisfaction with coach ($r = .505$). All other intercorrelations were below the a priori-level ($r \geq .30$) set to determine whether analysis should consider the criterion variables separately or together as one set of variables.

Main Analysis

Intercorrelations of .30 and greater were found between satisfaction with the coach and satisfaction with team involvement ($r = .505$) and perceived competence and satisfaction with team involvement ($r = .316$). Consequently,

Table 7

Intercorrelations between Criterion Variables

	PC	CSAT	TSAT	Ability
PC	1.000			
CSAT	.059	1.000		
TSAT	.316*	.505*	1.000	
Ability	.244	.059	.170	1.000

Note. * Denotes correlations > .30 (criterion level for intercorrelation).

PC = perceived competence, CSAT = satisfaction with coach, TSAT = satisfaction with team involvement.

it was appropriate to assess the relationships between the set of predictor variables and set of three criterion variables (perceived competence, satisfaction with coach, satisfaction with overall team involvement) through multivariate multiple regression and canonical correlation analyses rather than separate multiple regression analyses. The intercorrelations between ability and each of the other three criterion variables were lower than .30. Consequently, it was most appropriate to interpret the relationship between the predictor variables and ability separately from the other criterion variables. Thus a separate multiple regression analysis with ability as the dependent variable was warranted.

Multivariate Multiple Regression Analyses

The relationship between the set of coaching feedback categories (predictor variables) and three of the four criterion measures (perceived competence, satisfaction with coach, and satisfaction with overall team involvement) were assessed through multivariate multiple regression and canonical correlation procedures for perceived and preferred feedback separately. The ratios between the number of subjects and the number of variables was sufficient to

meet the recommended minimum ratio of 4:1 for regression analysis (17.9:1 perceived data, 11:1 preferred data) (Pedhazur, 1982). For the canonical correlation analyses, loadings of .30 or greater were considered to be a significant contributor to the multivariate relationship (Pedhazur, 1982; Tabachnick & Fidell, 1989).

Perceived feedback.

A multivariate multiple regression analysis was conducted with information/praise, no response, non-verbal praise, in response to a desirable performance and corrective information, encouragement/corrective information, criticism plus corrective information, no response and non-verbal criticism in response to an undesirable performance as the predictor variables. The criterion variables were perceived competence, satisfaction with coach, and satisfaction with overall team involvement. The overall multivariate analysis was significant, Wilks's lambda=.60, $F(24,325)=2.61$, $p<.01$. This indicates that the set of perceived coaching feedback variables were predictive of the set of criterion variables; perceived competence, satisfaction with coach, team satisfaction.

A follow-up canonical correlation analysis was used to investigate the nature of this multivariate relationship more closely. Only the first canonical function was significant. The correlation between the two sets of variables was $R_c=.54$ indicating a moderate relationship. The canonical loadings provided further detail regarding the relative contribution of each variable to the overall multivariate relationship. Canonical loadings give the correlations of the original variables with the respective canonical variate. They reflect the degree to which a variable is represented by the canonical variate (Dillon & Goldstein, 1984). A loading of .30 or greater was considered

a significant contribution to the overall relationship (Pedhazur, 1982). The loadings for all variables are presented in Table 8.

Table 8

Canonical Loadings for Perceived Coaching Feedback and Criterion Variables

Variable	Canonical loadings
Predictor variables	
Encouragement/corrective information	.7787
Corrective information	.7589
Non-verbal praise	.7078
Information/praise	.4919
No response ¹	-.4268
Non-verbal criticism	-.2597
Criticism + corrective information	-.0746
No response ²	.0116
Criterion variables	
Satisfaction with coach	.8375
Satisfaction with team involvement	.4502
Perceived competence	-.4373

Note. ¹ No response following an undesirable performance. ² No response following a desirable performance.

Encouragement/corrective information and corrective information only following an undesirable performance and non-verbal praise and information/praise following a desirable performance had a significant positive contribution to the relationship between the set of perceived feedback variables and the set of criterion variables. No response following a desirable performance was also a significant contributor to the relationship,

however, it was negatively related to the set of criterion variables. The canonical loadings for the criterion variables indicated that all three variables contributed significantly to the relationship. However, satisfaction with the coach and satisfaction with team involvement were positively related to the predictor set, while perceived competence was negatively related to the set of predictor variables. It is important to note that satisfaction with coach contributed most to the overall relationship so these results indicate levels of satisfaction to a greater extent than perceived competence.

These results suggest that adolescent female field hockey players who perceived their coaches giving a greater frequency of encouragement/corrective information, and corrective information alone following a mistake, greater non-verbal praise, and information/praise following a good performance and a lower frequency of non response following a good performance reported that they were more satisfied with their team involvement and coach and had lower perceived competence. In addition to the significance in the relationship between sets of variables expressed by the canonical correlation, the strength of the association was also assessed through calculation of the redundancy index. This index reflects the amount of variance in the criterion set of variables explained by the set of predictor variables. A redundancy index of 10% or greater is considered significant and meaningful (Pedhazur, 1982). The amount of shared variance between perceived competence, satisfaction measures and the perceived feedback categories was 10.47%; thus the set of predictor variables accounted for a significant amount of variance in satisfaction and perceived competence.

Preferred feedback.

The predictor variables for the multivariate multiple regression analysis were the preferred coaching feedback categories; praise, information, no

response and non-verbal praise following a desirable performance and encouragement, criticism, criticism plus corrective information, no response, non-verbal criticism, and corrective information following an undesirable performance. The three criterion variables were the same as the analysis with perceived feedback data. Results of the multivariate multiple regression analysis were significant, Wilks's lambda=.60, $F(30,329)=2.12$, $p<.01$. This indicates that the set of preferred coaching feedback variables were predictive of the set of criterion variables; perceived competence, satisfaction with coach, team satisfaction.

From the follow-up canonical correlation analysis only the first canonical function was significant. The correlation between the two sets of variables was $R_c=.51$ indicating a moderate relationship. The canonical loadings indicated that encouragement, corrective information following a poor play or mistake and information following a good play or effort contributed most to the overall relationship, followed by no response after an undesirable performance and praise (verbal and non-verbal) following a desirable performance. Two variables were negatively related to the set of criterion variables, no response to a mistake and no response to a good performance or effort. Non-verbal criticism, criticism and criticism plus corrective information were not significant contributors (see Table 9). Of the criterion variables the two satisfaction scores contributed most to the relationship, the contribution of perceived competence was not significant (see Table 9).

The results indicated that adolescent female field hockey players' preference for a greater frequency of encouragement, corrective information, information, praise, non-verbal praise and a lower frequency of non-responses was related to higher levels of satisfaction with their team involvement and satisfaction with their coach. The athletes' level of

perceived competence was not associated with the preferred frequency of each type of coaching feedback.

Table 9

Canonical Loadings for Preferred Coaching Feedback and Criterion Variables

Variable	Canonical loadings
Predictor variables	
Encouragement	.7945
Corrective information / encouragement	.7462
Information/praise	.6657
No response ¹	-.5007
Non-verbal praise	-.3683
Praise	.3413
No response ²	-.3165
Non-verbal criticism	-.1105
Criticism plus corrective information	.0922
Criticism	-.0834
Criterion variables	
Satisfaction with team involvement	.9144
Satisfaction with coach	.6690
Perceived competence	-.0424

Note. ¹ No response following an undesirable performance.

² No response following a desirable performance.

The redundancy index for the two sets of variables was significant and meaningful. The amount of variance in the criterion set of variables

explained by the set of predictor variables was 11.07%, indicating that the preferred coaching feedback categories accounted for a significant amount of the variance in the satisfaction variables.

Stepwise Multiple Regression Analyses for Ability

Perceived feedback.

The relationship between the coaches' ranking of their athletes' ability and the athletes' perceived feedback was assessed by conducting a stepwise multiple regression analysis with ability as the dependent variable. No significant relationship was found $F(5,122)=.79, p > .05$. There appeared to be no relationship between these athletes' level of field hockey ability and perceptions of the feedback they received from their coaches.

Preferred feedback.

The stepwise multiple regression analysis with ability and preferred coaching feedback variables was not significant, $F(10,119)=1.09, p > .05$. There was no relationship between these athletes' level of field hockey ability and the types of feedback they preferred to receive from their coaches.

Post-Hoc Analyses

High- and Low-Perceived Competence Players

The canonical correlations provided some understanding of the relationship between coaching feedback and perceived competence and satisfaction. However, with this type of analysis it is difficult to isolate the relationships of individual variables. For this reason separate stepwise multiple regression analyses were conducted with perceived competence as the dependent variable and coach feedback as the independent variables. The results of these

analyses should be viewed cautiously as the interrelationship of perceived competence and satisfaction variables has not been taken into account.

Players were classified into either a high or low perceived competence group according to their score on the perceived competence (PC) scale. The high-PC group ($n = 78$, $M = 3.07$) was composed of those players whose level of perceived competence was above the mean PC for this group ($M=2.7$). The low-PC group ($n = 61$, $M = 2.23$) was composed of those players whose PC score fell below the mean for the group.

Perceived feedback.

A stepwise multiple regression procedure was conducted using perceived competence as the dependent variable and perceived coach feedback variables as the independent variables. The overall set of eight perceived feedback variables was predictive of PC, $F(8, 117) = 2.74$, $p < .01$, but accounted for 15.8% of the variance in PC. Two individual variables were significantly related to PC, accounting for a large proportion of the variance (9.7%). These were corrective information only following an undesirable performance, $\beta = -.26$ and information/praise following a desirable performance, $\beta = .28$. Specifically, players higher in PC perceived a greater frequency of information/praise in response to a good play or effort and a lower frequency of corrective information only following a poor play or mistake. Encouragement/corrective information following an error ($p < .06$) approached, but did not attain, significance. The results of the multiple regression are presented in Table 10.

Preferred feedback.

A stepwise multiple regression was also conducted with perceived competence as the dependent variable and preferred coach feedback as the

independent variables. The set of 10 preferred feedback variables was not predictive of PC, $F(10,118) = 1.75, p > .05$. However, the set of nine preferred feedback variables was predictive of PC, $F(9, 119) = 1.96, p < .05$ and accounted for 12.9% of the variance in PC. Two individual variables significantly predicted PC; non-verbal praise following a good performance, $\beta = .27$ and no response to a poor performance, $\beta = -.21$. A third variable, non-verbal criticism following a poor performance ($p > .06$) approached, but did not attain, significance. Specifically, players with higher PC preferred greater non-verbal praise following a desirable performance and less non-response after an error in performance. The results are presented in Table 11.

Table 10

Stepwise Multiple Regression Analysis for High and Low Perceived Competence and Perceived Feedback

Variable	Multiple R	R ²	Beta	T	F
Corrective information	.22	.05	-.26	-2.10*	6.60*
Information/praise	.31	.10	.28	2.30*	6.60**
Encouragement/ corrective information	.33	.11	-.25	-1.96*	4.95**
Non-verbal praise	.36	.13	.18	1.65	4.53**
No response ²	.38	.14	-.16	-1.66	4.00**
No response ¹	.39	.15	.12	1.23	3.59**
Criticism + corrective information	.39	.16	-.07	-.72	3.11**
Non-verbal criticism	.40	.16	.52	.60	2.74**

Note. ¹ No response following an undesirable performance. ² No response following a desirable performance.

Variables listed according to entry into equation.

* $p < .05$, ** $p < .01$.

Table 11

Stepwise Multiple Regression Analysis for High and Low Perceived Competence and Preferred Feedback

Variable	Multiple R	R ²	Beta	T	F
Non-verbal praise	.17	.03	.27	2.11*	3.97*
Non-verbal criticism	.24	.06	.20	1.96	3.76*
No response ²	.29	.08	-.21	-2.23*	3.72*
Criticism	.32	.10	-.20	-1.83	3.53**
Encouragement/ corrective information	.34	.12	-.10	-.70	3.23**
Criticism + corrective information	.35	.12	.11	1.02	2.88*
No response ¹	.36	.13	-.07	-.67	2.51*
Encouragement	.36	.13	-.06	-.40	2.21*
Information/praise	.36	.13	-.05	-.33	1.96*
Praise	.36	.13	-.02	-.12	1.75

Note. ¹ No response following an undesirable performance. ² No response following a desirable performance.

Variables listed according to entry into equation.

* $p < .05$, ** $p < .01$.

High- and Low-Ability Players

In light of the lack of a significant relationship between ability and either perceived or preferred coach feedback variables, players were classified into high-ability (those ranked '4' by their coaches) ($n = 45$, 31.3% of original sample) and low-ability (those ranked '1' or '2' by their coaches) ($n = 45$, 31.3% of the original sample). The middle 37.5% ($n = 54$) were excluded from the analysis to ensure there was a distinct separation between the groups.

Perceived Feedback.

The overall set of eight perceived feedback variables was not significantly predictive of ability, $F(8, 74) = 1.30, p > .05$, however, the combination of the first four variables entered was a significant predictor of ability, $F(4, 78), p = .05$, accounting for 11.2% of the variance in ability. These were non-verbal praise, $\beta = .28$ and information/praise, $\beta = .17$, encouragement/corrective information, $\beta = -.27$, and no response, $\beta = .16$. Specifically, players of higher ability perceived greater frequency of non-verbal praise, information/praise following a good performance or effort and no response following a poor performance and less encouragement only following a mistake compared with athletes with lower ability. No individual variables were significantly related to ability. The results are presented in Table 12.

Table 12

Stepwise Multiple Regression Analysis for High and Low Ability and Perceived Feedback

Variable	Multiple R	R ²	Beta	T	F
Non-verbal praise	.21	.05	.28	1.97*	3.78*
Encouragement/ corrective information	.29	.08	-.27	-1.51	3.68*
No response ²	.32	.10	.16	1.24	2.95*
Information/praise	.33	.11	.17	1.05	2.45*
No response ¹	.34	.12	-.08	-.61	2.07
Criticism + corrective information	.35	.12	-.06	-.49	1.77
Corrective information	.35	.12	-.04	-.26	1.50
Non-verbal criticism	.35	.12	-.01	-.08	1.30

Note. ¹ No response following an undesirable performance. ² No response following a desirable performance. Variables listed according to entry into equation. * $p < .05$

Preferred Feedback.

The overall set of 10 preferred coach feedback variables was not a significant predictor of ability, $F(10, 70) = 1.33, p > .05$, however, the combination of the first six factors significantly predicted ability, $F(6, 74) = 2.24, p < .05$, accounting for 15.4% of the variance in ability. These factors were encouragement only, $\beta = -.46$, non-verbal praise, $\beta = .25$, no response (following an error), $\beta = -.18$, praise, $\beta = .15$, corrective information/encouragement, $\beta = .13$, and no response (following a good play), $\beta = .07$. Specifically, higher ability athletes indicated they preferred more frequent non-verbal praise, praise, following a good performance and corrective information/encouragement and less frequent no response and encouragement only following an error compared with athletes of lower ability. One individual variable was significantly related to ability: encouragement only following an error. The results of the regression analysis are presented in Table 13.

High- and Low-Satisfaction Players

The results of the canonical correlations of satisfaction measures with perceived and preferred coach feedback provided a good indication of the relationship between these variables, consequently, further regression analyses were not warranted.

Table 13

Stepwise Multiple Regression Analysis for High and Low Ability and Preferred Feedback

Variable	Multiple R	R ²	Beta	T	F
No response ²	.16	.03	-.18	-1.58	2.19
Encouragement	.23	.05	-.46	-2.45*	2.21
Non-verbal praise	.36	.13	.25	1.54	3.71**
Encouragement/ corrective information	.37	.14	.13	.67	3.09*
No response ¹	.38	.15	.07	.54	2.60*
Praise	.39	.15	.15	.81	2.24*
Criticism	.40	.16	.06	.40	1.97
Non-verbal criticism	.40	.16	.04	.28	1.71
Information/praise	.40	.16	-.01	-.04	
Criticism + corrective information	.40	.16	.06	.02	1.33

Note. ¹ No response following an undesirable performance. ² No response following a desirable performance.

Variables listed according to entry into equation.

* $p < .05$, ** $p < .01$.

CHAPTER V

DISCUSSION

For clarity and convenience, the discussion of the results is organized into four sections. In section one the descriptive findings are discussed in response to research questions one and two. Section two discusses the results of the investigation of the relationships between coach feedback categories and perceived competence, satisfaction with the coach, satisfaction with team involvement and ability in response to question three. Section three is a brief discussion of non-verbal communication in sport. Finally, in section four, the findings are summarised, practical implications made and recommendations for future research are presented.

Section One: Perceived and Preferred Frequency of Coach Feedback

Question 1. What coaching feedback do adolescent female field hockey players perceive they are receiving in response to desirable and undesirable performances?

Perceived Frequency of Feedback

It was clear from the results of this study, that these athletes perceived their coaches' frequently provided praise (verbal and non-verbal) and information about the performance following a good play or effort and encouragement and corrective information following a mistake or poor play. Further, it is important to note that all categories of feedback that included criticism were perceived to be given relatively infrequently.

These findings provide empirical support for the recommendations Smith and Smoll (1995) have outlined for coaches to enhance coach-athlete interaction. These recommendations were derived from the Coach Effectiveness Training (CET) program (Smith, Smoll & Curtis, 1979) and are based on research in youth sport. They stress that training programs should be based and evaluated on scientific evidence rather than intuition and/or informal observation. This view was echoed by Howe (1990) who suggested that most research on effective coaching has been based on "subjective beliefs and traditional practices which have tended to reinforce the status quo in coaching performance" (p. 4). The CET program consists of empirically derived behavioural guidelines which are based on a positive approach to coaching rather than a negative or aversive control approach. The guidelines emphasize to the coach the desirability of increasing four specific behaviours: (a) reinforcement (for effort as well as for good performance); (b) mistake-contingent encouragement; (c) corrective instruction (given in an encouraging and supportive manner) and (d) technical instruction (spontaneous instruction about the techniques and strategies of sport). The coach is also encouraged to decrease the amount of non-reinforcement, punishment, punitive instruction, and to avoid having to use regimenting behaviours designed to keep control. Several studies have demonstrated the effectiveness of the CET in altering coaches' behaviour in a desirable manner, positively influencing children's attitudes to the sport, their self-esteem, performance anxiety and attrition (Smith, Smoll & Curtis, 1979; Smoll, Smith, Barnett, & Everett, 1993; Barnett, Smoll, & Smith, 1992).

The results of this study indicate that based on the athletes' perceptions, their coaches displayed behaviours that closely resemble the guidelines outlined in the CET programme. Comparing the behaviour of coaches in this study with the recommendations provided in the CET programme it can be seen that

overall these coaches were perceived to be positive, providing reinforcement such as praise and non-verbal praise, in response to desirable performances and encouragement in response to errors. Further, corrective information was given relatively frequently. Spontaneous behaviours were not assessed in this study, consequently the occurrence of spontaneous technical instruction was not determined. Finally, the incidence of non-response to performances was low, as was the frequency of criticism and criticism combined with instruction, this is also congruent with the CET recommendations.

The perceived coach feedback in this study is also consistent with the recommendations the Coaching Association of Canada (CAC) outlines for providing feedback. Coaches are encouraged to make sure feedback is specific, that it contains precise information about what the athlete should attempt to do, that it should also be constructive, reinforcing positive behaviours and making suggestions for improvement and it should be positive (Coaching Theory Level 1, 1988). While the categories of feedback employed in the present investigation are more detailed than the recommendations of the CAC, in general the perceived high frequency of praise, encouragement, information and corrective information matches well with these guidelines.

This positive feedback focus ties in well with the goals of coaching emphasized by Smith (1986):

“One of your [the coach’s] most important goals is to create a good learning situation in which athletes can acquire the technical skills needed to succeed as individuals and as a team. Another priority for most coaches is to create a social environment in which the participants can experience positive interactions with one another” (p 35).

This approach to coaching is supported by the Coaching Association of Canada. In their coaching manuals they acknowledge the important influence coaches can have on participants self-image and encourage a positive coaching style. Coaching behaviours such as non-verbal signs of support, interacting on an individual basis as much as possible, and encouraging skills being worked on, especially after a mistake are just a few examples of how a coach can display this positive approach in their coaching (Coaching Theory Level 1, 1988).

Preferred Frequency of Feedback

Question 2. What coaching feedback do adolescent female field hockey players prefer to receive in response to desirable and undesirable performances?

A clear finding from this study is that not only did these coaches appear to provide feedback that was consistent with coaching guidelines but also this feedback was congruent with the preferred feedback of this group of athletes. While older athletes' preference for particular coaching behaviours has been the focus of a number of studies (see Chapter II), the preferences of adolescents, in particular adolescent females, have received little empirical attention. The results of this study showed that adolescent female field hockey players preferred coaches to respond to good performances and efforts with praise (verbal and non-verbal) and information about their performance. Smith (1986) supports combining reinforcement with a specific description of the desirable behaviour suggesting that it combines the power of the reinforcement with "an instructional reminder" (p. 39) of what the player should do. This kind of feedback can also provide cues for the athlete to focus on. In response to a mistake or undesirable performance the athletes

in this study preferred their coach to be encouraging and provide corrective information on how to improve their performance. This desire for instruction has also been evident in older and more experienced athletes (Chelladurai & Carron, 1983; Erle, 1981). Chelladurai's (1993) review of leadership in sport lead him to conclude that athletes were satisfied with leadership to the extent that the coach emphasized; (a) training and instruction that enhances the ability and coordinated effort by members toward task accomplishment and (b) positive feedback which recognizes and rewards good performance. It would appear that this group of adolescent females is no different in this regard.

While, the findings of this study support the research that has employed the Leadership Scale for Sport (LSS) (Chelladurai & Saleh, 1978) as indicated above, the results are more situation-specific. For example, the issue of how athletes would like their coach to respond to a good performance as opposed to a poor performance is an issue not dealt with by the LSS-based research. In this respect the research presented here, not only adds to the knowledge of the coaching preferences of adolescent females but also to the understanding of desired responses to a good performance or effort and to poor performance or mistake.

Congruence between Perceived and Preferred Frequency of Feedback

There was little difference between frequencies of perceived and preferred coach feedback for these subjects. However, in most feedback categories the athletes in this study preferred more frequent feedback than they perceived they were receiving. It is not uncommon for athletes to require more feedback than they believe they are getting (Howe, 1990). They desired more frequent feedback in every category except no response and criticism. This result is encouraging for coaches, although not always easy to achieve. It

suggests that athletes are interested in what the coach has to say about their performance and the information coaches are conveying is of use to them. This desire for a high frequency of feedback places a large demand on the coach, particularly in a team situation. To give specific contingent feedback to each individual athlete can be difficult, however, it would appear that it is received well when provided.

Conclusion

Based on the perceptions of these athletes, it was shown that the coaches' feedback following desirable and undesirable performances was positive, encouraging and frequently contained information about aspects of the skill that were done well or how they could be improved. This result is in accordance with the guidelines for coaching young athletes (Smith, Smoll & Curtis, 1979; Coaching Theory Level 1, 1988).

Further, the preferences these adolescent females had for specific types of feedback were very similar to the feedback they perceived they were receiving. They desired praise when they made a good play, encouragement when they made a mistake, confirmation of what they were doing well, and how they could improve their performance. It is encouraging that there was little discrepancy between these athletes preferences and perceptions of coach feedback and that their satisfaction with the coach and overall team involvement was high. Although these results are only descriptive, we may infer that, with regard to coach-athlete interaction, the coaches in this study were communicating effectively with their players and the athletes were happy with their experiences with their coach. Furthermore, for those involved with the education of coaches of adolescent females these results are encouraging because they support the coaching guidelines/recommendations which are currently being promoted throughout the U.S. and Canada.

Section Two: Relationships between Coaching Feedback and Perceived Competence, Satisfaction and Ability

Question 3. Do athletes higher in perceived competence, ability or satisfaction have different perceptions of and preferences for coaching feedback compared with athletes lower in perceived competence, ability, or satisfaction?

An answer to this question was achieved in two ways: (a) through multivariate multiple regression analyses, and (b) through separate stepwise multiple regression analyses. The relationships among variables were analyzed separately for perceived and preferred feedback. Further, because there were only low intercorrelations between ability and perceived competence and satisfaction measures, the relationships between coach feedback and ability were analyzed separately.

Perceived Feedback, Satisfaction and Perceived Competence

Due to intercorrelations between perceived competence and satisfaction measures a multivariate multiple regression analysis was conducted to examine the relationship between these variables and perceived coach feedback variables. Of the original twelve feedback variables, eight were entered in the analysis. Praise and criticism were excluded from the analysis due to low scale reliability and due to multicollinearity, four other original variables were combined to create two composite variables: encouragement/corrective information; and information/praise.

The set of feedback variables significantly predicted satisfaction and perceived competence. Closer examination revealed that greater encouragement/corrective information and corrective information only following an

undesirable performance, non-verbal praise and information/praise following a desirable performance and a lower frequency of no response were related with higher levels of satisfaction with the coach and satisfaction with team involvement but were also related to lower levels of perceived competence. It is important to note that in this canonical function, satisfaction with the coach contributed most to the relationship.

The positive relationship between information/ praise, non-verbal praise, encouragement/corrective information, corrective information only and satisfaction with the coach and satisfaction with overall team involvement provides empirical support for the positive approach to coaching promoted by coach training programmes.

To better understand the relationship between perceived coach feedback and perceived competence a separate stepwise multiple regression analysis was employed with perceived competence as the dependent variable. This analysis revealed several differences in perceptions of feedback between female adolescents with higher perceived field hockey competence and those with lower perceived competence. Firstly, the overall set of eight feedback variables predicted level of perceived competence significantly. This suggests that these teenagers did differ in their perceptions of coach feedback. Specifically, athletes who held higher perceptions of their field hockey competence perceived higher frequency of information/praise and non-verbal praise following a desirable performance and less corrective information only and encouragement plus corrective information following an error. Black and Weiss (1992), in a study of competitive swimmers, found that for older swimmers (15-18 years) perceived higher frequencies of information, praise, and information plus praise were also related to higher perceived competence. Furthermore, female swimmers who perceived

higher frequency of information, praise, and information plus praise had higher levels of perceived competence and enjoyment. The results of this study and those of the present study provide empirical support for the contention that for adolescent females a positive relationship exists between frequency of information and praise following a desirable performance and perceptions of ability.

This positive relationship has not been found in all studies and it has been suggested that coaches and teachers may be, in part, responsible for these differences. Horn's (1985), study of junior high school female softball players, found that children who received the greatest amount of feedback following a successful performance in practice demonstrated lower perceived competence compared with athletes receiving less frequent feedback. Horn suggested that this reinforcement following a successful performance may not have all been contingent on performance and that this feedback may have been given inappropriately leading children to infer lower ability. In a different analysis of this data, Horn (1984) found that athletes who were rated by their coaches to have lower ability were given a significantly higher proportion of reinforcement than athletes of higher ability. Considering the lower skill level of these athletes it is likely that at least some of this praise may have been inappropriate and non-contingent to actual performance. In the academic domain, Brophy (1980) has observed, that classroom teachers use praise for motivational or disciplinary purposes and not as a performance-contingent or appropriate evaluation of a child's performance. Horn and Harris (1995) have also noted the potential negative effect on athletes self-perceptions of feedback which is inappropriate and/or non-contingent.

Horn (1985) also found that greater criticism following errors was associated with higher perceived competence. She suggested that feedback of this nature

indicated to the children they were capable of better performance and led them to infer higher ability. Black and Weiss (1992) found that for 15-18 year old swimmers, greater encouragement and corrective information following an undesirable performance was associated with higher perceived competence. In the present study, however, the opposite relationship was found. Specifically, a higher frequency of corrective feedback was related to lower perceived competence. It is possible that adolescents with lower perceived competence are more sensitive to the corrective information they are given than adolescents with higher perceptions of ability. The finding of Smith, Smoll and Curtis (1978; 1979), that children low in self-esteem benefited more from positive supportive coaches than higher self-esteem children provides support for this idea. Corrective information only and even encouragement plus corrective information following an error in performance may highlight to the athlete as well as to their peers that they have in fact made a mistake. This could be perceived as an indication of their lack of ability rather than an indication that the coach believes they are capable of even better performances and hence they have high ability.

Harter (1978) believed that feedback has precise functions in developing perceived competence. She hypothesized that the functions of reinforcement could be separated into motivational/emotional and informational. Horn and Harris (1995) supported Harter's contention and noted that feedback provides information concerning the coach's judgement of their performance ability but also feedback indicates how subsequent performances will be judged in the sporting context. Feedback that is contingent to performance but places greater emphasis on skill technique than outcome, would have positive affect on perceptions of ability (Horn & Harris, 1995). Based on the results of the present study, it is suggested that although a third party may be able to identify separate motivational and informational components of

feedback, the recipients may not be able to, or at least do not, make this distinction. Further, there are no guarantees that the recipients will interpret the function of feedback in the same way the coach or teacher may have intended. Consistent, appropriate and performance-contingent feedback from coaches is perhaps the best way they can attempt to ensure that the message they intend to convey is the message that is received by the athlete.

Harter's competence motivation model suggests that positive responses from significant others positively influence perceptions of success, intrinsic motivational orientation, perceptions of control, and perceived competence which in turn positively influence intrinsic pleasure and result in higher competence motivation. This ultimately results in continued participation and future mastery attempts. Further, negative responses from significant others have the opposite effect resulting in perceptions of failure, external perceptions of control, low perceived competence and anxiety which in turn may decrease competence motivation and reduce the likelihood of a child engaging in future mastery attempts. It is possible that for adolescent females, receiving feedback high in corrective information from the coach following a mistake may be perceived as indicating failure, which in turn results in feelings of lack of personal control over their performance and a lower perception of their ability. It is interesting to note that in a study of high school and university male basketball players Chelladurai and Carron (1983) found that a preference for training and instruction which was high for midget level players decreased at the junior level, reached its lowest with senior high school players and then increased again at the university level. Although these two studies differ in their methodology, it would appear that adolescent athletes are more sensitive to corrective or technical information than has been previously recognised. This type of feedback is most often intended to provide information about how the individual can improve

their performance, however, this may not always be the message perceived by the athlete.

Athletes lower in perceived competence may perceive higher frequency of corrective information and encouragement following an error because that is exactly what they are getting. There are two possible explanations here. First, perceived competence has been related to performance and, although it is not a perfect relationship, it is likely that those individuals lower in perceived competence are in fact performing at a lower level in comparison to their peers with higher perceptions of ability. Athletes performing at a lower level are likely to be making a greater number of mistakes than their higher perceived competence teammates and consequently, the coach will have more opportunities to provide corrective feedback to lower perceived ability athletes. Therefore, the perceived difference in frequency of certain types of feedback is in fact a real difference. One method to control for any actual differences in the amount of feedback a coach gives to different players was used by Horn (1985). In her study, the number of observed coaching behaviours in each category toward a player were expressed relative to the total number of feedback opportunities for this player. However, this method does not account for differences in the amount of feedback one player receives relative to other players on their team.

Second, when athletes with a higher perception of their ability make a mistake their perception of ability may be less affected by the feedback the coach provides. Holding this higher perception of their ability may act as a buffer for the corrective information they receive following a mistake, in that, although they are being told they can do better, they may already hold this view themselves without having to be told and can focus on the 'how to' information contained in the feedback, rather than the judgement the coach

has just made with regard to their ability. Athletes with a lower perception of their ability may not have such an optimistic outlook about future performances and focus on the fact that they have just made a mistake, rather than how to improve their performance and infer low ability. This view is supported by research based on self-enhancement models which has shown, in the laboratory, that high self-esteem people are less affected by evaluative responses than people with lower self-esteem (Smith & Smoll, 1990).

One cautionary note with regard to the findings of this study is that although the athletes have been categorized as low and high in perceived competence, this categorisation is a relative one. In that, athletes were separated based on the mean of this group and not on the mean of all adolescent field hockey players. Examination of the mean perceived competence of this group of adolescent females revealed that they have a moderate to high perception of their field hockey ability. Consequently, those athletes categorized as lower in perceived competence in this study, are still likely to have higher perceptions of field hockey ability than other adolescent females not included in this study. This potential problem is not unique to this study. Research employing a relatively homogenous group of participants involved in any sport at a relatively high competitive level are likely to find similar results. Further, according to Harter's competence motivation model, individuals who have a higher perception of their ability are more likely to continue to participate, therefore it is not surprising that those children still competing in a sport in adolescence have higher perceived competence for that sport than the general population.

Preferred Feedback, Satisfaction and Perceived Competence

The analysis of preferred coach feedback, perceived competence and satisfaction revealed similar results to the perceived feedback analysis. Once

again the relationship was more indicative of a relationship between the set of feedback variables and satisfaction measures and not perceived competence. Examination of the results suggests higher satisfaction with their coach and overall team involvement were related to feedback that praises desirable performances and efforts, provides encouragement following an error and frequent corrective information. These results provide empirical support for the recommendations volunteer coaches are given in the CET (Smith, Smoll & Curtis, 1979) and Coaching Association of Canada (Coaching Theory Level 1, 1988).

The mean satisfaction scores for the athletes in this study indicated that these athletes were very satisfied with both their coach and the overall involvement with their team. Considering the similarities between preferred and perceived coaching behaviour this result is not surprising. This result provides support for Chelladurai's (1978) multidimensional model of leadership in sport, in that satisfaction is viewed as one consequence of the congruence between actual, preferred and required leader behaviour. When congruence between types of behaviour is high satisfaction is predicted to be higher (Chelladurai, 1993). In the present study the preferred and perceived behaviours were very similar and satisfaction was high. Much of the research in this area has focused on the discrepancy between perceived and preferred leader behaviours and has provided empirical support for an inverse relationship. Specifically, Chelladurai (1984) and Chelladurai and Carron (1985) found that greater discrepancy between preferred and perceived coach behaviour negatively affected satisfaction with leadership and overall team involvement. Further Smith, Smoll and Curtis' (1978, 1979) studies of little league baseball also found positive coaching style was related to enjoyment and a desire to play for that coach again the following season.

A separate stepwise multiple regression analysis revealed that adolescent females with differing perceptions of ability did appear to have different preferences for certain types of feedback. Specifically, athletes higher in perceived competence preferred greater frequency of non-verbal praise, and non-verbal criticism and lower frequency of non-response, criticism and encouragement plus corrective information. A negative relationship between encouragement plus corrective information and perceived competence was found. As discussed previously, this negative relationship may be because receiving corrective information following a mistake highlights to the adolescent they have indeed made an error and leads them to infer low ability. They may already be aware of the fact that they have made an error and do not want this fact reinforced, particularly in front of their peers.

Relationships between Coach Feedback and Ability

It was hypothesized that athletes of differing ability would have different perceptions of the feedback from their coaches and they would also prefer different types of feedback. Luikkonen and Saminen (1990) found that young Finnish athletes who were higher in ability perceived their coaches to be more rewarding and socially supportive than athletes of lower ability. Further Garland and Barry (1988) found that more able football players compared with less able players perceived that their coaches emphasized more training and instruction, were more socially supportive, and provided more positive feedback.

Results of the initial analyses did not support this hypothesis, that is, there were no significant relationship found between athlete's level of field hockey ability and the coach feedback categories (perceived or preferred). However,

when only the top and bottom 30% of this group were included in the analyses some relationships between coach feedback and ability were found. Higher ability athletes perceived greater praise (non-verbal) and information and less feedback that provided general encouragement compared with lower ability athletes. The perceived higher frequency of praise supports the findings of Garland and Barry (1988) that more able football players thought their coaches provided more positive feedback. However, this finding is different from the observational research of Horn (1984) who found that coaches gave more frequent general praise to athletes for whom they held lower expectations. At least some of the positive feedback the athletes of higher ability in this study perceived contained information combined with praise. This feedback was more specific and contingent to performance than the general positive feedback noted by Horn (1984) and could be one reason for the different finding shown here.

With regard to preferred feedback, athletes of higher ability preferred more frequent praise, and corrective information and less encouragement only compared with lower ability athletes. A desire for frequent praise has been discussed already but it appears that even athletes of high ability want to be praised for a good performance. This suggests that coaches' feedback is important to athletes and supports the research that indicates coaches remain an important source of competence information in adolescence, particularly for young women (Horn, Glenn & Wentzell, 1993). Further, there was only a low correlation between the coaches ranking of athletes' ability and athletes' self-perception of competence, suggesting that although the coach may hold a high view of an athlete's ability, the athlete may not always hold the same high view of their ability and this is likely to affect their perception of the message contained in feedback.

Lastly, the relationship between ability and coach feedback was only found when the middle ranked athletes were dropped from the analysis and this group of athletes as a whole may have been more similar in their perceptions and preferences than they were different. One reason for this may be that they have been identified as the top field hockey players in their region and in this respect they are a homogenous group. It is likely that while the coaches were able to separate their athletes into higher and lower ability, the range of ability was not sufficient to see significant differences in their perceptions and preferences for particular coaching behaviours. Future research should include subjects with a wider range of ability, for example high school teams.

Section Three: Non-Verbal Feedback

When considering the effectiveness of coach communication, it is important to remember that information is conveyed both verbally and non-verbally. Howe (1990) reported that a major concern athletes have with regard to their coaches communication is they provide inconsistent messages to athletes. One way this may happen is when verbal messages conflict with the non-verbal messages the coach transmits. Non-verbal communication has been identified as an important method of conveying information, but has received little empirical attention (Smith & Smoll, 1989; Howe, 1990).

In an effort to address the role of non-verbal communication, this study included two measures of non-verbal communication; non-verbal praise, and non-verbal criticism. As noted previously in this chapter, non-verbal praise was perceived to be given with a moderate to high frequency and was a desired form of feedback following a good performance or effort. In

comparison, non-verbal criticism was perceived to be provided only rarely and for these athletes that was the way they preferred it. In the present study it was also found that perceived and preferred frequency of non-verbal praise were an important predictors of satisfaction and perceived competence. It can be seen from these results that non-verbal communication is occurring in the sport domain, athletes are aware of it, and it may influence self-perceptions of ability.

Section Four: Summary

Adolescent females are an 'at risk group' with regard to their continued participation in sport and physical activity. This study attempted to shed some light on adolescent female athletes' perceptions of and preferences for certain types of coach feedback and the relationships between coach feedback and the psychological variables of perceived competence and satisfaction. Substantial research has been documented supporting the relationship between perceptions of ability and motivation and behaviour in sport. According to Harter's competence motivation theory high perceptions of competence lead to intrinsic pleasure, high competence motivation and an increased likelihood of engaging in further mastery attempts. Further, positive evaluative feedback and responses from significant others enhance perceptions of success, competence, internal locus of control and intrinsic pleasure. The coach is a powerful figure in sport and has the potential to both positively and negatively influence the experiences of children and adolescents.

As noted above, based on the perceptions of these adolescents the coaches in this study displayed a positive coaching style. These behaviours are

congruent with the guidelines promoted for volunteer coaches in the United States of America and Canada. Further, they were very similar to the feedback desired by these adolescent females.

This positive coaching style was predictive of satisfaction with the coach and overall team involvement. However, some differences were found with regard to perceived feedback of adolescents higher and lower in perceived competence. A higher frequency of praise and information following a desirable performance was associated with higher perceived competence. This positive association had been previously found for adolescent swimmers. Higher frequency of corrective information following an error was associated with lower perceived competence. This was a different finding and it was suggested that although this type of feedback is intended to convey information about how to improve performance, it may also highlight the fact that a mistake has been made and indicate failure, which in turn may lead to a lower perception of ability.

Practical Implications

The descriptive results and, in part, the correlational analyses provided empirical support for the positive approach to coaching advocated by Smith, Smoll and Curtis (1978) in their coach effectiveness training programme and by the Coaching Association of Canada.

For adolescent females praise (verbal and non-verbal), information, and praise combined with information are desired and positively related to satisfaction with involvement and the coach and perceived competence. It is important that this feedback is appropriate and contingent to performance. That is, give credit (praise) where credit (praise) is due, and not for the sake of having something to say. Coaches should be aware that feedback can have

both motivational/emotional and informational functions and that praise/reinforcement which is non-contingent is often used as a motivational tool at the expense of information and perceptions of ability.

With regard to corrective information, the young women in this study expressed a desire for frequent feedback of this nature. However, the difficult task for the practitioner is to convey this valuable information in a manner which achieves its purpose (i.e., provides information and suggests ways the athlete can do better, inferring high ability) but does not highlight the fact they have just failed. One possible approach is the 'sandwich' approach suggested by Smith (1986). With this approach the important information is preceded by a positive statement about an aspect of the skill/performance the athlete is doing well and followed by a similar sort of statement. In this way the coach is creating an environment that is predominantly positive but is still conveying necessary corrective information. Most importantly, providing feedback that is consistent overtime and across players, appropriate and performance-contingent appears to be a good way to convey valuable information to athletes about their performance without focusing their attention on the judgement of success or failure.

Recommendations for Future Research

This study was intended to extend the knowledge and understanding of adolescent females' sport experiences. The group was chosen because very little is known about their experiences and psychosocial growth in sport. The negative relationship found between corrective information and perceived competence has not been previously documented for adolescent females and warrants further investigation. This type of feedback is most often intended to help athletes improve their performances and enhance their self-

perceptions, consequently, why corrective information appears to have the opposite effect for adolescent females is open to investigation.

Perceived competence does not develop or change over night, consequently, to further our understanding of children's and adolescents' perceptions of ability and the influence of their involvement in sport, research that follows the same children over a period of time is important. Horn (1985) and Smith, Smoll and Curtis (1978; 1979) followed children participating in youth sport programmes over the period of one and two seasons, respectively. They found that changes in self-perceptions did occur and identified several factors associated with these changes. Longitudinal research which extends beyond one or two seasons of sport experience is required to increase our understanding of the changes in perceived competence which occur in childhood through adolescence and into adulthood and the psychosocial factors related to these changes. Research to date across childhood and adolescence has revealed differences in perceived competence and several related factors but has primarily employed cross sectional approaches (Horn & Harris, 1995). One example of longitudinal research that may increase understanding of the impact of coach feedback on psychological growth is an examination of individual's reinforcement history from significant others. Weiss (1986) suggested past experience of coach feedback was likely to affect how future feedback is perceived, as well as influencing the preferences for different types of feedback.

The question of whether athletes compare the frequency and quality of feedback they receive with the frequency and quality of feedback their teammates receive was not addressed in this research. However, it may be that the absolute frequency of feedback is not as important as the frequency of feedback relative to their teammates. As early as 4 to 7 years children begin to

use peer comparison as a source of competence information. The importance of the peer group in judging competence continues and even increases through childhood until by age 12 where it becomes perhaps one of the most important sources of ability information (Horn & Harris, 1995). The structure of the sport context also encourages the use of peer comparison to judge ability rather than encouraging self-comparison, particularly as children get older and face increasingly competitive events. Sporting competitions constantly compare one child with another to determine 'the best', 'the winner', inferring they have higher ability than another, however, this also determines 'the loser' and those with less ability. Adolescents continue to evaluate their performance relative to that of their peers and it has been suggested that, whereas children use 'known' peers; for example, friends and children in their class or school, as the basis of their ability judgements, adolescents begin to use a larger peer group; for example, adolescents from their region, province and even from the whole country (Horn & Harris, 1995). Considering the increased interest in how their peers are performing, it is likely that adolescents are aware of the differences that may be present between the frequency and content of feedback they receive and the feedback their peers receive for the same performance and this may influence their self-perceptions.

From a methodological and theoretical perspective, there are two further recommendations for future research examining the complex nature of coach-athlete interactions, perceived competence and motivation of adolescent athletes. First, although this study employed a questionnaire approach to examine coach feedback rather than direct observation, the potential usefulness of direct observation should not be dismissed. Observing coaches in real situations may still provide important information about the nature of communication between coaches and athletes, particularly if

combined with some form of examination of athletes' responses to different coach behaviours.

Second, it is important to note that coach feedback is only one factor in this complex relationship. Future research should attempt to include other related factors such as locus of control, intrinsic/extrinsic motivation, and goal orientations. Based on Nicholls achievement motivation theory and the demonstrated relationship between goal orientation and perceived competence, the negative relationship between corrective information and perceived competence found in the present study, may be due to error corrections turning the athlete's focus toward ego comparisons and posing a threat to their ego rather than focusing them toward task and skill improvement. Corrective feedback in front peers may serve to further exaggerate this affect. This requires further research to understand the evaluative process adolescents employ to judge their success or failure of a task and their competence. Further, coach decision making style and spontaneous communication between coach and athlete, are two other coach behaviours that were not investigated here but may aid in providing a clearer understanding of the relationships between perceived competence, motivation to participate in physical activity and the potential impact of the coach. Lastly, the coach is just one of a group of significant others, who could influence athletes' perceptions of competence. Two other significant others who should be included in future research in this area, are parents and peers.

In conclusion, it is encouraging to note that this group of athletes, who are at an important stage in their development, received what is considered to be excellent coaching. With regard to the relationship between perceived competence and coach feedback, further research is needed to better understand this relationship for adolescents.

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APPENDIX A
Coach Feedback Questionnaire

Code no. _ _ _ _

WHAT IS MY COACH LIKE?

As you are probably already aware coaches can be very different from each other in the type of information they give and in the responses they make about players' skills and performances.

You are the top field hockey players in your age group in BC, and for this reason, we are interested in your opinions of how your coach relates to you. Your opinions are very important to us as they give us your side of the experiences you have had with your involvement in field hockey.

Please read the statement below and sign at the bottom if you agree to participate in this study. Then detach this page from the rest of the questionnaire :

Statement of Consent for Participation in the Coaching Communication Study

I understand that this research project is studying the nature of communication between coach and athletes. I understand that my participation is entirely voluntary and that I can withdraw from the study at any time, without explanation.

I understand that all data collected in this study will remain confidential, questionnaires will be kept in a locked filing cabinet in the Physical Education Department, at the University of Victoria. I understand that the information I provide will not be made available to anyone except the researchers involved in this study. Furthermore I understand my name will not be attached to any published results and that anonymity will be protected by using code numbers to identify the results obtained from individual participants.

I understand that whether I participate or choose not to participate will have no bearing on my status on the team or future teams. Finally, I have been given the opportunity to ask questions about the study and have had them answered to my satisfaction.

Name(full) _____

Date _____

Signature _____

TO BEGIN

First there are 3 questions to give us a little information about you and your team.

1. What is your age _____ (years and months)
2. How many years have you been playing field hockey? _____
3. Where do you think your team will finish in this tournament? (*circle your answer below*).

10th to 8th

7th to 5th

4th to 1st

Code no. _ _ _ _

PART ONESection 1. Your coach's responses to you when you play well or make a good effort

Listed below are 15 examples of the responses your coach might make to you after you have made a good play or effort in a practice or game. *Please circle the 'x' for each statement that BEST describes how often your coach provides responses like these to you.*

	Always	Often	A lot of the time	About 50% of the time	Some- times	Occasion- ally	Never
1. "Nice move"	x	x	x	x	x	x	x
2. Coach doesn't saying anything about your good practice or effort.	x	x	x	x	x	x	x
3. "Way to go! "You had your hands together in that hit"	x	x	x	x	x	x	x
4. "You kept your head down that time."	x	x	x	x	x	x	x
5. Coach smiles.	x	x	x	x	x	x	x
6. "Great practice"	x	x	x	x	x	x	x
7. Coach ignores your good performance.	x	x	x	x	x	x	x
8. "Well done! You put the ball into good space for her to move onto."	x	x	x	x	x	x	x
9. Coach claps enthusiastically.	x	x	x	x	x	x	x
10. "Your pushes are getting stronger"	x	x	x	x	x	x	x
11. "Good game"	x	x	x	x	x	x	x
12. Coach is too busy to comment about your good play.	x	x	x	x	x	x	x

13. Coach gives you a pat on the back.	x	x	x	x	x	x	x
14. "Great shot! You took the shot right at the edge of the circle."	x	x	x	x	x	x	x
15. "You stepped up on your check and denied them the ball."	x	x	x	x	x	x	x

Section 2. Your coach's responses when you make a mistake or don't play well.

Listed below are 21 examples of the responses your coach might make to you after you have made a mistake in practice or in a game or after you have not played well. *Please circle the 'x' for each statement that **BEST** describes how often your coach provides responses **like these to you.***

	Always	Often	A lot of the time	About 50% of the time	Sometimes	Occasionally	Never
1. "Keep working at it!"	x	x	x	x	x	x	x
2. Coach doesn't say anything about your mistake.	x	x	x	x	x	x	x
3. "That was a bad pass!"	x	x	x	x	x	x	x
4. "To get your pass away quicker, shorten your backswing"	x	x	x	x	x	x	x
5. "It's okay! Watch the ball right onto your stick."	x	x	x	x	x	x	x
6. Coach shakes his/ her head or looks away.	x	x	x	x	x	x	x
7. "I told you to stay on your check! Next time go with her when she cuts into the circle."	x	x	x	x	x	x	x
8. "Hang in there! Better luck next time!"	x	x	x	x	x	x	x

9. Coach ignores your mistake.	x	x	x	x	x	x	x
10. "Your shots are weak!"	x	x	x	x	x	x	x
11. "Stay goal side of your check."	x	x	x	x	x	x	x
12. Coach rolls her/his eyes or looks to the sky.	x	x	x	x	x	x	x
13. "Don't worry about it. Cushion the ball when you are receiving it."	x	x	x	x	x	x	x
14. "You are giving the ball right to the opposition. Look where you are going to pass the ball first!"	x	x	x	x	x	x	x
15. "Stick at it! Now you know what to work on."	x	x	x	x	x	x	x
16. Coach makes no response about your poor performance.	x	x	x	x	x	x	x
17. "You're missing every ball that comes to you!"	x	x	x	x	x	x	x
18. Coach looks angry	x	x	x	x	x	x	x
19. "Try taking your check away, then cut back to the ball!"	x	x	x	x	x	x	x
20. "It'll come. Next time dodge a little sooner!"	x	x	x	x	x	x	x
21. "You'll never get the ball by standing waiting for it! Move to meet the ball!"	x	x	x	x	x	x	x

Section 3. How do you feel about your field hockey ability?

In this section we are interested in **how** you feel about your field hockey ability. There are 5 questions.

For each question:

1. Please select which of the two statements is **MOST** like you.

and then

2. Whether this statement is "Really true for you" or "Sort of true for you".

	Really True for Me	Sort of True for Me			Sort of True for Me	Really True for Me	
			<u>Statement One</u>	BUT	<u>Statement Two</u>		
1.	<input type="checkbox"/>	<input type="checkbox"/>	Some field hockey players my age do very well at all skills		Other players my age don't feel that they are very good when it comes to skills.	<input type="checkbox"/>	<input type="checkbox"/>
2.	<input type="checkbox"/>	<input type="checkbox"/>	Some field hockey players my age think they could do well at any new skill or play		Other players my age are afraid they might not do well at a new skill or play.	<input type="checkbox"/>	<input type="checkbox"/>
3.	<input type="checkbox"/>	<input type="checkbox"/>	Some field hockey players my age feel that they are better than others their age at field hockey		Other players my age don't feel they can play as well.	<input type="checkbox"/>	<input type="checkbox"/>
4.	<input type="checkbox"/>	<input type="checkbox"/>	Some field hockey players my age don't do as well at new skills and plays		Other players my age are good at new skills and plays right away.	<input type="checkbox"/>	<input type="checkbox"/>
5.	<input type="checkbox"/>	<input type="checkbox"/>	Some field hockey players my age do not feel that they are very good at field hockey		Other palyers my age feel that they are very good at field hockey.	<input type="checkbox"/>	<input type="checkbox"/>

12. Coach is too busy to comment about your good play.	x	x	x	x	x	x	x
13. Coach gives you a pat on the back.	x	x	x	x	x	x	x
14. "Great shot! You took the shot right at the edge of the circle."	x	x	x	x	x	x	x
15. "You stepped up on your check and denied them the ball."	x	x	x	x	x	x	x

Section 2. Your coach's responses when you make a mistake or don't play well.

Listed below are 21 examples of the responses your coach might make to you after you have made a mistake in a practice or in a game or not played well. *Please circle the 'x' for each statement that BEST describes how often you would like your coach provides responses like these to you.*

	Always	Often	A lot of the time	About 50% of the time	Sometimes	Occasionally	Never
1. "Keep working at it!"	x	x	x	x	x	x	x
2. Coach doesn't say anything about your mistake.	x	x	x	x	x	x	x
3. "That was a bad pass!"	x	x	x	x	x	x	x
4. "To get your pass away quicker, shorten your backswing"	x	x	x	x	x	x	x
5. "It's okay! Watch the ball right onto your stick."	x	x	x	x	x	x	x
6. Coach shakes his/ her head or looks away.	x	x	x	x	x	x	x
7. "I told you to stay on your check! Next time go with her when she cuts into the circle."	x	x	x	x	x	x	x

8. "Hang in there! Better luck next time!"	x	x	x	x	x	x	x
9. Coach ignores your mistake.	x	x	x	x	x	x	x
10. "Your shots are weak!"	x	x	x	x	x	x	x
11. "Stay goal side of your check."	x	x	x	x	x	x	x
12. Coach rolls her/his eyes or looks to the sky.	x	x	x	x	x	x	x
13. "Don't worry about it. Cushion the ball when you are receiving it."	x	x	x	x	x	x	x
14. "You are giving the ball right to the opposition. Look where you are going to pass the ball first!"	x	x	x	x	x	x	x
15. "Stick at it! Now you know what to work on."	x	x	x	x	x	x	x
16. Coach makes no response about your poor performance.	x	x	x	x	x	x	x
17. "You're missing every ball that comes to you!"	x	x	x	x	x	x	x
18. Coach looks angry	x	x	x	x	x	x	x
19. "Try taking your check away, then cut back to the ball!"	x	x	x	x	x	x	x
20. "It'll come. Next time dodge a little sooner!"	x	x	x	x	x	x	x
21. "You'll never get the ball by standing waiting for it! Move to meet the ball!"	x	x	x	x	x	x	x

Section 3. How do you feel about your experience with this team this season?

Finally, we are interested in how you feel about your experiences with this team so far this season. There are just 2 questions. *Please circle the "x" that BEST describes how you feel.*

1. How satisfied are you with your coach so far this season?

Very dissatisfied	Moderately dissatisfied	Slightly dissatisfied	Neutral	Slightly satisfied	Moderately satisfied	Very satisfied
x	x	x	x	x	x	x

2. How much have you enjoyed being coached by your coach this season?

Very unhappy	Moderately unhappy	Slightly unhappy	Neutral	Slightly happy	Moderately happy	Very happy
x	x	x	x	x	x	x

3. What kind of job has your coach done with this team this season?

Terrible	Very poor	Poor	Average	Good	Very good	Excellent
x	x	x	x	x	x	x

4. How satisfied are you with your involvement with this team so far this season?

Very dissatisfied	Moderately dissatisfied	Slightly dissatisfied	Neutral	Slightly satisfied	Moderately satisfied	Very satisfied
x	x	x	x	x	x	x

5. How much have you enjoyed being on this team so far this season?

Very unhappy	Moderately unhappy	Slightly unhappy	Neutral	Slightly happy	Moderately happy	Very happy
x	x	x	x	x	x	x

6. What kind of experience have you had with this team so far this season?

Terrible	Very poor	Poor	Average	Good	Very good	Excellent
x	x	x	x	x	x	x

Finally, if there is anything about your experiences with your coach that will help us to better understand your point of view please write on the back of this page.

THANK YOU VERY MUCH
GOOD LUCK FOR YOUR TOURNAMENT!!!

APPENDIX B
Definitions Of Coach Feedback Categories

Definitions of Coach Feedback Categories

Feedback	Definition
Response to a Good Performance or Effort	
Praise Only (P)	a positive, rewarding reaction (verbal) to a good play or effort
No Response (NR)	failure to respond to a good performance
Information Only (I) (Black & Weiss, 1992)	instructing a player on what they did well or how to improve further
Praise plus Information (PI) (Horn, 1985)	instructing a player on what they did well or how to improve further in a positive manner or in combination with a positive statement
Non-verbal Praise (NVP) (new)	a positive, rewarding reaction (non-verbal) to a good play or effort
Response to a Poor Performance or Mistake	
Encouragement (E)	encouragement given to a player following a mistake
No Response (NR)	failure to respond to a mistake or poor performance
Corrective Information (CI)	instructing or demonstrating to a player how to correct a mistake
Criticism Only (Crit)	a negative reaction (verbal) following a mistake or poor performance
Encouragement plus Corrective Information (E+CI) (Black & Weiss, 1992)	instruction following a mistake which is given in an encouraging manner or in combination with an encouraging statement
Criticism plus Corrective Information (Crit+CI)	instruction following a mistake which is given in a negative or hostile manner
Non-verbal Criticism (NVCrit) (new)	a negative reaction (non-verbal) following a mistake or poor performance

Note. Unless otherwise stated the definitions are from the work of Smith, Smoll, and Hunt (1977). The letters in parentheses are the scoring codes for each behaviour category.

APPENDIX C
Informed Consent Form - BCWFHF

BCWFHF Consent Form for the Coaching Communication Study

Primary Researcher: Justine B. Allen
Supervisor: Dr. Bruce Howe
Institutional Affiliation: School of Physical Education, University of Victoria,
PO Box 3015, Victoria, BC, V8W 3P1

I give permission for the above mentioned researchers to conduct their study into coaching communication with the teams competing at the British Columbia Under 18 girls Provincial Championships, May 11-12, in Oliver, BC, provided consent is obtained from the coach, athletes and athletes' parents. I have had the purpose of the study and all procedures explained to my satisfaction. I have had the opportunity to ask questions about the study and had them satisfactorily answered.

I understand that participation in this study is entirely voluntary and the participants can withdraw at any time without explanation. I understand that participation or choosing not to participate will not effect the job status of the coach or team status of players.

I am satisfied that every effort will be made by the researchers to protect the participants in the study from any physical, psychological or other risks.

Name _____ Date _____

Signature _____

Position in Federation _____

Please return to: J. Allen at the above address

APPENDIX D
Informed Consent Form - Coach

Consent Form for Participation in the Coaching Communication Study

I understand that this research project is studying the nature of communication between coach and athletes. I understand that participation in this study will involve athletes' completion of a brief questionnaire about coach communication and my ranking of each of my players based on their field hockey ability.

I understand that my participation is entirely voluntary and that I can withdraw from the study at any time, without explanation.

I understand that all data collected in this study will remain confidential, questionnaires and rankings will be kept in a locked filing cabinet in the Physical Education Department, at the University of Victoria. I understand that the information I provide will not be made available to anyone except the researchers involved in this study. Furthermore I understand my name will not be attached to any published results and that anonymity will be protected by using code numbers to identify the results obtained from individual subjects.

I understand that whether I participate or choose not to participate will have no bearing on my coaching status. Finally, I have been given the opportunity to ask questions about the study and have had them answered to my satisfaction.

Name(full) _____

Signature _____

Coaching Position _____

Date _____

Please return to: J. Allen
School of Physical Education
University of Victoria
PO Box 3015
Victoria, BC V8W 3P1

APPENDIX E
Informed Consent Form - Parent

Dear Parent/Guardian,

I am writing to request your permission for your daughter to participate in our study of coach-athlete communication, to be conducted at the BC Under 18 girls Provincial Championships, May 12-14, at Oliver, BC. I am a graduate student with the School of Physical Education, University of Victoria and am interested in the experiences of young women involved in sport. I am particularly interested in athletes' opinions and perceptions of the comments their coaches make during practices and games. The study has been discussed with BCWFHF and they have given their approval for us to proceed.

Participation in this study will involve completion of a questionnaire about coach communication, taking approximately 20 minutes. This will occur at a time deemed convenient by the coach.

All data collected in this study will remain confidential, questionnaires will be kept in a locked filing cabinet in the Physical Education Department, at the University of Victoria. The information collected in the study will not be made available to anyone except the researchers involved in this study. Your daughter's name will not be attached to any published results and anonymity will be protected by using code numbers to identify the results obtained from individuals.

Participation in the study is voluntary and you have the right to withdraw your permission for your daughter to participate at any time, without explanation. Decision to participate or choose not to participate will have no bearing on your daughter's status on the team or future teams. If you have any questions about the study please **do not** hesitate to contact me, Justine Allen 721 8635 (w), 472 1978 (h).

— — — — —
Please complete and return to team coach, A.S.A.P.

I _____ (full name) hereby give permission for
 _____ (daughter's name) to participate in the coach-
 athlete communication study being conducted by researchers from the
 School of Physical Education, University of Victoria.

Signature _____ Date _____

Daughter's field hockey team _____

APPENDIX F
Informed Consent Form - Athlete

Consent Form for Participation in the Coaching Communication Study

I understand that this research project is studying the nature of communication between coach and athletes. I understand that participation in this study will involve completion of a brief questionnaire about the communication of my coach.

I understand that my participation is entirely voluntary and that I can withdraw from the study at any time, without explanation.

I understand that all data collected in this study will remain confidential, questionnaires will be kept in a locked filing cabinet in the Physical Education Department, at the University of Victoria. I understand that the information I provide will not be made available to anyone except the researchers involved in this study. Furthermore I understand my name will not be attached to any published results and that anonymity will be protected by using code numbers to identify the results obtained from individual participants.

I understand that whether I participate or choose not to participate will have no bearing on my status on the team or future teams. Finally, I have been given the opportunity to ask questions about the study and have had them answered to my satisfaction.

Name(full) _____

Signature _____

Date _____

Experimenter _____

APPENDIX G

Perceived and Preferred Frequencies of Coach Feedback

Adolescent Female Field Hockey Players' Perceived and Preferred Frequencies
of Coach Feedback (Unstandardised Means and Standard Deviations)

Feedback	Frequency	
	Perceived <u>M</u> (SD)	Preferred <u>M</u> (SD)
Response to good play/effort		
Praise	5.59 (1.02)	6.09 (0.95)
Praise + information	4.99 (1.13)	5.15 (1.30)
Non-verbal praise	4.78 (1.30)	5.49 (1.20)
Information	3.83 (1.40)	4.77 (1.37)
No response	1.85 (0.77)	1.48 (0.72)
Response to poor play/mistake		
Encouragement	4.74 (1.38)	5.59 (1.30)
Encouragement + corrective information	4.62 (1.39)	5.46 (1.24)
Corrective Information	4.50 (1.35)	5.15 (1.25)
Criticism + corrective information	2.79 (1.27)	3.24 (1.27)
No response	2.61 (0.95)	1.90 (0.90)
Non-verbal criticism	1.66 (0.97)	1.31 (0.49)
Criticism	1.41 (0.62)	1.70 (0.85)

Note. Frequencies of feedback were made on a seven-point scale (1=never, 7=always). The values represent the mean frequencies of feedback. Standard deviations in parentheses.

APPENDIX H
Alpha Coefficients for Criterion and Predictor Variables

Alpha Coefficients for Criterion and Predictor Variables

Alpha coefficients		
Criterion Variables		
Perceived competence	.63	
Satisfaction with coach	.74	
Satisfaction with team involvement	.82	
Predictor Variables		
	Perceived scale	Preferred scale
<i>Response to good play/effort</i>		
Praise	.45*	.69
Praise + information	.72	.81
Non-verbal praise	.57*	.69
Information	.67	.75
No response	.60	.64
<i>Response to poor play/mistake</i>		
Encouragement	.71	.83
Encouragement + corrective information	.76	.82
Corrective information	.60	.81
Criticism + corrective information	.58*	.68
No response	.57*	.77
Non-verbal criticism	.66	.77
Criticism	.41*	.66

Note. * Denotes alpha coefficients < .60 (criterion level for acceptable reliability).

VITA

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University of Otago

1988 to 1992

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Author



Justine Barbara Allen

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