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How Competitive and Cooperative Tasks Impact Adolescents' Social Behaviours and Post-Task Evaluations

by

Allison Diane Kates

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Abstract

This study compared the prosocial and negative behaviours of eighth grade students across a competitive and a cooperative task, as well as their post-task evaluations of themselves and their task partners. A total of 29 female *dyads* and 25 male *dyads* participated. When *dyads* were the unit of analysis, a repeated measures ANOVA revealed a task x sex interaction, where females demonstrated more prosocial behaviours in the competitive task and males demonstrated more prosocial behaviours in the cooperative task. Regarding negative behaviours, it was found that all dyads showed more negative behaviours in the competitive task. The *individual* was the unit of analysis when examining post-task evaluations. Moderate correlations emerged between post-task evaluations and observed behaviours. Limitations and implications are discussed.

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CHAPTER 1

Introduction

Overview of Issue

From early on, children experience situations in their day-to-day lives that could be characterized as competitive or cooperative. Early experiences with siblings may provide these contexts, and surely by school age and adolescence, classroom experiences are bound to expose students to situations or tasks marked by competition and cooperation. In fact, competition and cooperation are arguably significant parts of every day life.

Children and adolescents' growing social competence may be best described in terms of being able to successfully navigate a myriad of social situations. Researchers have called for an increasing emphasis on children's and adolescents' social goals within school curriculum, in addition to the existing cognitive/academic goals (Branco, 2001; Green & Rechis, 2006). Learning appropriate ways of responding to peers in varying settings is a worthy educational goal, particularly as peer relationships take on increasing importance in the lives of adolescents (Hartup, 1983). As autonomy increases throughout adolescence, and the majority of adolescents' time is spent at school with peers, the peer group becomes increasingly important to the development of identity and social behaviour (Hartup, 2001). It is also important to recognize how social competence, and the subsequent display of social behaviours, may differ for students (Green & Rechis). In particular, there has been a great deal of research that has focused on how male and female students conduct their behaviour in competitive and cooperative situations.

Different theories suggest why males and female differ in their displays of social behaviour. These range from biologically based differences, to direct and vicarious learning, to adolescents actively seeking social experiences and translating knowledge into action that shapes ensuing behaviours. Taking an integrated view of how and why males and females display social behaviours, the present study considers the influence of psychobiological and co-constructivist perspectives to understanding social behaviours, but draws more heavily from social cognitive and social information processing theories.

Recently, researchers have suggested that examining adolescents' behaviours in limited resource tasks is one way of determining how critical prosocial and negative behaviours can be in navigating social encounters (Green & Rechis, 2006). By assigning social tasks to adolescents with instructions that create a context of competition or cooperation, adolescents' prosocial and negative behaviours can be assessed. Through direct and relatively unobtrusive observation of the behaviours that are produced in these different contexts, we may glean important information regarding adolescents' social interaction.

Present Study

Building on previous research in the area, this study aims to answer the question, "How do male and female adolescents differ in their observed prosocial and negative behaviours when given social tasks that are competitive and cooperative?" and "How do these observed behaviours relate to the adolescents' post-task evaluations of themselves and their task partners?"

The present study was designed to explore these questions with the use of direct observational methods. Junior high school students worked in dyads and were presented

with novel social tasks that were designed to create contexts of competition and cooperation. The tasks were videotaped and the behavioural displays were later examined for differences between the two tasks as well as differences between males and females.

At the end of each task, each participant was interviewed to assess self-evaluations of how he/she did in task, how helpful he/she was, and how cooperative he/she was. Students were asked individually to evaluate their partners on the same dimensions. This information was correlated with the frequency of the prosocial and negative behaviours observed via videotape during the task.

The ways in which students respond to each other (e.g., with negativity, engagement, or affirmation) in different scenarios and how they evaluate the interaction (post-task evaluations of self and partner) may be important for understanding adolescents' social knowledge. A gap in the research in this area is determining whether adolescents gauge their post-task evaluations of themselves and their partners in a manner consistent with their observed behavior. For example, when adolescents are observed engaging in negative behaviours, do they perceive themselves as unhelpful or helpful? How are their partners evaluated? In a sense, looking at evaluations of self and other will provide this field of research with a unique angle in understanding adolescents' social processing.

CHAPTER 2

Literature Review

Peer interactions offer children and adolescents different opportunities to practice a variety of social strategies and skills (Menesini, Melan, & Pignatti, 2000). The ability to read social situations and adapt behaviours accordingly is a critical life tool, and a significant element of developing social competence (Rose-Krasnor, 1997). Social competence has been defined as an individual's effectiveness in social interactions, which depends on self-perspectives as well as other perspectives (Rose-Krasnor). For example, individuals who can successfully meet their own social needs and goals, while effectively maintaining positive relationships, are considered socially competent. Evidently, social competence is a broad and complex construct, but it has been suggested that children and adolescents' social competence is best assessed in relation to specific situations or social tasks (Garber & Kaminski, 2000; McFall, 1982; Menesini et al., 2000; Rinaldi, 2002; Rose & Asher, 1999). Through school activities, sports, academics, as well as in social gatherings, adolescents are often in situations that call for a variety of social behaviours.

This section will review several psychological theories that provide conceptual frameworks for thinking about how and why adolescents demonstrate prosocial and negative behaviours in social contexts. A brief review of psychobiological, co-constructivist, social cognitive, and social information processing theories are provided with a focus on how they relate to adolescents' prosocial and negative behaviours within different contexts.

Theories of Social Development

Psychobiological

The psychobiological perspective draws on biological and evolutionary ideas and applies them to behaviour. Early on, questions abounded about the extent to which nature or nurture influenced behaviour and psychological functioning; however, the modern perspective centers more on how genes and environmental contexts interact in a reciprocal or bidirectional way, not on how much each contributes separately (Bjorklund & Pellegrini, 2002; Pike, 2002).

From this perspective, sex differences emerge because of our early ancestors' need for different sex roles to ensure survival (Bjorklund & Pellegrini, 2002). For example, adult males would have to hunt for food or fight to protect their young, whereas adult females were primarily focused on being caretakers. Over time, natural selection favoured these traits which are today seen early in life through differences in how children play (Bjorklund & Pellegrini). Boys tend to be more physical and rough in their play while girls show more behaviours that enact caregiving (Bjorklund & Pellegrini). These authors argue that the fact that males are more aggressive at all ages, in all cultures, and particularly during their peak reproductive ages is support for the argument that natural selection has favoured the expression of some negative (i.e., aggressive) and risky behaviours. These behaviours have helped ensure that the males survive, reproduce and have their genes passed on to offspring. Maccoby (2000) supports this view, stating that competitive and dominant behaviours seen in males harkens back to behaviours males used to acquire mates. Female displays of responsiveness and prosocial behaviours is said to come from their ancestral roles as supporters of the social group and primary

caregiver (Maccoby). The presence of similar behaviours seen in non-human species also supports the psychobiological perspective of social development (Bjorklund & Pellegrini). A modern extension of this theory is that females are also competitive in ways that differ from males, but may serve to secure a mate and help ensure reproduction. Specifically, females may tend to show their competitiveness or aggression through their social relationships (Crick & Grotpeter, 1995).

According to the psychobiological perspective, the "when" and "how" of behaviours being enacted is determined by a cost-benefit analysis of sorts. Prosocial or negative behaviours will be displayed if the individual determines that there is greater benefit than cost to displaying that behaviour (Bjorklund & Pellegrini, 2002; Charlesworth, 1996). For example, while it may seem that helping another person in some way benefits that individual rather than oneself, it is argued that the benefit comes from the fact that such prosocial acts are likely to be reciprocated in the future. Similarly, aggression towards another person is likely to invite aggression from others in the future. This idea is similar to social exchange theories, which propose that relationships are reciprocal and equivalent, and that social behaviours result from the drive to maximize rewards and minimize costs (Green & Rechis, 2006).

Recently, researchers have begun to focus on how the conditions of the environment provided by peers and other individuals can greatly influence what may be biologically predisposed (Harris, 1995; Maccoby, 2000). Harris (1995) suggests that it makes evolutionary sense that peer groups would become highly influential as children develop into adolescents because it is with peers that individuals will ultimately reside, work, and interact. Seeking and establishing social relationships not only shapes social

development, but helps ensure mate selection and reproduction. With the focus turning towards environmental influences, other theories of social development become increasingly important.

Co-Constructivism

It has been suggested that childhood and adolescence are distinct phases of development that are, in fact, social constructions because these developmental periods are not universal and vary greatly across cultures (Jenks, 2002). The co-constructivist perspective integrates relational, contextual, and subjective elements of a situation when considering social development and social goals (Branco, 2001). School activities provide adolescents with all three aspects of the co-constructivist perspective, making it a relevant framework to consider. For example, working with a peer provides the relational aspect and recognizes the bidirectional, reciprocal influence that comes from student-to-student interaction (Branco). The contextual aspect centers around characteristics of a situation, be it competitive or cooperative. The subjective aspect concerns the intraindividual factors such as motivation, individual social goals and of course, how the individual interprets situational cues and modifies behaviour accordingly. The individual's perspective on the situation is an important aspect of this theory, indicating that perspectives differ among individuals in the same situation.

With these factors in mind, the co-constructivist perspective argues in support of the idea that competition and cooperation are elements of a "continuous dynamic that reflects specific states of coordination of individuals' goal orientations as they interact with each other" (Branco, 2001, p.110). When considering competition and cooperation in this way, it is varying rules applied to each situation that establishes how individuals

display behaviours (Branco). Finally, this theoretical approach views the individual as an active participant in his or her social experiences (Jenks, 2002). In this way, the reciprocal influence between peers is an important element to consider.

Social Cognitive

A very prominent theory of social development, social learning theory, first developed out of early behaviourist positions that stated behaviours are learned via conditioning and contingencies, which then evolved into social cognitive theory which encompasses environmental components as well as internal cognitive processes to describe how behaviours are learned (Eisenberg & Fabes, 1998; Golombok & Hines, 2002; Maccoby, 2000). Bandura's social cognitive theory suggests that people are "producers as well as products of social systems" (Bandura, 2001, p. 266). Bandura's theory of triadic reciprocal determinism proposes that there is mutual influence between an individual's characteristics (e.g., the person's cognition, affective state, and biological make-up), his or her behavior, and the environment (Muuss, 1996). An individual's behavior is therefore determined by the influences of personality as well as the environment; and both are subsequently influenced by his or her behavior.

A good example of how social interaction patterns are learned is illustrated using the four subfunctions of Bandura's theory of observational learning (Bandura, 1986, 2001). The first subfunction is one's attention processes. Different people attend to different aspects of any given situation, depending upon an individual's cognitive skills, preconceptions, and values, and also the personal relevance of the model's actions, its salience, and the attractiveness of the situation and its outcomes (Bandura, 2001). The second subfunction is the cognitive representational stage where the individual must

actively take in the information presented by the model and encode it into memory through, for example, cognitive rehearsal (Bandura, 2001). Upon observing a peer's "win" in a competitive situation (e.g., gaining access to some type of reward), the peer who "lost" may strive to remember the strategies employed by the winning peer and may be likely to remember and employ these tactics in the future. The third subfunction is behavioral production. This is when action occurs. The behavior is reproduced by the observer and is subsequently modified in order to "achieve close correspondence between conception and action" (Bandura, 2001, p. 272). Research has shown that from early on, children model prosocial behaviour that is demonstrated by parents (Eisenberg & Fabes, 1998). Specifically, it has been found that when mothers model helping behaviours, children are in turn more likely to help their mothers with household tasks (Rheingold, 1982). Skills that children and adolescents learn in the context of family relations are expected to transfer to other social relations (peer, teacher, community, etc), and as children mature, the importance and significance of peer relations becomes more apparent (Hartup, 1983). Research has found that peers respond in a reinforcing manner to other peers who demonstrate prosocial behaviour (Eisenberg & Fabes).

The fourth subfunction of Bandura's theory is the motivational processes. Bandura explains that there is a fundamental difference between the acquisition and performance of a behavior, whereby an individual can *learn* a behavior, but never actually *perform* the behavior. If an adolescent is sufficiently motivated toward some outcome, he or she is more likely to use a behavior that he or she saw was effective in the past. Bandura describes three motivational forces: direct, vicarious, and self-produced. Direct motivation would be doing something to receive a valued outcome (e.g., winning

in a task); vicarious motivation results from seeing a model be reinforced for an action or experiencing success (e.g., seeing peer win a task and receive positive outcomes); self-produced motivation would be acting in a way that is self-satisfying and gives the individual a sense of worth (e.g., fulfilling a need for achievement through completion of a task, regardless of how well peers do).

In accordance with Bandura's theory, skills and behaviors can be learned and maintained within the context of various relationships, and most certainly through peer interactions. Parents are seen as only one source of social development. Most children's first socialization experiences occur with their parents, with the parent-child relationship being a naturally salient model for social interaction and social problem-solving skill development (Ladd & Pettit, 2002). Early on, parents may reinforce different behaviours in boys and girls, and children may identify with and model behaviours of their same-sex parent (Golombok & Hines, 2002; Maccoby, 2000). As children enter into adolescence, other influences like peers begin to play a larger role in social development. Even more broadly, gender stereotypes portrayed in media and society can have increasingly significant effects on behaviour differences between males and females (Bandura, 2001; Coie & Dodge, 1998). When considering the effects of violence on TV, cross-cultural studies have shown how robust the influence is on behaviours of both males and females (Coie & Dodge). With the availability of many sources of social information and behavioural models to identify with, children and adolescents are active participants in their social experiences.

Recently, researchers have described how competitive situations are inherently comparative, and how social comparisons can be influenced by situational cues (Stapel &

Koomen, 2005). The information derived from these social comparisons influences individuals' self-perceptions, emotions, and behaviours. Cooperative and competitive situational cues can lead to either upward or downward comparisons depending on the individuals' mindset in the situation (Stapel & Koomen). One way of examining how these social comparisons play out is to consider them from a social information processing perspective, which is complementary to the social cognitive theory perspective (Coie & Dodge, 1998).

Social Information Processing

Social information processing theory is a more modern extension of social cognitive theory, and integrates cognitive-developmental and problem-solving theories (Coie & Dodge, 1998). An individual's mindset in a situation can be viewed as a product of both intrapersonal (e.g., biological limitations) and interpersonal (e.g., reciprocal influence of peer interaction) elements (Crick & Dodge, 1994). As these elements interact, an individual's behaviours within a social setting change over time, as if behaviours were the output of a social-cognitive feedback loop. This suggests a certain amount of flexibility on the part of the child. Adolescents who can modify their behaviours in response to situation-specific demands or in response to different goals of situations are using feedback from the others and the context to make those adaptations (Richard, Fonzi, Tani, Tassi, Tomada, & Schneider, 2002). In this way, social information processing theory becomes an appropriate theoretical perspective for understanding how situation-specific elements such as competition and cooperation ultimately influence social competence.

Crick and Dodge's (1994) theory of social information processing captures the importance of situational effects on social behaviors. Six steps are involved this theory. Steps one and two encompass the encoding and interpretation of social cues (e.g., attending, interpreting, and attributions). Step three involves the individual setting a goal for the situation. Step four is where the individual recalls possible responses to a situation, or generates a new response if he or she is in a novel situation. Individuals then evaluate their possible responses (step five) and select a behavior. Finally, the individual acts out whatever response he or she has chosen (step six). Individuals cycle through the steps, accessing a cognitive database of memories, schemata, and social knowledge at each or any step.

Naturally, adolescents' social behavior is expected to vary according to the situations in which the interactions take place. Classrooms, for example, often employ peer tutoring, cooperative learning, peer-to-peer dialogue, and other paired activities; sports or academics can present students with situations or tasks that are either competitive or cooperative (or both). Studies on the influence of context on students' social behaviors suggest that a competitive context, a highly active context, and an aversive context all may promote aggression between participants (De Rosier, Cillessen, Coie, & Dodge, 1994). Certainly, it can be argued that aspects of an adolescent's behavior are inherent to the individual (e.g., tendency toward aggression; see Coie & Dodge, 1998), but it is imperative that situational factors be considered as a strong influence on adolescents' behavior (Eisenberg & Fabes, 1998; Hubbard, Dodge, Cillessen, Coie, & Schwartz, 2001). In her review of the literature, Rose-Krasnor (1997) points out that limiting research to a simple evaluation of social skills negates the

influence of the context, particularly in terms of how behaviours emerge as a product of an interaction between individuals. By studying pairs of adolescents using direct observation methods, it may be possible to more fully glean the effects of these situational, reciprocal effects.

Integrating Theoretical Perspectives

The theoretical perspectives described thus far explain how different behaviours develop and how some gender differences emerge as well. The present study does not employ any direct measures of biological factors that may contribute to behaviour or to differences between males and females. Nevertheless, it is important to keep the psychobiological perspective in mind because of the types of behaviours that have been naturally selected for across generations and also how different hormones and neurotransmitters can influence behaviour (Eisenberg & Fabes, 1998). The psychobiological point of view reminds us that much human behaviour may be predisposed, but requires certain environmental "triggers" to be displayed.

With this in mind, the present study draws heavily from more social-cognitive and environmental theories. Social cognitive theory presented four subfunctions. The ones most related to the present study include the behavioural production subfunction, where observable, measureable action occurs. The attentional and cognitive representation subfunctions inform this study in terms of the influence each partner has on the other. One participant may be paying close attention to how his or her partner is behaving and commit it to memory with the possibility of enacting the same or similar behaviours in a later interaction during the task. Similarly, the social information processing theory is well-suited to the current project. In this study, adolescents were presented with novel

social tasks that have been designed to have characteristics of either competition or cooperation. At the end of each task, the adolescents participated in an interview and information on their post-task perspectives of themselves and their partners was collected (corresponding to steps one and two of the social information processing model; encoding and interpretation of cues). This information was compared to a frequency of prosocial and negative behaviours observed via videotape during the task (corresponding to step six of the model; behavioral enactment).

Maccoby (2000) argues that it is important to combine some of the traditional theories while keeping in mind a broader ecological perspective. Traditionally, the ecological perspective has examined research on animals from an evolutionary standpoint; however, when applied to human behaviour, ecologists focus on *situations.* In this way, the present study uses aspects of various theories of social development to provide a guiding framework for understanding adolescents' social behaviours, the influence within a dyad, and the effects of the setting. Drawing from the co-constructivist view, this study shares the importance placed on the reciprocal influence of participants within a competitive or cooperative context, and also incorporates the individuals' perspective. Thus, the rules of a social task, the people present, varying attentional processes and cognitions, and past schema for behaviour combine to evoke the prosocial and negative behaviours that are observed in this study.

Prosocial and Negative Behaviours

Adolescents' social behaviour is comprised of both prosocial and negative displays of both motor and verbal behaviour (Coie & Dodge, 1998; Crick, Bigbee, Howes, 1996). Previous research in the area of social development has helped to define a

range of behaviours that commonly characterize positive and negative interactions (e.g., Bergin, Talley, & Hamer, 2003; Brody, Stoneman, & Wheatley, 1984; Deutsch, 2006; Eisenberg & Fabes, 1998; Jackson & Tisak, 2001). Psychological research has long focused on correlates and predictors of adolescents' prosocial and negative behaviours, with particular emphasis on the latter. This next section will review research related specifically to operational definitions of prosocial and negative behaviours.

Prosocial Behaviour

Definitions of prosocial behaviours vary in the literature. Greener and Crick (1999) reviewed some of the definitions that have been used in previous studies, such as "voluntary, intentional behavior that results in benefits for another person" (p.349). Jackson and Tisak (2001) define prosocial behaviour as "any action that, as it happens, benefits others, or promotes harmonious relations with others, even if there is no sacrifice on the actor's part and even if there is some benefit to the actor" (p.349). Researchers contend that past studies often use a limited range of behaviours to categorize as prosocial behaviour, primarily helping and sharing (Greener & Crick; Jackson & Tisak). Other studies have included cooperating, comforting, and caring (Eisenberg & Mussen, 1989; Jackson & Tisak). In a unique approach to determining what constitutes prosocial behaviours, Bergin and colleagues (2003) asked young adolescents to report on what they consider to be "positive social behaviour" (p.16). Adolescents described prosocial behaviours as being comprised of both overt and relational behaviours. Examples of overt prosocial behaviours included: helping, providing physical assistance, and sharing, which are similar to other researchers' definitions of prosocial behaviours (see Greener & Crick for a review). Adolescents' examples of relational prosocial behaviours included:

providing emotional support, complimenting and encouraging, and expressing happiness. Finally, it has been suggested that social engagement is a relevant, but often overlooked, component of prosocial behaviour (Fernandez de Los Santos, 2005). Social engagement includes friendly discourse and engaging in humor, and is considered prosocial because these behaviours can be seen as way of making one's partner feel at ease in a stressful situation, or as a way of including someone in an activity.

Prosocial behaviours for the current study include: *social engagement* that is either task-related or of a personal nature, *provision of emotional support* such as encouraging or complimenting, *positive self-talk*, *positive general talk* such as statements about liking the task or having fun, *helping* - whether in response to a request for help or simply offering assistance, *sharing* resources or facilitating access to resources, and *cooperation* within the task. Full operational definitions are provided in Table 1.

Table 1

Operational definitions of behaviour

Prosocial Behaviours	Definition
Social engagement	General verbal interactions during which there is no negativity including small talk, self-disclosure, sharing of personal thoughts or stories, good-natured humour (e.g., "So, what class are you missing right now?", "I usually don't buy CDs, I just burn them.")
Provision of emotional support	Provision of encouragement and compliments (e.g., "Wow, you're cruising!")
Positive self talk	Compliments self, is proud of self (e.g., "I'm pretty good at KNEX.", "I'm doing good so far.")
Positive general talk	When participant makes positive general comments pertaining to the activity, or things in general (e.g., "This is so cool!")
Helping	The offer and/or provision of physical assistance (e.g., participant puts together a part of the model for his/her partner) or advice/information (e.g., participant explains how the KNEX pieces attach).
Sharing	Giving up a personal resource (e.g., giving partner a KNEX piece) or facilitating access to a resource (e.g., positioning the instructions such that his/her partner has an equally good view).

Table 1 (continued).

Operational definitions of behaviour

Prosocial Behaviours	Definition
Cooperation	Coordinating efforts to achieve a mutual goal (e.g., each participant is having difficulty building a part of the model so the dyad works together to figure out how to build the part).
Negative Behaviours	**Definition**
Negative verbal behaviour	When participant threatens, teases, insults, engages in sarcasm, name-calling, yelling, protesting, or cockiness (e.g., "You are so dumb!", "Duh! Hello!! Is anyone home?")
Negative general talk	When participant uses negative language that is not directed towards other partner but is of a derogatory or negative nature; a general negative attitude (e.g., "This is so stupid!", "This damn thing isn't working.")
Negative self talk	Negative talk about oneself that could be task-related or general self-derogatory comments (e.g., "I'm not doing very well," "I suck at this.")
Negative Physical	Hitting, pushing, grabbing objects away from one's partner, or throwing pieces.
Sulking	Nonverbal (e.g., heavy sighing) and verbal (e.g., whining) expressions of frustration or disappointment.

Negative Behaviour

In contrast to prosocial behaviours, negative behaviours are often referred to in the literature as aggression or antisocial behaviours (Coie & Dodge, 1998). The behaviours that are encompassed by the term "aggression" exist along a continuum of severity. The behaviours can range from being disruptive in the classroom to delinquent acts and serious violence (Coie & Dodge). While is has been shown that frequency of aggression is highest among toddlers, aggression displayed in adolescence and young adulthood is the most dangerous (Coie & Dodge). Moreover, the discrepancy between males and females frequencies of aggressive displays increases throughout development, with females outgrowing their displays of overt aggression earlier than males (Coie & Dodge). The less severe behaviours are the focus of the present study, particularly the types of negative behaviours that are likely to occur on a daily basis between peers, which are not necessarily disruptive to the entire class. What is missing in the literature in this area is this view of the day-to-day types of interactions that occur between peers (Coie & Dodge).

With varying definitions of aggression in the literature, the common features include (1) feelings of anger and (2) an intention to hurt or harm (Crick, Bigbee, & Howes, 1996). Furthermore, researchers have posited that aggression can be further understood as either bullying or instrumental aggression (Coie & Dodge, 1998). Bullying involves actions that attempt to establish one's interpersonal dominance over another, whereas instrumental aggression features behaviours directed at goals such as object possession (Coie & Dodge). As previously mentioned, Crick and Grotpeter (1995)

introduced the concept of relational aggression, where feelings of anger and the focus of harm are directed at interpersonal relationships and social exclusion.

It has been said that experiencing frustration primes an individual for aggression due to the arousal of anger within that individual (Coie & Dodge, 1998). Crick and colleagues (1996) asked young adolescents open-ended questions to elicit their thoughts on what boys and girls do when they are mad at someone. Content analysis of the participants' responses revealed the following categories: physical aggression (e.g., hitting, kicking), verbal threats (e.g., threatening to beat up a peer), verbal insults (e.g., making fun of a peer), nonverbal aggression (e.g., rolling eyes), relational aggression (e.g., excluding a peer from a group), telling (e.g., involving a teacher in a dispute), and avoidance (e.g., walking away or doing nothing).

The perspective of this study is that negative behaviours have many features and include both interpersonal and noninterpersonal aspects. The competitive task used in this study presents students with limited resources, which is likely to elicit frustration. This in turn may be displayed aggressively, which is termed 'negative behaviours' in the current study. Specifically, the negative behaviours observed in this study include: *negative verbal talk* (e.g., insults, teasing), *negative general talk* (e.g., negative comments about the task in general), *negative self-talk*, *negative physical behaviour* (e.g., hitting, grabbing), and *sulking*. Full operational definitions are provided in Table 1.

Sex Differences

When looking at what constitutes prosocial and negative behaviours, a common question surrounds differences between males and females. Certainly, research has documented important differences in males' and females' displays of prosocial and

negative behaviours specifically in relation to tasks characterized by competition and cooperation. Research has shown that males tend to be more overtly aggressive (e.g., pushing, grasping), use more directive speech, and tend have more fun in competitively designed situations displaying more positive affect compared to females in these situations (Bergin et al., 2003; Green & Rechis, 2006; Maccoby, 2000; Olweus, 1993; Richard et al., 2002). Research has also suggested that males are more troubled by losing in competitive situations (Green & Rechis). Menesini and colleagues (2000) found that boys showed higher levels of aggression than girls in a cooperative task; however the behaviours that were observed (e.g., shaking fists, angry gestures) were directed more towards the task itself than the partner in the task. Boys have been found to display more physical strategies to gain access to resources as well as more strategies *overall* in competitive situations compared to girls (Green & Rechis). In addition, boys generated more aggressive solutions to ambiguous social vignettes in a cooperative condition, than in a competitive condition (Dorsch & Keane, 1994). It may be that boys are generally more concerned with dominance regardless of the characteristics of a situation (Benenson, Roy, Waite, Goldbaum, Linders, & Simpson, 2002).

Girls are often just as active in competitive situations as boys are when researchers consider the typical interaction styles of girls, such as being more subtle, giving commands, using verbal objections, showing less physical aggression and more relational aggression (Benenson et al., 2002; Coie & Dodge, 1998; Crick & Grotpeter, 1995; Richard et al., 2002). The more covert tactics used by girls may represent fairly sophisticated social competence in the sense that they are using self- and other-perspectives as a means to achieve a desired social goal; however, there is no empirical

evidence to support sex differences on levels of social competence (Rose-Krasnor, 1997). The recent focus on girls' relational tactics in competition is not intended to imply that females cannot or do not engage in overt competition; however, there has been some research to support the idea that females are more uncomfortable in competitive settings than males. Females display more negative emotional responses in competitive settings (Benenson et al., 2002).

Purpose of the Study and Hypotheses

The main questions of the present study concern the possible effects of different setting demands (competition, cooperation) on adolescents' prosocial and negative behaviours and on their post-task evaluations of themselves and their partners. Recently, researchers have identified a gap in the research of social tasks and adolescents' behaviours, stating that there needs to be a consideration of the relationship between observed behaviours and post-task evaluations (Rockhill, Fan, Katon, McCauley, Crick, & Pleck, 2007). Rockhill and colleagues (2007) studied the relationship between observed emotions in game-playing tasks and post-task evaluations in children and adolescents with depressive symptomatology and their task partners. Results showed that observations of negative emotions were not significantly related to post-task evaluations, but observations of positive emotions were, particularly for children high in depressive symptomatology. The post-task evaluations in Rockhill et al.'s study looked at how much the participants enjoyed playing the games. The present study aims to build on previous research by looking at how prosocial and negative behaviours correlate with post-task evaluations, but will be examining behaviours rather than emotions, and will be looking at post-task evaluations of behaviours related to building, helping and cooperating.

This study is part of a larger project that used direct observation methods to examine children and adolescents' social competence, and used post-task interviews to assess their ratings of their own and their partner's behaviours during the task. In the larger study, students at-risk for emotional-behavioral difficulties as well as typically functioning control students were included in the tasks. Many studies involve the comparison of some type of clinically-oriented group with a control group; however, it is also important to examine adolescents who are of relatively similar behavioural status because it can be informative regarding daily social functioning in classrooms, peer groups, and possibly between siblings. It is also possible that the results of a study of individuals of relatively similar emotional and behavioural status will have greater reach in terms of practical applications for parents, teachers, and other professionals working with typically functioning adolescents. Thus, only the students who were part of the control group were included in this study. Furthermore, the richness of data that can be acquired from observation adds something more to traditional questionnaire or interview assessment research. Social interaction tasks are helpful in providing a relatively objective way of studying behaviour within a social context (Garber & Kaminski, 2000).

Recently, social scientists have been examining the best way to study samples when the participants are not independent of one another. Kashy and Kenny (2000) argue that theories, research methods, and data analysis should be designed to capture the interpersonal influences often found in social psychological research. Observing adolescents interacting in dyads therefore requires that the reciprocal influence of the interactions not only be acknowledged, but that it be treated as "nonindependence" – that is, the behaviors of the actors in the dyads are not independent of one another because

they are influenced by each other (Kashy & Kenny, 2000; Kenny, 1995). Moreover, *dyads themselves* have properties that individuals alone do not possess because the interactions between members of the dyad are cumulative and reciprocal (Coie & Dodge, 1998; Maccoby, 2003). The behaviour of one member of the dyad becomes the cue to the other member for selecting a subsequent response. The work of these researchers has influenced the present study to consider the *dyad* as the unit of analysis for some of the questions under examination, which addresses another gap in current research on adolescents' behaviours in social contexts.

This study had adolescents working in *dyads* in two different social tasks with the purpose of examining, firstly, how each task (competitive vs. cooperative) contributed to observed occurrences of positive and negative behaviours and whether this differed by male and female dyads. Secondly, this study examined at an *individual* level whether males and females differed in their post-task evaluations of themselves and their partners in relation to the prosocial and negative behaviours observed during the two tasks. What is unique about this study is that it uses actual observations of adolescents during competitive and cooperative tasks to examine their verbal statements and overt behaviors and then compares that to their evaluations and perceptions afterwards. In summary, the main research questions of this study are:

Dyadic Inquiries:

1) Does the number of observed prosocial behaviours vary according to task (competitive, cooperative) and sex (male versus female) of dyads? It is predicted that female dyads will display more prosocial behaviours in both the competitive and the cooperative task compared to male dyads, given females' socialization

patterns to cultivate close relationships particularly in dyads. Prosocial behaviours are expected to be higher in the cooperative task overall compared to the competitive task (Branco, 2001).

2) Does the number of observed negative behaviours made vary according to task (competitive, cooperative) and sex (male versus female) of dyads? It is hypothesized that both male and female dyads will display more negative behaviours in the competitive task than in the cooperative task perhaps because of heightened stress and frustration, social comparisons, competition of resources, and because as one participant approaches the goal, the other participant will subsequently be farther away from the goal (Branco, 2001; Charlesworth, 1996; Dorsch & Keane, 1994; Stapel & Koomen, 2005). It is also hypothesized that male dyads will display more negative behaviours in both tasks overall compared to female dyads because of the research showing that males tend to be more aggressive overall (Coie & Dodge, 1998).

Individual Inquiry:

3) How do the students' evaluations of themselves and their partners relate to the observed behaviours? The evaluations are made in response to questions on a 4-point Likert scale where a higher number indicated a more positive rating. It is hypothesized that there will be a positive correlation between students' self-ratings of helpfulness and cooperation and the direct observation of these behaviours. It is also hypothesized that there will be a negative correlation between overall evaluations of self and other and the observations of negative behaviours during both tasks, but a positive correlation between overall

evaluations of self and other and the observations of prosocial behaviours during both tasks. These hypotheses are somewhat exploratory in nature, but draw from the work of Rockhill et al. (2007) to see how post-task evaluations relate to prosocial and negative behaviours and how they vary based on the type of task.

CHAPTER 3

Research Methods

Participants

One hundred and eight junior high school (grade eight) students participated in this study, and were from schools in suburban and rural areas in western Canada. This sample is a subset of a larger study examining social exchanges in students at-risk for emotional behavioural difficulties. The present sample was randomly selected only from the control group of the larger study, in order to control for the influence of emotional and behavioural difficulties. Participants ranged in age from 12.11 years to 14.10 years, with a mean age of 13.9 years. The adolescents worked in pairs and in total there were 54 *pairs* of adolescents. In 29 pairs, both participants were female, and in 25 pairs both participants were male. Initially, 30 female and 30 male dyads were selected, but one female dyad and five male dyads were removed due to methodological issues such as: dyads did not complete both tasks, video data was damaged, or participants withdrew from the study. Parental consent was obtained prior to the study. All participants were from middle class backgrounds, with 99% Caucasian representation, and had volunteered to be in the study. Participants' names were entered into a draw for a gift certificate to a local music store as a way of thanking them for participating.

Measures

Prosocial behaviour coding scheme. The observational data (videos) were coded according to a scheme developed for the larger study. These codes were based on a literature review of definitions of negative and prosocial behaviours. The present study uses a combination of overt and relational definitions of prosocial behaviours: social

engagement, provision of emotional support, positive self-talk, positive general talk, helping, sharing, and cooperation. As previously mentioned, the codes and their operational definitions can be found in Table 1.

Negative behaviour coding scheme. Codes were also developed for negative statements and behaviours enacted during the tasks. These included: negative verbal behaviour, negative general talk, negative self-talk, negative physical behaviour, and sulking. As previously mentioned, the codes and their operational definitions can be found in Table 1.

Peer Feedback Interview (PFI; Rinaldi & Heath, 2001). The PFI is a semi-structured interview that was designed to assess how students evaluated themselves in their building, helping, and cooperating in each task, as well as how they evaluated their partners on the same behaviours (Rinaldi & Heath, 2001). Students were asked to rate their behaviour and then provide an explanation for their rating. Though all students in this sample were administered the full PFI, for the current study, only seven questions were used in the analyses, and all were structured with a forced-choice response. An interviewer asked the adolescents to rate themselves, their partners, and their team (dyad) on a 4-point Likert scale. The scale consisted of 4 = very well, 3 = pretty well, 2 = pretty badly, and 1 = very badly. The first question of the PFI asked the students to rate how well they thought they did as a team. The next three questions were: (1) "How well do you think you did by yourself in building?"; (2) "How well do you think you did in helping your partner out?"; (3) "How well do you think you did in being cooperative?" The last three questions of the PFI asked students to rate their *partners* on the same items. The full list of interview questions can be found in the Appendix. Students were

interviewed individually after each task, and were reassured that their responses would be confidential. Interviews were tape recorded, transcribed and then coded.

Procedure

For the present study, students were paired with a same-sex partner from the same grade, and each dyad was involved in two social tasks: a competitive task and a cooperative task. In each case, administration of the tasks took place in an empty room within the school (e.g., empty classroom). Once the research assistant gave the standardized set of instructions, the students were left alone in the room to complete the task and were videotaped. The videotapes were later coded for prosocial and negative behaviours using a Noldus software program called The Observer™ (version 5.1). No other students or adults were present during the tasks. In addition, tasks were counterbalanced in order to minimize order effects. The Faculties of Education, Extension and Augustana Research Ethics Board at the University of Alberta granted ethical approval for this study.

In the *competitive* task, the students were first told to choose a leader who would then choose the design of the model to build. Models were made out of KNEX™ pieces, which are similar to Lego™. Once the leader was chosen and the design picked, the students were given the pieces for their chosen model. Each student was then instructed to construct his or her own model based on the chosen design. They were instructed that (1) they had 15 minutes to complete the task and (2) that the winner would have his or her name entered into a draw for a gift certificate to a local music store. This task was designed to create a context of competition because the students soon realize that there are not enough pieces for each of them to construct their own model. Only one student

could successfully build the model. Enough pieces were provided for one person to complete the model and for the second person to *nearly* complete the model, except for a few pieces. At the end of the 15-minute segment, the research assistant returned to the room and informed the students that, in fact, they had to decide whose name would be entered into the draw. Following the completion of the task, the research assistant debriefed the students and informed them that both of their names would in fact be entered into the draw for the gift certificate. The research assistant then interviewed each student individually using the PFI where they were asked to rate themselves and their partners on how well they did in building, helping, and cooperating.

In the *cooperative* task, the students were informed to jointly choose the model to build. Once the model was selected, they were given the pieces for their chosen model. There were enough pieces for the pair to construct one model together. They were given 15 minutes to complete the task. Each participant was interviewed separately upon completing the task and was again asked to rate themselves and their partners on building, helping, and cooperating.

CHAPTER 4

Results

Preliminary Analysis

To establish inter-rater reliability on the coding schemes, 20% of the videotapes for each task were randomly selected and independently coded by a research assistant blind to the study. Using Cohen's kappa (Bakeman & Gottman, 1997), the resulting coefficients ranged from .80 to .86 (mean $\kappa = .83$). Overall, inter-rater reliability for this study was judged to be very good.

Dyadic Analyses

Does the Number of Observed Prosocial Behaviours Vary According to Task and Sex of Dyads?

For each dyad, a frequency was derived for prosocial behaviours observed during each task, following a similar tally method used in previous research where instances of each behaviour is added to create a total score (Maccoby, 2000). A 'prosocial behaviour' total score was computed and included the following observations of behaviour: social engagement, provision of emotional support, positive self-talk, positive general talk, helping, sharing, and cooperation. A repeated-measures analysis of variance (ANOVA) was conducted to investigate whether there were differences in the number of prosocial behaviours observed as a function of task condition. *Sex* was the between-subjects variable and task condition was the within-subjects variable. Results were considered statistically significant when tests of within-subjects effects were significant at the .05 level or higher. It was hypothesized that more prosocial behaviours would be demonstrated in the cooperative task. Results showed that there was not a significant

main effect of task ($F_{(1, 51)}$=.051; *ns*). A significant Task x Sex interaction emerged ($F_{(1,51)}$=6.89; p<.05). Females demonstrated significantly more prosocial behaviours in the competitive task (M =76.62; SD =46.13) than males did (M=50.54; SD=44.06). Males displayed significantly more prosocial behaviours in the cooperative task (M=68.08; SD=45.95) than females did (M=55.79; SD=35.51). It was also hypothesized that females would display more prosocial behaviours in the cooperative task than males; however this was not supported. In fact, the opposite resulted. Males demonstrated more prosocial behaviours than females did in the cooperative task; whereas females demonstrated more prosocial behaviours in the competitive task. See Table 2 for a summary of the means, Table 3 for a summary of the ANOVA results, and Figure 1 for a plot of the interaction.

Does the Number of Observed Negative Behaviours Vary According to Task and Sex of Dyad?

For each dyad, a frequency was derived for negative behaviours observed during each task. A 'negative behaviour' total score was computed and included the following observations of behaviour: negative verbal talk (insults, teasing, etc.), negative general talk (negative comments about the task), negative self-talk, negative physical behaviours, and sulking. A repeated-measures ANOVA was conducted to determine whether negative behaviours varied by task and dyad. *Sex* was the between-subjects variable and task condition was the within-subjects variable. Results were considered statistically significant when tests of within-subjects effects were significant at the .05 level or higher. It was hypothesized that both male and female dyads would make more negative behaviours in the competitive task than in the cooperative task. It was also hypothesized

Table 2

Prosocial and negative behaviours made by male and female dyads across tasks

Prosocial Behaviours	Task	Sex of Dyad	Mean (*SD*)	n
	Competitive	Male	50.54 (44.06)	24
		Female	76.62 (46.13)	29
	Cooperative	Male	68.08 (45.95)	24
		Female	55.79 (35.51)	29
Negative Behaviours	**Task**		**Mean (*SD*)**	**n**
	Competitive	Male	32.00 (23.82)	24
		Female	30.69 (19.43)	29
	Cooperative	Male	10.38 (9.82)	24
		Female	5.45 (8.75)	29

Table 3

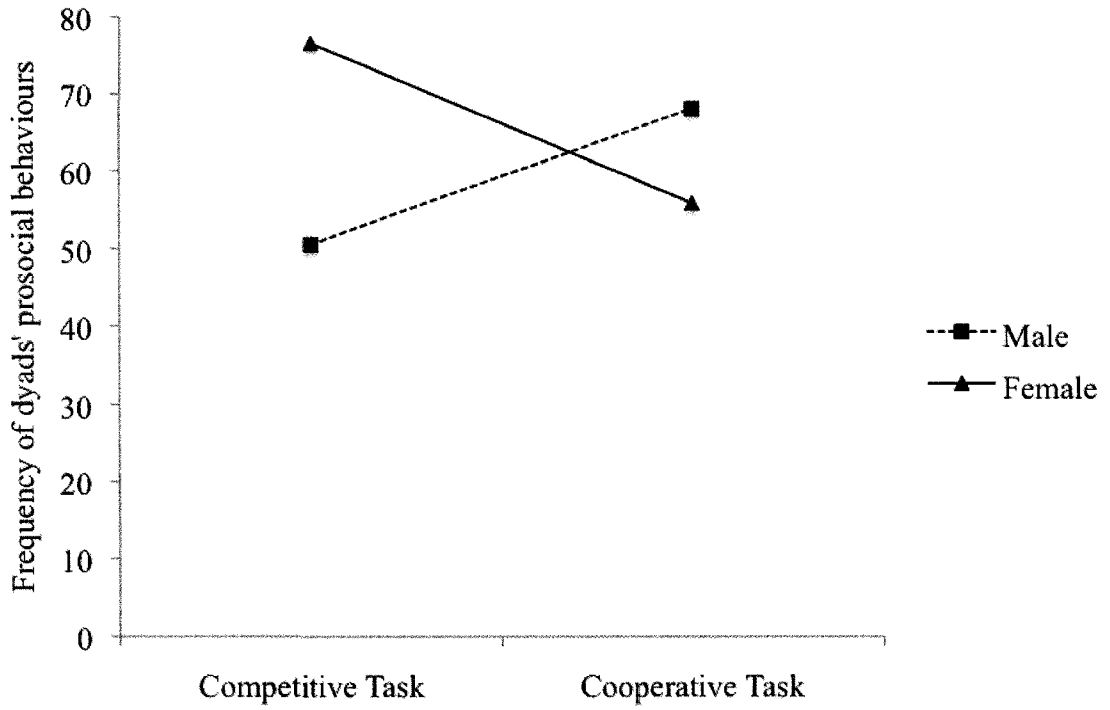
Repeated measures analyses of variance with dyad as unit of analysis

Prosocial Behaviours	Source	*df* Between subjects	*F*	η^2
	Task	1	.051	.001
	Task x Sex	1	6.894 *	.119
	Within-group error	51		
Negative Behaviours	Source	*df* Between subjects	*F*	η^2
	Task	1	6.421***	.557
	Task x Sex	1	.382	.007
	Within-group error	51		

Note: * $p<.05$, *** $p<.001$

Figure 1.

Task x Sex interaction for prosocial behaviours displayed by male and female dyads



that boys would display more negative behaviours in both tasks overall compared to girls. The results supported the former hypothesis, but not the latter. A significant main effect of *condition* emerged ($F_{(1,51)}$=6.42; p<.001), but a significant Task x Sex interaction was not evident. That is, *regardless of sex* of dyad, all dyads engaged in more negative behaviours in the competitive task (M=31.28; SD=21.32) than in the cooperative task (M=7.68; SD=9.48). See Table 2 for a summary of the means and Table 3 for a summary of the ANOVA results. Because no significant interaction emerged, this suggests that sex is not a significant factor in these analyses.

Self and Peer Feedback Interviews (Individual Analyses)

Some of the data collected in this study are more appropriately examined with the *individual* as the unit of analysis rather than the *dyad.* The results of the PFI open up the final line of questioning in this study: Do post-task evaluations correlate with observed behaviour? The PFI data considers the individual as the unit of analysis, so a simple correlation was run between the individuals' observed behaviours and their self-report ratings on the PFI. Students responded to the PFI without their task partner in the room. Thus, it can be argued that the reciprocal influence of behaviours that is expected during the task is no longer a factor during the PFI. Students were asked to reflect on the task and rate themselves and their partners on how well they did in building, helping, and cooperating. Ratings were given on a 4-point Likert scale, with a higher score indicating a better evaluation of performance. Means are provided in Tables 4 to 7, correlations are provided in Tables 8 and 9. Sample sizes vary at times because some questions went unasked during the interview, not because of question refusal by participants.

Table 4

Means and standard deviations for males' negative and prosocial behaviours and post-task ratings following the competitive task

Behaviour composites and PFI items	Mean (*SD*)	n
Negative behaviours	16.44 (12.60)	50
Prosocial behaviours	24.62 (22.26)	50
How well do you think you did as a team?	2.96 (.79)	48
1. How well do you think you did by yourself in building?	3.08 (.83)	49
2. How well do you think you did in helping your partner out?	2.55 (.86)	49
3. How well do you think you did in being cooperative?	3.22 (.62)	49
4. How well do you think your partner did in building?	3.35 (.75)	49
5. How well do you think your partner did in helping you out?	2.96 (.86)	49
6. How well do you think your partner did in being cooperative?	3.37 (.69)	49
Mean of self-evaluation questions (1, 2, 3)	2.95 (.49)	49
Mean of other-evaluation questions (4, 5, 6)	3.22 (.56)	49

Table 5

Means and standard deviations for females' negative and prosocial behaviours and post-task ratings following the competitive task

Behaviour composites and PFI items	Mean (*SD*)	n
Negative behaviours	15.362 (11.94)	58
Prosocial behaviours	38.31 (23.71)	58
How well do you think you did as a team?	3.30 (.49)	57
1. How well do you think you did by yourself in building?	2.98 (.64)	57
2. How well do you think you did in helping your partner out?	2.88 (.91)	57
3. How well do you think you did in being cooperative?	3.58 (.49)	57
4. How well do you think your partner did in building?	3.46 (.57)	57
5. How well do you think your partner did in helping you out?	3.30 (.80)	57
6. How well do you think your partner did in being cooperative?	3.70 (.46)	56
Mean of self-evaluation questions (1, 2, 3)	3.15 (.42)	57
Mean of other-evaluation questions (4, 5, 6)	3.48 (.44)	57

Table 6

Means and standard deviations for males' negative and prosocial behaviours and post-task ratings following the cooperative task

Behaviour composites and PFI items	Mean (*SD*)	n
Negative behaviours	5.19 (5.77)	48
Prosocial behaviours	34.04 (23.73)	48
How well do you think you did as a team?	3.60 (.68)	48
1. How well do you think you did by yourself in building?	3.35 (.67)	48
2. How well do you think you did in helping your partner out?	3.02 (.91)	48
3. How well do you think you did in being cooperative?	3.50 (.62)	48
4. How well do you think your partner did in building?	3.66 (.56)	47
5. How well do you think your partner did in helping you out?	3.25 (.81)	48
6. How well do you think your partner did in being cooperative?	3.54 (.74)	48
Mean of self-evaluation questions (1, 2, 3)	3.29 (.59)	48
Mean of other-evaluation questions (4, 5, 6)	3.48 (.56)	48

Table 7

Means and standard deviations for females' negative and prosocial behaviours and post-task ratings following the cooperative task

Behaviour composites and PFI items	Mean (*SD*)	n
Negative behaviours	2.72 (4.63)	58
Prosocial behaviours	27.95 (18.07)	58
How well do you think you did as a team?	3.84 (.37)	58
1. How well do you think you did by yourself in building?	3.48 (.54)	58
2. How well do you think you did in helping your partner out?	3.38 (.62)	58
3. How well do you think you did in being cooperative?	3.72 (.49)	58
4. How well do you think your partner did in building?	3.84 (.37)	58
5. How well do you think your partner did in helping you out?	3.65 (.58)	57
6. How well do you think your partner did in being cooperative?	3.84 (.41)	58
Mean of self-evaluation questions (1, 2, 3)	3.53 (.41)	58
Mean of other-evaluation questions (4, 5, 6)	3.78 (.32)	58

Table 8

Correlations of PFI ratings and males' and females' behaviours in the competitive task

Sex and Task	PFI Items: "How well do you think…"	Observed Behaviours	
		Negative	Prosocial
Males in Competitive Task	… you did as a team?	-.25	.03
	1. … you did by yourself in building?	-.26	-.20
	2. … you did in helping your partner out?	-.33*	-.10
	3. …you did in being cooperative?	-.32*	-.18
	4. … your partner did in building?	.04	-.106
	5. … your partner did in helping you out?	-.13	-.06
	6. … your partner did in being cooperative?	-.25	-.41**
	Mean of self-evaluation questions (1, 2, 3)	-.48**	-.25
	Mean of other-evaluation questions (4, 5, 6)	-.15	-.25
Females in Competitive Task	… you did as a team?	-.42**	-.01
	1. … you did by yourself in building?	-.18	-.07
	2. … you did in helping your partner out?	-.21	.28*
	3. … you did in being cooperative?	.05	.26
	4. … your partner did in building?	.18	-.11
	5. … your partner did in helping you out?	-.14	.28*
	6. … your partner did in being cooperative?	.13	.03
	Mean of self-evaluation questions (1, 2, 3)	-.22	.28*
	Mean of other-evaluation questions (4, 5, 6)	.04	.14

Note: * $p<.05$; ** $p<.01$

Table 9

Correlations of PFI ratings and males' and females' behaviours in the cooperative task

Sex and Task	PFI Items: "How well do you think…"	Observed Behaviours	
		Negative	Prosocial
Males in Cooperative Task	… you did as a team?	-.30*	-.23
	1. … you did by yourself in building?	-.22	-.08
	2. … you did in helping your partner out?	-.47**	-.32*
	3. … you did in being cooperative?	-.32*	-.22
	4. … your partner did in building?	-.10	.01
	5. … your partner did in helping you out?	-.38**	-.27
	6. … your partner did in being cooperative?	-.14	-.20
	Mean of self-evaluation questions (1, 2, 3)	-.44**	-.28
	Mean of other-evaluation questions (4, 5, 6)	-.28	-.22
Females in Cooperative Task	… you did as a team?	-.02	.20
	1. … you did by yourself in building?	.16	.26*
	2. … you did in helping your partner out?	.08	-.00
	3. … you did in being cooperative?	.05	.13
	4. … your partner did in building?	.09	.20
	5. … your partner did in helping you out?	.14	-.04
	6. … your partner did in being cooperative?	-.14	.07
	Mean of self-evaluation questions (1, 2, 3)	.13	.16
	Mean of other-evaluation question (4, 5, 6)	.05	.08

Note: * $p<.05$; ** $p<.01$

How do the Students' Post-Task Evaluations of Themselves and Their Partners Relate to the Observed Behaviours?

First, it was hypothesized that a positive correlation would emerge between post-task evaluations of helpfulness and cooperation, and the observation of these behaviours during both tasks. Second, it was also hypothesized that a negative correlation would emerge between overall post-task evaluations and the observation of negative behaviours, but a positive correlation between overall post-task evaluations and the observation of positive behaviours. These hypotheses were partially supported, and differences emerged between males and females. The section below examines the results in more detail.

Competitive task: Males. In the competitive task, males' prosocial behaviours were negatively correlated with nearly all post-task evaluations, which was not in the expected direction. The general pattern of results suggested that as observed prosocial behaviours increased, post-task evaluations decreased. The only statistically significant correlation that emerged showed that males' observed prosocial behaviour was negatively correlated with their post-task evaluations of how cooperative their partner was. The general pattern that emerged may reflect the task instructions. Participants were told to each build their own model and therefore may have been in a mindset of competition where helping and cooperating were not consistent with what is typically "expected" in competition. Even though prosocial behaviours were observed, participants seemingly did not view themselves as acting prosocially in the competitive task.

Males' negative behaviours were negatively correlated with nearly all post-task evaluations. While nearly all correlations were in the expected direction, those reaching statistical significance were related to evaluations of helping, being cooperative, and the

mean of self-evaluations. This suggests that males rated themselves fairly accurately and in-line with the behaviours that were observed.

Competitive task: Females. In the competitive task, a consistent pattern of correlations did not emerge for females in this study. The correlations that reached statistical significance were as follows: females' prosocial behaviours were positively correlated with post-task evaluations of how well they think they did in helping, how well they think their partner did in helping, and their overall average rating of themselves. Females' negative behaviours were negatively correlated with their responses to the question, "How well do you think you did as a team?"

Cooperative task: Males. In the cooperative task, males' prosocial behaviours were also negatively correlated with nearly all post-task evaluations, which was not in the expected direction. The only item that reached statistical significance was related to how well they thought they did in helping, which may reflect difficulties in coordinating efforts in the task, leading to a sense of feeling unhelpful.

A pattern emerged where males' negative behaviours were negatively correlated all post-task evaluations, which reflects the expected direction of the correlations. The observation of negative behaviours significantly correlated with the following post-task self-evaluations: how helpful they were, how cooperative they were, how helpful their partner was, how they did overall as a team, and the average overall rating of self. These findings seem reasonable given that if there were increasing instances of negative behaviours, their perceptions of themselves as being helpful or cooperative, even though the task was designed with cooperative characteristics, would decrease.

Cooperative task: Females. In the cooperative task, females' prosocial behaviours were positively correlated with their post-task evaluations of how well they thought they did in building. No significant correlations emerged between females' negative behaviours and post-task evaluations. These results likely reflect the very low occurrence of negative behaviours that was observed.

CHAPTER 5

Discussion

This study addressed whether competitive and cooperative tasks influenced the type of behaviours male and female dyads displayed during the tasks. The study also explored how observed behaviour related to post-task evaluations of how the students' perceived how well they and their partners did in building, helping, and cooperating.

Social Task Performance and Male and Female Dyads

It was hypothesized that females would make more prosocial behaviours in the cooperative task than males, but this was not supported. In fact, the opposite finding emerged, where females demonstrated more prosocial behaviours than males in the *competitive* task, and males demonstrated more prosocial behaviours than females in the *cooperative* task. Some research has suggested that the notion that females are more prosocial than males is arguable (Grusec, Davidov, & Lundell, 2002). Some research has shown that girls may be more kind but not necessarily more helpful or likely to share (Eisenberg & Fabes, 1998). Self- or other-reports of prosocial behaviour tends to favor girls, but direct observation does not always support that (Eisenberg & Fabes). The results of the current study are thus in line with some previous research. A suggested explanation is that females tend to be more uncomfortable in competitive situations than males (Benenson et al., 2002), so perhaps females rely on the strategy of social/emotional support during the task. This may be accomplished through prosocial behaviours such as engaging in casual conversation, disclosing one's struggles with the task, complimenting one's partner, or trying to keep a positive attitude. This reasoning follows from the idea that females may revert to what it is females are socialized to do: cultivate relationships,

talking to each other for support, and using the relationship to decrease stress. Males, on the other hand, may be more task-oriented and display less talking in general during competition. The finding that males were more positive during the cooperative task was interesting. This is not consistent with previous research, which has found that females tend to be more prosocial than males regardless of task scenario (Rinaldi, Kates, & Welton, 2008). These results show us that males engage in prosocial behaviors and supports the line of thinking that males often bond and socialize when "doing" things, such as actively engaging a task, sport, or other activity together (Fanning & McKay, 1993).

The hypothesis that both male and female dyads would display more negative behaviours in the competitive task than in the cooperative task was supported. The results did not support the hypothesis that boys would make more negative behaviours in both tasks than females. The results showed that *regardless of the sex of the dyad*, more negative behaviours were made during the competitive task. Sex of the dyad did not emerge as a significant factor in these analyses. Given that social comparison is inherent in competition, it seems reasonable that students would engage in negative verbal behaviour perhaps as a way of trying to shake their partner's confidence, distract their attention, or bully their partner into giving up desired resources (Charlesworth, 1996; Dorsch & Keane, 1994; Stapel & Koomen, 2005).

Discussion of PFI Results

Competitive task. Males and females showed different patterns of correlations between PFI ratings and observed behaviours during the competitive task. The results showed that males' frequencies of prosocial behaviours were negatively correlated with

their post-task evaluation of how cooperative they thought their partners were. This is an interesting finding and it may be that the individual attributes the prosocial behaviours or atmosphere to himself. It may also be that because the task was *competitive*, the post-task evaluation reflects males not wanting to indicate that they were receiving help from their partners or working jointly in some way, and therefore did not evaluate their partner as being cooperative.

The results also showed that as males' frequency of negative behaviours increased, their post-task evaluations of how well they thought they did overall, and specifically in helping and being cooperative decreased. This may suggest that males are fairly accurate in evaluating themselves on these items. If they behaved negatively during the task, they were presumably correct to not evaluate themselves as high on being helpful or cooperative. The presumed accuracy in post-task evaluations in this case may reflect that negative behaviours may be perceived as being more socially acceptable in a competitive task so males are more likely to evaluate themselves accordingly (Richard et al., 2002).

Females' prosocial behaviours were positively correlated with their post-task evaluations of themselves overall, how helpful they thought they were, and how helpful they thought their partners were. These results may suggest that females are fairly accurate in evaluating themselves based on their prosocial behaviours. Even during a competitive task, it may be that there is an expectation for females to be "nice" regardless of the situation, and so the display of prosocial behaviours and the corresponding post-task evaluations may reflect this cultural expectation (Branco, 2001).

Females' negative behaviours were negatively correlated with their post-task evaluations of how well they thought they did as a team. As negative behaviours increased, their ratings of themselves as a team decreased, which may reflect that females evaluate themselves in the context of the peer relationship. By adolescence, females spend more time than males in interpersonal activities (Ruble & Martin, 1998). The fact that the only significant correlation that emerged between negative behaviours and post-task evaluations relates to how females did as team may be consistent with the salience of interpersonal relationships for females.

Cooperative task. Males' prosocial behaviours in the cooperative task were negatively correlated with their post-task evaluations of how helpful they thought they were. The instructions for the cooperative task directed the students to work together. It may be that males did not rate themselves as being helpful because they perceived it as an expectation of the task, rather than a personally generated behaviour. Direct observation considered the behaviours to be prosocial, but in line with social information processing theory, it may be the individual's self-perceptions were influenced more by the rules of the task (Crick & Dodge, 1994).

Males' negative behaviours in the cooperative task were negatively correlated with the following post-task evaluations: how well they thought they did as a team, how helpful they thought they were, how cooperative they thought they were, how helpful they thought their partner was, and their overall rating of self. Again it seems that males were fairly accurate in evaluating themselves. Given that some negative behaviours occurred during the cooperative task, it makes sense that when that occurred, the males

reflected on the situation and decided they were not very helpful or cooperative, nor did they view their partners or themselves as a team in that manner.

Females' prosocial behaviours in the cooperative task were positively correlated with their post-task evaluations of well they thought they did in building. This is an interesting finding and may reflect that females perceive themselves as doing a good job at their task if they are behaving prosocially. Finally, females' negative behaviours in the cooperative task were not significantly correlated with any of the post-task evaluation items. The absence of negative behaviours may be explained as a product of the interpersonal elements as well as the setting demands of the cooperative task. For example, the task may have set a positive backdrop that facilitated prosocial behaviours between the participants.

Limitations

There are certain methodological challenges associated with this study that warrant discussion. First, the relatively small sample size in the present study may have decreased the overall power in statistical analyses. Future researchers may want to consider replicating this study with a larger sample size.

Second, participants completed the task portion of this study while alone in a room; however, a research assistant administered the questionnaire portion of the study. It is possible that students may have responded in a socially desirable manner to the items on the PFI because they not only had to give their rating of their behaviour (and their partner's), but they had to also provide an explanation for why they chose their rating. It may be that for some adolescents it would be difficult to admit that they were generally unhelpful, uncooperative, or made negative statements. Instead, the generally high ratings

may reflect a socially desirable response pattern. Future research may want to consider having participants complete the questionnaire anonymously and privately in order to minimize social desirability effects.

Researchers contend that there is greater need for future research to evaluate the ecological validity of laboratory-based social tasks (Garber & Kaminski, 2000). In this way, there may be a limitation of ecological validity – to what extent do these social tasks represent the types of interactions students demonstrate on a daily basis? There may have been some self-monitoring of behaviours by the students because they were aware of being videotaped. However, this study provides some ecological validity in the sense that students are often paired with fellow classmates without being given the opportunity to choose their partner, which is common within a school classroom setting. The students in this study were classmates and were likely paired with a peer who was familiar with the student, as opposed to a stranger.

Future Directions

The findings from this study point to the influence of competitive and cooperative social tasks over males' and females' prosocial and negative behaviours. Males and females tend to be socialized differently from one another in Western culture, and much research looking at competitive and cooperative tasks has focused on the ways in which males and females differ. A new and interesting perspective would be to consider replicating research in this area with mixed-sex peers (Rinaldi et al., 2008). It is likely that would yield very interesting results, as the patterns of observed behaviours would possibly change. Given the reciprocal influence of interactions, it may be that males and females would influence each other in a way that same-sex dyads do not. One sex may

have an advantage over the other in some tasks, and the participants may learn or employ different social behaviours or strategies to be successful in various situations (Green & Rechis, 2006).

Another way to further examine how social tasks influence social interaction would be to consider the interaction as a whole. For example, in addition to coding each instance of specifically defined behaviours, one could devise a scale by which the entire interaction was rated for its overall level of prosocial/negative interaction. This would relate well to Rose-Krasnor's theory of social competence and Crick and Dodge's (1994) theory of social information processing because it would be a way to view the integration of the various stages and components of these important social development issues. Furthermore, this approach may begin to recognize that socially competent adolescents use a variety of strategies – both prosocial and negative - to meet their needs (Green & Rechis, 2006). Comparatively, less competent adolescents might perseverate in using only one type of strategy.

Conclusions

In conclusion, the findings from the current study provide new insight into how competitive and cooperative social tasks can influence males and females behaviours. The surprising finding that females were more prosocial in the competitive task suggests that they may rely on well-developed strategies to cope with stressful situations, whereas males may remain more task-oriented and engage in fewer prosocial behaviours while in a competitive task. Males' demonstration of more prosocial behaviours in a cooperative task is a new finding in this area of research. More attention needs to be paid to this

finding in terms of how males' prosocial interactions are encouraged and fostered within dyad or group tasks.

The increase in negative behaviours during the competitive task is important information for educators and other professionals working with adolescents. The behaviours may reflect an attempt to cope with the situation or may be strategies to win. In any case, continuing to provide adolescents with competitive and cooperative social tasks in order to teach ways of effectively managing one's behaviours remains a worthy objective of any social curriculum.

The results of this study suggested only low to moderate correlations between observed behaviours and the adolescents' reported perceptions of their behaviours. Certain methodological limitations likely influenced this (e.g., restricted range, low occurrence of negative behaviours in cooperative task, etc.) Nevertheless, encouraging adolescents to reflect on their behaviour in social situations either actively through journaling or discussion, or through personal reflection, may be a critical component of continuing to develop social competence. Remaining keenly aware of the influence of situations over behavioural expression, how to reflect on situations and subsequently incorporate that reflection and knowledge into future behaviour remains important, particularly in order to promote balanced social interaction experiences and overall healthy social development for adolescents.

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Appendix

Peer Feedback Interview

Introduce yourself. Briefly review confidentiality and anonymity.

We are interested in finding out what kinds of things help kids work together and what kinds of things make it more difficult for them. There are no right or wrong answers; this is about how you feel and what you think about things.

*** For the following questions you need to ask the question and get qualitative responses **AND** also a Likert scaled response.

How well do *you* think *you* did as a team?

Very well (4) ☐ Pretty well (3) ☐ Pretty badly (2) ☐ Very badly (1) ☐

(1) How well do you think *you* did by *yourself* in building?

Very well (4) ☐ Pretty well (3) ☐ Pretty badly (2) ☐ Very badly (1) ☐

(2) How well do *you* think you did in helping *your* partner out?

Very well (4) ☐ Pretty well (3) ☐ Pretty badly (2) ☐ Very badly (1) ☐

(3) How well do you think you did in being cooperative?

Very well (4) ☐ Pretty well (3) ☐ Pretty badly (2) ☐ Very badly (1) ☐

(4) How well do you think your partner did in building?

Very well (4) ☐ Pretty well (3) ☐ Pretty badly (2) ☐ Very badly (1) ☐

(5) How well do you think your partner did in helping you out?

Very well (4) ☐ Pretty well (3) ☐ Pretty badly (2) ☐ Very badly (1) ☐

(6) How well do you think your partner did in being cooperative?

Very well (4) ☐ Pretty well (3) ☐ Pretty badly (2) ☐ Very badly (1) ☐