RELATION-INFERRED SELF-EFFICACY IN YOUTH SPORT

RELATION-INFERRED SELF-EFFICACY: INVESTIGATIONS OF SOURCES, PROCESSES, AND INTERVENTIONS IN YOUTH SPORT

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ABSTRACT

The purpose of this dissertation was twofold; the first purpose was to investigate the interpersonal sources of relation-inferred self-efficacy (RISE) and the metacognitive processes involved in self-efficacy development in youth sport. The second purpose was to translate those findings to recreational sport coaches. Study 1 explored the perceived sources of self-efficacy and identified a variety of relevant coaching behaviours sport participants used to formulate RISE. Findings showed a range of experiential as well as interpersonal factors were used to develop sport participants' self-efficacy. In both contexts, participants described detailed examples of the verbal and nonverbal interactions they had with their coach that contributed to their RISE perceptions.

Study 2 examined the relationships among coaching behaviour, RISE, and self-efficacy of boys and girls participating in youth sports and proceeded to investigate the causal processes involved in the interpretation of coaching behaviour. Results showed a positive relationship between coaches' RISE-enhancing behaviour and athletes' RISE perceptions; however, the association between coaching behaviour and self-efficacy differed by gender. Results were consistent with previous research in that sport participants' RISE was shown to be strong and positively correlated with their self-efficacy beliefs. Overall, findings provided empirical support for RISE as a mediator of the coaching behaviour – self-efficacy relationship and provided initial evidence of a complementary pathway, outlined in Lent and Lopez (2002) model of relational efficacy beliefs that may be used to build self-efficacy among youth athletes.

Study 3 examined the effects of a two-phase coach-athlete communication intervention on coaches' perceptions toward integrating RISE-enhancing interactions into their coaching practice. Findings showed coaches' knowledge, outcome expectations, and self-efficacy for implementing RISE-enhancing behaviours with their athletes improved significantly from pre-to post-intervention. Findings provided support for Bandura's (1997) Self-efficacy Theory and emphasized the need to incorporate the learning preferences of youth sport coaches. The studies in this dissertation, advanced our understanding of the specific interpersonal sources that contribute to athletes' RISE as well as the metacognitive processes involved in the development of children's self-efficacy beliefs within a youth sport context. Taken together, findings of these studies suggest additional efforts to educate coaches on the potential they have to influence children's RISE perceptions may be warranted.

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Do not conform to the pattern of this world, but be transformed by the renewing of your mind. Then you will be able to test and approve what God's will is – his good, pleasing and perfect will. – Romans 12:2 (NIV)

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To those striving to find their calling in life, I challenge you to look beyond your worldly ambitions and begin to ask where God may be leading you. Based on my experiences I can assure you his plans will far exceed your expectations. *"Commit your plans to the Lord whatever you do, and your plans will succeed"* Proverbs 16:3 (NIV)

Without good direction, people lose their way; the more wise counsel you follow, the better your chances – Proverbs 11:14 (MSG)

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LIST OF ABBREVIATIONS

ANOVA	analysis of variance
CET	coach effectiveness training
MANOVA	multivariate analysis of variance
PA	physical activity
PE	physical education
RISE	relation-inferred self-efficacy
SET	self-efficacy theory
SCT	social cognitive theory
SPSS	Statistical Package for the Social Sciences

PREFACE
DECLARATION OF ACADEMIC ACHIEVEMENT

This thesis, presented in sandwich format, is based on the following three original manuscripts.

STUDY 1 (Chapter 2)
Saville, P. D., Bray, S. B., Martin Ginis, K. A., Cairney, J., Marinoff-Shupe, D., & Pettit, A. (2014). Sources of self-efficacy and coach/instructor behaviors underlying relation-inferred self-efficacy (RISE) in recreational youth sport. *Journal of Sport & Exercise Psychology, 36*, 146-156. doi: 10.1123/jsep.2012-0144

P.D. Saville's role in Study 1:

- Author of ethics application at McMaster University
- Developed interview guides and all study materials
- Lead investigator responsible for data collection, analysis and interpretation
- Primary author of manuscript

Role of co-authors in Study 1:

- SB, KMG and JC contributed to the design of the study and obtained funding
- SB assisted PS with obtaining ethics approval at McMaster University
- DMS and AP assisted PS with data collection and contributed to the design of the study
- SB assisted PS with the analysis and interpretation of the data
- SB and KMG revised the article and approved of the final version of the manuscript before submission to *Journal of Sport & Exercise Psychology*

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Saville, P. D., & Bray, S. R. (Submitted, June 2014). Coaching behaviour contributes to relation-inferred self-efficacy (RISE) and self-efficacy in youth sport. *Psychology of Sport & Exercise*.

P.D. Saville's role in Study 2:

- Author of ethics application
- Developed study design and carried out pilot testing of the coaching behaviour measure
- Lead investigator responsible for data collection, analysis, and interpretation
- Primary author of manuscripts

Role of co-authors in Study 2:

- SB contributed to study design and measure development/analysis
- SB assisted PS with obtaining ethics approval at McMaster University
- SB assisted PS with the analysis and interpretation of the data
- SB provided critical feedback on previous drafts of the manuscript

STUDY 3 (Chapter 4)
Saville, P.D. & Bray, S. R. Effects of a coaching communication workshop on alpine ski coaches' perceptions for engaging in RISE-enhancing interactions with their athletes

P.D. Saville's role in Study 3:

- Author of ethics application
- Developed study design and selected appropriate measures
- Designed study materials and facilitated intervention activities
- Lead investigator responsible for data collection, analysis, and interpretation
- Primary author of manuscript

Role of co-authors in Study 3:

- SB contributed to study design and measure selection
- SB assisted PS with participant recruitment and intervention activities
- SB assisted PS with obtaining ethics approval at McMaster University
- SB assisted PS with the analysis and interpretation of the data
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CHAPTER 1:

INTRODUCTION

"My father gave me the greatest gift anyone could give another person, he believed in me."
- Jim Valvano

1.0 PHYSICAL ACTIVITY AMONG CHILDREN

1.1 Physical activity and associated benefits for children

Current evidence shows participating in at least 60 minutes of moderate-to vigorous intensity physical activity (PA) per day can lead to increases in a wide range of important health outcomes in children and youth (aged 5 – 17 years). For instance, numerous studies have demonstrated the positive effects of PA on children's adiposity, cardiovascular/musculoskeletal fitness, and mental health (Janssen, 2007; Strong et al., 2005).

Although there are many benefits to be gained from engaging in PA, recent research conducted by Colley et al. (2011) suggests only 7% of Canadian children and youth are reaching recommended levels of PA. These low levels of PA are believed to be implicated with rising levels of obesity (Roberts, Shields, de Groh, Aziz, & Gilbert, 2012), metabolic syndrome (Kelishadi, 2007), and an overall reduction in physical fitness among youth (Barnes, Colley, & Tremblay, 2012; Janssen & LeBlanc, 2010; Strong et al., 2005). In order to improve the PA patterns of children and youth in Canada, research-based recommendations for children's PA include activities that involve aerobic and weight-bearing activities that children enjoy (Strong et al., 2005; Tremblay et al., 2011). Further assertions by Janssen (2007) and Eime, Young, Harvey, Charity, and Payne (2013) suggest

children in the developmental stages of life (ages 5 – 12 years) may consider participating in organized sport as an effective means for accumulating PA.

1.2 Sport as an attractive physical activity option for children

Sport participation has been shown to account for as much as 60% of children's moderate-to-vigorous intensity PA and has also been associated with a 2.1% reduction in body mass index (Leek et al., 2011; Romani, 2011). Additional evidence suggests sports offer children a variety of benefits that exceed those acquired through other forms of PA (Eime et al., 2013). For example, a recent review by Eime et al. (2013) suggests organized sports promote a number of aspects of psychological and social functioning. More specifically, studies have demonstrated that children participating in sport reported greater self-esteem (Findlay & Coplan, 2008), higher levels of confidence (Zarrett et al., 2009), and improved social skills (Howie, Lukacs, Pastor, Reuben, & Mendola, 2010) compared to children not participating in sport. In light of these findings, research attention should be directed toward identifying factors that affect sport participation among youth.

2.0 A SOCIAL COGNITIVE APPROACH TO UNDERSTANDING BEHAVIOUR

Extensive reviews by Biddle, Atkin, Cavill, and Foster (2011) and Sallis, Prochaska, and Taylor (2000) acknowledge sport and PA as multi-dimensional

behaviours influenced by multiple behavioural, psychological and environmental factors. Social Cognitive Theory (SCT) has been used extensively in research to explain behaviour within the sport domain as well as other health promoting contexts such as healthy eating and exercise (Bandura, 1986, 1997). Bandura (1977) suggests people serve as proactive agents of their motivation and behaviour. Rather than suggesting people passively react to the environment around them, Bandura's agentic perspective underscores people's capabilities to regulate, reflect, and act on their cognitions and emotions simultaneously (Bandura, 1997). Although Bandura (1986) goes to great lengths to explain the function of internal psychological factors and their effects on behaviour, he also recognizes the potential influence of external factors such as environmental conditions (e.g., weather, access to appropriate resources/facilities) and interactions with others as important contributors to peoples' actions.

In SCT, Bandura (1997) proposes triadic reciprocal causation, which refers to an interactive process by which personal (i.e., cognitions, physical abilities, emotions), behavioural (e.g., level of effort, persistence, performance), and environmental (e.g., field conditions, task difficulty, feedback from others) factors influence and are influenced by one another. For example, in baseball, a pitcher may lack confidence in her/his ability to throw strikes (i.e. personal factor), particularly when the bases are loaded (i.e., environmental factor) and may request to be taken out of the game (i.e., behaviour) as a result. However, it is also possible for the same pitcher to receive feedback from his coach (i.e.,

environmental factor) during a mound visit (e.g., "I know you still have a few more strikes in that arm and I believe you can finish off this inning") which may provoke positive thoughts and emotions (i.e., personal factors) and may lead her/him to stay in the game and throw the next pitch (i.e., behaviour). The social cognitive principles of agency and the reciprocal networks, outlined above, provide the theoretical foundation for the studies within this dissertation.

2.1 Self-efficacy beliefs and associated outcomes

Within the context of SCT, Bandura (1997) proposed the primary theoretical construct involved in determining behaviour is self-efficacy. Self-efficacy refers to, "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (Bandura, 1997 p. 3). To gain a better understanding of the nature of self-efficacy beliefs as they might occur in sport it is helpful to consider examples of self-efficacy and describe how self-efficacy differs from related constructs (e.g., sport confidence, perceived competence, self-esteem).

Self-efficacy beliefs represent context and task-specific beliefs as opposed to more global perceptions one may hold with regard to performing a collection of tasks or activities in general. For example, in baseball, a hitter may have high self-efficacy in his ability to hit, but may have considerably lower self-efficacy with regard to her/his base-running abilities. In contrast, sport confidence is a more global construct that acknowledges one's broader perceptions of ability as

they pertain to the sport at large (Feltz, Short, & Sullivan, 2008). Self-efficacy beliefs are also highly individual perceptions that can vary across and within various tasks. As such, one player may have low self-efficacy when hitting against a star pitcher, yet another player may have high self-efficacy when hitting against the same pitcher even though both performances occur within the same context. Therefore, self-efficacy beliefs are conceptually distinct from perceived competence, which represent a more stable and general perception of one's ability relative to others (Feltz et al., 2008). Finally, Bandura (1997) pointed out that the cognitive nature of self-efficacy judgments is another important characteristic that sets them apart from concepts such as self-esteem. That is, rather than referring to an individual's affective judgment of self-worth, self-efficacy is only concerned with one's cognitive perceptions of task-specific abilities and are not necessarily indicative of whether one feels positively or negatively about oneself (Bandura, 1997). For example, a marathon runner may have doubts about her ability to complete a race within a certain time frame (i.e., low self-efficacy), yet these cognitions may be unrelated to her sense of personal value.

Self-efficacy beliefs are purported to vary according to three basic dimensions: level, strength, and generality (Bandura, 1997). The *level* at which efficacy perceptions are made refers to the degree of challenge one attributes to a given task and can vary from simple to extremely difficult based on a variety of factors. For example, a basketball player might rate her self-efficacy for free throw shooting in an empty gym on a lower level compared to free throw shooting

in an arena packed with screaming fans. Self-efficacy beliefs can also vary by s*trength* or one's degree of certainty in her/his belief to perform or persist at a specified task or in a given situation. For instance, in a hockey shootout, two goaltenders might report a similar level of self-efficacy for stopping the shots from opposing players, yet one may have greater strength or more certainty in his ability than the other such that Goalie A rates his self-efficacy at 90%, whereas Goalie B rates his self-efficacy at 75%.

Although self-efficacy beliefs are intended to be rated with regard to a specific task or situation, the dimension of *generality* refers to the transferability of one's efficacy beliefs across activities or domains (Feltz et al., 2008). For instance, one may report being highly efficacious in multiple sports such as: baseball, golf, and hockey (e.g., high generality). The source of this similarity may reflect the fact that each sport involves similar tasks or movement patterns (i.e., swinging with the arms or torso rotation). However, self-efficacy for baseball may not generalize to waterskiing or gymnastics (i.e. low generality). The generality of self-efficacy beliefs are highly dependent on similarity between tasks and are thus less likely to translate across unrelated domains (Bandura, 1997). Collectively, these three dimensions can be used to measure and describe self-efficacy and have been shown to be associated with behaviour as well as performance (Bandura, 2006).

A substantial amount of research has investigated the relationship between self-efficacy and various aspects of athletic performance (Feltz, 1988; Gilson,

Chow, & Feltz, 2012; Helper & Feltz, 2012; Moritz, Feltz, Fahrbach, & Mack, 2000; Schunk 1995; Short & Ross-Stewart, 2009; Treasure, Monson, & Lox, 1996; Watkins, Garcia, & Turek, 1994; Wells, Collins, & Hale, 1993); however, self-efficacy beliefs may also play an important role in the selection of sport-related tasks or activities (Chase, 2001; Escarti & Guzman, 1999). For example, Chase (2001) found children with higher self-efficacy perceptions for performing sport skills (e.g., batting, fielding, dribbling) chose to participate more often in sport tasks and expressed higher self-efficacy for future attempts at tasks than those with low self-efficacy. Self-efficacy beliefs have also been shown to be positively associated with the amount of effort one puts forth (George, 1994) as well as the perseverant effort one displays when confronted with difficult physical tasks (Hutchinson, Sherman, Martinovic, & Tenenbaum, 2008). Finally, a review by Sallis et al. (2000) has also shown self-efficacy to be a consistent positive correlate of PA in youth. Considering this evidence, self-efficacy beliefs can be viewed as a vital component involved in children's sport participation and is thus a focal interest of the three studies presented herein.

2.2 Sources of self-efficacy

Bandura's Self-Efficacy Theory (SET) proposes self-efficacy beliefs are constructed based on four primary sources of efficacy information: mastery experiences, vicarious experiences, verbal persuasion, and physiological and affective states (Bandura, 1997). Prior mastery experiences have been shown to

be a primary source of self-efficacy, for youth and adults alike (Chase, 1998; George, 1994; Gernigon & Delloye, 2003; Wise & Trunnell, 2001). Each time an individual attempts a given task or skill, the resulting performance serves as an experience that influences his or her self-efficacy. Successful experiences are linked to improvements in one's self-efficacy beliefs whereas failed attempts may serve to undermine self-efficacy. For example, belief in one's ability to serve in tennis may be derived from her/his past success with serving in tennis. However, it is important to note that simply performing a task does not contribute to self-efficacy directly, rather performances must be cognitively processed and evaluated before they can have an effect on subsequent cognitions (Bandura, 1990). Furthermore, repeated successes on straightforward (i.e., easy) tasks do not necessarily enhance self-efficacy perceptions and may, in fact, diminish one's ability to persevere when the demands of that task suddenly increase (Bandura, 1997). According to Bandura (1997) mastery experiences may be most effective for producing positive changes in self-efficacy when the task being performed is similar to the target behaviour and involves a high degree of difficulty accompanied by temporary setbacks.

In addition to mastery experience with a given task, research has shown vicarious experiences to be another source of efficacy information that can be used to bolster self-efficacy beliefs (George, Feltz, & Chase, 1992; Lirgg & Feltz, 1991; McAuley, 1985; Wise & Trunnel, 2001). Vicarious experiences involve watching others (i.e., models) perform a task, noting the processes and outcomes

of their performances and subsequently interpreting that information in relation to one's own experiences (Bandura, 1997). For instance, research by Boyer, Miltenberger, Batsche, Fogel, and LeBlanc (2009) has shown observing video clips of another performer can be an effective method for gaining vicarious experience when learning complex sport movements, as are videos of one's own performance (i.e., self-modeling; Clark & Ste-Marie, 2007). Although vicarious experiences generally have less influence on self-efficacy than mastery experiences (Wise & Trunnell, 2001), the degree of likeness between the model and the viewer is theorized to enhance the impact of the information gleaned from the model (George, Feltz, & Chase, 1992). Bandura also identifies cognitive modeling (i.e., imagery), where an athlete imagines her/himself performing a task in her/his mind, to be an alternate form of vicarious experience.

SET also proposes stronger self-efficacy beliefs may result from verbal persuasion, whereby others convey positive encouragement or competence-related information to the target individual (Chase, 1998; Vargas-Tonsing, Myers, & Feltz, 2004; Weinberg, Grove, & Jackson, 1992). In sport, the provision of this form of efficacy enhancing strategy is often employed by coaches, parents, and peers. When verbal persuasion is provided alone, it is proposed to have weaker effects on self-efficacy than both mastery or vicarious experiences (Wise & Trunnell, 2001). However, the influence of verbal persuasion can be enhanced when it is accompanied by appropriate attributional feedback (e.g., linking behavioural outcomes with effort and ability information) and can be particularly

beneficial for individuals that have difficulty gauging the progress of their performance improvements (Schunk, 1989). The influence of persuasive information can also be increased when it is provided by individuals perceived to be highly credible, knowledgeable, and trustworthy like coaches or sport psychologists (Feltz et al., 2008; Escarti & Guzman, 1999; Bandura, 1997). Considering all psychological interventions are facilitated by interpersonal communication to some extent, it is important to recognize the value of verbal persuasion and to understand factors that heighten its influence on self-efficacy (Maddux & Lewis, 1995).

People may also rely on their physiological or emotional states to inform their self-efficacy beliefs, particularly when participating in tasks of a physical nature (Bandura, 1997; Feltz & Mungo, 1983; Feltz & Reissinger, 1990). The influence of physiological information is largely dependent on the way an individual cognitively appraises her or his current physical state. For example, when an athlete's level of autonomic arousal is high and is accompanied by fear or uncertainty s/he may rate self-efficacy low. In contrast, if the athlete experienced those same physiological signals without fear s/he might rate self-efficacy higher (Feltz et al., 2008). Similarly, one's emotional states can also influence one's self-efficacy (Feltz et al., 2008; Maddux & Lewis, 1995). Generally, positive emotions (e.g., happiness or excitement) contribute to greater self-efficacy and negative emotions (e.g., sadness, frustration) have a detrimental effect on efficacy beliefs. For example, players who are overjoyed to play in the

first game of a new season may be more highly efficacious than those that feel nervous or upset. Bandura (1997) also posits that more intense emotional experiences have a greater influence on self-efficacy than those that are more subdued.

Bandura (1977; 1997) first introduced the theoretical determinants of self-efficacy, outlined above and a considerable body of literature has since accumulated. Evidence provides empirical support for mastery experiences (e.g., Chase, 1998; Chase, Feltz, & Lirgg, 2003; Hays, Maynard, Thomas, & Bawden, 2007; Vealey, Hayashi, Garner-Homan, & Giacobbi, 1998; Wise & Trunnell, 2001), vicarious experiences (Feltz, Landers, & Raeder, 1979; Fox & Bailenson, 2009; Weiss, McCullagh, Smith, & Berlant, 1998; Wise & Trunnell, 2001), verbal persuasion (Chase, 1998; Escarti & Guzman, 1999; Vargas-Tonsing 2009; Wise & Trunnel, 2001;), and physiological (Feltz & Reissinger, 1990; Wilson, Sullivan, Myers, & Feltz, 2004) and affective states (Martin, 2002; Treasure, Monson, & Lox, 1996) as sources of self-efficacy in sport and exercise settings. Although these findings support the existence of important causal pathways that may enhance self-efficacy beliefs, Bandura (1997; 2001) also recognized that the complex process involved in evaluating physical performances does not occur in social isolation. Instead, he proposes that when self-efficacy information is processed within socially-enriched environments, like youth sport, people may also consider the evaluative perceptions of those around them to inform their self-efficacy.

The social influences relating to self-efficacy can be illustrated by considering the experiences of children playing soccer. For example, aside from scoring or preventing a goal in soccer, there are very few objective indicators that players may consider to assess one's performance. However, many sport environments, like soccer, present multiple opportunities for one to gain perspective on her/his performance accomplishments by asking for, or receiving feedback offered by others in attendance (e.g., coaches, parents, and peers). With adequate experience and self-evaluative capabilities, sport environments can be used to guide self-efficacy beliefs; however, these factors may be limited for young children.

Children who are participating in sport and developing their sport skills often lack direct experience to derive accurate efficacy judgments (Horn & Hasbrook, 1986; Horn & Weiss, 1991). Thus, children may have the most to gain from interactions with influential agents within the sport environment (e.g., coaches, parents) who can assist them in making sense of their sport experiences (Chan, Lonsdale, & Fung, 2012). For example, in minor football, a receiver may go through several games without scoring a touchdown and may begin to doubt her abilities unless a coach were to provide her with some sort of evaluative or formative feedback. Research by Jackson, Knapp, and Beauchamp (2009) suggests this player may be particularly receptive to verbal (e.g., "you are doing a great job running your routes") or nonverbal communication (e.g., assigning her a more challenging route that could improve her chances of scoring a touchdown)

provided by her coaches when constructing self-efficacy beliefs. Considering the highly interdependent nature of youth sport, it is not surprising that socially mediated experiences, like the one described above, have also been theorized to contribute to self-efficacy beliefs.

3.0 A TRIPATRITE MODEL OF RELATIONAL EFFICACY BELIEFS

Lent and Lopez (2002) proposed an extension to Bandura's (1986; 1997) SET that recognizes an alternate pathway to self-efficacy development. In this theory, Lent and Lopez acknowledged that people operating within close relationships often draw from their interpersonal experiences with one another to develop, or restore, a sense of their own capabilities. Although Bandura (1997) recognizes the potential for verbal encouragement to influence an individual's self-efficacy, Lent and Lopez propose a more comprehensive understanding of the cognitive processes involved in the appraisal of social cues within an interpersonal context is necessary. An adapted version of Lent and Lopez's model is presented below in Figure 1.

The relational sources of self-efficacy put forth by Lent and Lopez (2002) are intended to complement, rather than replace, Bandura's (1986) experiential sources of self-efficacy and consist of two important relational constructs that are proposed to guide self-efficacy perceptions. The first is *other efficacy*, which refers to beliefs an individual has about another person's ability to perform specific behaviours (Lent & Lopez, 2002). For example, a coach may have

beliefs about an athlete's ability to perform or improve at a specific task or skill. The second relational construct is *relation-inferred self-efficacy* (RISE), which refers to one person's (person A's) perceptions about what another person or others believe about her (person A's) capabilities. For example, an athlete's perceptions of her coach's confidence in her sport abilities would reflect the athletes' RISE. More specifically, a baseball player may have RISE perceptions regarding how confident she believes her coach is in her ability to lay down a sacrifice bunt, to score a run, when the game is on the line.

Theorizing by Lent and Lopez (2002) identifies RISE as the most proximal intra-relationship source of self-efficacy. RISE is proposed to be developed through the interpretation of social cues provided by influential others (Lent & Lopez, 2002). Lent and Lopez also suggest RISE perceptions may be particularly valuable under circumstances where previous performance experience is limited or when self-efficacy is particularly low. In line with our previous example, if a baseball player doubted her ability to execute a bunt late in a game, she may stand to benefit from hearing her coach say, "I believe you have what it takes to make an excellent bunt in this situation. In fact, that is why I chose *you* for this task." Such interactions are theorized to contribute to greater perceptions of RISE (i.e., "My coach really does believe I can make a successful bunt in this situation") and are expected to bolster self-efficacy as a result.

3.1 Evidence supporting RISE in sport

Although Lent and Lopez's (2002) conceptualization of efficacy development may be readily applied to a variety of social relationships (e.g., teachers-student, parent-child), research has been limited. However, research investigating interdependent relationships within sport and physical education (PE) domains (e.g., athlete-athlete, coach-athlete, instructor-student) has gained the most attention in the literature.

Early work by Jackson, Knapp, and Beauchamp (2008) explored the origins and consequences of RISE within adult athlete-athlete dyads and provided initial evidence supporting the existence of RISE. In this study, members of elite sport dyads were interviewed and asked to reflect on their experiences with their dyad partners. In general, athletes expressed both interpersonal and experiential sources that contributed to their RISE beliefs. For example, athletes described their RISE perceptions as emanating from a product of the verbal and nonverbal interactions they had with their partner as well as past performance accomplishments they had together. With respect to the consequences of RISE, athletes reported having greater confidence in their own abilities as well as enhanced motivation and greater intentions to continue in the dyad when they believed their partner was highly confident in them. Although these findings provide preliminary support for Lent and Lopez's (2002) theoretical predictions, it is important to note that all dyad members in this study were athletes and shared similar roles and responsibilities.

A similar study by Jackson et al. (2009) explored RISE perceptions as they pertain to coach-athlete relationships wherein members fulfill unique roles and differ with regard to their status in the partnership. Despite the differences in partnership status that exists between coaches and athletes, findings paralleled those from Jackson et al. (2008) with regard to the content of verbal communication as well as the way that information was communicated by coaches (e.g., tone of voice) as factors identified by athletes that inform their RISE beliefs. Athletes also acknowledged goals set by their coaches to be a meaningful way to determine how much confidence the coach had in them. Furthermore, athletes reported that high RISE perceptions contributed to improvement in self-efficacy beliefs and positive affective states (i.e., feelings of joy or excitement), whereas low perceptions of RISE were reported to reduce their motivation to work hard during practices or competitions. Together, these studies document the importance of RISE perceptions in the sport domain and provide compelling evidence supporting athletes' RISE as a possible determinant of their self-efficacy beliefs.

3.2 The RISE – self-efficacy relationship

Although previous qualitative investigations provide preliminary evidence in support of RISE as a relevant phenomenon that exists within sport relationships, limited research has sought to evaluate the relationship between RISE and self-efficacy using quantitative methods. However, one study by Jackson and

Beauchamp (2010) provided initial support for the RISE-self-efficacy relationship in adolescent tennis players. Although the primary focus of the study was to examine the associations between relational efficacy beliefs and coach-athlete commitment, effort, and satisfaction with the dyadic relationship, results indicated a strong positive relationship between athletes' RISE and self-efficacy beliefs (r =.65). Findings of this study also showed athletes' RISE perceptions were positively, and moderately, correlated with their commitment and satisfaction with the relationship.

Two additional studies have examined the RISE-self-efficacy association in the PE domain (Jackson, Myers, Taylor, & Beauchamp, 2012; Jackson, Whipp, Chua, Pengelley, & Beauchamp, 2012). Research by Jackson, Whipp, et al. (2012) assessed the relational efficacy beliefs of high school PE students. Data collected from large samples of Australian and Singaporean students showed a strong positive correlation between high school PE students' RISE (i.e., perceptions of their PE teacher's belief in their ability to perform skills in PE) and their self-efficacy for performing activities in PE. Results of the Jackson, Myers, et al. (2012) study identified similar positive relationships between RISE and self-efficacy beliefs in a sample of college students participating in a tennis course. Additionally, students who reported higher self-efficacy beliefs were also found to put forth greater effort and enjoyed these classes more. Taken together, these findings support Lent and Lopez's (2002) theoretical assumptions suggesting

RISE may lead to self-efficacy. However, there is clearly a need to carryout further investigations involving relational efficacy constructs in sport.

3.3 Gaps & limitations of existing research on RISE and self-efficacy

Research on relational efficacy in sport is in its infancy, therefore, it is not surprising that a number of gaps in knowledge exist. To date, research has largely focused on the sources and consequences of RISE as they pertain to adult dyads. Given the developmental differences, these results may not apply directly to children's experiences in youth sport. Thus, there is a need to determine whether children consider RISE to be an important factor in the development of their self-efficacy beliefs as they relate to sport. Findings by Jackson et al. (2008; 2009) are also limited by the brief description of antecedent factors expected to influence RISE perceptions reported in those studies. Future efforts to understand the determinants of RISE require further details documenting the specific nature of key interpersonal exchanges or social cues (See Figure 1) that contribute to young athletes' RISE perceptions.

Although preliminary evidence supports a strong positive relationship between RISE and self-efficacy in adolescent athletes (ages 13-18) as well as PE students, there is no existing support for this relationship in younger children (ages 8-12) who may have less experience and are involved in team sports where objective feedback may be highly ambiguous. Given the primitive state of the literature on RISE, it is not surprising that no studies have attempted to educate

influential others on the existence of this potential avenue to self-efficacy development. However, effectively translating this knowledge to relevant stakeholders in sport (e.g., coaches, instructors) exposes a new set of challenges. For example, recent research by Nash and Sproule (2012) and Vargas-Tonsing (2007) has begun to question the methods and effectiveness of existing coaching education programs. Furthermore, research by Williams and Kendall (2007) contend that researchers must accommodate the needs and preferences of their audience before the effectiveness of coaching education programs can be expected to improve.

4.0 THE YOUTH SPORT CONTEXT

Youth sport represents a highly interactive social system that carries great potential for the psychosocial growth and development of its members (Gould & Weiss, 1987; Smoll & Smith, 2002). From a developmental perspective, one of the most critical factors contributing to youth sport participation is the interpersonal dynamic that exists between athletes and their coaches (Gould & Weiss, 1987; Smoll & Smith 2002). Within sport, coaches assume a leadership position and have been shown to play an active role in their athletes' psychosocial development both within and beyond the sport setting (Côté & Gilbert, 2009; Fraser-Thomas, Côté, & Deakin, 2005; Vella, Oades, & Crowe, 2011). Unfortunately, many recreational sport programs are left in the hands of volunteers who may have some experience with the technical aspects of their

sport, but often lack the necessary knowledge and practice required to create a positive psychological environment appropriate for children (Smoll & Smith, 2002). Since coaches are understood to have good intentions when it comes to coaching (Martens & Gould, 1979; Smith, Smoll, & Curtis,1978), this shortcoming is most likely due to a lack of guidance with regard to the types of behaviours that may be used to bring about improvements in athletes' psychosocial outcomes and overall sport experience.

4.1 Coaching behaviours, training, and athlete outcomes

To date, efforts to reliably measure (Smith, Smoll, & Hunt, 1977; Smith, et al., 1978) and assess the influence of various coaching behaviours on athlete outcomes have been examined extensively within the youth sport context (Smith & Smoll, 1990; Smith et al., 1978; Coatsworth & Conroy, 2006; Conroy & Coatsworth, 2004). In fact, seminal work carried out by Smith, Smoll and colleagues was first to use a combination of correlational (Smith et al., 1978; Smith & Smoll, 1990) and experimental studies (Smith, Smoll, & Barnett, 1995; Smith, Smoll, & Curtis, 1979; Smoll, Smith, Barnett, & Everett. 1993) to establish an important connection between supportive coaching behaviours and various athlete outcomes. For example, in an observational study by Smith and Smoll (1990), little league baseball players who perceived their coaches to provide high levels of supportive behaviours (e.g., positive reinforcement, encouraging feedback, corrective instruction followed by praise) reportedly liked their coaches

more and had more fun playing their sport than those who perceived their coaches to be less supportive. These types of interactions were also found to be particularly effective for children with low self-esteem (Smith et al., 1978; Smith & Smoll 1990).

Likewise, in an experimental study by Smith et al. (1979), athletes who played for coaches who took part in a cognitive-behavioural intervention designed to increase their use of these supportive and instructional behaviours (i.e., Coach Effectiveness Training) reported more favourable attitudes toward the coach, enjoyed their sport more, and experienced less performance anxiety compared to athletes who did not take part in the intervention.

In a later study, Barnett, Smoll, and Smith (1992) followed up with players who discontinued participation the following year. Findings of this study showed dropout rates were substantially lower among players who played for trained coaches (5%) compared to those who played for untrained coaches (26%).

Additional research has since replicated these findings among youth swimmers using a similar psychosocial coach training programs (Coatsworth & Conroy, 2006; Conroy & Coatsworth, 2004) and provided further support for the use of coaching behaviour recommendations that emphasize the integration of frequent reinforcement and mistake-contingent encouragement while minimizing punitive interactions with athletes.

Taken together, findings from this research highlight the benefits of an effective coach training program and recognize the importance of several

behaviour patterns that are fundamental to creating a positive sport environment for youth. Consequently, these behaviours have been shown to have positive effects on children's self-esteem, attitudes, enjoyment, performance anxiety and attrition (Barnett et al., 1992; Gould, 1987; Smith et al., 1978; 1979; Smoll et al., 1993). However, considerably less research attention has been devoted to examining the specific coaching behaviours that have the potential to affect athletes' level of self-efficacy, which is known to be crucial during initial sport skill development as discussed earlier (Feltz et al. 2008). As a result, coaches are provided with far less guidance with regard to the specific interactions that may be used to develop their athletes' self-efficacy and RISE perceptions.

5.0 GENERAL PURPOSE OF DISSERATION

The purpose of this dissertation was twofold. The first purpose was to investigate the interpersonal sources of RISE and the metacognitive processes involved in self-efficacy development. Studies were designed to build on Smoll and Smith's (2002) positive approach to coaching by exploring the nature of efficacy-oriented interactions that occur between coaches and athletes and to determine the relationships among these forms of interpersonal communication, athletes' RISE perceptions and self-efficacy.

Given the highly interactive nature of youth sport settings and the dynamic relationship that often exist between coaches and athletes, we began to explore youth sport participants' perceived sources of RISE and self-efficacy using

qualitative interviews (Study 1). In Study 2, we employed a quantitative approach to investigate the associations between RISE-relevant coaching behaviour, athletes' RISE, and self-efficacy. Causal processes involved in the development of self-efficacy beliefs were also assessed to determine the role of RISE in the coaching behaviour-self-efficacy relationship.

The second purpose of this dissertation was to translate findings from Study 1 and 2 to recreational sport coaches. Study 3 was specifically designed to develop and test the efficacy of a two-phase coach-athlete communication workshop. This workshop involved traditional coach education components (e.g., verbal presentation and interactive discussion; Edwards, Law, & Latimer-Cheung, 2012; Smith et al., 1978) as well as an experiential component (e.g., field-based practice) that aimed to teach coaches about the importance of RISE and to give them an opportunity to practice modifying their behaviour in ways that would help them nurture their athletes RISE in the future. A brief overview of each study will be presented next.

5.1 Study 1

Study 1 used a combination of individual and focus group interviews to explore perceived sources of self-efficacy and identified a variety of relevant coaching behaviours sport participants used to formulate RISE within two youth sport contexts (i.e., sport camp and recreational sport league). In line with Lent and Lopez's (2002) tripartite theory of relational efficacy, findings showed a

range of experiential as well as interpersonal factors were used to develop participants' self-efficacy. In both contexts, participants described detailed examples of the verbal and nonverbal interactions they had with their coach that contributed to their RISE perceptions. This study provided a first-hand look at the interpersonal determinants children use to evaluate their ability in youth sport.

5.2 Study 2

Findings from Study 1 provided sufficient information for the development of a RISE-relevant coaching behaviour measure that was tested in Phase one of Study 2. The primary objective of Study 2 was to investigate plausible causal processes by which RISE-relevant coaching behaviours influence athletes' self-efficacy in youth sport. Specifically, a sample of youth athletes rated the frequency of RISE-relevant interactions they had with their coaches and those scores were correlated with their self-reported RISE and self-efficacy beliefs. Findings were consistent with previous work by Jackson et al. (2010) in that participants' RISE was strong and positively correlated with self-efficacy. Results also showed a positive relationship between coaches' RISE-enhancing behaviour and athletes' RISE perceptions. Further analyses identified RISE as a mediator of the coaching behaviour-self-efficacy relationship; however, the association between RISE-relevant coaching behaviour and self-efficacy differed by gender. This study made important contributions to Lent and Lopez's (2002) relational efficacy theory by providing initial evidence supporting a

complementary pathway that may be used to build self-efficacy among youth athletes.

5.3 Study 3

Studies 1 and 2 clearly demonstrated that athletes are attuned to several important coaching behaviours and that specific RISE-oriented interactions are associated with athletes' RISE perceptions. In Study 3, a coach-athlete communication workshop was designed to translate knowledge established in Studies 1 and 2 to youth sport coaches. Coaches participated in a two-phase coaching education intervention consisting of classroom (e.g., audio visual presentation, interactive discussion) and experiential (e.g., behaviour rehearsal, simulated role-play) activities. Findings revealed coaches' knowledge, outcome expectations, and self-efficacy for integrating RISE-enhancing interactions into their coaching practice improved significantly from pre-to post-intervention. Findings provide support for Bandura's (1997) SET by emphasizing the value of mastery experiences and the role they play in enhancing self-efficacy. This study was essential for identifying effective knowledge translation techniques that could be used to facilitate coaches' beliefs toward adopting important behaviours that may lead to improvements in youth athletes' motivation, effort, and performance.

6.0 SUMMARY

Three empirical studies were conducted for this dissertation. Study1 employed a qualitative approach whereas Study 2 relied on quantitative measures

to gain insight into the interpersonal sources of RISE as well as the interplay among relational cognitions as they relate to the coaching behaviour self-efficacy relationship. Study 3 evaluated the effects of an intervention designed to enhance coaches' perceptions toward implementing RISE-enhancing behaviours into future coaching practice. Each of these studies is presented in detail over the next three chapters followed by a general discussion that synthesizes findings and describes how this dissertation contributes to the existing literature on relational efficacy perceptions.

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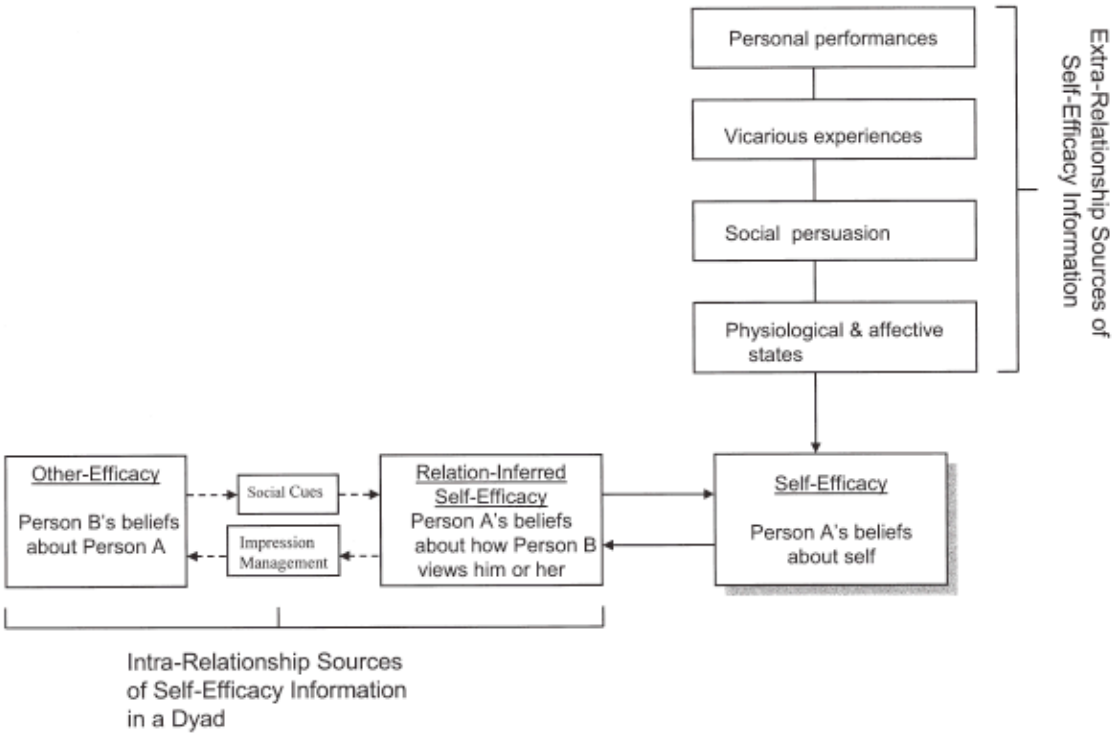
Figure 1. Tripartite model of relational efficacy beliefs



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CHAPTER 2

Sources of self-efficacy and coach/instructor behaviors underlying relation-inferred self-efficacy (RISE) in recreational youth sport

Preamble

Sources of self-efficacy and coach/instructor behaviors underlying relation-inferred self-efficacy (RISE) in recreational youth sport is the first study in the dissertation series. This study used a combination of interview strategies to explore youth sport participants' perceived sources of self-efficacy and examined the specific types of verbal and nonverbal coaching behaviors they use to generate (RISE) within two different sport settings. It was hypothesized that sport participants would report both experiential as well as relational sources of self-efficacy.

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Contribution of Study 1 to overall dissertation

Study 1 explores the determinants of self-efficacy in youth sport and is the first to explicitly investigate the interpersonal sources of RISE among children ages 7- 12 years old. Findings from Study 1 are consistent with Bandura's (1997) Self-efficacy Theory and are first to provide support for Lent and Lopez's (2002) relational efficacy model among children at this age. Thus, Study 1 contributes to the overall dissertation in two important ways: (1) acknowledging that, in sport, children base their self-efficacy beliefs on their personal experiences as well as their perceptions of how others view their sport abilities (i.e., RISE) and (2) establishing a more comprehensive understanding of the content and nature of the coaching behaviors children draw from to inform their RISE perceptions.

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Sources of Self-Efficacy and Coach/Instructor Behaviors Underlying Relation-Inferred Self-Efficacy (RISE) in Recreational Youth Sport

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Interpersonal feedback from coaches may be instrumental in the formation of children's self-efficacy to learn or perform sport skills. We report on two studies that explored perceived sources of self-efficacy and relation-inferred self-efficacy (RISE) in one-on-one interviews with sport camp participants ($N = 61$; ages 7–12) and focus groups with recreational league participants ($N = 28$; ages 8–12). Participants' responses indicated that prior experiences and socially constructed interactions contributed to the development of self-efficacy and RISE beliefs. Results support Bandura's (1997) theorizing that self-efficacy is developed through processing of experiential feedback as well as Lent and Lopez's (2002) tripartite theory proposing interpersonal feedback from influential others contributes to children's RISE and self-efficacy.

Keywords: self-confidence, feedback, youth development, coach-athlete relationships

Self-efficacy refers to one's belief in his or her capabilities to perform a given task or skill (Bandura, 1997). In the sport psychology literature, higher levels of self-efficacy are linked to an array of adaptive behaviors displayed by athletes including: enhanced effort investment, greater persistence and improved performance (Feltz, Short, & Sullivan, 2008). Bandura's (1997) social cognitive model proposes that self-efficacy is developed via four major determinants: mastery experiences, social persuasion, vicarious experiences, and physiological/emotional states. A considerable body of correlational and experimental evidence supports the influential role of these determinants on self-efficacy in a variety of physical activity domains (recreational sport, elite performance, exercise adoption) with mastery experiences showing the strongest associations with self-efficacy (Bandura, 1997; Beauchamp, Jackson, & Morton, 2012; Samson & Solmon, 2011).

Although each proposed determinant may have potential to influence self-efficacy, Bandura (1997) is cautious to point out that the information provided by these determinants is only relevant inasmuch as it is attended to and subsequently processed by the focal individual. For example, the experiential interpretation of the distance a long jumper travels on a jump may be irrelevant or ambiguous to him or her without some perceptual comparison with how far he or she had jumped previously or expected to jump. In this example, the jumper's performance experiences are self-referenced. However, sport participation provides an achievement context in which behaviors are rarely performed in social isolation. On the contrary, sport practice and performance environments are enriched with complex social interactions that allow athletes to interpret and reflect on their own performance accomplishments relative to the performances of others and the evaluative or formative feedback provided by coaches or instructors. Such experiences are consistent with a social constructionist perspective that suggests human thought and behavior are largely produced through social processes and dynamic interplay between relevant social groups (Gasper, 1999). In other words, one's concept of reality is based on her/his interpretation of language and social practices that can also be influenced by social context (Young & Collin, 2004).

Specific interpersonal interactions between athletes and others in their social environment can affect the translation of one's objective experiences to his or her subjective experiences. For example, athletes routinely experience performance plateaus in which their objective performance in competition stifles amid important improvements to technique or fitness that are recognized and reinforced interpretively through feedback from their coaches. These "socially mediated" aspects of the experience–self-efficacy relationship have been highlighted

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in theorizing by Lent and Lopez (2002), who extended Bandura's original model by acknowledging the potential role of metaperceptions as factors that contribute to the development of self-efficacy beliefs. In addition to self-efficacy, Lent and Lopez identify two forms of efficacy perceptions that can arise from interpersonal interactions. The first is *other-efficacy*, which refers to beliefs one has about another's abilities and can be exemplified as a coach's beliefs about his or her athlete's abilities. The second is *relation-inferred self-efficacy* (RISE), which refers to a person's (person A's) perceptions about what another person or others believe about his/her (person A's) capabilities. An example of RISE is an athlete's perception of his or her coach's confidence in that athlete's abilities. Thus, when a credible source (e.g., sport coach) makes a statement such as "I believe you can accomplish this task," the recipient's interpretation of such a verbal cue could, in turn, lead to greater RISE (e.g., "My coach believes I can do it"). Lent and Lopez contend that one's belief that others have confidence in one's own abilities (RISE) can be a powerful determinant of self-efficacy and that RISE may be particularly influential under circumstances where objective feedback about one's performance or task capabilities is unavailable or ambiguous.

Considering the socially constructed environment most sports are practiced or performed in, interpersonal feedback emanating from key individuals (e.g., coaches, parents, peers) may generate positive RISE perceptions among participants. These perceptions, in turn, may be influential when people (e.g., sport participants) formulate their self-efficacy beliefs (Lent & Lopez, 2002). A qualitative study by Jackson, Knapp, and Beauchamp (2008) garnered initial evidence for the existence of RISE perceptions among members of elite-level athlete dyads. In this study, athletes reported their self-efficacy was influenced by their own interpretations of experiences as well as interpersonal information gleaned from their dyad partners. Specifically, athletes reported their self-efficacy was derived in part through their past achievements, physiological/emotional states, and verbal persuasion, which is consistent with theorizing by Bandura (1997). However, they also reported self-efficacy perceptions were affected by social comparisons and relationship-specific cognitions (i.e., other-efficacy and RISE) that were largely interpreted through verbal and nonverbal interactions with their sport partner and others within their environment.

Building on their preliminary findings, Jackson, Knapp, and Beauchamp (2009) conducted another study that investigated athletes' beliefs about self-efficacy, other-efficacy and RISE in the context of elite level coach-athlete dyads. In the coach-athlete context, the nature of the relationship between the members is more clearly distinguished by their assumed roles where the coach is generally regarded as the superordinate member in the relationship and assumes a higher status over the athlete who is usually the subordinate member. Findings from this study paralleled those from Jackson et al. (2008) in that athletes reported using interpersonal feedback information from their coaches to inform RISE, including verbal behavior and the degree to which challenging goals were set forth by their coach. Furthermore, when athletes believed their coaches were highly confident in them (i.e., high RISE) they reported having greater motivation to work harder in practice and competition (Jackson et al., 2009).

More recent research by Jackson, Myers, Taylor, and Beauchamp (2012) and Jackson, Whipp, Chua, Dimmock, and Hagger (2013) has extended research on RISE to the adolescent physical education context. Collectively, those studies have also shown positive psychological and behavioral outcomes associated with greater RISE. In both sets of findings, positive effects were observed between RISE and students' self-efficacy for physical activity. Jackson et al. (2013) also showed RISE was independently associated with greater participation in physical activity during leisure time.

In sum, research by Jackson et al. (2008, 2009, 2012, 2013) provides preliminary evidence for the existence of relational efficacy perceptions in sport and physical education, yet findings may not be generalizable to younger sport participants or athletes at other competitive levels. One way in which these findings may be limited is in terms of applicability to youth developmental or grassroots sport environments (e.g., introductory sport camps) where young participants are acquiring basic motor coordination and sport skills. Furthermore, research investigating the specific manner in which these complex perceptions are derived has yet to be explored in athletes at any age or competitive level.

According to Lent and Lopez (2002), RISE may exert considerable influence on self-perceptions in learning environments where learners have minimal experiential knowledge or objective feedback to guide the development of their self-beliefs. Indeed, compared with experienced athletes such as those interviewed in Jackson et al.'s (2008, 2009) work, introductory participants who are learning a new sport have little experience upon which to base their self-efficacy to perform or improve and, objectively, may be more prone to errors or task failure than successful task execution. We hypothesize that in such environments the interpersonal feedback provided by coaches or instructors plays a critical role in assisting the learner to make sense of what "success" is at her or his level of proficiency and in so doing may be a major factor in the development of the learner's self-efficacy. Furthermore, developmental athletes may also be expected to develop a sense of RISE based on the verbal and nonverbal interpersonal interactions they have with their coaches or instructors. Given its potential importance, research aimed at determining factors contributing to the formation of RISE beliefs in this context is warranted.

In the present work, we report on two investigations that build on preliminary research by Jackson et al. (2008, 2009) to investigate sources of self-efficacy and RISE beliefs among children participating in developmental sports. We sought to gain insight to the language,

thoughts, and social processes children use to construct self-beliefs regarding sport performance competency and their reflections on experiences in which instructors or coaches provided them with interpersonal feedback. To allow participants to share their first-hand personal and interpersonal experiences, both individual and focus group interviews were used to probe children's thoughts about the nature of their developmental sport experiences. In Study 1, an individual interview approach was used to explore children's experiences during a 2-week summer sport camp, whereas Study 2 used focus groups to investigate children's experiences in recreationally competitive youth sport programs. Thematic analysis, as described by Braun and Clarke (2006), was used to investigate the socially constructed experiences children reported from these two distinct contexts.

Study 1

The primary purpose of Study 1 was to explore youth sport participants' perceived sources of self-efficacy stemming from their experiences in a 2-week recreational sport camp. The second purpose was to investigate participants' perceptions of specific verbal and nonverbal cues they used to inform their beliefs about their instructors' confidence in their abilities (RISE).

Method

Participants and Context

Participants were 61 (boys n = 38; girls n = 23) youth sport participants (age range: 7–13; M_{age} = 9.43) who were enrolled in a recreational summer sport day camp. The camp offers 27 different sport and recreation activities and involves over 800 participants taught by 90 trained instructors in a participative environment that endorses a mastery climate relying on self-referent rather than normative or outcome-referenced performance. Participants took part in daily activity sessions lasting approximately 7 hr in total and in which they participated and received instruction in three self-selected sport activities (e.g., basketball, golf, lacrosse, soccer, hockey, skateboarding) each week. Participants' selections of sport experiences are guided by the developmental and recreational nature of the camp, which encourages experimentation in sports that participants do not play competitively outside of the camp environment (e.g., participants who play organized soccer outside of camp would not participate in soccer as a camp sport selection).

Measures

Demographics and Consent. Informed consent was obtained after explaining to the participants and a parent/guardian the parameters of their involvement, confidentiality of their information, and their unconditional right to withdraw from the study. An initial questionnaire assessed information about participants' sex, age, and the sport camp activities they were involved in at that time.

Procedures

After obtaining parental consent, youth participants were invited to participate in the study during their second week of camp allowing participants a minimum of 1 week to establish a rapport with their instructor. On the day of the scheduled appointment, participants completed the demographic survey and participated in a 25–30 min one-on-one interview. One-on-one interviews were used to acquire an in-depth view of participants' individual experiences that lead to the development of their self-efficacy and RISE beliefs within this novel sport camp context. All procedures were reviewed and approved by an institutional research ethics board before data collection.

Interview Guide

A semistructured interview guide (see Appendix) based on previous work by Jackson et al. (2009) was developed and pilot-tested with competitive youth coaches and adult recreational athletes who had experience coaching or teaching sport skills to children to identify any problematic wording or grammatical phrasing relating to the content or context of the questions. Interview discourse revolved around 23 questions, but only 9 questions were in line with the aims of the current investigation. All questions were written at or below a Flesch–Kincaid Reading level of Grade 4 to ease comprehension. Some requisite words among the questions (e.g., confidence) requiring a reading level of Grade 4 were thoroughly explained with particular attention given to the younger participants. Responses to all nine questions, specific to self-efficacy and RISE, were analyzed for the purpose of this study. All questions were presented both orally, by the lead author, and visually via slide show.

Each interview session began with a brief introduction that defined and clarified the concept of self-efficacy and was followed by a discussion exploring participants' thoughts about their experiences when self-efficacy had been developed (e.g., Can you tell me about a time you felt confident?). Participants were also asked to draw from experiences they had across all of the sports they were engaged in during camp to discuss the various sources they perceived to influence their self-efficacy beliefs (e.g., What kinds of things have happened to help your confidence grow?). Participants were encouraged to discuss their overall experiences at the camp before being asked to provide more specific examples of their experiences that pertained to the skills they had performed during each sport.

Following the discussion devoted to the sources of self-efficacy, participants were given a brief verbal definition of RISE as "thoughts you might have about someone else's confidence in your abilities to do certain things." To facilitate understanding and illustrate the concept of

RISE, participants then watched a brief video clip in which a group of youth sport characters provide interpersonal encouragement to a teammate. After watching the video, the interviewer checked participants' understanding of RISE in terms of what they thought the person receiving the encouragement would be thinking at that time and asked them if they had experienced interactions in which they felt other people such as parents, friends, or teachers had confidence in their abilities. All participants then went on to provide specific examples of interpersonal exchanges they had experienced with their sport camp instructors that had generated or reinforced their own RISE beliefs (e.g., How can you tell when your coach/instructors are confident in you? . . . What do they say? . . . What do they do?). A multipronged approach using additional probes (e.g., How do they say it? . . . Are there certain times you feel more confident than others?) was used to clarify meaning and to provide the interviewer with a more complete understanding of the participants' experiences.

Thematic Analysis

Interview responses were subjected to thematic analysis, based on the six-step process described by Braun and Clarke (2006). First, sport participants' responses were audio-recorded, transcribed verbatim, and thoroughly reviewed by three independent raters. This initial step allowed raters to familiarize themselves with the content and extract all relevant meaning units from the transcripts. Meaning units represent separate sentences, phrases or paragraphs containing conceptually relevant information (Tesch, 1990). Second, raters systematically identified key features of all meaning units and generated initial codes to broadly classify them. Third, each rater sorted and collated all meaning units into themes and subthemes (i.e., clusters of conceptually congruent meaning units). Fourth, raters met on two separate occasions to review and cross-reference themes before generating distinct thematic maps that best described the interpersonal interactions sport participants' used to derive self-efficacy and RISE beliefs. Fleiss's kappa showed a moderate level of agreement (K = .58) among the three raters and discrepancies were thoroughly discussed until agreement was reached (Fleiss, 1971). Fifth, themes and subthemes were further refined to ensure labels captured their true meaning. Sixth, raters selected compelling responses that best represented the breadth and depth of each theme to enhance the reader's understanding of the specific interactions sport participants tuned-in to when developing these beliefs.

Depending on the nature and scope of the research question, thematic analysis can be used to identify themes in one of two ways: theoretically or inductively (Braun & Clarke, 2006). A theoretical approach is often employed when data address a narrow research question heavily rooted in theory. Although this approach is more analyst driven, it allows for a more detailed analysis of a specific aspect of the data (Braun & Clarke, 2006). In line with this approach, Lent and Lopez (2002) propose self-efficacy information can be transmitted via self-referenced experiences as well as interactions with influential others. Therefore, a theoretical approach was used to code meaning units that reflected the major determinants of self-efficacy as expressed by Bandura (1997). Contrarily, an inductive approach allows data to be coded freely with no regard for preexisting categories and allows themes to evolve naturally through the coding process (Braun & Clarke, 2006). Considering there has been no previous research investigating youth sport participants' sources of RISE, we coded the meaning units that conveyed RISE using an inductive approach.

Themes emanating from our thematic analyses were not dependent upon a predetermined number of responses or any other quantifiable measure. Rather, themes and subthemes were representative of sport participants' true experiences and, as a result, reflect common interpretations of relational interactions that contribute to their self-efficacy and RISE perceptions.

Results

The 61 interviews produced 128 pages of 12-point, single-spaced, transcribed text. Participants' responses and discussions regarding sources of self-efficacy for performing sport skills resulted in a total of 136 coded meaning units. Themes included mastery experiences, social persuasion and vicarious experiences. Subthemes were used to identify the manner in which self-efficacy antecedent information was received. Mastery experiences included self-referenced meaning units as well as relationship-based and socially comparative experiences. Antecedent meaning units associated with social persuasion and vicarious experiences were all social in nature and derived from interactions with others with whom the participant had an interpersonal relationship (e.g., sibling, parent, coach). All themes, subthemes, and exemplar meaning units are displayed in Table 1.

Participants' responses to questions inquiring about the specific behavioral cues they use to inform their RISE beliefs, based on their instructor-participant interactions, generated a total of 467 meaning units. Responses indicated that both verbal and nonverbal exchanges between instructors and participants were integral to the development of RISE beliefs. Three distinct themes emerged for verbal as well as nonverbal interactions. Themes for verbal interactions consisted of general encouragement or praise (e.g., "just try your best" or "good job"), followed by efficacy-building statements (e.g., "I believe you can do this") and instruction (e.g., "keep watching the ball"). Themes for nonverbal interactions consisted of focused interpersonal attention such as "she shows me *how* to do [the skill]," expressiveness (e.g., "they have a *you can do it!* look [on their face]"), and challenging/special opportunities including instances where instructors select certain sport participants to show their peers how to perform a given task or skill. All themes were further broken down into two or more subthemes and are displayed in Table 2 along with exemplar meaning units.

Table 1 Themes, Subthemes, and Exemplar Meaning Units for Sources of Self-Efficacy From Sport Camp Interviews

Self-Efficacy Antecedents		
Theme	**Subtheme**	**Exemplar Meaning Unit**
Mastery Experiences	Self-referenced sources	"I feel confident because I ran a little bit faster than I did last time."
	Specific relational sources	"sometimes when I'm running against my sister I [feel more confident] because I beat her before."
Social Persuasion	Specific relational sources	"when my friends, parents, teammates, and teachers encourage me, clap, and say, 'You can do it . . .' I feel more confident."
	Undifferentiated sources	"I was confident because . . . a lot of people were saying positive things about what I was doing."
Vicarious Experiences	Specific relational sources	"seeing my friends play before me makes me think that I can do it too."
	Undifferentiated sources	"if I see other people do it, that are like me, then I might think that I can do it."

Note. Themes were guided by a theoretical thematic analysis and include the thoughts and opinions of all participants.

Table 2 Themes, Subthemes, and Exemplar Meaning Units for Sources of RISE from Sport Camp Interviews

Verbal Interactions		
Theme	**Subtheme**	**Exemplar Meaning Unit**
General Encouragement	Before skill attempts	"just try your best"
	During skill attempts	"keep trying harder"
	Postskill attempts	"good job; you did well"
	Normative	"you are the best at this skill"
Efficacy Building Statements	General support	"you can do it; you will get it next time"
	RISE support	"I believe you can do this"
Instruction	General instruction	"just work on this"
	Specific instruction	"keep watching the ball"
Nonverbal Interactions		
Focused Interpersonal Attention	General	"they help me get better"
	Instructor demonstrations	"she shows me how to do it"
	Special attention	"teaches me 1-on-1; she passes to me"
Expressiveness	General encouragement	"they cheer for me; cheer me on"
	Facial expressions	"they smile at me; they have a you can do it look"
	Intonation	"you can tell by the tone of their voice"
	Interpersonal contact	"pats me on the back; high fives me"
Challenging/Special Opportunities	Peer demonstrations	"they pick me to show other kids how to do it"
	Special assignments	"she puts me in to guard the best player"
	Selective assignments	"puts me in on forward; puts me in a new spot"

Note. Themes were guided by an inductive thematic analysis and include the thoughts and opinions of all participants.

Discussion

Youth sport participation provides unique opportunities for social interactions that can shape self-beliefs. In this study, we used semistructured interviews to explore recreational youth sport participants' perceived sources of self-efficacy and RISE based on their interactions with others in their social environment during a 2-week summer sport camp. It was expected that participants would identify both experiential and socially mediated sources of self-efficacy as well as a number of specific behaviors their instructors exhibit from which they base their RISE beliefs.

Findings provide support for Bandura's (1997) social cognitive theory in the youth sport participation context in that mastery experiences, social persuasion and vicarious experiences were each found to be factors participants drew upon in developing self-efficacy. In addition to these self-referenced sources of self-efficacy, participants reported examples of relationship-based sources including positive verbal encouragement and watching others succeed at performing skills (i.e., vicarious experiences). Specifically, youth sport participants reported that their instructors, peers and parents play a role in developing self-efficacy. These findings also align with previous research by Jackson et al. (2008), who reported past performance accomplishments and modeling were perceived as important determinants of self-efficacy in a sample of competitive tennis players.

Instructors and coaches are acknowledged as being influential factors in the development of sport participants' efficacy beliefs, which makes it important to understand how they are able to have such influences (Feltz et al., 2008). In this study, participants identified several specific behaviors they drew upon to develop RISE. These specific behaviors consisted of both verbal and nonverbal interactions that occurred between instructors and participants. General words of encouragement were sources of RISE, while efficacy-building statements (e.g., "you can do it"; "I believe you can do this") were also identified by participants. In addition, verbal instructions coming from the coach regarding how to improve skills (e.g., "keep watching the ball") were sources of RISE.

Although participants clearly identified several ways in which they gained RISE from the types of things their instructors said, it was also evident that they were mindful of the types of things their instructors *did* when forming their RISE beliefs. Instructional behavior, including physical demonstrations (e.g., "she shows me how to do it") and individualized attention (e.g., "he teaches me one-on-one") were among the nonverbal behaviors participants drew from to develop their sense of RISE. Thus, it would appear that when instructors take their time to work one-on-one with them, participants interpret this behavior as a sign the instructor believes they can, or have potential to, perform that skill successfully. We also found evidence that instructors' expressiveness (e.g., "when they smile at me," "he pats me on the back") were regarded as nonverbal contributors to RISE. Participants also reported that encouraging facial expressions and a positive or excited tone in their instructor's voice were behaviors that fostered their RISE beliefs. Lastly, when instructors selected them to perform certain tasks (e.g., showing others how to perform a skill; guard the other team's best player; play a desired position), participants reported these behaviors helped them develop stronger perceptions of RISE.

Overall, recreational youth sport participants reported a broad variety of nonverbal and verbal behaviors that contributed to their RISE beliefs. However, these findings may be limited due to the fact that participants spent a limited amount of time (i.e., 2 weeks) with their instructors in a structured camp environment. Sport participants who have the opportunity to work with a coach throughout a sport season may have more extensive exposure to behaviors from which they would derive a sense of RISE. Therefore, in the next study, we examined sources of self-efficacy and RISE in a sample of recreational sport league participants during a sport season.

Study 2

The purpose of Study 2 was to explore recreationally competitive sport participants' perceived sources of self-efficacy stemming from their experiences during a sport season. The secondary purpose was to identify specific verbal or nonverbal coaching behaviors youth participants used to inform their RISE beliefs. As in Study 1, an interview methodology was used to explore participants' perceived sources of self-efficacy and RISE. Drawing from our initial evidence in Study 1, it was hypothesized that participants would identify undifferentiated as well as relationship-based sources of self-efficacy and that participants would identify both verbal and nonverbal coaching behaviors that they drew upon to develop RISE beliefs.

Method

Participants and Context

The sample was comprised of 28 (boys $n = 27$; girl $n = 1$) youth participants (age range: 8–12; $M_{age} = 10.25$) from community recreational sport programs including soccer, baseball, ice hockey, and basketball. Participants took part in one of five focus group interviews that varied in size from three to ten participants.

Measures

Demographics and Consent. Informed consent was obtained after explaining to the participants the parameters of their full involvement in the study, confidentiality of their information, their unconditional right to withdraw from the study and contact information for the investigators. An initial questionnaire assessed information about age, sex, and level of current sport participation.

Procedures

At the midpoint of their sport seasons, youth sport participants were invited to take part in a 1-hr focus group interview that took place at a local community venue. After volunteering to participate in the study, informed consent was obtained from parents or guardians as well as the participants before partaking in the focus group interview. Upon arriving at the community venue, participants completed the demographic survey and participated in a 45–50 min semistructured focus group interview.

Community-based sport programs are dynamic and diverse in comparison with the more structured environment of the sport camp. Therefore, we elected to use focus group interviews in this setting as opposed to one-on-one interviews to allow participants to express their own experiences and respond to the experiences of others from various sport contexts. After five focus group interviews the researchers experienced data saturation and ceased further data collection.

Interview Guide

The semistructured interview guide developed for Study 1 was used to facilitate discussion in each of the focus groups in Study 2. Minor revisions were made to the wording of some questions to accommodate the fact that the sample was drawn from a recreational sport setting rather than a sport camp. Although the focus group question content was similar to that used in the Study 1 interviews, the collaborative nature of the focus groups was used to stimulate novel perspectives and additional discussion regarding targeted constructs. Once again, participants were invited to speak openly about their overall experiences with the team before being asked to express their personal experiences with specific tasks or skills. Probe questions were also used to contrast experiences of participants from similar and dissimilar sports and teams to provide the focus group facilitator with a greater understanding of how the sources of self-efficacy and RISE may vary by context.

Thematic Analysis

Focus group interview data endured the same six-step process described in Study 1. Two raters were present for all focus groups interviews and were thus involved in the thematic analysis. Cohen's kappa showed that agreement between the two raters was very strong, $\kappa = .91$ (Cohen, 1960), and meaning units that caused discrepancies were thoroughly discussed until agreement was reached. Theme and subthemes that emerged from the data captured a variety of interpersonal cues expressed by participants across all five focus groups and were the result of critical analysis and careful deliberation between the raters.

Results

The information recorded during the five focus groups generated 93 pages of 12-point, single-spaced, transcribed text. Initial group discussion of the sources of self-efficacy resulted in a total of 38 coded meaning units, which generated six subthemes that fit within three overarching themes. In this context, mastery experiences, social persuasion, and vicarious experiences were all reported as sources of self-efficacy. Subthemes were used to identify the manner in which self-efficacy information was perceived. Each theme, subtheme, and examples of individual meaning units reflecting each subtheme are presented in Table 3.

Participants identified an array of behaviors enacted by their coaches upon which they based their RISE perceptions. Group responses indicated that both verbal and nonverbal interactions were relevant to the formation of RISE beliefs. Verbal interactions used to inform RISE consisted of general encouragement as well as efficacy-building statements where athletes reported their coaches saying "I am confident that you can do this" or "I know you can hit it—I've seen you do it before." Coaches' instructions including "just focus on what you're trying to do" and task-oriented statements such as "it doesn't

Table 3 Themes, Subthemes, and Exemplar Meaning Units for Sources of Self-Efficacy From Focus Groups

Self-Efficacy Antecedents		
Theme	**Subtheme**	**Exemplar Meaning Unit**
Mastery Experiences	Self-referenced sources	"when I try [a skill] and it works, it makes me feel confident."
	Specific relational sources	"when coach gives you a practice pitch and you hit it well . . . that helps my confidence grow."
	Undifferentiated or other sources	"I feel more confident playing against weaker opponents."
Social Persuasion	Specific relational sources	"it boosts my confidence if the coach says I'm doing really good."
	Undifferentiated sources	"when people compliment you."
Vicarious Experiences	Specific relational sources	"when my coach shows me what to do . . . to get better."

Note. Themes were guided by a theoretical thematic analysis and include the thoughts and opinions of participants across all focus groups.

matter if you don't hit it" were also evident as sources of RISE expressed by these youth sport participants.

Nonverbal interactions included challenging/special opportunities assigned to players by their coach (e.g., "coach makes me go [through the drill] backwards") and focused interpersonal attention (e.g., "[the coach] kept working with me to make sure I was doing it right"). Participants also reported coaches' expressiveness (e.g., coach gives you thumbs up or pats you on the back) to be another behavior they used to derive perceptions of RISE. All themes and subthemes are displayed in Table 4 along with accompanying exemplar meaning units.

Discussion

In this study, interactive focus group interviews were used to explore recreational youth athletes' perceived sources of self-efficacy and RISE. As was the case in Study 1, participants were expected to identify a combination of experiential and socially mediated sources of self-efficacy as well as a variety of coaching behaviors that contributed to developing perceptions of RISE.

Consistent with Study 1, findings were shown to support Bandura's (1997) theorizing in terms of mastery experiences, social persuasion and vicarious experiences being identified as sources of self-efficacy. As we hypothesized earlier, it was also clear that participants' experiences could be classified as either self-referenced or socially mediated phenomena. Evidence of the former came in the form of descriptions of performances that children compared with their own previous levels of success, whereas the latter experiences were often guided or interpretive experiences orchestrated by coaches. Positive verbal encouragement and watching others experience, or model, success at performing skills (i.e., vicarious experiences) were also identified as factors contributing to self-efficacy. Together these findings illustrate a broad array of interpersonal experiences that influence self-efficacy in youth sport settings.

Seven different themes emerged reflecting the coaching behaviors athletes used to inform their RISE beliefs. As in Study 1, it was evident that general words of encouragement, efficacy-building statements (e.g., "I am confident you can do this") and instructions coming from the coach regarding how to improve skills (e.g., "next time try to get your leg down [as a goalie]") were sources of RISE. One emergent theme that was not evident in Study 1 involved task-oriented statements such as "who cares about the score as long as you . . . try your hardest" or "it doesn't matter if you don't hit [the ball]." Coaches may use these types of statements to downplay the importance of performance outcomes and emphasize the value of effort and personal improvement, which are characteristics that contribute to a task-oriented environment (Ames & Roberts, 1992). This type of environment has been shown to contribute to a variety of adaptive sport outcomes including athletes' motivation, sport competence, and sport self-confidence (Ames & Roberts, 1992; Magyar & Feltz, 2003). Our data suggest that positive coaching behaviors contribute to the development of athletes' RISE perceptions and could potentially influence other adaptive motivational outcomes such as those that have been documented in the physical education context (Jackson et al., 2012, 2013).

Several examples of nonverbal coaching behaviors were also identified as sources of RISE. A diverse theme of nonverbal behaviors athletes drew upon to develop RISE involved what they felt were *challenging or special opportunities* assigned by their coach (e.g., "pairing me up with [a teammate or opponent] that is better," "s/he puts you in [an important] position like centre," "s/he asks you to demonstrate the drill"). From the coaches' standpoint, such behaviors may often be driven by pragmatic considerations (e.g., putting more skilled players in important positions) that could have implications for team success or, in the case of demonstrations, team learning. However, it is clear that coaches' use of "special" assignments can foster a stronger perception of RISE within their athletes and this may happen regardless of the player's skill level.

As was the case in Study 1, we found that focused interpersonal attention (e.g., "kept working with me," "makes me keep doing it until I get it right") and variations in expression (tone of voice and facial features) were also characteristics of coaching behaviors to which participants attached meaning and used as sources of RISE. These findings reinforce the importance for coaches to take time to work on skill development, independently, with each of their athletes, as there may be potential payoff for both skill acquisition and RISE. Furthermore, it is clear that athletes are closely tuned-in to not only what their coaches are saying, but also how they are saying it. Therefore, it may be important for coaches to practice and to experiment with the way they use their voices and expressions, in addition to their words, to increase their players' RISE.

Summary and General Discussion

The present studies explored youth sport participants' perceptions about sources of self-efficacy and coach/instructor behaviors from which they developed RISE. Participants in both studies identified several sources of self-efficacy that stemmed from self-referenced experiences as well as interactions with others in the sport learning and performance environment.

Collectively, this evidence is consistent with Bandura's (1997) social cognitive theory insofar as participants indicated they based their self-efficacy perceptions upon their personal inferences about past accomplishments and interpersonal experiences (i.e., verbal persuasion; modeling). However, the findings also provide additional support for Lent and Lopez's (2002) tripartite efficacy model as participants identified numerous ways in which the verbal and nonverbal behaviors of coaches and instructors led them to infer beliefs others had about their sport abilities.

Table 4 Themes, Subthemes, and Exemplar Meaning Units for Sources of RISE From Focus Groups

Verbal Interactions		
Theme	**Subtheme**	**Exemplar Meaning Unit**
General Encouragement	Before skill attempts	"just do your best—try to make the save"
	During skill attempt	"you're doing great; you can hit that ball"
	Postskill attempt	"you did a great job during the last period"
Efficacy Building Statements	General support	"I know you can hit it—I've seen you do it before"
	RISE support	"I am confident that you can do this"
Instruction	General instruction	"just focus on what you're trying to do"
	Specific instruction	"next time try to get your leg down (as a goalie)"
	Suggestions for improvement	"give you tips on how to get better"
Task-Oriented Statements	Deemphasize outcome	"it doesn't matter if you don't hit it"
	Emphasize effort over outcome	"who cares about the score as long as you . . . try your hardest"
Nonverbal Interactions		
Challenging/Special Opportunities	Special assignments	"pairing me up with [a teammate or opponent] who is better"
	Task opportunities	"he puts you in and he's counting on you"
	Peer demonstrations	"when the coach asks you to demonstrate the drill"
	Additional challenges	"my coach makes me go [through the drill] backwards"
	Selective assignments	"when he puts you in an [important] position like centre"
	Playing time	"puts you in longer and more frequently during games"
Focused Interpersonal Attention	1-on-1 instruction	"kept working with me to make sure I'm doing it right"
	Coach's commitment	"he makes me keep doing it until I get it right"
	Hands-on instruction	"coach gets his clipboard and he shows me what I did wrong"
	Personal support	"you always have the coach to back you up"
Expressiveness	Physical expressions	"when he's smiling at you; giving you thumbs up"
	Interpersonal contact	"he pats you on the back; he gave me props"

Note. Themes were guided by an inductive thematic analysis and include the thoughts and opinions of participants across all focus groups.

One important way in which the current findings contribute to the literature is in terms of how the data were found to differentiate between verbal persuasion as a general source of self-efficacy and verbal communication from coaches and instructors as a source of RISE. These results are consistent with previous findings by Jackson and colleagues (2008, 2009) whose thematic models clearly distinguished between verbal behaviors of teammates and coaches as sources of RISE and verbal persuasion from interpersonal sources as antecedents of self-efficacy. The results also support theorizing by Lent and Lopez (2002), whose writing articulates an important distinction between RISE perceptions and social persuasion as independent mechanisms that have implications for the development of self-beliefs. They argue that social persuasion is the act of providing efficacy-relevant information to an individual whereas RISE represents the cognition arising from interpretive processes allowing one to make sense of that information. Therefore, a coach's verbal attempt to convey a strong positive belief in an athlete's capabilities (RISE) may be received accurately, but could also be misinterpreted or overlooked depending on the athlete's interpretation of the content or meaning of the verbal communication.

Although results largely supported social cognitive theory, participants in both samples did not identify any examples of physiological or emotional states that affected their self-efficacy beliefs. This finding is not consistent with Jackson et al.'s (2008, 2009) interview research with competitive athletes, which identified several physical (e.g., injury, fitness, pain) and emotional (e.g., anxiety) antecedents of self-efficacy. Lack of evidence in these regards may be a function of the interview questions in the current study probing only information about experiences that made participants more confident, not less confident. It is also possible that positive physiological (i.e., fitness level or strength) and emotional states (e.g., excitement) and a perceived association between these factors and self-efficacy may not be easily discernable at young ages or among athletes who participate at recreational levels. Furthermore, negative physical (e.g., injury, pain) or emotional states (e.g., anxiety) may be sources of reduced self-efficacy (See Bandura, 1997; pp. 137–150); however, our questions

aimed only to assess positive sources of self-efficacy. In sum, although our data do not identify any physiological or emotional states as sources of self-efficacy, future research utilizing a broader range of ages and elicitation questions would be enlightening.

Another way in which the current findings diverged from those of Jackson et al. (2009) is that participants in this study did not specifically acknowledge RISE as a source of self-efficacy. As was the case with physiological/affective states, methodological aspects of the interview questions may account for this discrepancy. Jackson et al. (2009) probed competitive athletes' perceptions of both sources and consequences of self-efficacy, other-efficacy, and RISE. Therefore, participants in that study may have been better prepared or prompted to more thoroughly consider the role of RISE in the development of their self-efficacy. It may also be that youth participants appreciate that self-efficacy and RISE are unique perceptions, yet they do not perceive RISE as an obvious source of self-efficacy. These methodological and participant-related issues should be explored in future research with youth sport participants.

Among the most interesting findings was the obvious recognition by participants of challenging/special opportunities assigned by their instructor or coach as sources of RISE. Sport participants in both the camps and recreational leagues identified numerous examples of challenging and extraordinary opportunities afforded to them by their instructors or coaches as ways in which they inferred RISE beliefs. Although these special tasks ranged from being placed in a "desired" or "important" position to showing others how to perform a skill in practice, it appears that being given an exceptional opportunity is important for developing RISE. Thus, coaches and instructors should be aware of these opportunities and consider ways in which they can design practice or competition sessions that allow their athletes to do something out of the ordinary.

When interpreting the implications of these studies, several limitations need to be taken into consideration. For instance, the generalizability of the findings in Study 2 may be limited as the focus groups consisted almost entirely of boys. However, the congruence between findings from Study 1 and Study 2 suggest that girls are likely to interpret RISE through similar verbal and nonverbal cues as boys. Nevertheless, interviewing a greater representation of girls from recreational sports could be helpful for identifying additional RISE-relevant cues and would thus provide a more comprehensive understanding of how RISE beliefs are manifested in recreational youth sport settings. In addition, while focus groups have advantages in terms of affording participants opportunities to consider varying opinions and "piggy-backing" on ideas or experiences brought up by others, they may also impose social constraints for those who do not want to speak up in front of peers. Thus, we suggest future research should consider using a combination of personal interviews and focus groups in future studies.

Other limitations concern the fact that these studies deliberately targeted sport participants between the ages of 8 and 12 years because many youth at this age are in the process of evaluating their sport experiences and deciding whether to continue participating in sport. Therefore, findings may not be generalizable to younger children or adolescents and future research involving older and younger age groups is encouraged. Furthermore, it is important to note that these studies focused solely on feedback from the coaches or instructors that were reported to increase participants' RISE. However, an important consideration for future research would be to assess the various forms of feedback that may undermine those beliefs and consequently increase children's risk of dropping out of sport prematurely.

Despite these caveats, the results of these studies provide important and novel insights into experiences and coaching behaviors young sport participants' tune-in to when developing self-efficacy and RISE beliefs. Although the themes and ideas expressed in these studies were not particularly complex, coaches and instructors should not discount the implications they have for developing youth sport participants' efficacy beliefs. Our data suggest designing and delivering efficacy-building sport experiences for youth should involve basic, but deliberate attempts to provide positive verbal and nonverbal feedback in combination with occasional challenging opportunities. Such feedback may provide important boosts in self-beliefs that raise motivation and investment in sport experiences, which could potentially translate into better performances or increase children's decisions to continue participating in sport when attractive sedentary alternatives present themselves.

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Appendix

Interview Items Targeting Sources of Self-Efficacy

1. Can you tell me about a time you felt confident?
2. Are there certain times you feel more confident in your sport skills?
3. What kinds of things have happened to help your confidence grow?

Interview Items Targeting Sources of RISE

4. How can you tell when your coach/instructor is confident in you?
5. What does your coach/instructor *say* to make you feel like s/he is more confident in you?
6. What does your coach/instructor *do* to make you feel like s/he is more confident in you?
7. Can you tell when your coach/instructor is confident in other players?
8. Finish this sentence: "I would feel like my coach truly believed in me if . . ."
9. How can you tell if your coach truly believes you can improve?

CHAPTER 3

Coaching behaviour contributes to relation-inferred self-efficacy (RISE) and self-efficacy in youth sport

Preamble

Coaching behaviour contributes to relation-inferred self-efficacy (RISE) and self-efficacy in youth sport is the second study in the dissertation series. This study involves the development and pilot testing of a new coaching behaviour assessment tool and examines relationships among coaching behaviours, RISE, and self-efficacy among boys and girls participating in youth sports. Further analyses also report on the causal processes involved in children's interpretation of RISE-relevant coaching behaviour. RISE was hypothesized to mediate the coaching behaviour – self-efficacy relationship.

The manuscript is not currently submitted for publication in a journal and has been formatted for this dissertation.

Contribution of Study 2 to overall dissertation

Study 2 is the first investigation of the causal processes by which RISE-enhancing interactions influence self-efficacy development within a youth sport setting. Overall, findings provide empirical support for the causal processes outlined in Lent and Lopez's (2002) model of relational efficacy beliefs in that RISE operates as a mediator in the coaching behaviour – self-efficacy relationship. Other important contributions of Study 2 include: (1) the validation of a RISE-relevant coaching behaviour instrument designed for use with children in sport, (2) establishing a positive relationship between the frequency of RISE-relevant coaching behaviour and children's RISE and self-efficacy perceptions.

Abstract

Relation-inferred self-efficacy (RISE) refers to perceptions of how others view one's abilities. Evidence suggests athletes develop RISE from their exposure to a combination of verbal and non-verbal coaching behaviors. However, no research has examined athletes' perceptions of their exposure to RISE-relevant behaviours and how the frequency of these experiences may contribute to RISE and self-efficacy. The purpose of this study was to investigate young athletes' perceptions about RISE-relevant coaching behaviors and explore the relationships between RISE-relevant coaching behaviors, RISE, and self-efficacy. Youth athletes (N = 198, M_{age} = 9.5 yrs) provided measures at the midpoint of a competition season. Perceived frequency of RISE-relevant behavior from coaches was positively associated with RISE and self-efficacy. Results showed an indirect effect of RISE that mediated the relationship between coaching behavior and self-efficacy for the total sample (95% C.I. = 0.34- 0.61, κ^2 = .45). Further analyses showed the indirect effect was conditional, with a strong mediation effect for boys (95% C.I. = 0.29- 0.70) and no mediation effect for girls. Findings are discussed in light of theory and practical potential for coaches to convey RISE-enhancing information that has the potential to develop RISE and self-efficacy among their athletes.

Keywords: self-confidence, coach-athlete relationship, mediation

Coaching Behavior Contributes to Relation-inferred Self-efficacy (RISE) and Self-efficacy in Youth Sport

Participation in sport or physical activity (PA) has multiple psychosocial and health-related benefits for children and youth (Eime, Young, Harvey, Charity, & Payne, 2013). There are multiple personal, interpersonal and environmental factors that can influence children's participation in sport or PA (Sallis, Prochaska, & Taylor, 2000; Sallis et al., 1992; Van der Horst, Paw, Twisk, & Van Mechelen, 2007). One personal factor that has been shown to affect people's decisions to engage in and persist at many behavioral endeavors is self-efficacy. Self-efficacy refers to "one's belief in his or her capabilities to organize and execute the courses of action required to produce given attainments" (Bandura, 1997, p. 3). Self-efficacy has been a focus of research in sport psychology for decades and is consistently associated with enhanced effort, persistence, and improved performance among athletes of various ages and competitive levels (Feltz, Short, & Sullivan, 2008).

Bandura (1997) proposed four primary determinants of self-efficacy: mastery experiences, verbal persuasion, vicarious experiences, and physiological/emotional states. According to Bandura, mastery experiences are generally the most powerful sources of self-efficacy beliefs. However, research by Horn & Weiss (1991) suggests that children have difficulty gauging their objective sport performances, which may be problematic for self-efficacy development. For example, when a young hockey player fails to score any points

over a series of games, she may find it difficult to determine how well she is performing and doubt her abilities. Consequently, youth sport participants may also draw upon subjective information gleaned from interpersonal sources to aid interpretation of their experiences. Thus, the player in the previous example might be prompted by a coach or parent to consider the number of shots she had on net or the amount of time spent in the offensive zone as alternative indicators of her performance. The player's assessment of her performance experience could also be affected by communication from a coach, parent, or teammates in the form of verbal encouragement (e.g., "you are playing your position very well") or nonverbal recognition (e.g., when a coach assigns her to a challenging position or selects her to guard a highly skilled opponent at a critical point in a game). Thus, verbal and nonverbal information from others may be used in concert with direct experiences to inform one's self-efficacy beliefs.

As noted above, Bandura (1997) recognizes verbal encouragement, which may include performance feedback, as an important source of self-efficacy. However, theorizing by Lent and Lopez (2002) expands on the cognitive processes used to interpret interpersonal communication and proposes that *reflected appraisals* (e.g., perceptions of others' evaluations) also contribute to the development of self-efficacy. They proposed that people develop perceptions of relation-inferred self-efficacy (RISE), which represent one person's (person A's) perceptions about what another person, or others, believe about his/her (person

A's) capabilities. In the sport context, RISE can be exemplified as an athlete's perception of her or his coach's confidence in his/her (i.e., the athlete's) abilities.

An abbreviated version of Lent and Lopez's (2002) conceptual model is presented in Figure 1. As shown in the figure, RISE perceptions are based on the focal individual's interpretations of interpersonal cues (verbal and non-verbal behaviors). Their model also suggests that RISE provides a supplementary pathway through which self-efficacy beliefs may be informed. That is, RISE-enhancing interactions provided by influential others (e.g., coach) may contribute to RISE and, in turn, leads to self-efficacy as an indirect, mediated process.

Jackson, Knapp, and Beauchamp (2008) were first to investigate RISE in a sport context. In this qualitative study of members of elite dyads, results showed athletes appreciated the content of the verbal and non-verbal interactions with their playing partners were important determinants of their RISE perceptions. Furthermore, when athletes' perceived their partner to be highly confident in them (i.e., high RISE) they reported having greater self-efficacy. In a similar investigation, Jackson, Knapp and Beauchamp (2009) explored the RISE concept within the context of coach-athlete relationships. Their findings showed athletes used the verbal and nonverbal behaviors enacted by their coaches as a basis to develop RISE perceptions and also described RISE as a source of their self-efficacy.

Jackson et al.'s (2008; 2009) research provided initial evidence of the phenomenon of RISE and its general antecedents (e.g., verbal feedback) and

consequences (self-efficacy). However, recent work by Saville et al. (2014) has probed more deeply into the content of coach-athlete communication to investigate the types of coaching behaviours athletes use to develop RISE. The results showed youth sport participants used efficacy-building statements (e.g., "when [the coach] says, I believe you can do it."), challenging opportunities (e.g., "when coach asks you to demonstrate a drill."), and focused interpersonal attention (e.g., "when [the coach] kept working with me to make sure I did it right") to inform their RISE perceptions. These findings, in concert with those of Jackson and colleagues (2009), support Lent and Lopez's (2002) theorizing and provide evidence that, through the content of their interpersonal exchanges, coaches contribute to the formation of athletes' RISE beliefs and that RISE may serve as an important source of self-efficacy.

Although the aforementioned studies provide evidence of the phenomenon of RISE from a qualitative perspective, three studies have quantified the relationship between RISE and self-efficacy. To date, only one of those studies have reported on this particular relationship with respect to coach-athlete dyads (Jackson & Beauchamp, 2010). Although the aim of the study was to examine the influence of relational efficacy beliefs on relationship commitment, effort and satisfaction, results also reported adolescent athletes' RISE was positively related to their self-efficacy beliefs.

Additional research by Jackson, Whipp, Chau, Pengelley, and Beauchamp (2012) and Jackson, Myers, Taylor, and Beauchamp (2012) have since quantified

the RISE-self-efficacy relationship within a physical education (PE) context. In the former study, involving two samples of university students enrolled in a tennis class, participants' perceptions of their instructors' beliefs in their sport-related abilities were also found to be positively associated with their self-efficacy, which in turn, predicted their effort and enjoyment of the classes. In the later study, students' RISE perceptions relating to their PE teachers' beliefs in their capabilities to learn and perform skills in PE classes were also found to be strong and positively associated with self-efficacy.

Collectively, the research undertaken on RISE thus far has shown competitive athletes, youth sport participants, and PE students recognize RISE perceptions as a source of self-efficacy garnered from the verbal and nonverbal interactions that occur between themselves and others. However, no research has investigated the proposed causal processes linking RISE-relevant coaching behaviour to self-efficacy vis à vis RISE beliefs.

As mentioned earlier (also refer to Figure 1), RISE is a metaperception that is theorized to play a mediational role in the translation of coaching behaviors to inform athletes' self-efficacy perceptions. Although the role of RISE in the coaching behaviour – self-efficacy relationship has not been investigated in sport, a series of studies by Jussim, Soffin, Brown, Ley, and Kohlhepp (1992) have explored other metaperceptions that represent reflected appraisals in a teaching-learning environment. Jussim et al. examined how perceptions of ability (a construct similar to self-efficacy) are affected under a variety of performance

feedback conditions and the extent to which self-perceptions were mediated by reflected appraisals of ability. The first study showed that when clear objective performance feedback (i.e., either success or failure) was provided, having a teacher provide an additional verbatim summary of the performance score led to reflected appraisals (i.e., perceptions of the teacher's beliefs in the participant's abilities) and that those reflected appraisals accounted for significant variance in self-perceptions of ability and performance beyond that explained by the objective feedback alone. Their second study showed that when objective performance feedback was intermediate, or ambiguous in terms of success or failure, positive or negative subjective (verbal) feedback from a teacher influenced reflected appraisals of performance, which, in turn, accounted self-perceptions of performance and ability. In their third study, Jussim and colleagues tested and found support for causal pathways showing interpersonal feedback led to reflected appraisals of ability, which then led to self-perceptions of ability.

Overall, the results of Jussim et al.'s (1992) studies support the notion that people internalize the content of feedback they receive from others and generate reflected appraisals based on that feedback. They also show that reflected appraisals are used to guide self-perceptions of ability and that reflected appraisals are particularly potent informants of self-perceptions when objective feedback is unclear. Although these results are generally consistent with Lent and Lopez's (2002) theoretical predictions, the reflected appraisals and self-perceptions investigated in those studies were not RISE or self-efficacy, thus additional

research investigating these constructs and processes is necessary. Furthermore, the findings were produced in a contrived, lab-based, environment with college students and, therefore have questionable application to real-life environments involving youth sport participants learning or performing skills in practice or competitions.

The objective of the present study was to investigate the associations between coaching behaviors, RISE and self-efficacy in youth sport. Based on research by Jackson et al. (2008; 2009) and Saville et al. (2014) it was predicted that frequency of RISE-relevant information received from coaches would be positively associated with RISE. Also, drawing from research by Jackson and colleagues it was predicted that RISE would be positively correlated with self-efficacy (Jackson, Whipp et al., 2013; Jackson, Whipp, Chau et al., 2012). The overarching hypothesis, based on Lent and Lopez's (2002) tripartite efficacy perspective and prior research by Jussim et al. (1992), was that coaching behaviors would predict RISE, which would in turn predict self-efficacy. In other words, RISE would mediate the relationship between coaching behaviors and self-efficacy.

In order to achieve the objective, the research spanned two phases. Phase 1 involved developing and pilot testing a brief (10-15 item) questionnaire inventory that could be used to assess RISE-relevant coaching behaviors enacted by coaches during practices and games. After developing and testing this

inventory, Phase 2 progressed with a study of youth athletes who completed measures of coaching behaviors, RISE and self-efficacy.

Phase 1

Method

Participants and Context

Participants were 32 youth ice-hockey players (n = 26 boys and n = 6 girls; M_{age} = 9 (+/-1.18 yrs) from six minor hockey league teams in Ontario, Canada. Participants had all been playing with their current team and coach for at least four months with twice-weekly practices and games and had attended at least 80% of the games and practices in their competitive schedule.

Measures

RISE-relevant coaching behavior. A list consisting of 25 RISE-relevant coaching behaviors was extracted from the qualitative interview data reported by Saville et al. (2014). Coaching behaviors included examples such as: "s/he tells me I can do it, even when I'm not so sure I can" and "s/he takes the time to show me what I did wrong when I make a mistake." The 25 items comprising the measure are presented in Table 1. Participants evaluated each behavior by rating the extent to which they perceived it would convey information they would use to inform their RISE beliefs. Specifically, all items were prefaced with the stem: "I can tell my coach has confidence in me when …". Each item was rated on a 3-point scale using the following anchors: 1 = *this is not a good way to tell that your coach has confidence in you*, 2 = *this is an okay way to tell that your coach has*

confidence in you, 3 = *this is a very good way to tell that your coach has confidence in you*.

Procedures

Volunteer participants were recruited from a regional sport league that held several consecutive multi-team competitions in one weekend. Participants and a parent or guardian provided informed consent and then completed a brief demographic survey of their gender, age, and sport involvement as well as the RISE-relevant coaching behavior questionnaire. Study participation took place prior to the scheduled games to avoid competition or practice-related biases. All procedures were reviewed and approved by an institutional research ethics board.

Results

Mean response values for each RISE-relevant coaching behavior item as well as the frequency with which each item was rated 3/3 are presented in Table 1. Participants' responses provided general support for previous work by Saville et al. (2014) showing all of the behaviors, but one, received ratings of > 2 / 3 and indicating the sample believed all were at least "an okay way to tell that your coach has confidence in you". For example, athletes endorsed verbal behaviors including efficacy-building statements (e.g., when s/he tells me that s/he believes I can do well), task-oriented statements (e.g., when s/he tells me to try my best and not to worry about winning or losing), instructions (e.g., when s/he gives me important tips on how to get better at my sport) as well as non-verbal behaviors including: special assignments (e.g., when s/he puts me in (games) during

important situations; when s/he puts me up against the other good players during games) and focused interpersonal attention (e.g., s/he takes time to show me what I did wrong when I make a mistake) among the highest rated RISE-relevant behaviors. However, in order to create a brief measure, only items that received a mean score of > 2.5 as well as having over 50% of participants providing a rating of 3 were retained for the scale used in the main study. Based on these criteria, thirteen items (denoted with * in Table 1) were used to construct the brief RISE-relevant coaching behavior inventory for Phase 2.

Phase 2

Method

Participants and Context

Participants were youth ice-hockey (n = 148) and ringette (n = 50) players (M_{age} = 9.50, SD = 1.47) recruited from two multi-team tournaments held in Southern Ontario in 2013. In the region where the research took place, ice-hockey is primarily played by boys and ringette by girls. Thus, both sports were selected in order to garner data from samples of boys (n = 148; M_{age} = 9.54±1.50) and girls (n = 50; M_{age} = 9.38±1.38) participating at both highly-competitive and recreationally-competitive levels. Ice-hockey and ringette are similar in that both are played on an indoor ice surface with the same number of players on the ice at the same time (i.e., 6 players per team) with comparable objectives, equipment, rules and skills required to play (e.g., skating, passing, shooting). Ringette differs from hockey in a few minor ways (i.e., ringette is played with a straight stick and

a soft rubber ring whereas ice-hockey uses a curved stick and hard rubber puck). Importantly, participants in each sport are involved in organized competition and have equivalent structures in terms of multiple games and practices on a weekly basis over a 4-5 month competitive season. At the time of data collection, participants were competing at either a highly-competitive level (n = 93; M_{age} = 9.43±1.42) or at a recreationally-competitive level (n = 105; M_{age} = 9.56±1.51). The highly-competitive subsample participated in their sport 3-4 times per week as well as engaged in inter-community competitions, whereas the recreationally-competitive subsample participated in inter-league play 1-2 times per week with no inter-community competitions. All participants completed study measures at approximately the mid-point of their competitive season schedules.

Measures

Coaching Behavior. The 13 items comprising the instrument developed in Phase 1 were used to assess RISE-relevant coaching behaviors. Participants rated each item in terms of the frequency with which they experienced each of the RISE-relevant coaching behaviors. Seven of the items represented verbal interactions (e.g., How often does your coach tell you that s/he believes you can do well?) and six items represented non-verbal interactions (e.g., How often does your coach take time to show you what you did wrong when you make a mistake?). Each item was rated on a 5-point response scale: (1 = *never*, 2 = *once in a while*, 3 = *one time per game/practice*, 4 = *two to three times per game/practice*, 5 = *more than three times per game/practice*).

Given this was a newly-developed measure, we assessed the psychometric structure of the scale using principle components analysis (PCA). The analysis yielded a solution consisting of three components (Eigenvalues > 1.0) with one primary component accounting for 35% of the variance and two lesser components explaining 11% and 10% of the variance, respectively. Examination of the pattern coefficients showed cross-loading on two or three components for seven items while the remaining six items loaded exclusively on one component with coefficients > .45. We constructed a new scale consisting of those six items and computed another PCA, which produced a univariate component solution (Eigenvalue = 2.88) with item loadings in excess of .56 and accounting for 48% of the variance. The resulting six-item coaching behavior scale (items denoted with ** in Table 1) showed an acceptable level of internal consistency (Cronbach's $\alpha = .77$) and was used for the analyses of the hypothesis tests.

Self-Efficacy. Self-efficacy was assessed using an adapted version of Jackson and colleagues' (Jackson, Whipp, Chua, Pengelley, & Beauchamp, 2012) tripartite efficacy measure originally developed for PE settings. Item wording was revised in an attempt to better capture athletes' experiences in a youth sport context as opposed to those experienced in PE classes. For example, in Jackson, Whipp, et al.'s (2012) study, respondents were instructed to think about their skills in PE whereas participants in the current study were prompted to think about their sport skills when asked, "At this point in time, how confident are you in your ability to…". The ten items that followed included content such as:

"…carry out your coach's instructions at all times" and "…practice and improve your sport skills", which were direct adaptations of Jackson, Whipp, et al.'s measure substituting "coach" for "teacher" and "sport skills" for "skills in PE". One additional item ("…try your hardest in every practice") was included in the adapted measure. All items were rated on a 5-point scale anchored at 1 (*no confidence at all*) and 5 (*complete confidence*). Jackson, Whipp, and colleagues showed acceptable internal consistency during the initial development of this measure (α = .89-.90). Internal consistency for the adapted measure used in this study was also acceptable (α = .87).

RISE. Following research by Jackson, Whipp, et al. (2012), RISE beliefs were assessed using the same core questions as those used to measure self-efficacy. However, the instruction set was altered in order to prompt participants to rate *how confident they thought their coach was in their abilities* (i.e., rather than how confident they were in their own abilities). In an attempt to emphasize the difference between self-efficacy and RISE perceptions, we also included a statement used by Jackson, Whipp, and Beauchamp (2013): "We're not focusing on how confident you are; we're focusing on whether you think your coach is confident in you" prior to the RISE item set. Items were rated using a 5-point scale anchored at 1 (*no confidence at all*) and 5 (*complete confidence*). Jackson, Whipp, et al. reported an acceptable range of internal consistency with their original measure of RISE (α = .91-.92). Our adapted version of this measure also produced an acceptable level of internal consistency (α = .86).

Procedures

Prior to data collection, all procedures were reviewed and approved by an institutional research ethics board. Youth athletes attending one of two hockey or ringette tournaments were invited to participate in the study. After obtaining consent from participants and a parent/guardian, participants completed a paper and pencil questionnaire. Participants completed the questionnaire on their own in the presence of an investigator who provided verbal clarification regarding question content, if necessary. Measures were obtained during structured breaks in the tournament competition schedules (i.e., neither right before or after a game) to avoid competition-specific responses. Upon completion, surveys were returned to the investigator where they were secured for later analysis. Participants were thanked for their participation and entered in a draw for token prizes.

Data Analysis

Descriptive statistics and bivariate (Pearson's *r*) correlation coefficients were computed. Although there were no specific apriori hypotheses regarding competition level or gender differences, there were sufficiently large subsamples of boys and girls as well as highly-competitive and recreationally-competitive participants to detect medium-sized effects (Cohen, 1992). Post-hoc comparisons between these groups were conducted using one-way ANOVA and the magnitude of these effects was also calculated using online software (Wiseheart, 2013) to compute Cohen's *d*, where .20, .50, and .80 represent small, medium and large

effects, respectively (Cohen, 1988). Tests for indirect (mediation) effects and conditional indirect effects (i.e., moderated mediation) were assessed using the *PROCESS* software macro (Hayes, 2013). All statistical analyses were conducted using SPSS version 20.

Results

Overall Sample Analysis

Descriptive statistics and correlation coefficients (Pearson's *r*) for self-efficacy, RISE, and RISE-relevant coaching behaviors are reported for the overall sample as well as by competition level and gender (See Table 2). Generally, participants reported high levels of self-efficacy ($M = 4.13 / 5$) and RISE ($M = 4.08 / 5$) and having received at least one form of RISE-relevant information from their coach per game or practice ($M = 3.65 / 5$). Correlation coefficients indicated a strong positive relationship between participants' RISE and self-efficacy perceptions, $r(198) = .77$, as well as RISE and RISE-relevant coaching behaviors, $r(198) = .54$. The correlation between coaching behaviors and participants' self-efficacy was positive, but slightly less strong, $r(198) = .33$. All correlations were statistically significant ($p < .01$).

Competition Level Analysis

Initially, mean scores for all study variables were compared between highly-competitive and recreationally-competitive participants using one-way ANOVA. Results showed those participating at a highly-competitive level reported significantly greater self-efficacy, $F(1, 196) = 18.08$, $p < .01$, ($d = .60$)

compared to those participating at a recreationally-competitive level. However, mean scores reported for RISE-relevant coaching behaviors and RISE perceptions did not differ significantly between these groups. The relationship between frequency of RISE-relevant coaching behaviors and self-efficacy was positive and moderate in the highly-competitive group, $r(93) = .27$, whereas correlations between all other variables showed strong positive relationships regardless of competitive level. All correlations were statistically significant ($p < .01$).

Gender Analysis

Post-hoc comparisons were also performed to identify any significant gender differences in regard to the frequency of RISE-relevant coaching behavior, self-efficacy and RISE beliefs. Results of one-way ANOVA indicated girls reported higher self-efficacy, $F(1, 196) = 12.27$, $p < .01$ ($d = 1.13$), and RISE, $F(1, 196) = 8.68$, $p < .01$ ($d = .55$), compared to boys. However, there were no gender differences in scores for RISE-relevant coaching behaviors. The relationship between RISE and self-efficacy were strong and positive for both girls, $r(50) = .72$, $p < .01$ and boys, $r(148) = .76$, $p < .01$. However, the relationship between RISE-relevant coaching behaviors and RISE perceptions was strong and positive for boys, $r(148) = .62$, $p < .01$, but modest for girls $r(50) = .28$, $p = .05$. Similarly, coaching behaviors and self-efficacy were positively and moderately related for boys, $r(148) = .39$, $p < .01$, whereas this relationship was weak and non-significant for girls $r(50) = .12$, $p = .42$.

Indirect (Mediation) Effects

Indirect effects analyses were computed for the overall sample using the PROCESS software macro (Hayes, 2013). Self-efficacy was specified as the dependent variable with RISE-relevant coaching behavior as the independent variable and RISE as the mediator. Consistent with recommendations by Hayes and Scharkow (2013), bias-corrected bootstrap procedures utilizing 1000 simulations were computed. Results of these analyses, including 95% confidence intervals and κ^2 values, which represent the proportion of the maximum possible effect that was accounted for by the mediator (i.e., RISE) in each model (Preacher & Kelley, 2011), are reported in Table 3. Overall, the results indicate a significant indirect (mediation) effect for RISE (95% C.I. = 0.34, 0.61, κ^2 = .45).

Given the competition level and gender variations evident in the univariate analyses, the indirect effect of RISE was further explored using conditional effects analysis based on competition level and gender. In the competition level analysis, there were significant indirect effects for RISE at both highly-competitive (95% C.I. = 0.18, 0.51, κ^2 = .43) and recreationally-competitive levels (95% C.I. = 0.27, 0.62, κ^2 = .49) and no conditional (i.e., moderation) effect (Index of moderated mediation = -.11, 95% C.I. = -.34, .09). When the conditional effects analysis was performed based on gender, results showed the indirect effect of RISE on self-efficacy beliefs was moderated by gender (Index of moderated mediation = .36, 95% C.I. = 0.18, 0.57). The indirect effect of RISE

was significant for boys (95% C.I. = 0.53, 0.85, κ^2 = .50), but not for girls (95% C.I. = -0.02, 0.22, κ^2 = .26).

Discussion

The purpose of the present study was to investigate the associations between coaching behaviors, RISE and self-efficacy in youth sport. Overall, findings were in line with our hypothesis that the frequency of RISE-relevant coaching behaviors would show positive associations with athletes' RISE and self-efficacy beliefs. However, these effects were moderated by gender, such that coaching behavior was related to RISE for both boys and girls, while self-efficacy beliefs and coaching behaviors were not associated for girls. As far as we are aware, these are the first results to provide empirical evidence in support of coaching behavior as a predictor of RISE, RISE as a mediator of the coaching behavior—self-efficacy relationship, and RISE as a complementary pathway predicting self-efficacy in youth sport.

Findings in this study were consistent with past studies that have supported the tripartite model of efficacy beliefs (Lent & Lopez, 2002). That is, previous research by Jackson, Myers, et al. (2012); Jackson, Whipp, et al. (2012) has consistently shown strong positive correlations between RISE and self-efficacy in samples of high school PE students (r = .69, .72) as well as college students participating in a tennis class (r = .73). Similarly, in the present study we found that RISE and self-efficacy were strongly correlated with an average effect for the overall sample of r = .77. These findings also mesh with qualitative data

from Jackson et al. (2008; 2009) indicating adolescents and young adult athletes perceive RISE has a positive influence on their self-efficacy. However, this is the first study to provide quantitative evidence of the RISE—self-efficacy relationship in the youth sport context.

The present findings contribute to a growing body of literature investigating the relationship between RISE and self-efficacy. However, this study is the first to investigate coaching behavior as a factor that leads to RISE. As noted earlier, many youth sport contexts offer limited objective feedback upon which athletes can gauge their performance or progress. For example, in hockey and soccer the clearest indicators of performance are goals scored and saves made. Other objective indicators of performance such as making good passes, having good shot selection, or creating turnovers may not be recognizable to athletes in the absence of interpersonal communication provided by others such as coaches or parents. Research by Jussim et al. (1992), described earlier, suggests that in these sorts of ambiguous performance situations, interpersonal communication may be critical to the formation of RISE perceptions. Our findings provide support for the theorized positive effects of coaching behaviors on RISE and further suggest that when coaches provide more frequent RISE-relevant information it leads to stronger perceptions of RISE among their athletes.

Theorizing by Lent and Lopez (2002) and research by Jussim et al. (1992) led us to investigate the causal process model outlined in Figure 1. In this model, coaching behavior was hypothesized to predict RISE, which would, in turn,

predict self-efficacy. Results from the overall sample supported this theorizing, showing an indirect effect of RISE in the coaching behavior—self-efficacy relationship. However, findings revealed this effect was driven by a strong indirect effect for boys while there was no indirect effect for girls. Looking further at the patterns of correlations reported in Table 2, it is apparent that the relationship between RISE and self-efficacy was similar for boys and girls. However, the correlation between coaching behaviors and RISE was weaker for girls, $r = .28$, $p = .05$, and the coaching behavior—self-efficacy association was not significant ($r = .12$, $p = .42$).

As noted earlier, boys and girls in the present study were participants in ice-hockey and ringette, respectively. Although these sports share many common attributes, there are several differences as well. Furthermore, the data were drawn from convenience samples that may not have been at equivalent levels of competition. However, closer examination of the data (See Table 2) showed girls in this sample had significantly higher self-efficacy and a much smaller range of self-efficacy scores (i.e., 3.60 – 5.00; vs. 1.57 – 5.00 for the boys). Thus, despite a broad range of coaching behavior scores (i.e., 1.67 – 5.00), the restricted range of self-efficacy scores in the girls' data may have played a factor in the results. Future research sampling from a broad range of skill levels and variety of sports is recommended in order to more confidently assess the theorized relationships between coaching behaviors, RISE, and self-efficacy.

Although the current study was the first to explicitly examine the relationships between coaching behavior, RISE and self-efficacy and provides evidence to support the intermediary role of RISE in youth sport, it is not without limitations. One important limitation relates to the fact that the data were collected at one time point, which does not allow us to infer temporality of the proposed causal pathways. However, because athletes' ratings of their coaches' behavior was based on their prior training and competition experiences we have some confidence to infer that RISE perceptions were based on coaching-athlete interactions that occurred prior to the study. On the other hand, participants' RISE and self-efficacy were measured concurrently. Therefore, questions remain as to whether there is a directional relationship between RISE and self-efficacy.

Given theory put forth by Lent and Lopez (2002) and the pathways described herein (Figure 1), we propose RISE as an antecedent of self-efficacy and believe our findings support this contention. However, we cannot rule out an alternative interpretation that self-efficacy may also have a reciprocal relationship with RISE. This relationship has been referred to as a "false consensus effect" (Felson, 1993) or a "projection effect" (Jussim et al., 1992) wherein people who have a strong assessment of their own capabilities rate others' perceptions of their abilities high despite what others' perceptions actually are. Jussim et al. (1992; Study 3) examined this bi-directional relationship possibility with respect to people's reflected appraisals of ability to perform an anagram task. They discovered that reflected appraisals affected self-perceptions, but found no

evidence that self-perceptions of ability had an effect on reflected appraisals. Therefore, evidence supports the proposed pathway between RISE and self-efficacy, but additional research employing longitudinal or experimental designs is needed to more thoroughly assess the temporal and causal aspects of the RISE—self-efficacy relationship in the sport context.

A second limitation relates to the fact that data were collected in the context of two team sports that may provide relatively few opportunities for clear, objective performance feedback and, therefore, may not generalize to other sports where such feedback may be more abundant (e.g., archery, gymnastics, golf). However, we elected to purposely examine hockey and ringette as research by Jussim et al. (1992) illustrates that subjective feedback may have the strongest effects on reflected appraisals such as RISE when objective feedback is ambiguous. We recommend future research investigate other sports where RISE-relevant information is provided alongside clear objective feedback to further advance our understanding of the associations between RISE-enhancing coaching behavior, RISE and self-efficacy under a variety of feedback conditions.

Another limitation is that this study involved children/youth between the ages of eight and twelve years old. Therefore, findings may not apply to younger or older sport participants. Recent work by Chan, Lonsdale and Fung (2012) recognizes that coaches stand to have a greater relative impact on adolescents' sport competence perceptions compared to younger children. Future research

should investigate relationships between coaching behavior, RISE and self-efficacy in a broader range of ages.

Notwithstanding its limitations, results of the current study contribute to the advancement of knowledge in at least two important ways. First, findings support the importance of coaches as relational sources of efficacy information within the youth sport environment and illustrates that coaches are in a position to provide specific verbal and nonverbal interactions that contributes to positive reflected and self-appraisals of their athletes. Second, findings provide support for Lent & Lopez's (2002) theory by showing self-efficacy can be developed through an alternative pathway that involves interpersonal behaviors and the extent to which people interpret how others view their capabilities.

Moving forward, research may consider testing the generalizability of the proposed model by examining the relationships between RISE-oriented coaching behavior, RISE, and self-efficacy as they apply to various sport settings. In a related vein, future research may also benefit from additional studies investigating whether athletes interpret efficacy-related information from other relational sources (e.g., parents, peers) in a similar way to that used with coaches. Although research regarding RISE and self-efficacy has begun to attract attention in the sport psychology literature, it may be worthwhile to expand the scope of investigations to include processes by which RISE-oriented information may affect these perceptions within other interdependent relationships (e.g., personal trainer-client, parent-child, advisor-graduate student).

The present findings may also have important practical implications for athletes and coaches. For example, provision of subjective information is a common exchange between coaches and athletes and may help them monitor improvements in technique, fitness and task execution. However, these exchanges may not be as enriched as possible if they do not contain RISE-relevant information as well as encouraging statements. For example, coaches who are in the habit of saying "good job" as a form of positive encouragement to their athlete should attempt to incorporate RISE-relevant information (e.g., I am confident you have what it takes to do even better next time) into their interpersonal exchanges with their athletes. Together, positive encouragement and RISE-enhancing interactions should be more effective at bolstering athletes' self-efficacy than either form of communication alone.

Although coaches may incorporate RISE-enhancing interactions into their coaching practice, an important caveat to our findings is that coaches should not feel inclined to use RISE-enhancing behaviors in every situation. Until more research is available to provide evidence-based recommendations, it is advisable that coaches should be cautious in their approach to providing RISE-enhancing information so they are not interpreted as being disingenuous.

Application of the present findings has potential to benefit both athletes and coaches. However, additional efforts are needed to effectively transfer this knowledge to coaches. Therefore, future research should be directed toward designing knowledge exchange interventions that aim to educate youth coaches of

the value of providing RISE-enhancing information in both practice and competition environments.

In sum, our findings support theorizing by Lent and Lopez (2002) and prior research by Jackson, Myers, et al. (2012) and Jackson, Whipp, et al. (2012) showing positive associations between athletes' RISE and self-efficacy. This study also provides the first evidence that RISE beliefs may be influenced by the frequency at which coaches engage in RISE-enhancing interactions with their athletes. We found evidence that the coaching behavior—self-efficacy relationship may be different between boys and girls; however, these effects may be accounted for by unmeasured factors that limited the range of self-efficacy scores in the sample of girls in this study. The RISE-relevant content of coaches' interactions with their athletes is something that should be modifiable through coach education, therefore, this knowledge needs to be passed on to youth sport coaches (e.g., parent volunteers) who should be aware and appreciative of the potential influence they can have on their athletes' self-efficacy, motivation, and positive experiences in sport.

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Table 1

Means and Frequencies of Coaching Behavior Items

During a regular **GAME:** *I can tell when my coach has confidence in me to do a skill, or get better at it when s/he…*	*M*	$f_{(3)}$
1. tells me to try my best and not to worry about winning or losing.**	2.62	21
2. puts me *in* during important situations (e.g., when the game is close).*	2.50	20
3. tells me that I can do it, even when I'm not so sure I can.*	2.56	20
4. picks me to perform special tasks that not everyone gets to do.	2.42	1
5. smiles at me.	2.27	1
6. gives me the "you can do it" look.	2.44	17
7. gives me high fives/fist bumps.	2.39	17
8. takes the time to *show me* what I did wrong when I make a mistake.**	2.62	22
9. *tells me* that *s/he believes* I can do well.*	2.70	23
10. puts me up against the other good players during games.*	2.53	20
11. tells me that they are glad to have me on the team.*	2.82	28
During a regular **PRACTICE:** *I can tell when my coach has confidence in me to do a skill, or get better at it when s/he…*		
12. works with me 1-on-1 so I can improve my weaker skills.**	2.57	18
13. makes practice drills more challenging for me but not the rest of the team.	1.90	9
14. gives me a thumbs up when I go in the game.	2.41	16
15. asks me to help my teammates when they are struggling with a skill.	2.42	16
16. asks me to demonstrate certain skills for my teammates.	2.32	14
17. tells me to keep working at a skill until I get it.	2.45	18
18. picks me to perform special tasks that not everyone gets to do.	2.29	13
19. gives me important tips on how to get better at my sport.*	2.53	20
20. tells me that I can do it, even when I'm not so sure I can.**	2.68	23
21. gives me the "you can do it" look.	2.42	16
22. gives me high fives/fist bumps.	2.32	17
23. takes time to *show me* what I did wrong when I make a mistake.**	2.56	21
24. tells me that *s/he believes* I can do well. **	2.62	21
25. puts me up against other good players.*	2.59	21

Note. All items were rated on a 3-point scale: (1 = *not a good way*, 2 = *an okay way*, 3 = *a very good way to tell that your coach has confidence in you*), $f_{(3)}$ = frequency of items rated as 3

* = items retained for use for 13-item scale, ** = items comprising 6-item scale.

Table 2

Descriptive Statistics and Pearson's r for Study Variables for the Sample and by Subsamples

Total									
	M	*SD*	Range				1	2	3
1. Coaching Behaviors	3.65	.76	3.67				-	.54**	.33**
2. RISE	4.08	.66	3.33					-	.77**
3. Self-efficacy	4.13	.67	3.43						-
Competitive level		HC			RC		1	2	3
	M	*SD*	Range	*M*	*SD*	Range	-	HC / RC	HC / RC
1. Coaching Behaviors	3.59	.72	3.50	3.71	.80	3.33		.45** / .62**	.27** / .44**
2. RISE	4.14	.62	3.00	4.03	.69	3.33		-	.79** / .78**
3. Self-efficacy	4.33	.58	2.70	3.95	.69	3.43			-
Gender		Boys			Girls		1	2	3
	M	*SD*	Range	*M*	*SD*	Range		Boys / Girls	Boys / Girls
1. Coaching Behaviors	3.64	.75	3.50	3.71	.82	3.33	-	.62** / .28*	.39** / .12
2. RISE	4.00	.70	3.33	4.31	.43	1.60		-	.76** /.72**
3. Self-efficacy	4.03	.72	3.43	4.41	.38	1.40			-

Note. RISE = Relation-inferred Self-efficacy, HC = Highly Competitive, RC = Recreationally Competitive. Total sample $N = 198$; HC sample $n = 93$, RC sample $n = 105$, Girls $n = 50$, Boys $n = 148$.
* = $p < .05$, ** = $p < .01$.

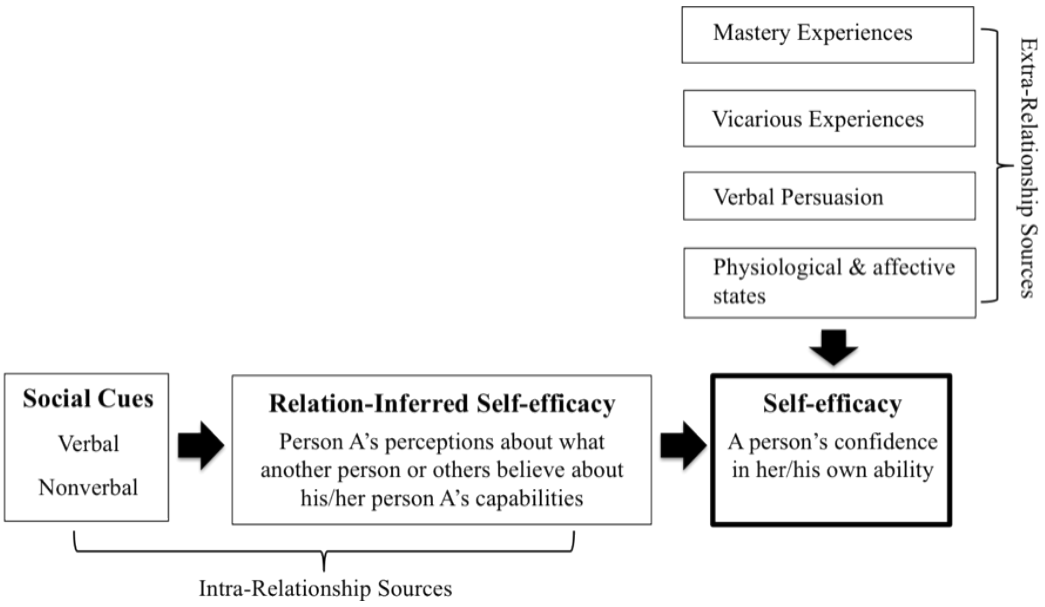
Table 3

Indirect Effects of RISE on the Coaching Behavior – Self-efficacy Relationship for the Overall Sample and by Subsample

Sample	*B*	*SE B*	95% C.I.	κ^2
Overall				
	.39	.07	0.26 - 0.52	.46
Competitive Level				
Highly Competitive	.30	.08	0.18 - 0.51	.43
Recreationally Competitive	.43	.09	0.27 - 0.62	.49
Gender				
Boys	.50	.08	0.53 - 0.85	.50
Girls	.10	.06	-0.02 - 0.22	.26

Note. HC = Highly Competitive, RC = Recreationally Competitive, C.I. = confidence interval, κ^2 = proportion of the maximum possible effect that was accounted for by the mediator in each model (Preacher & Kelley, 2011)

Figure 1. Conceptual model of the feedback appraisal process (Adapted from Lent & Lopez, 2002)



CHAPTER 4

Effects of a coaching communication workshop on alpine ski coaches' perceptions for engaging in RISE-enhancing interactions with their athletes

Preamble

Effects of a coaching communication workshop on alpine ski coaches' perceptions for engaging in RISE-enhancing interactions with their athletes is the third study in the dissertation series. This study describes the first attempt to translate empirical findings and from Study 1 and 2 to youth sport coaches using a two-phase coach-athlete communication intervention. Intervention activities aligned with Bandura's (1997) Self-efficacy Theory and hypothesized to enhance coaches' knowledge, outcome expectations, self-efficacy, and intentions toward integrating RISE-enhancing interactions into their coaching practice.

The manuscript is not currently submitted for publication to a journal and has been formatted for this dissertation.

Contribution of Study 2.1 to overall dissertation

Study 3 focuses on transferring empirical findings established in Study 1 and 2, to youth sport coaches using strategies that target theory-based constructs. Study 3 contributes to the overall dissertation by demonstrating the value of a two-phase approach to coaching education and by emphasizing the need to incorporate the learning preferences of youth sport coaches into future coaching education programs. Findings also identify key knowledge translation techniques that can be used to facilitate coaches' beliefs toward adopting RISE-enhancing behaviours.

Abstract

Recreational athletes' motivation to participate in sports can be influenced by the perceptions they develop regarding how others (e.g., coaches) view their abilities. These perceptions are referred to as relation-inferred self-efficacy (RISE). Specific coach-athlete interactions have been shown to contribute to positive RISE perceptions, yet there have been no attempts to translate this knowledge to coaches. The purpose of this study was to examine the effects of a coach-athlete communication intervention on alpine ski coaches' perceptions toward integrating RISE-enhancing behaviours into their coaching practice Forty-three coaches (women $n = 15$; $M_{age} = 35$, $SD = 14$) participated in a two-phase workshop. Coaches' cognitions were measured across three time points: at baseline and following each of the two phases of the workshop. Results showed coaches' perceived knowledge ($F_{(1, 42)} = 27.77$, $p < .01$, $\eta^2 = .40$) and outcome expectations ($F_{(1, 42)} = 26.98$, $p < .01$, $\eta^2 = .39$) increased immediately following Phase 1, whereas self-efficacy ($F_{(1, 42)} = 17.79$, $p < .01$, $\eta^2 = .30$) for providing RISE-relevant information changed after Phase 2. Results indicated the workshop was successful at enhancing coaches' cognitions as well as the benefits of incorporating context-specific strategies to enhance self-efficacy, which may lead them to implement RISE-relevant behaviours during future coach-athlete interactions. Practical implications for conducting such workshops in future coach education programs are discussed.

Keywords: self-confidence, coach education, youth sport, communication,

Effects of a Coaching Communication Workshop on Alpine Ski Coaches' Perceptions for engaging in RISE-enhancing interactions with their athletes

Self-efficacy refers to one's belief about her/his ability to execute a specific task or skill successfully (Bandura, 1997). Self-efficacy has been a construct of interest in sport research for over 40 years and has important implications for athletes' performance and motivation (Feltz, Short, & Sullivan, 2008). Research has shown athletes who report higher levels of self-efficacy take on more challenging tasks, expend more effort and are likely to overcome greater adversity than those who are uncertain about their abilities (Bandura, 1997; Feltz et al., 2008; Samson & Solmon, 2011).

According to Bandura (1997), gauging one's self-efficacy requires making sense of one's objective experiences as part of a complex self-appraisal process that relies on the interpretation of four primary sources of efficacy information including: mastery experiences, vicarious experiences, verbal persuasion, and physiological or affective states. Evidence supports the value of each proposed determinant; however, mastery experiences are often recognized as the most influential source of self-efficacy (Bandura, 1997; Beauchamp, Jackson, & Morton, 2012)

Although direct experiences are critical for developing self-efficacy beliefs, Bandura (2001) also recognized that efficacy judgments generally operate within a broader social context and may be influenced by the appraisals of various social agents. In this vein, Chan, Lonsdale, and Fung (2012) noted that, in the

sport environment, parents, coaches and peers may each have an important impact on participants' self-efficacy and that social influences may be particularly powerful when performance experiences are limited.

The idea that interpersonal interactions, such as those that occur between a coach and athlete, represent an alternate pathway for self-efficacy development is a fundamental feature of Lent and Lopez's (2002) tripartite model of relational efficacy. According to Lent and Lopez's model, self-efficacy perceptions arise as a consequence of one's interpretation of both personal (e.g., past performance accomplishments) and interpersonal experiences (e.g., performance feedback provided by others in the environment). A focal construct in Lent and Lopez's theory is *Relation-inferred Self-efficacy* (RISE). RISE is a meta-perception that represents a person's (person A's) perception of how another person (or others) views his or her (person A's) capabilities. For example, a basketball player may have a RISE perception regarding how confident her coach is in her ability to successfully score a 3-point shot in a game. RISE is theorized to develop from one's interpretation of the verbal and non-verbal cues received from others and, as noted above, may contribute to the formation of self-efficacy.

Although the relational efficacy perspective has not received a great deal of attention in the psychology literature, research by Jackson and colleagues has explored the phenomenology of RISE within sport and physical activity contexts. In the first studies to investigate RISE in sport, Jackson, Knapp, and Beauchamp (2008) conducted interviews with members of competitive sport (athlete-athlete

and coach-athlete) dyads who shared their perceptions about RISE. Participants from athlete-athlete dyads (Jackson et al., 2008) acknowledged verbal and nonverbal behaviours from their partners as well as past accomplishments they had with them to be important antecedents of their RISE beliefs. Athletes also described several consequences of RISE including greater confidence in their own abilities (higher self-efficacy) and having stronger intentions to remain a member of the dyad when they perceived their partner had greater confidence in them (i.e., higher RISE). Results from the study of coach-athlete dyads (Jackson, Knapp, & Beauchamp, 2009) were consistent with the first study, showing verbal information as well as the intonation coaches used to convey information was important for developing RISE. Athletes also reported that positive RISE perceptions also helped them develop and maintain greater self-efficacy. Together these findings provided evidence supporting the phenomenological nature of RISE, its antecedents, and the role of RISE as a unique source of self-efficacy.

Building on qualitative investigations by Jackson and colleagues (2008; 2009), research using quantitative measures have begun to explore the association between RISE and self-efficacy as well as other variables relevant to social cognitive theory in both sport and physical education (PE) domains (Jackson & Beauchamp, 2010; Jackson, Myers, Taylor, & Beauchamp, 2012; Jackson, Whipp, Chau, Pengelley, & Beauchamp, 2012). Jackson and Beauchamp (2010) found initial support for the positive relationship (r = .65) between adolescent athletes'

RISE and self-efficacy beliefs in a study that was primarily focused on relational efficacy and its link to various dyadic outcomes (e.g., commitment, satisfaction). This study represents the only attempt to investigate the RISE-self-efficacy relationship within a sport context. However, two additional studies found corroborative evidence of this relationship among members of similar relationships based in PE.

Findings by Jackson Whipp et al. (2012) demonstrated high school PE students' RISE perceptions were also positively related to their self-efficacy in two separate samples (r = .69, .72). Results also showed self-efficacy to be positively correlated with effort and enjoyment for engaging in PE activities. Similarly, Jackson, Myers et al. (2012) found that when college students believed their PA course instructor was highly confident in their ability (i.e., RISE), they reported elevated ratings of self-efficacy for performing the specific skills pertinent to the course. Specifically, a strong positive correlation between RISE and self-efficacy (r = .73) was also found for college students. Further results showed self-efficacy was positively related to students' enjoyment for the activities they performed in that course.

Although a growing body of evidence supports the Lent and Lopez (2002) model regarding the consequences of RISE (e.g., self-efficacy), considerably less research has been devoted to understanding how RISE perceptions are developed. Jackson et al. (2008, 2009) documented several general categories of verbal and non-verbal behaviours athletes use to inform their RISE perceptions. However,

their results lacked specific details identifying the content of those RISE-enhancing statements or interactions. In a recent study, Saville et al. (2014) interviewed youth sport participants (ages 8-12) about their perceived sources of RISE and invited them to share the specific content of their RISE-enhancing experiences. Participants identified multiple verbal and nonverbal behaviours from interactions with their coaches or instructors that they used to inform their RISE beliefs. Specific sources of RISE included: efficacy-building statements spoken by coaches (e.g., "I believe you can do this"), special opportunities (e.g., when the coach selects you to guard a skilled opponent) and being involved in positive interpersonal exchanges (e.g., high five, pat on the back, etc.). These findings provided the first evidence that youth sport participants develop RISE perceptions about their coaches' beliefs in their abilities as well as specific behaviours that could be used by coaches to develop the RISE perceptions of their athletes.

Building from the evidence obtained in the Saville et al. (2014) study, Saville and Bray (Submitted) carried out a correlational study in which they measured how often athletes received RISE-relevant information form their coaches during practices and games and examined whether the frequency of those occurrences were related to athletes' RISE and self-efficacy beliefs. Results showed that athletes who reported more frequent RISE-relevant interactions with their coaches reported greater RISE. Findings also supported Lent and Lopez's (2002) relational efficacy model inasmuch as RISE was a positive predictor of

self-efficacy. These findings serve as evidence to suggest that receiving RISE-enhancing information from coaches on a more frequent basis may be an important pathway for developing RISE and self-efficacy. Thus, coaches interested in nurturing athletes' positive psychological development may seek to integrate more frequent RISE-enhancing behaviours into their coach-athlete interactions.

Cultivating knowledge about RISE and identifying effective methods for developing RISE through coach-athlete interactions is a new area of research that needs to be shared with coaches. Previous research indicates coaches have strong motivation to increase their knowledge and application of Sport Psychology research into their coaching practice (Nash & Sproule, 2012; Vargas-Tonsing, 2007; Wiersma & Sherman, 2005). However, opportunities for coaches to develop knowledge and confidence to implement evidence-based techniques may be limited by the cost, time and availability of appropriate resources. For example, research by Williams and Kendall (2007) indicates that despite a desire to include evidence-based techniques in their coaching practice, coaches found information published in scientific journals to be overly complex, time-consuming to retrieve, and difficult to apply in the field. Coaches involved in a more recent study by Nash and Sproule (2012) further expressed a need for sport science researchers to integrate more practical knowledge and experiences into coaching interventions.

In response to calls from coaching practitioners for greater knowledge mobilization efforts from sport scientists, efforts by researchers have aimed to

develop and build upon existing coach education interventions that have shown considerable promise for influencing change in coaching behaviours as well as athlete outcomes (Smith, Smoll, & Curtis, 1979; Coatsworth & Conroy, 2006; Conroy & Coatsworth, 2004).

One of the most influential coaching interventions that has set the foundation for many modern youth sport coach training programs is Smith, Smoll, and Curtis' (1979) Coach Effectiveness Training (CET). This 2 hour workshop focuses on conveying a positive approach to coaching that emphasizes effort over normative success and provides coaches with behavioural guidelines that can be used to create a positive relational environment conducive to children's development (Smith & Smoll, 1996). Specifically, CET involves an educational, role-playing, and self-monitoring component intended to increase coaches' use of supportive coaching behaviours (e.g., reinforcement, mistake contingent encouragement) and has demonstrated consistent improvements in children's perceptions of their coaches (Smith et al., 1979; Smith & Smoll 1990). Although CET has endured the most extensive empirical evaluation, similar programs including The Penn State Coach Training Program (Coatsworth & Conroy, 2006), American Coach/Sport Education Program (Martens, 1997), and National Youth Sport Coaches Association Program (Brown & Butterfield, 1992) have also been deemed effective for influencing positive changes in various aspects of youth development.

A more recent coach education intervention by Edwards, Law, and Latimer-Cheung (2012) evaluated the effects of a training workshop for coaches on the delivery of mental imagery skills training to athletes. This workshop incorporated many of the basic components outlined in Smith et al.'s CET program (e.g., information exchange, interactive discussion, and role-playing) and serves to illustrate how coach education workshops may focus specifically on developing coaches' skills for communicating psychological content in their coach-athlete interactions.

Mental imagery is commonly used by competitive sport participants (Cumming & Williams, 2012); however, recreational-level participants may not benefit from imagery training because their coaches lack knowledge about imagery and confidence to teach imagery skills. In attempt to reduce this knowledge-to-action gap, Edwards et al. (2012) developed an imagery skills education workshop intended to teach coaches about the basics of imagery and provided opportunities for coaches to engage in role-playing exercises to develop and share effective strategies for promoting the use of imagery with their athletes. Results showed that coaches' knowledge and attitudes towards imagery use were high prior to and following the workshop and that coaches' confidence to carry out imagery training with their athletes increased significantly following he workshop.

Although results of Edwards et al. (2012) study are encouraging, those researchers encouraged further research that would extend their methods to

incorporate experiential activities that would allow coaches to apply their new knowledge and skills. Revisiting research on sources of self-efficacy, it may be critical to allow coaches opportunities to gain experience and receive formative feedback about their application of new knowledge and skills in order to enhance their self-efficacy and apply these skills to their coaching practice beyond the workshop environment (Bandura, 1997).

The objective of the current study was to examine the effects of a coach-athlete communication workshop on coaches' perceptions toward engaging in RISE-enhancing interactions with their athletes. We investigated the effects of a two-phase intervention designed to enhance coaches' perceived knowledge, outcome expectations, self-efficacy and intentions. Phase One included classroom-based workshop components similar to those outlined by Edwards et al. (2012), such as information sharing and collaborative planning/strategizing. Following recommendations of Edwards and colleagues, Phase Two involved an experiential component wherein participants practiced delivering RISE-enhancing information to peers in a sport coaching setting. In line with findings from Edwards et al. (2012), it was hypothesized that perceived knowledge and outcome expectations would increase following Phase One. Based on Self-efficacy Theory and the experiential nature of the activities involved, we also predicted further increases in self-efficacy following Phase Two (Bandura, 1997).

Method

Participants and Context

Participants were alpine ski coaches (N = 43; M_{age} = 35 years; SD = 14) involved in a pre-season ski coaching training program. All participants were coaches of small groups (M = 11 skiers; SD = 5) of competitive youth skiers between the ages of 8 and 14 years old. Participants' coaching experience varied (M = 13 years; SD = 12; Range = 0 - 47). They reported having received formal (n = 37), informal (n = 2), or no coach training (n = 3) prior to the beginning of the study. Formal training was defined as having a formal coaching certification (e.g., Canadian Ski Coaches Federation or National Coaching Certification Program) whereas informal training consisted of attending public coaching workshops provided by a group without any formal affiliation.

Measures

Questionnaires assessing social cognitive variables were used at multiple time points throughout the study. Accordingly, to capture participants' state perceptions and allow us to examine any changes in perceptions that occurred, each set of measures included a basic statement (i.e., "At this point in time") to prompt coaches to report the beliefs they held at the current point in time.

Outcome Expectancies: Coaches' beliefs about the utility of engaging in RISE-enhancing interactions with their athletes were assessed using a 9-item scale developed for this study. Example items included: "To what extent do you think providing verbal/nonverbal feedback helps kids develop confidence in their skiing abilities; Effectively communicating confidence in my athletes' abilities would make them feel more confident in their own abilities; Effectively communicating

confidence in my athletes' abilities would motivate them to attempt things they haven't done before." Responses to all items were rated on a 7-point Likert scale anchored at 1 (Strongly disagree) and 7 (Strongly agree). Responses to each item were used to generate mean scores and a high level of internal consistency was observed for this measure at each of the three time points (Cronbach's α = .85 - .95).

Perceived Knowledge. Coaches' perceived knowledge regarding methods for providing RISE-enhancing information was assessed using a 4-item scale. All items were prefaced with the stem: "To what extent are you knowledgeable about…" and were followed by items including: "things to say in order to effectively communicate your confidence in your athletes abilities" or "ways to effectively tailor your feedback to different athletes?" Responses to the items were rated on a 7-point scale anchored at 1 (Not very knowledgeable at all) and 7 (Very knowledgeable). Average response scores were computed and acceptable internal consistency was observed for this measure at each time point (α = .88 - .95).

Self-efficacy. Coaches' rated their beliefs in their abilities to engage in RISE-enhancing interactions with their athletes using a 7-item scale. All items were prefaced with the stem "How confident are you in your ability to…" followed by 7 items including: " use verbal feedback to effectively communicate your belief in your athletes' abilities"; "identify appropriate situations in which to communicate your belief in your athletes' abilities." Each item was rated on a 7-

point scale ranging from 1 = Not at all confident to 7 = Completely confident. Item scores were summed and averaged to yield a scale score with acceptable internal consistency at each time point (α = .87 - .92).

Intentions. Coaches' intentions to engage in RISE-enhancing interactions with their athletes in the future were assessed using a 3-item scale. Intention items were: "I intend to use verbal/nonverbal feedback to effectively communicate my confidence in my athletes' skiing abilities in the future." and "I plan on communicating my confidence in my athletes' skiing abilities during every training session/competition in the future." Items were rated on a 7-point scale anchored by 1 (Not at all true) and 7 (Very true). This measure was only used at Time 2 and Time 3 after coaches had been exposed to information about and experiences with delivering RISE-relevant feedback. Mean scores were computed and acceptable internal consistency was observed at each time point (α = .78, .88).

Procedure

Once informed consent was obtained, all eligible coaches provided their demographic information and completed a pre-workshop questionnaire designed to measure their beliefs (perceived knowledge, outcome expectations, and self-efficacy) with regard to the provision of RISE-enhancing behaviours. Then, all coaches took part in a two-phase (educational and experiential) coach-athlete communication workshop designed to improve their cognitions toward

implementing RISE-enhancing interactions with their athletes. Study variables were measured after each phase.

The workshop was developed and delivered by the authors. Workshop facilitators were certified professional coaches with coaching experience at elite and recreational levels in numerous sports including alpine skiing. The content of the workshop was informed by empirical evidence provided by multiple studies of RISE and RISE-relevant behaviours (e.g., Jackson et al., 2009; Saville et al., 2014). The session structure was modeled after the workshop described by Edwards and colleagues (2012) and was pilot tested and refined with input from key stakeholders including youth coaches from a variety of sports as well as youth sport camp instructors and program coordinators (Saville & Bray, submitted).

Workshop

Phase One. The classroom component of the workshop consisted of five activities specifically designed to enhance coaches' perceived knowledge about and outcome expectations toward incorporating RISE-enhancing interactions during coaching sessions. First, coaches received a brief audiovisual presentation based on work by Saville et al. (2014), which was used to introduce and define the concept of RISE and Lent and Lopez's (2002) theorizing regarding how RISE may relate to young athletes' self-perceptions. Once coaches had acquired a basic understanding of the verbal and nonverbal behaviours that contribute to athletes' RISE perceptions, they were asked to share their previous experiences with these types of interactions (as a coach or as an athlete). Next, coaches watched three

short video demonstrations of sport coaches providing RISE-enhancing behaviours to children in a summer sport camp environment. After observing the videos of the coach models, participants engaged in an activity in which they generated and wrote out a brief (4-6 items) list of personalized cues they could integrate into their interactions with athletes during training or at competitions. Finally, ski coaches worked together, to share and develop strategies to help them effectively deliver these cues during training and competition. At the end of this phase, coaches were given a take-home brochure providing a summary of the session content and a supplementary list of exemplar RISE-enhancing cues developed based on findings from Saville and colleagues (Saville et al., 2014).

Phase Two: The experiential component of the workshop consisted of two interactive activities that took place on the ski hill. Coaches from the larger workshop group were divided into groups of 8-10. For the first activity, each coach selected a partner from her/his group and practiced giving self-generated RISE-relevant statements, developed during the classroom component, to their coaching partner for a period of 5-10 minutes. This rehearsal exercise allowed coaches opportunities to practice the delivery of RISE-enhancing behaviours, to experiment with different tones and expressions, and provide feedback to each other regarding the quality, authenticity, and proper execution of RISE-oriented interactions.

In the second activity, the groups of coaches engaged in a role-playing activity to practice providing RISE-relevant behaviours in a simulated coaching

session. Each pair of coaches from the earlier exercise was responsible for leading the rest of the group through one of five on-hill skiing practice drills (i.e., drills that coaches would use during technical skill-development sessions with their athletes). During the drills, coaches engaged in RISE-relevant interactions with others participants in the group at times they felt they it would be most appropriate. For example, some coaches provided RISE-relevant information prior to skill performance (e.g., "If you concentrate on using proper technique, I believe each of you will make through this drill without making any mistakes"), others employed RISE-enhancing behaviours while the drill was going on (e.g., giving high fives, thumbs up, and selecting certain skiers to demonstrate certain aspects of the drill for others in the group), and others provided RISE-oriented feedback immediately following skill performances (e.g., "We may have some more work to do but, I know if you concentrate on exploding out of your turns, you will do even better on the next run").

At the completion of each drill session, one of the researchers guided the group in a short debrief that involved coaches' discussion of how effective RISE-relevant behaviours had been executed and shared suggestions with the drill leaders that could potentially enhance the impact of their delivery (e.g., noting when behaviours were applied correctly, suggesting variations that could be substituted or combined with the interactions that were provided, highlighting missed opportunities when RISE-relevant behaviours could have been integrated, and limitations about when RISE-enhancing interactions might not be appropriate

or could be perceived as being disingenuous). All experiential activities were repeated with each group until all coaching pairs had a chance to practice giving and receiving RISE-relevant information. Each drill session lasted approximately 7-10 minutes, for a total session length of 40 minutes.

Study Design and Data Analysis

The study was a single group A, B, C intervention design where A was designated as the baseline assessment, B was the post-classroom assessment, and C was the post-experiential assessment. Although single group studies lack the control of randomized or experimental designs, their use has been advocated in the area of Applied Sport Psychology where the effects of complex interventions on athletes' and coaches' cognitions and behaviours are frequently investigated (Barker, McCarthy, Jones, & Moran, 2011).

Data were initially screened for outliers and missing data. Although there were no outliers, examination of the pattern of missing data revealed 16 coaches were missing data for all scales at more than one time point and were thus dropped from the analysis. Of the remaining coaches included in the analysis (n = 43), eight did not provide complete data following Phase Two of the workshop. Although several treatment techniques for missing data are available, we employed an approach known as hot-deck imputation, advocated by Roth, Switzer, and Switzer (1999), whereby missing data points were replaced by carrying forward the previous value reported by the participant for each missing data point.

In each of these cases, values reported after Phase One were carried forward and substituted for these missing values. For example, a coach who provided a mean score of 6.25 for self-efficacy after Phase One of the workshop and did not provide data after Phase Two was imputed a score of 6.25.

Descriptive statistics were computed for all study variables at each of the three time points (i.e., baseline, post Phase One, post Phase Two) with the exception of intentions, which were only at post Phase One and post Phase Two. A repeated measures MANOVA was computed to test the effects of the workshop on ski coaches' perceived knowledge, outcome expectations, and self-efficacy for implementing RISE-enhancing behaviours. Significant MANOVA results were followed-up with univariate analyses and simple (between time) contrasts. For the intentions measure, a dependent *t*-test was computed to compare coaches' ratings of intentions to use RISE-enhancing behaviours with their athletes following each phase of the workshop. To control for multiple comparisons and reduce the possibility of a Type 1 error, a Bonferonni correction was employed such that values of $p < .0167$ were considered significant. The magnitude of the workshop effects were also calculated using online software (Wiseheart, 2013) to compute Cohen's *d* for repeated measures, where .20, .50, and .80 represent small, medium and large effects, respectively (Cohen, 1988). All statistical analyses were carried out using SPSS version 20.

Results

Descriptive statistics for the study variables are displayed in Table 1. At baseline coaches' outcome expectations, and self-efficacy for providing RISE-enhancing behaviours was relatively high with mean scores greater than 6 / 7, yet their perceived knowledge regarding useful techniques for transferring these beliefs to their athletes was slightly lower at 5.81 / 7. As shown in the table, mean scores for all variables increased over time.

Hypothesis Testing

Results of the repeated measures MANOVA evaluating changes in mean scores over time was significant (Pillai's Trace = .54, F (6, 37) = 7.35, $\eta_p^2 < .01$). To decompose this omnibus effect, univariate, within-subjects contrasts were computed to identify which variables differed at which time-points. As shown by the subscripts presented in Table 1, there were significant increases in coaches' perceived knowledge, F (1, 42) = 27.77, $p < .01$, $\eta^2 = .40$, $d = .87$ outcome expectations, F (1, 42) = 26.98, $p < .01$, $\eta^2 = .39$, $d = .88$, and self-efficacy, F (1, 42) = 17.79, $p < .01$, $\eta^2 = .30$, $d = .71$, from baseline to post Phase Two.

Simple Contrasts

Comparisons of means for individual variables over the three measurement points were made using simple contrasts. Results showed coaches' perceived knowledge, F (1, 42) = 15.17, $p < .01$, $\eta^2 = .27$, $d = .60$, and outcome expectations, F (1, 42) = 19.26, $p < .01$, $\eta^2 = .31$, $d = .71$, significantly increased after Phase One of the workshop while self-efficacy scores remained unchanged F (1, 42) = 1.7, $p = .19$, $\eta^2 = .04$, $d = .24$. In contrast, coaches' self-efficacy

significantly increased from Phase One to Phase Two, F (1, 42) = 18.19, $p < .01$, $\eta^2 = .30$, $d = .67$, while perceived knowledge ($d = .32$) and outcome expectations ($d = .40$) did not change significantly. Results of a dependent t-test showed coaches' intentions to implement RISE-enhancing behaviours were higher following the workshop, but scores did not reach statistical significance t (1, 42) = 1.72, $p = .09$, $d = .26$.

Discussion

In the present study, we examined the effects of a two-phase coach-athlete communication workshop that emphasized both classroom and simulated, field-based experiences on alpine ski coaches' beliefs and intentions to engage in RISE-enhancing interactions with their athletes. Generally, findings were consistent with our hypotheses that coaches' perceived knowledge, outcome expectations, and self-efficacy would increase from pre- to post-workshop. The results also provide empirical evidence supporting a two-phase approach to coaching education that may be effective for enhancing coaches' self-efficacy for integrating RISE-enhancing interactions as well as other coaching behaviours into their coaching practice.

Overall, findings provided support for the use of a practical approach to coach education that aimed to transfer knowledge to youth sport coaches. More specifically, Phase One of the workshop led to significant increases in coaches' ratings of their perceived knowledge and outcome expectations about integrating RISE-related information into their coach-athlete interactions. Phase Two led to

further (but not significant) increases in perceived knowledge and outcome expectations. In contrast, self-efficacy was not significantly affected by the content of Phase One, as it was only after Phase Two that significant increases in self-efficacy were observed. These results were similar to those reported by Edwards et al. (2012) who observed increases in self-efficacy for coaching mental imagery skills from pre- to post-workshop, but diverge from their findings also in that changes in knowledge and attitudes towards coaching imagery skills were not seen in that study.

The lack of change in knowledge and attitudes by Edwards et al. (2012) may have been attributable to a high level of knowledge and positive attitudes among coaches going into the study. In comparison, the concept and content of RISE-relevant exchanges was a novel consideration to many coaches in the present study, which may have allowed greater scope for knowledge development. On the other hand, the similarity in the findings (i.e., that self-efficacy improved) may be attributable to the role-playing and coaching simulation activities that were incorporated into the workshop activities included in both studies. Indeed, the fact that a significant increase in self-efficacy was found only after the on-hill simulations in the present study supports an interpretation that these activities are critical to the development of self-efficacy for coaches.

The increases in self-efficacy observed after the on-hill practice segment of the intervention provide support for Bandura's (1997) Self-efficacy Theory in that coaches' self-efficacy was enhanced following mastery experiences, vicarious

experiences, and persuasive information provided by influential others. That is, when coaches engaged in the on-hill coaching sessions they had opportunities to gain mastery experiences by engaging in RISE-relevant exchanges with other skiers. With at least five opportunities per drill, each time a coach executed an authentic RISE interaction (e.g., told a skier: "I believe you can do this" or made the drill more challenging for a certain skier) s/he generated an additional mastery experience on which to base her/his self-efficacy to provide RISE-relevant information.

The interactive, group nature of on-hill ski sessions also offered coaches opportunities to build self-efficacy via vicarious experiences. For example, when coaches participated in the ski drills, they were able to observe their peers effectively providing RISE-relevant behaviours. Although vicarious experiences may be less powerful determinants of self-efficacy than one's own experiences, they have been shown to be effective when the person modeling the behaviour shares similar characteristics with the target individual (Bandura, 1997; George, Feltz, & Chase, 1992). Furthermore, the on-hill practice sessions provided exposure to coping modeling (Clark & Ste-Marie, 2007) as coaches observed and shared strategies with one another about ways in which the content and delivery methods for providing RISE-enhancing interactions could be improved or optimized as they were all learning a new variation of information provision.

Verbal persuasion from the researchers and other coaches may also have contributed to improvements in self-efficacy during the on-hill component of the

workshop. In each of the on-hill sessions, the ski drills were followed up by short debriefs that allowed researchers and fellow coaches to provide encouragement, evaluative feedback and, in some cases, RISE-enhancing statements to convey their belief in the next drill leader's ability to effectively communicate RISE. In one poignant example, members of a group embraced RISE by intimating to their group leaders: "we believe in your abilities to make us believe you have confidence in us". Considering the circumstances, it is difficult to interpret the impact of such statements on coaches' self-efficacy, but it is encouraging to note that coaches understood the concept of RISE well enough to recognize its versatility and apply it in situations beyond the coach-athlete relationship.

Although findings indicate that the workshop was effective for developing coaches' beliefs toward adopting RISE-enhancing behaviours, improvements in coaches' behavioural intentions were negligible. However, it is important to note that coaches' unusually high ratings on the initial measure of intention may have limited our ability to detect subsequent improvements. It is possible that these scores may have been more indicative of coaches' plans to act on the knowledge and expectations acquired in Phase One of the workshop rather than a true baseline measurement. Conversely, once coaches had an opportunity to practice providing RISE-enhancing behaviours in their sport context (i.e., during Phase Two), they may have determined it was not as easy to implement these behaviours as they originally thought. Future research should consider incorporating activities that would assist coaches in formulating implementation intentions

regarding when, where, and how to effectively implement RISE-enhancing behaviours (Gollwitzer & Sheeran, 2006).

Although the results of this study have direct relevance to research and practice in the area of knowledge translation for coaching science, they may also be important to consider in other areas of sport psychology that involve coaching and self-efficacy. One area in which the findings are particularly relevant is for research on coaching efficacy. Coaching efficacy refers to coaches' beliefs in their abilities to affect the learning and performance of their athletes (Feltz, Chase, Moritz, & Sullivan, 1999). Research has shown that higher levels of coaching efficacy are related to positive coaching behaviours such as: praise, encouragement and social support (Feltz et al., 1999; Sullivan, Paquette, Holt, & Bloom, 2012) as well as desirable outcomes for athletes such as: player/team satisfaction and team efficacy (Feltz et al., 1999; Vargas-Tonsing, Warners, & Feltz, 2003).

Not surprisingly, coaching education is a factor that is associated with higher levels of coaching efficacy (Malete & Feltz, 2000; Sullivan et al., 2012). Although research investigating this relationship has relied primarily upon correlational or case-control designs, one study by Malete and Feltz (2000) investigated the effects of a coaching education program on the coaching efficacy of high school coaches. This classroom-based intervention produced moderate improvements in overall coaching efficacy compared to controls; however, Malete and Feltz suggested that allowing coaches to experiment with unfamiliar

behaviours in a simulated sport environment may further contribute to coaching efficacy. Our findings support this assertion and suggest that role play, mock coaching sessions, or other simulations may be a critical aspect of coaching interventions that should improve coaches' self-efficacy to apply their acquired knowledge in a practical manner.

Although findings from this study extend knowledge and contribute to a variety of research areas relevant to coaching education programs it is not without limitations. One limitation was the use of a single-group design that did not have a control condition for comparison. This aspect of our design does not allow us to rule out the possibility that participating in a workshop of any kind could have increased coaches' cognitions toward the use of RISE-enhancing behaviours. In fact, the primary benefit of including a control group is to determine whether or not findings were a consequence of being exposed to an intervention (regardless of its content) and is referred to as the mere exposure effect (Zajonc, 1968). However, if a mere exposure effect had occurred, we might expect that all study variables would have increased after each phase of the workshop, which was not the case in the current investigation. In particular, ratings of coaches' self-efficacy did not change in response to activities in Phase One, but did increase significantly following Phase Two, and vice versa for coaches' perceived knowledge and outcome expectations. Thus, coaches' perceptions changed following exposure to the intervention content that should have led to changes in those perceptions and did not change following content that should not have led to

any changes. Together, these findings give us confidence that the results were not attributable to mere-exposure effects. Nonetheless, including a no-intervention control condition would have been an improvement to the design. A control group would also provide a stronger basis for applied implications of the findings and is recommended for future research in this area.

A second limitation is that we did not assess any effects of the workshop on coaches' use of RISE-enhancing behaviours in practice or competitions and thus, cannot infer the findings can translate beyond the intervention workshop setting itself. With this consideration in mind, it is important to understand that the current study was designed to test whether a two-phase workshop was capable of producing positive effects on coaches' social cognitions. Behaviour change interventions work by targeting change in theory-based mediating variables that, in turn, evoke changes in behaviour (Baranowski, Anderson, & Carmack, 1998). Therefore, having demonstrated change in the social-cognitive mediators of perceived knowledge, outcome expectancies, and self-efficacy, we would propose that changes in behaviour may also be expected to occur. However, future research is required to examine the effects of this workshop as they apply to coaches' use of RISE-relevant behaviours in the field.

Despite these limitations, current findings provide support for the positive effects of a two-phase workshop intervention for promoting perceived knowledge and positive outcome expectations as well as building coaches' self-efficacy to interact with their athletes in ways that will help them build positive RISE

perceptions. Findings also advocate for the use of supplemental strategies designed to improve knowledge translation, which include providing opportunities for coaches to gain mastery through guided or simulated experiences with targeted behaviours. Without integrating effective knowledge translation strategies, coaching education programs are more likely to fail to accommodate coaches' interests in staying current with new developments in sport and coaching science (Williams & Kendall, 2007). Furthermore, the approach to coaching education implemented in this study aligned with preferences of coaches who expressed their dissatisfaction with coaching education programs that do not provide peer interactions, hands-on experience or practical simulations (Nash & Sproule, 2012). Therefore, coach education initiatives may benefit from integrating features of the workshop used in this study (e.g., coping modeling, field-based activities) into their training programs.

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Table 1.

Descriptive Statistics of Study Variables at Baseline and following Phase 1 and Phase 2 of the Coaching Workshop.

Variable	Baseline		Post-Phase 1		Post-Phase 2	
	M	*SD*	*M*	*SD*	*M*	*SD*
Perceived Knowledge	5.81_a	.75	6.24_b	.77	6.43_b	.67
Outcome Expectations	6.09_a	.78	6.54_b	.55	6.67_b	.47
Self-efficacy	6.08_a	.72	6.20_a	.62	6.46_b	.55
Intentions	-	-	6.50_a	.63	6.59_a	.54

Note: $N = 43$. Means for each variable (in the same row) that do not share a common subscript differ at $p < .05$.

CHAPTER 5:

GENERAL DISCUSSION

The objectives of this dissertation were to investigate the interpersonal sources of RISE and the metacognitive processes involved in self-efficacy development in youth sport as well as to attempt to translate those findings to recreational sport coaches. Findings identified specific coaching behaviours as important sources children draw from when formulating RISE beliefs within sport environments where objective feedback may be limited. Results also provided additional support for the RISE-self-efficacy relationship as it applies to children's experiences in youth sport and found RISE perceptions to be a mediator of the coaching behaviour-self-efficacy pathway. Considering the potential practical implications of results obtained in Studies 1 and 2, Study 3 took a different direction and determined the effects of a coach-athlete communication intervention on youth sport coaches' perceptions toward adopting RISE-enhancing behaviours into their coaching practice. The overall purpose of this chapter is to highlight the conceptual and practical contributions of this dissertation, address the caveats related to the research, and discuss recommendations for future directions in light of findings from the current investigations.

5.1 CONCEPTUAL CONTRIBUTIONS

Studies from this dissertation lend support to existing theory and contribute to the conceptual understanding of self-efficacy development within youth sport environments. In Study 1, youth sport participants indicated self-referenced experiences (e.g., mastery experiences) with various sport skills were

important sources of their self-efficacy beliefs. However, participants in both sport environments (i.e., sport camps, competitive sport seasons) also made reference to interpersonal behaviours stemming from specific relationships they had with others involved in their personal experiences (See Table 1 and 3). These findings provided evidence that children are cognizant of the behaviours of others involved in their personal experiences that contribute to their self-efficacy beliefs. Youth sport participants were also able to report detailed descriptions of interactions with their coaches or instructors as sources of their RISE perceptions. This finding extends the application of Lent and Lopez's (2002) relational efficacy model by identifying interpersonal behaviours as a source of RISE among children in sport.

Study 2 also made important contributions to Lent and Lopez's (2002) relational efficacy model by providing evidence supporting hypothesized relationships between key constructs. To our knowledge, this study was the first to provide empirical support for the relationship between the frequency of RISE-enhancing behaviours provided by the coach and young athletes' RISE perceptions. Findings also lend support to the existence of a strong and positive relationship between RISE and self-efficacy in youth sport. Although research has reported on this relationship within adolescent coach-athlete dyads (Jackson & Beauchamp, 2010) and instructor-student relationships in PE (Jackson, Myers, Taylor, & Beauchamp, 2012; Jackson, Whipp, Chua, Pengelley, & Beauchamp,

2012), this study was the first to demonstrate these relationships with children in the early stages of sport skill development.

Beyond establishing important relationships between coaching behaviours, RISE and self-efficacy in younger children, Study 2 also represented the first attempt to investigate the causal process by which coaching behaviours influences self-efficacy within a real-world sport environment. Findings showed RISE mediated the coaching behaviour-self-efficacy relationship, which builds on research by Jussim, Soffin, Brown, Ley, and Kohlhepp (1992) that acknowledges similar cognitive processes involved in the interpretation of interpersonal performance feedback and its effects on perceptions of one's ability on school-based tasks. Specifically, results from Study 2 suggest both verbal and nonverbal behaviours from coaches may operate through RISE to affect sport participants' self-efficacy beliefs. This proposed causal pathway was found to be moderated by athletes' gender. However, as mentioned in Study 2, this difference may have been a consequence of sampling that led to an underrepresentation of girls that reported lower ratings of self-efficacy. Thus, a more representative sample of girls with varying levels of self-efficacy may have produced similar indirect effects to those found with boys. Despite this limitation, findings from this study contribute directly to Lent and Lopez's (2002) theoretical assertions by identifying an alternate pathway for developing self-efficacy among youth athletes.

Study 3 was conceptually distinct from the first two studies of this dissertation insofar as it focused on developing knowledge and confidence about coaching practice involving the concept of RISE rather than trying to understand RISE per se. In this study, a two-phase approach to coaching education was employed and findings were consistent with Bandura's Self-efficacy Theory (SET; 1997). Initial improvements in coaches' knowledge and their perceived benefits of providing RISE-enhancing behaviours followed several verbally persuasive activities (e.g., informative presentation, interactive discussion) that took place in Phase 1. However, activities in Phase 2 underscored the importance of mastery experiences in developing coaches' self-efficacy for engaging in RISE-enhancing interactions with their athletes. Although contextualized experiences in the simulated coaching sessions were a central focus of the Phase 2, other experiential activities were provided to boost coaches' self-efficacy for enacting these behaviours in the future. For example, coaches also participated in a rehearsal exercise that provided them with an opportunity to gain vicarious experiences by watching other coaches pair RISE-relevant behaviours with various tones and expressions and evaluating the authenticity of the resulting behaviour. Overall, this study demonstrated the utility of various strategies for influencing change in important social cognitive constructs.

Collectively, studies in this dissertation provide support for Bandura's (1997) SET and extensions to this theory put forth in Lent and Lopez's (2002) relational efficacy model. Advances in theory are important for consolidating a

conceptual understanding of underlying constructs involved in self-efficacy development and associated behaviours. Accordingly, practical implications of this knowledge are important to share with relevant stakeholders (e.g., coaches, instructors). With this issue in mind, the next section will discuss the practical implications of findings from this dissertation.

5.2 PRACTICAL CONTRIBUTIONS

In addition to the conceptual contributions outlined in the previous section, the findings of this dissertation lend themselves to a number of practical implications with regard to: (a) the existence of RISE perceptions among children, (b) the nature of RISE-enhancing interactions, (c) the intervention strategies that can be used to improve coaches' perceptions toward incorporating new behaviours into their coaching practice, and (d) the importance of including efficacy-enhancing strategies in formal coach education programs in the future.

Prior to the current investigations, only preliminary evidence by Jackson and Beauchamp (2010) and Jackson, Knapp, and Beauchamp (2009) had acknowledged that athletes consider RISE to be a meaningful perception used to evaluate their sport performance capabilities. However, findings from Study 1 were first to illustrate that young children also attend and reflect on these perceptions for various sport tasks and can be regarded as an important point of influence for coaches. Establishing the existence of these behaviours among children was important; however, this dissertation also proceeded to examine the

specific social interactions coaches can use to facilitate positive RISE perceptions among their athletes.

In previous research, only broad categories and obscure examples had been used to describe the antecedents of RISE (e.g., "I can tell how confident she is in me by the way she acts around me"), which limits the practical application of these important findings. Results from this dissertation advanced knowledge in this area by documenting in-depth descriptions of the content and nature of various RISE-relevant interactions between coaches and youth sport participants, including statements (e.g., "I am confident you can do this") and behaviours (e.g., when coach asks you to demonstrate a drill). Drawing on findings from Study 3, this information may be transferred to coaches more effectively if coaching education programs adopted more applied training methods (e.g., field-based communication exercises, simulated coaching sessions, or peer-mentoring activities) over more passive strategies (e.g., webinars or brochures). According to the findings expressed in Study 1, coaches may also consider restructuring their practices (e.g., including athlete demonstrations) or paying closer attention to the way they allocate responsibilities (e.g., allow athletes to perform tasks s/he would not normally have the chance to) in attempts to create environments more conducive to RISE and self-efficacy development.

RISE-relevant coaching behaviours reported by athletes in Study 1 were also consolidated into a brief list that could be used as a self-monitoring tool (e.g., checklist) whereby coaches could keep track of their RISE-enhancing interactions

with their players. This technique may help coaches identify athletes who may benefit from additional RISE support. For example, if coaches were to complete the checklist following a series of practices, they may determine that one or two athletes have received fewer opportunities to bolster RISE than others. Consequently, coaches may consider directing future efforts toward providing additional RISE-relevant interactions to those athletes. Through this process, coaches may also identify unwanted repetition in their coach-athlete interactions or seek to develop behaviours that they feel could be most impactful in certain situations and tailor their coach-athlete interactions accordingly. This form of self-monitoring is a behaviour change technique that has been demonstrated to be effective in a previous coach training program by Smoll and Smith (1993) and can help coaches become more aware of the behaviours they use during practices and competitions.

In addition to clarifying the specific coaching behaviours responsible for influencing athletes' RISE, findings of this dissertation also hold practical potential in terms of educating coaches on how to effectively communicate confidence in their athletes' abilities. After participating in the coach-athlete communication intervention (See Study 3), youth sport coaches were able to grasp the concept of RISE and reported higher self-efficacy for applying RISE-enhancing behaviours in their natural sport setting. The format (i.e., workshop) and relevance of the topic in the intervention (i.e., coach-athlete communication) matched the needs and preferences expressed by coaches in previous research and

may have been partly responsible for its success (Nash & Sproule, 2012; Vargas-Tonsing, 2007). However, several key strategies put forth in Study 3 were also influential in building coaches' self-efficacy for adopting these behaviours. For example, coaches were encouraged to tailor their RISE-enhancing behaviour to potential athletes in their sport and had several opportunities to discuss and exchange ideas with other coaches that would allow them to optimize the influence of their interactions. Furthermore, coaches participated in a mock coaching session that took place in the coaches' natural sport environment. Together, these strategies were likely to have been influential in bolstering coaches' self-efficacy for engaging in RISE-enhancing behaviours and could serve as a guide for future coaching education programs interested in translating other important behaviours (e.g., providing social support or similar leadership behaviours) into coaching practice.

Finally, it is important to understand that findings from the current investigations may be most powerful when considered alongside other coaching behaviours (e.g., high levels of feedback reinforcement, mistake-contingent encouragement/instruction and low levels of punishment or punitive instructions) empirically proven to benefit athletes (Conroy & Coatsworth, 2004; Smith, Smoll, & Curtis, 1979). For example, if content from the RISE training workshop was integrated into existing coach education programs, primarily designed to generate a positive and mastery-oriented environment (e.g., Coach Effectiveness Training; Smith et al., 1979), coaches may be able to produce an environment that not only

increases children's self-esteem, attitude, and enjoyment, but also bolsters their RISE and self-efficacy beliefs.

5.3 LIMITATIONS

Although this dissertation has shed light on the relevance of coach-athlete interactions to RISE in youth sport and has identified an alternate approach to developing self-efficacy among children, it is important to address some key limitations. First, studies in this dissertation focused entirely on interactions that occurred between youth athletes and their coaches. While coaches are often regarded as reputable sources of social influence, Chan, Lonsdale, and Fung (2012) have recognized parents and peers also exert considerable influence on children's cognitions and appraisals of various sport experiences. Therefore, future research may benefit from investigating the impact of interpersonal interactions received from such sources. Furthermore, it may be interesting to examine whether interactions with parents and peers are interpreted via the same cognitive processes proposed in Study 2.

Second, the mediational analyses used to assess the cognitive processes involved in the interpretation of coaches' behaviour (i.e., RISE and self-efficacy) were confined to concurrent measurements. This type of cross-sectional design limits our ability to draw definitive conclusions with regard to the direction of the relationship between these constructs. However, as expressed in Study 2, past research by Jussim et al. (1992; Study 3) offers support for RISE as an antecedent

of self-efficacy by investigating the potential of a reciprocal relationship between reflected appraisals of ability (i.e., perceptions others hold of one's ability) and self-perceptions of ability regarding performance on a series of anagram tasks. Results showed reflected appraisals contributed directly to self-perceptions of ability, but found no evidence supporting the reciprocating pathway (Jussim et al., 1992). Although these findings support the proposed pathway advocated in this dissertation, future research would benefit from employing longitudinal or experimental designs capable of producing stronger evidence for the causal relationship between RISE and self-efficacy in sport.

A final limitation of this dissertation relates to its focus on theory-based mediators of behaviour rather than behaviour itself. That is, the dissertation did not attempt to measure children's behaviour that might be affected by high levels of RISE. In the future, researchers might look to assess behavioural outcomes associated with RISE and self-efficacy including: self-guided pursuits of challenging tasks, sport attendance/absenteeism, or various sport enrollment patterns (e.g., re-enrollment, level of enrollment). Furthermore, although the coach-athlete communication workshop in Study 3 was able to produce positive effects on coaches' perceptions (i.e., knowledge, outcome expectations, self-efficacy), additional research is needed to determine whether these findings can be successfully translated into change in coaches' behaviour during practices or competitions. Nevertheless, results of this study represent a valuable first step in the process toward integrating RISE-enhancing behaviours into coaching practice

and provide detailed descriptions of the types of activities that can facilitate change in future coach education interventions.

5.4 FUTURE RESEARCH CONSIDERATIONS

Notwithstanding these limitations, findings from this dissertation have made important conceptual and practical advancements with regard to the content and frequency of interpersonal interactions that may be effective for boosting athletes' RISE and self-efficacy beliefs. However, it is important to remember that the interpretation of social cues is a highly complex process (Lent & Lopez, 2002) and may involve a number of outstanding factors that were not explicitly examined in this dissertation.

One avenue of future research should be to investigate the possibility that the influence of RISE-enhancing behaviours on athletes' RISE perceptions may vary depending on the circumstances under which they are provided. It may be that coaches should be as strategic with regard to the timing of RISE-relevant interactions as they should be with the selection of appropriate content. For example, an athlete may respond more positively to RISE-enhancing behaviours received prior to a task they do not perform on a regular basis (e.g., penalty kick, corner kick) compared to before or after a more common task (e.g., dribbling or passing). In contrast, there may be certain instances when RISE-relevant interactions may not be appropriate. For example, if a coach were to offer a RISE-enhancing statement (e.g., "I believe you can keep the ball away from their best defender") to a player who just recently lost the ball on consecutive

possessions, it may be far less impactful and could potentially undermine her/his RISE. Therefore, a fruitful avenue for future research may be directed toward identifying optimal situations for which to engage in RISE-relevant interactions with youth athletes.

Another area of future research should investigate perceived authenticity of coach-athlete interactions, which may be related to the impact of coaches' RISE-relevant behaviour on RISE. Such research could be useful for identifying optimal behavioural combinations and may be instrumental for helping coaches gain confidence in the provision of RISE-enhancing information, particularly during early stages of adoption. For example, athletes may perceive a statement like, "I believe you can guard the best player on their team" to be far more genuine if the coach were to place a hand on her/his shoulder and say it while maintaining direct eye-contact. Research in this area is clearly needed.

Future research should also attempt to further investigate the influence of RISE-relevant interactions in multiple contexts within and outside of sport. The present research was carried out within the context of team sports characterized with few opportunities to gain objective performance feedback (e.g., hockey, ringette). Although the intent behind selecting these sports was deliberate and in line with work by Jussim et al. (1992), which suggests ability feedback is most influential under these types of conditions, it may be worthwhile to examine the influence of these interactions in other sports that are performed under different conditions. For example, it would be interesting to know whether the impact of

RISE-enhancing behaviours would carry the same weight in sports like baseball where the opportunity to objectively judge one's performance may be much more pronounced considering every play ends with a "safe" or "out" call. In order to affirm the versatility of the coach-athlete interactions ascribed herein, future investigations in other sports are encouraged.

As a final comment, it should be noted that evidence supporting RISE as an influential construct in self-efficacy development has gained considerable momentum in the sport psychology literature. However, RISE perceptions may not be exclusive to relationships in the athletic domain and may be particularly salient within other interdependent relationships where partners' roles are clearly distinguished (e.g., parent-child, advisor-graduate student). Therefore, future research may consider exploring the determinants of RISE perceptions as they apply to members of critical relationships within other important domains.

5.5 CONCLUSIONS

This dissertation has advanced our understanding of the specific interpersonal sources that contribute to RISE as well as the metacognitive processes involved in the development of children's self-efficacy beliefs within a youth sport context. Further evidence supported the present approach to coaching education as being capable of improving coaches' perceptions toward adopting RISE-relevant behaviours into coaching practice. Although findings made

conceptual and practical contributions to existing research on RISE, there are several questions that remain unanswered.

Overall, it is important to note that the use of RISE-enhancing behaviours may already be occurring in youth sports to some extent. However, there may be a tendency for coaches to rely primarily on general forms of encouragement (e.g., "good job" or "you're doing great") or specific skill instructions, which are documented as sources of RISE in Study 1, but may not be sufficient for influencing RISE perceptions alone. Therefore, findings from this dissertation contend that young athletes may experience increases in RISE when coaches incorporate a variety of RISE-enhancing behaviours in a more structured and consistent manner.

Sport participation is a complex behaviour with a wide range of determining factors (Biddle, Atkin, Cavill, & Foster, 2011; Sallis, Prochaska, & Taylor, 2000). However, this dissertation shows children's self-efficacy beliefs can be influenced by personal as well as interpersonal experiences they have with their coaches and have been shown to contribute to the motivation and persistent effort that may be essential to initiating and maintaining sport participation (Feltz, Short, & Sullivan, 2008). Thus, youth sport coaches should be encouraged to learn and use appropriate RISE-enhancing techniques to enhance children's overall sport experience, which may lead them to view sport participation as a compelling opportunity to engage in physical activity and enjoy its associated

benefits (Eime, Young, Harvey, Charity, & Payne, 2013; Janssen & LeBlanc, 2010).

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APPENDIX A: STUDY 1 MATERIALS

Appendix A.1:
Athlete Background Information Questionnaire

INSTRUCTIONS: Please complete the following questions to provide us with some basic background information about you.

1) How many seasons have you been playing your sport (Check one):
   [ ] less than 1 season
   [ ] 1-5 seasons
   [ ] 6-10 seasons
   [ ] More than 10 seasons

2) Do you plan on playing your sport again next year (Check one):
   [ ] YES
   [ ] NO

3) How many seasons have you been playing for the same coach (Check one):
   [ ] first season
   [ ] 2 seasons
   [ ] 3 seasons
   [ ] 4 or more seasons

4) I play my sport at the _____ level (Check all that apply):
   [ ] house league
   [ ] select
   [ ] city rep
   [ ] other: _____

5) Do you play on any other organized sports teams?
   [ ] Baseball
   [ ] Soccer
   [ ] Basketball
   [ ] Ringette
   [ ] Other: _____

Appendix A.2
Interview Items

Interview items targeting sources of self-efficacy:

1. Can you tell me about a time you felt confident?
2. Are there certain times you feel more confident in your sport skills?
3. What kinds of things have happened to help your confidence grow

Interview items targeting sources of RISE:

4. How can you tell when your coach/instructor is confident in you?
5. What does your coach/instructor *say* to make you feel like s/he is more confident you?
6. What does your coach/instructor *do* to make you feel like s/he is more confident you?
7. Can you tell when your coach/instructor is confident in other players?
8. Finish this sentence: "I would feel like my coach truly believed in me if…"
9. How can you tell if your coach truly believes you can improve?

APPENDIX B: STUDY 2 MATERIALS

Appendix B.1
Athlete Background Information Questionnaire

PLEASE ANSWER THE FOLLOWING QUESTIONS:

1. **I am a…** (Check one):
   [ ] Boy
   [ ] Girl

2. **I am** _____ years old.

3. **The sport I am currently playing is** (Select one)**:**
   a. Hockey
   b. Basketball
   c. Soccer
   d. Other : _____

4. **I play my sport at the** _____ (Select one):
   a. House league level
   b. Rep level (e.g., A, AA, AAA)

Appendix B.2
Sport Feedback Pilot Survey

ANSWER THE FOLLOWING QUESTIONS BY PLACING A (✓) IN THE APPROPRIATE CIRCLE

○	= it is a **VERY GOOD WAY** to tell when your COACH is confident in you.
○	= it is an **OKAY WAY** to tell when your COACH is confident in you.
○	= it is **NOT A GOOD WAY** to tell when your COACH is confident in you.

During a regular **GAME:** *I can tell when my coach has confidence in me to do a skill or get better at it when s/he…*	**NOT a Good Way**	**OK Way**	**Very Good Way**
1) tells me to try my best and not to worry about winning or losing.	○	○	○
2) puts me *in* during important situations. (e.g. when the game is really close)	○	○	○
3) tells me that I can do it, even when I'm not so sure I can.	○	○	○
4) picks me to perform special tasks that not everyone gets to do.	○	○	○
5) smiles at me.	○	○	○
6) gives me the "you can do it" look.	○	○	○
7) gives me high fives/fist bumps.	○	○	○
8) takes the time to *show me* what I did wrong when I make a mistake.	○	○	○
9) tells me that s/*he believes* I can do well.	○	○	○
10) puts me up against other good players during games.	○	○	○
11) tells me that they are glad to have me on the team.	○	○	○

During a regular **PRACTICE:**
I can tell when my coach has confidence in me to do a skill, or get better at it when s/he…

12) works with me 1-on-1 so I can improve my weaker skills.
13) makes practice drills more challenging for *me*, but not the rest of the team.
14) gives me a thumbs up when I go in the game.
15) asks me to help my teammates when they are struggling with a skill.
16) asks me to demonstrate certain skills for my teammates.
17) tells me to keep working at a skill until I get it.
18) picks me to perform special tasks that not everyone gets to do.
19) gives me important tips on how to get better at my sport.
20) tells me that I can do it, even when I'm not so sure I can.
21) gives me the "you can do it" look.
22) gives me high fives/fist bumps.
23) takes the time to *show me* what I did wrong when I make a mistake.
24) tells me that s/*he believes* I can do well.
25) puts me up against other good players.

Appendix B.3
Coaching Behaviour Questionnaire

During a regular GAME:

1. **How often does my coach tell me to try my best and not to worry about winning or losing?**

O	O	O	O	O
1	2	3	4	5
Never	Once in a while	1 time per game	2-3 times per game	More than 3 times per game

2. **How often does my coach tell me that I can do it, even when I'm not so sure I can?**

O	O	O	O	O
1	2	3	4	5
Never	Once in a while	1 time per game	2-3 times per game	More than 3 times per game

3. **How often does my coach put me in at the more important positions?**

O	O	O	O	O
1	2	3	4	5
Never	Once in a while	1 time per game	2-3 times per game	More than 3 times per game

4. **How often does my coach take the time to ***show me*** what I did wrong when I make a mistake?**

O	O	O	O	O
1	2	3	4	5
Never	Once in a while	1 time per game	2-3 times per game	More than 3 times per game

5. **How often does my coach tell me that *he believes* I can do well?**

O	O	O	O	O
1	2	3	4	5
Never	Once in a while	1 time per game	2-3 times per game	More than 3 times per

game

6. **How often does my coach put me up against other good players during games?**

O	O	O	O	O
1	2	3	4	5
Never	Once in a while	1 time per game	2-3 times per game	More than 3 times per game

7. **How often does my coach tell me that he's glad to have me on the team?**

O	O	O	O	O
1	2	3	4	5
Never	Once in a while	1 time per game	2-3 times per game	More than 3 times per game

During a regular PRACTICE:

8. **How often does my coach take the time to ***show me*** what I did wrong when I make a mistake?**

O	O	O	O	O
1	2	3	4	5
Never	Once in a while	1 time per game	2-3 times per game	More than 3 times per game

9. **How often does my coach give me important tips to help me get better at my sport?**

O	O	O	O	O
1	2	3	4	5
Never	Once in a while	1 time per game	2-3 times per game	More than 3 times per game

10. **How often does my coach tell me that I can do it, even when I'm not so sure I can?**

O	O	O	O	O
1	2	3	4	5
Never	Once in a while	1 time per game	2-3 times per game	More than 3 times per game

11. **How often does my coach work with me to improve a skill?**

O	O	O	O	O
1	2	3	4	5
Never	Once in a while	1 time per game	2-3 times per game	More than 3 times per game

12. **How often does my coach <u>tell me</u> that *he believes* I can do well?**

O	O	O	O	O
1	2	3	4	5
Never	Once in a while	1 time per game	2-3 times per game	More than 3 times per game

13. **How often does my coach put me up against other good players?**

O	O	O	O	O
1	2	3	4	5
Never	Once in a while	1 time per game	2-3 times per game	More than 3 times per game

Appendix B.4
RISE items (Adapted from Jackson et al., 2013)

These statements focus on *you*, but we would like you to estimate (or guess) how confident **your coach is** in your sport abilities. We're NOT focusing on how confident you are; we're focusing on **whether you think <u>your coach is</u>** confident in you or not.

For example, you might not be all that confident yourself, but you might think that your coach has lots of confidence in you.

How confident do you think <u>YOUR COACH IS</u> in your ability at this moment in time to…
Answer each question by placing an "X" in the appropriate box.

1. **Try your hardest in every game?**

O	O	O	O	O
1	2	3	4	5
No Confidence at all	Low Confidence	Moderate Confidence	High Confidence	Complete Confidence

2. **Try your hardest in every practice?**

O	O	O	O	O
1	2	3	4	5
No Confidence at all	Low Confidence	Moderate Confidence	High Confidence	Complete Confidence

3. **Be physically fit enough to always perform well in your sport?**

O	O	O	O	O
1	2	3	4	5
No Confidence at all	Low Confidence	Moderate Confidence	High Confidence	Complete Confidence

4. **Be enthusiastic in your sport, even when the skill is hard or unfamiliar to you?**

O	O	O	O	O
1	2	3	4	5
No Confidence at all	Low Confidence	Moderate Confidence	High Confidence	Complete Confidence

5. **Learn all the skills you are taught, even the most difficult ones?**

O	O	O	O	O
1	2	3	4	5
No Confidence at all	Low Confidence	Moderate Confidence	High Confidence	Complete Confidence

6. **Carryout your coach's instructions at all times?**

O	O	O	O	O
1	2	3	4	5
No Confidence at all	Low Confidence	Moderate Confidence	High Confidence	Complete Confidence

7. **Perform all the skills you are taught in your sport?**

O	O	O	O	O
1	2	3	4	5
No Confidence at all	Low Confidence	Moderate Confidence	High Confidence	Complete Confidence

8. **Attempt all the skills required in your sport, even the hard or unfamiliar ones?**

O	O	O	O	O
1	2	3	4	5
No Confidence at all	Low Confidence	Moderate Confidence	High Confidence	Complete Confidence

9. **Practice and improve your sport skills?**

O	O	O	O	O
1	2	3	4	5
No Confidence at all	Low Confidence	Moderate Confidence	High Confidence	Complete Confidence

10. **Perform well whenever you play games?**

O	O	O	O	O
1	2	3	4	5
No Confidence at all	Low Confidence	Moderate Confidence	High Confidence	Complete Confidence

Appendix B.5
Self-efficacy items (Adapted from Jackson et al., 2013)

The following statements focus on your sport skills. There are no right or wrong answers; we would simply like you to **rate your own confidence** in your ability to perform in your sport.

How confident are <u>YOU</u> in your ability at this moment in time to…
Answer each question by placing an "X" in the appropriate box.

1. **Try your hardest in every game?**

O	O	O	O	O
1	2	3	4	5
No Confidence at all	Low Confidence	Moderate Confidence	High Confidence	Complete Confidence

2. **Try your hardest in every practice?**

O	O	O	O	O
1	2	3	4	5
No Confidence at all	Low Confidence	Moderate Confidence	High Confidence	Complete Confidence

3. **Be physically fit enough to always perform well in your sport?**

O	O	O	O	O
1	2	3	4	5
No Confidence at all	Low Confidence	Moderate Confidence	High Confidence	Complete Confidence

4. **Be enthusiastic in your sport, even when the skill is hard or unfamiliar to you?**

O	O	O	O	O
1	2	3	4	5
No Confidence at all	Low Confidence	Moderate Confidence	High Confidence	Complete Confidence

5. **Learn all the skills you are taught, even the most difficult ones?**

O	O	O	O	O
1	2	3	4	5
No Confidence at all	Low Confidence	Moderate Confidence	High Confidence	Complete Confidence

6. **Carryout your coach's instructions at all times?**

O	O	O	O	O
1	2	3	4	5
No Confidence at all	Low Confidence	Moderate Confidence	High Confidence	Complete Confidence

7. **Perform all the skills you are taught in your sport?**

O	O	O	O	O
1	2	3	4	5
No Confidence at all	Low Confidence	Moderate Confidence	High Confidence	Complete Confidence

8. **Attempt all the skills required in your sport, even the hard or unfamiliar ones?**

O	O	O	O	O
1	2	3	4	5
No Confidence at all	Low Confidence	Moderate Confidence	High Confidence	Complete Confidence

9. **Practice and improve your sport skills?**

O	O	O	O	O
1	2	3	4	5
No Confidence at all	Low Confidence	Moderate Confidence	High Confidence	Complete Confidence

10. **Perform well whenever you play games?**

O	O	O	O	O
1	2	3	4	5
No Confidence at all	Low Confidence	Moderate Confidence	High Confidence	Complete Confidence

APPENDIX C: STUDY 3 MATERIALS

Appendix C.1
Demographics and Background Coaching Questionnaire

1. What is your **age**? _____ years.

2. 2. **Sex** (please circle): Male / Female / Not specified

3. How long have you been coaching? _____ seasons

4. Approximately **how many** athletes are you typically responsible for during a single practice? _____

5. How old are the majority of the athletes you coach?
   a) Under 7
   b) 8-12
   c) 13-18
   d) 19 and over

6. Amount of coach training (Please be specific):
   a) No training
   b) Some informal training

Formal Training: (please specify) e.g., NCCP level:_____

Appendix C.2
Sport Coaches' Beliefs Questionnaire (Baseline)

For the following questions, please indicate how strongly you agree or disagree with the statement on a scale from strongly disagree, 1, to strongly agree, 7.

Note:- In this context, **verbal feedback** refers to the types of things you *say* or statements you direct toward your athletes whereas **non-verbal feedback** refers to the ways you interact with your athletes without using your words (e.g., facial expression, body language, etc.)

At this point in time:

To what extent do you think providing **verbal feedback** helps kids develop confidence in their skiing abilities?	1	2	3	4	5	6	7
To what extent do you think providing **non-verbal feedback** helps kids develop confidence in their skiing abilities?	1	2	3	4	5	6	7

Effectively communicating confidence in my athletes abilities would:

make them **feel more confident** in their own abilities.	1	2	3	4	5	6	7
motivate them to attempt things they haven't done before.	1	2	3	4	5	6	7
make them **try harder** when they attempt difficult tasks.	1	2	3	4	5	6	7
help them **keep trying harder** when they are practicing difficult skills.	1	2	3	4	5	6	7
make them feel **less anxious** about performing difficult tasks.	1	2	3	4	5	6	7
enhance the impact of my instructions (as a coach).	1	2	3	4	5	6	7
improve my relationship with them (as a coach).	1	2	3	4	5	6	7

For the following questions, please rate your knowledge on a scale from Not very knowledgeable at all, 1, to Very knowledgeable, 7.

To what extent are you knowledgeable about:

the best things to **say** in order to effectively communicate your confidence in your athletes	1	2	3	4	5	6	7

abilities?							
best things to **do** in order to effectively communicate your confidence in your athletes abilities?	1	2	3	4	5	6	7
the best **times/situations** to effectively communicate your confidence in your athletes abilities during training sessions or competitions?	1	2	3	4	5	6	7
the best ways to effectively **tailor your feedback** to different athletes?	1	2	3	4	5	6	7

For the following questions, please rate your confidence on a scale from Not confident at all, 1, to Completely confident, 7.

How confident are you in your ability to:

use **verbal feedback** to effectively communicate your belief in your athletes' abilities?	1	2	3	4	5	6	7
use **non-verbal feedback** to effectively communicate your belief in your athletes' abilities?	1	2	3	4	5	6	7
effectively communicate your belief in your athlete's abilities during **every** training session/competition?	1	2	3	4	5	6	7
communicate your belief in your athletes' abilities **in a way that seems genuine**?	1	2	3	4	5	6	7
identify appropriate situations for which to communicate your belief in you athletes abilities?	1	2	3	4	5	6	7
effectively communicate your belief in your athletes abilities **in your particular sport**.	1	2	3	4	5	6	7
make a detailed plan to effectively communicate your belief in your athletes abilities.	1	2	3	4	5	6	7

If you do **NOT** want to have your answers included in the study, please check this box → ❑

Appendix C.3

Sport Coaches' Beliefs Questionnaire (Post-Phase 1)

For the following questions, please indicate how strongly you agree or disagree with the statement on a scale from strongly disagree, 1, to strongly agree, 7.

Note:- In this context, **verbal feedback** refers to the types of things you *say* or statements you direct toward your athletes whereas **non-verbal feedback** refers to the ways you interact with your athletes without using your words (e.g., facial expression, body language, etc.)

At this point in time:

To what extent do you think providing **verbal feedback** helps kids develop confidence in their skiing abilities?	1	2	3	4	5	6	7
To what extent do you think providing **non-verbal feedback** helps kids develop confidence in their skiing abilities?	1	2	3	4	5	6	7

Effectively communicating confidence in my athletes abilities would:

make them **feel more confident** in their own abilities.	1	2	3	4	5	6	7
motivate them to attempt things they haven't done before.	1	2	3	4	5	6	7
make them **try harder** when they attempt difficult tasks.	1	2	3	4	5	6	7
help them **keep trying harder** when they are practicing difficult skills.	1	2	3	4	5	6	7
make them feel **less anxious** about performing difficult tasks.	1	2	3	4	5	6	7
enhance the impact of my instructions (as a coach).	1	2	3	4	5	6	7
improve my relationship with them (as a coach).	1	2	3	4	5	6	7

For the following questions, please rate your knowledge on a scale from Not very knowledgeable at all, 1, to Very knowledgeable, 7.

To what extent are you knowledgeable about:

the best things to **say** in order to effectively communicate your confidence in your athletes	1	2	3	4	5	6	7

abilities?							
best things to **do** in order to effectively communicate your confidence in your athletes abilities?	1	2	3	4	5	6	7
the best **times/situations** to effectively communicate your confidence in your athletes abilities during training sessions or competitions?	1	2	3	4	5	6	7
the best ways to effectively **tailor your feedback** to different athletes?	1	2	3	4	5	6	7

For the following questions, please rate your confidence on a scale from Not confident at all, 1, to Completely confident, 7.

How confident are you in your ability to:

use **verbal feedback** to effectively communicate your belief in your athletes' abilities?	1	2	3	4	5	6	7
use **non-verbal feedback** to effectively communicate your belief in your athletes' abilities?	1	2	3	4	5	6	7
effectively communicate your belief in your athlete's abilities during **every** training session/competition?	1	2	3	4	5	6	7
communicate your belief in your athletes' abilities **in a way that seems genuine**?	1	2	3	4	5	6	7
identify appropriate situations for which to communicate your belief in you athletes abilities?	1	2	3	4	5	6	7
effectively communicate your belief in your athletes abilities **in your particular sport**.	1	2	3	4	5	6	7
make a detailed plan to effectively communicate your belief in your athletes abilities.	1	2	3	4	5	6	7

For the following questions, please rate your intentions on a scale from Not true at all, 1, to Very true, 7.

At this point in time:

I intend to use **verbal feedback** to effectively communicate my confidence in my athletes' skiing abilities in the future.	1	2	3	4	5	6	7
I intend to use **non-verbal feedback** to effectively communicate my confidence in my athletes' skiing abilities in the future.	1	2	3	4	5	6	7
I plan on communicating my confidence in my athletes' skiing abilities **during every training session/competition** in the future.	1	2	3	4	5	6	7

If you do **NOT** want to have your answers included in the study, please check this box → ❑

Appendix C.4
Sport Coaches' Beliefs Questionnaire (Post-Phase 2)

For the following questions, please indicate how strongly you agree or disagree with the statement on a scale from strongly disagree, 1, to strongly agree, 7.

Note:- In this context, **verbal feedback** refers to the types of things you *say* or statements you direct toward your athletes whereas **non-verbal feedback** refers to the ways you interact with your athletes without using your words (e.g., facial expression, body language, etc.)

At this point in time:

To what extent do you think providing **verbal feedback** helps kids develop confidence in their skiing abilities?	1	2	3	4	5	6	7
To what extent do you think providing **non-verbal feedback** helps kids develop confidence in their skiing abilities?	1	2	3	4	5	6	7

Effectively communicating confidence in my athletes abilities would:

make them **feel more confident** in their own abilities.	1	2	3	4	5	6	7
motivate them to attempt things they haven't done before.	1	2	3	4	5	6	7
make them **try harder** when they attempt difficult tasks.	1	2	3	4	5	6	7
help them **keep trying harder** when they are practicing difficult skills.	1	2	3	4	5	6	7
make them feel **less anxious** about performing difficult tasks.	1	2	3	4	5	6	7
enhance the impact of my instructions (as a coach).	1	2	3	4	5	6	7
improve my relationship with them (as a coach).	1	2	3	4	5	6	7

For the following questions, please rate your knowledge on a scale from Not very knowledgeable at all, 1, to Very knowledgeable, 7.

To what extent are you knowledgeable about:

the best things to **say** in order to effectively communicate your confidence in your athletes	1	2	3	4	5	6	7

abilities?							
best things to **do** in order to effectively communicate your confidence in your athletes abilities?	1	2	3	4	5	6	7
the best **times/situations** to effectively communicate your confidence in your athletes abilities during training sessions or competitions?	1	2	3	4	5	6	7
the best ways to effectively **tailor your feedback** to different athletes?	1	2	3	4	5	6	7

For the following questions, please rate your confidence on a scale from Not confident at all, 1, to Completely confident, 7.

How confident are you in your ability to:

use **verbal feedback** to effectively communicate your belief in your athletes' abilities?	1	2	3	4	5	6	7
use **non-verbal feedback** to effectively communicate your belief in your athletes' abilities?	1	2	3	4	5	6	7
effectively communicate your belief in your athlete's abilities during **every** training session/competition?	1	2	3	4	5	6	7
communicate your belief in your athletes' abilities **in a way that seems genuine**?	1	2	3	4	5	6	7
identify appropriate situations for which to communicate your belief in you athletes abilities?	1	2	3	4	5	6	7
effectively communicate your belief in your athletes abilities **in your particular sport**.	1	2	3	4	5	6	7
make a detailed plan to effectively communicate your belief in your athletes abilities.	1	2	3	4	5	6	7

For the following questions, please rate your intentions on a scale from Not true at all, 1, to Very true, 7.

At this point in time:

I intend to use **verbal feedback** to effectively communicate my confidence in my athletes' skiing abilities in the future.	1	2	3	4	5	6	7
I intend to use **non-verbal feedback** to effectively communicate my confidence in my athletes' skiing abilities in the future.	1	2	3	4	5	6	7
I plan on communicating my confidence in my athletes' skiing abilities **during every training session/competition** in the future.	1	2	3	4	5	6	7

If you do **NOT** want to have your answers included in the study, please check this box → ❑

APPENDIX D: COPYRIGHT PERMISSIONS

Appendix D.1

Permission to include figure of Lent & Lopez (2002) Tripartite model of relational efficacy beliefs (Chapter 1)

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