ADOLESCENT DEVELOPMENT OF PARENT AND PEER DEPENDENCE

By

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A thesis submitted to the Department of Psychology
in conformity with the requirements for the
Degree of Master of Science

Queen's University
Kingston, Ontario, Canada
October, 2015

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ABSTRACT

Autonomy is an important developmental task that begins in toddlerhood and continues into adulthood (Zimmer-Gembeck & Collins, 2003). Research has generally examined autonomy from parents and peers in adolescence, as there are a number of cognitive, physical, and emotional changes during this period of development that may influence how youth become autonomous. There is limited research, however, on how dependence (or lack of autonomy) from both relationships develops jointly across adolescence. As well, few studies have examined the relationship quality and psychosocial adjustment outcomes associated with joint parent and peer dependence. The objectives of the current research were to investigate how the combination of parent and peer dependence develops together, and to assess its effects on youth’s functioning.

In the first study, semiparametric group-based modeling analyses were used to identify youth that followed different developmental trajectories of dependence with parents and peers. Our results indicated that there are individual differences in autonomy development, with some youth following a high trajectory of parent and/or peer dependence, and others following a low trajectory of parent and/or peer dependence. Four joint parent and peer dependence trajectory groups emerged. The second study built on the results from Study 1 and found that youth who reported low levels of dependence on both parents and peers had healthy relationships and psychosocial adjustment. On the other hand, youth with high dependence on both parents and peers may be at risk for psychosocial problems. Results also suggest that parent and peer dependence may have differential roles in influencing adolescent functioning. Together, these findings emphasize the interrelatedness of parent and peer dependence, and demonstrate the need to consider both parent and peer relationship contexts when examining youth functioning.
ACKNOWLEDGEMENTS

First, I would like to thank my supervisor, Dr. Wendy Craig, for her unwavering support, infallible wisdom, and tremendous patience throughout this process. I could not have asked for a better role model, and I am so grateful for the opportunity to continue growing and working with you. I would also like to thank my committee members, Dr. Jill Jacobson and Dr. Tara MacDonald for their valuable guidance and thought-provoking insight.

To all my wonderful, talented, and generous friends in Kingston and across the globe – you make this journey possible. I cannot thank each and every one of you enough, and I am incredibly lucky to be surrounded by supportive and loving friends wherever I go. Lastly, to my family – the words “thank you” do not seem sufficient in expressing my gratitude for everything you have done for me. Thank you for always believing in me and supporting me in every way imaginable. I could not be more blessed.
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CHAPTER ONE

General Introduction

Autonomy, or the process by which a person becomes a self-governing, independent individual, is an important developmental process that has been studied extensively. Autonomy development, however, has rarely been examined in the context of both parent and peer relationships. Specifically, there is little research investigating how autonomy from parents and peers develop concurrently across adolescence. As well, the literature has outlined problematic psychosocial adjustments associated with lack of autonomy (or dependence) from parents and from peers, separately. Yet it has not examined how dependence on parents and peers function together to influence youth’s functioning. The current thesis, consisting of two studies, examined the development of dependence in adolescence in multiple relationship contexts, while also exploring the relational and psychosocial correlates of parent and peer dependence.

Historically, autonomy has been conceptualized as a developmental task emerging in toddlerhood. Psychoanalysts, like Freud and Erikson, described young children as striving for independence from parents who initially restrict bids for autonomy (Edwards & Liu, 2002). Indeed, Erikson’s second stage of psychosocial development, autonomy versus shame and doubt, represents children’s efforts to establish a greater sense of personal control (Erikson, 1968). Parents have traditionally played an important role in aiding or impeding their children’s attempts to gain independence. More recently, the focus of autonomy development has shifted to middle childhood and adolescence. This stage of development is associated with a number of cognitive, affective, and behavioral changes that may be linked to children’s ability to be autonomous. In middle childhood, there are cognitive changes that expand children’s abilities to solve problems, learn new information, and become more competent and resourceful (Collins,
Madsen, & Susman-Stillman, 2002). Not only do children grow intellectually, their capacity for social understanding and competence become greater in middle childhood. For instance, they have increased self-regulation and self-control (Steinberg, 2005). As youth’s self-regulation abilities grow, parents develop expectations for increased autonomy and independence in school, home, and peer-group activities (Hartup, 1984). There also are changes in adolescents’ social context that introduce opportunities for increased autonomy. Compared to younger children, adolescents spend much of their free time being unsupervised (Steinberg & Silk, 2002). There are fewer structured after-school activities available for teenagers than there are for young children. In addition, with age, the expectations for autonomy in school increase, as parents tend to decrease their involvement in homework or assignments in middle or high school. Adolescents must self-manage their academic goals and educational involvement. These autonomy expectations continue throughout adolescence and into young adulthood, but may cause some tension in the parent-adolescent relationship. Even though parents expect their children to become more autonomous and develop their own identity, oftentimes parents may not be ready to grant adolescents the autonomy they seek.

In addition to these normative shifts in children’s cognitions and relationships with parents, adolescents tend to increase their social networks (Steinberg & Silk, 2002) and make more connections outside of the family. By early adolescence, youth spend more time with peers than with family members or other adults (Steinberg & Silk, 2002). Although parents remain important and influential in adolescents’ lives, peer relationships become increasingly meaningful to youth (Berndt, 1979). In adolescence, peers often act as guides for behaviors and attitudes, and provide emotional support (Gottman & Mettelal, 1986; Sussman et al., 1994). These peer influences on youth’s behaviors may not be consistent with parents’ beliefs or
behaviors, which can contribute to further tension in the parent-adolescent relationship. Peers become an important socializing relationship that also influences youth’s psychosocial and behavioral functioning. The social changes in adolescents’ relationships are significant and may be related to the development of autonomy.

There is a marked shift towards increasing autonomy from parents that begins in childhood but takes place primarily in adolescence. As youth become more self-reliant and less dependent on parents, previous patterns of parent-child interactions realign to become symmetrical and equal (Steinberg & Silk, 2002). This gradual, linear increase in autonomy from parents has been well established (Berndt, 1979). Developmental trends of autonomy from peers are less clear than parent trajectories. Some researchers argue that there is a curvilinear trend for susceptibility to peer influence (Berndt, 1979; Steinberg & Silverberg, 1986), while others found that autonomy from peers also increases steadily across adolescence (Steinberg & Monahan, 2009; Sumter, Bokhorst, Steinberg, & Westenberg, 2009). Furthermore, there is little research on how autonomy from parents and peers develop concurrently. There is also little research that examines the relational and psychosocial correlates of discordant autonomy.

Autonomy development has received significant attention in the literature because it is a central developmental task experienced by most youth. However a lack of autonomy, or dependence on others, has been associated with a number of problematic outcomes in psychosocial domains. According to self-determination theorists, autonomy is one of the basic psychological needs that must be attained for healthy functioning in adulthood (Ryan & Deci, 2000). Some parents are able to respond appropriately and support their adolescents’ increased capacity for independent decisions, while others may exclude their children from outside influences and opportunities. This lack of autonomy granting behaviors may result in adolescent
dependency (Silk, Morris, Kanaya, & Steinberg, 2003). Without age appropriate levels of autonomy development, youth tend to have problems with relationships, emotion regulation, social competence, self-esteem, and academic achievement (Zimmer-Gembeck & Collins, 2003). Researchers have also examined how peer autonomy (or peer influence) influences youth’s relationships and psychosocial functioning. Although positive peer relationships and friendships with non-delinquent peers can have protective functions in adolescence, in general, risk-taking behaviors tend to increase in the presence of peers (Gardner & Steinberg, 2005). As youth spend more time with peers than with adults, they may engage in problem behaviors to be accepted by same-aged peers (Steinberg & Monahan, 2009). Negative outcomes (i.e., delinquency, substance use, unhealthy dating behaviors) associated with adolescence and peer affiliation have raised concerns about youth’s abilities to be autonomous from peers. Despite this body of knowledge on problematic functioning associated with lack of autonomy from parents and from peers, there is limited research on how dependence in one relationship functions with dependence in another relationship. Since parents and peers are salient socialization influences from which youth must individuate, it will be important to examine adjustment outcomes associated with dependence in both contexts.

**Research Objectives**

Both studies in this thesis aim to address the gaps in the current autonomy literature by investigating how dependence functions in both parent and peer relationships. In the first study, we examined how dependence on parents and peers develop across adolescence. In the second study, we examined how dependence on parents and peers jointly related to adolescents’ relational and psychosocial adjustments. These studies contribute to the literature on adolescent autonomy by emphasizing the need to consider multiple relationship contexts when examining
adolescent development and functioning. Additionally, understanding which groups of youth may be at greatest risk for problematic behaviors may help guide future psychoeducation intervention efforts.
CHAPTER TWO
DEVELOPMENTAL TRAJECTORIES OF PARENT AND PEER DEPENDENCE
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Abstract

Autonomy is integral to youth adjustment and development and reflects growing emotional, social, and cognitive maturity of the adolescent (Zimmer-Gembeck & Collins, 2003). Autonomy is defined as the process by which an individual becomes a self-governing person who can regulate his or her own behavior. There is limited research on how autonomy from parents and from peers are related to each other and change across adolescence. The goals of this study were to identify: the developmental trajectories of parent and peer dependence (lack of autonomy) in adolescence; gender differences for parent and peer dependence; and to investigate how the two trajectories overlap (joint trajectories). This seven year longitudinal study used self-report measures from 863 adolescents collected in a large Canadian city with a cohort design (Grades 5, 6, and 7). Data collection continued until participants were in Grades 11 to 12. Trajectory analyses identified two trajectories of parent dependence (low, 72.5%; and high, 27.5%), and two trajectories of peer dependence (low, 82.6%; and high, 17.4%). Joint trajectories indicated that the majority of participants followed a low parent and low peer dependence trajectory (64.2%). Boys were more likely to be in the higher parent and peer dependence trajectories than girls. The results highlight the following: 1) there are individual differences in the development of autonomy; 2) for the majority of youth, there is an increase in autonomy throughout adolescence; and 3) autonomy in one relationship does not replace autonomy in another relationship. This study provides insight into normative development of parent and peer dependence across adolescence.
Introduction

Early adolescence is a critical transition period during which youth experience a number of biological, psychological, and social changes, including an increased need for independence (Ausubel, Montemayor, & Svajian, 1977), and a search for an autonomous identity (Erikson, 1968). During this time, adolescents are increasingly likely to become peer-oriented (Bowerman & Kinch, 1959), and seek out advice from and spend time with same-aged peers (Steinberg & Silverberg, 1986). Some theorists argue that peer influences replace earlier parental influences (Ausubel, Montemayor, & Svajian, 1977), such that the level of social influence on an individual is kept in equilibrium, with increasing peer influences balancing out decreasing parental influences. Other theorists suggest that peer and parental influences are independent from one another, such that adolescents may remain influenced by both their parents and peers to varying degrees. The extent to which one relationship has greater influence over another depends on the specific behaviors (Biddle, Bank, & Marlin, 1980; Wang, Peterson, Morphey, 2007). There is ample evidence to conclude that both parent and peer relationships have effects on adolescent development (Biddle, Bank, & Marlin, 1980; Steinberg & Morris, 2001). Very few studies, however, directly compare how lack of autonomy from parents and peers changes across the developmental span, especially using longitudinal data. The goals of this study were to explore how trajectories of peer and parent dependence develop individually, as well as jointly across adolescence.

Autonomy Definition

Autonomy is integral to youth adjustment and development as it reflects the growing emotional, social, and cognitive maturity of the adolescent (Dishion, Nelson, & Bullock, 2004). Autonomy is the process by which an individual becomes a self-governing person who can
regulate his or her own behavior (Murphy, Greenwell, Resell, Brecht, & Schuster, 2008; Zimmer-Gembeck & Collins, 2003). Susceptibility to peer influence during adolescence, conceptualized as a lack of autonomy (dependence), has received great attention in the literature (Allen, 2004). Being unable to resist group influences represents a weak sense of autonomy and may impede development, leading to negative outcomes (Allen & Loeb, 2015). Given that adolescence is a period during which youth become increasingly less dependent on both parents and peers (Murphy et al., 2008), it is important to examine developmental patterns of dependence.

Despite findings that parents and peers have differential influences that are domain-specific, researchers often treat these influences as being applicable to all areas of an adolescents’ development. One issue with this research is that many different concepts and operations have been used to define parental and peer influences. Some researchers broadly define influence as any instance in which adolescent behaviors are affected by the pressures of another (Biddle, Bank, & Marlin, 1980), or as the ability of individuals (e.g., parents) to pass on cultural, human, and social capital (Bourdieu, 1977). Others more narrowly examine autonomy through studying how parents’ and peers’ attitudes towards specific deviant behaviors (i.e., alcohol, drug use) affect youth (Cook, Buehler, & Henson, 2009; Duncan, Tildesley, Duncan, & Hops, 1995; Martino, Ellickson, & McCaffrey, 2009). Furthermore, some researchers compare peer influences with general parent-child relations (i.e., positive or negative relationship quality; Drew, Berg, & Wiebe, 2010). These issues contribute to the nebulousness of influence in adolescence, and make it difficult to directly compare the effects that parent and peer relationships have on youth development. The literature on susceptibility to peer influence, conceptualized as peer conformity (Brown, Clasen, & Eicher, 1986), as well as the literature on
adolescent behavioral and cognitive autonomy inform this study. In this study, we investigated the developmental trajectories of dependence on parents and from peers, separately and jointly.

**Autonomy in a Developmental Context**

During adolescence, youth undergo internal changes (i.e., physical and cognitive) and external processes (i.e., additional social relationships) that affect how they interact. As the brain develops, adolescents experience increased behavior and emotion regulation, as well as improved judgment and decision-making abilities (Steinberg, 2005). Along with these developments, adolescents are also exposed to a wider social network and begin to navigate increasingly complex social relationships while adjusting to additional academic and personal (e.g., chores, jobs) responsibilities (Zimmer-Gembeck & Collins, 2003). They also experience shifts in interactions in interpersonal relationships, becoming less family- and more peer-oriented (Bowerman & Kinch, 1959; Steinberg & Silk, 2002). In addition, youth are expected to cultivate self-regulatory skills and become individualized while maintaining meaningful relationships with peers (Allen & Loeb, 2015). When adolescents are unable to develop an autonomous identity, they may experience a number of negative consequences, most notably that of role confusion (Erikson, 1968).

The traditional view of conformity to parents suggests that adolescents experience greater autonomy as they age (Berndt, 1979). On the other hand, conformity to peers may vary depending on the type of behavior observed. The development of conformity to antisocial behaviors (e.g., rule-breaking) follows a curvilinear pattern characterized by a peak in grade nine, after which the level of conformity (or lack of autonomy) subsides (Berndt, 1979; Moffitt, 1993; Steinberg & Silverberg, 1986). In contrast, there are mixed findings for susceptibility to general peer influence (i.e., independent of antisocial activities). Some studies report that there is
a curvilinear relationship, similar to antisocial behaviors (Berndt, 1979; Steinberg & Silverberg, 1986). More recently, researchers have suggested a linear relationship, with resistance to general peer influence increasing steadily across the developmental span (Steinberg & Monahan, 2009; Sumter, Bokhorst, Steinberg, & Westenberg, 2009). This view reflects adolescents’ increasing autonomy and psychosocial maturity. As their brains develop, youths are able to develop more impulse control, responsibility, and self-awareness than in childhood and these changes may affect how they view and judge their peers’ behaviors. The current study focused on susceptibility to general peer influence, rather than to antisocial pressures because the former reflects the normative process by which youth gain autonomy.

When gender is taken into account, inconsistencies also arise in the research on autonomy. Some researchers have found that girls display less behavioral independence from parents than boys (Berndt, 1979), while others found that girl report more emotional autonomy from parents than boys (Steinberg & Silverberg, 1986). For peer autonomy, some research suggests that boys report greater susceptibility to antisocial pressures from peers (Steinberg & Monahan, 2009; Steinberg & Silverberg, 1986). Other studies, however, report that girls are more susceptible to both peer and parent influences than boys (Chassin, Presson, Sherman, Montello, & McGrew, 1986). Other research has found that no gender differences exist at all in peer autonomy (Adams, Ryan, Hoffman, Dobson, & Nielsen, 1984). This study adds to the literature by examining how dependence in boys and girls develop over time in a more recent survey of adolescents.

Notably, despite debates regarding the relative importance of parents versus peers, an adolescent’s capacity for autonomy is likely linked to experiences within the family. Adolescents that have autonomy in their interactions with parents tend to also be autonomous in their
interactions with peers (Allen & Loeb, 2015; Swedo, Mikami, & Allen, 2011). On the other hand, youth whose parents undermine autonomous behavior in the family, exhibit a decreased capacity for autonomy with peers. In other words, family interaction patterns influence and are consistent with how youths conduct themselves with their peers (Allen & Loeb, 2015; Swedo, Mikami, & Allen, 2011). This study followed youth longitudinally and examined the continuity in patterns of dependence as it develops in each relationship. In doing so, it allowed for a comparison of changes in parent and peer dependence across adolescence that may provide further insight into adolescent development.

Although peer autonomy formation is a normative process, researchers assume that it is experienced consistently by all youths in the same manner and to the same degree. The majority of studies in this area describe a single estimate of the level of peer and parent conformity over time (Berndt, 1979; Steinberg & Monahan, 2009; Sumter et al., 2009). Given individual differences in cognitive and behavior regulation development in adolescence, as well as other psychosocial factors that affect youth’s susceptibility to conform, a uniform, singular pattern in autonomy development may be problematic. For instance, an adolescent who derives self-efficacy from others and attributes control to external factors may lack autonomy and seek reinforcement and self-worth from peer acceptance. On the other hand, an adolescent who has autonomy may be socially confident and internally motivated to use self-regulation skills to guide their decision-making (Rotter, 1966). Moreover, youth that are more concerned with self-presentation may be more prone to conform to peers’ behaviors to avoid social disapproval (Arkin, 1981), and youth that are more concerned about rejection and/or have social anxiety may be more likely to display non-autonomous behaviors with their peers and parents (Kosten, Scheier, & Grenard, 2012). Not all youth are equally self-efficacious, or experience social
rejection similarly. Thus, individual differences in the development of autonomous behaviors in adolescence may exist. Recent evidence suggests that youth experience different types of peer conformity (Kosten et al., 2012). Latent class analyses revealed three groups of youths that were identified based on the type of conformity endorsed (e.g., deviance conformists, social conformists, mild conformists; Kosten et al., 2012). This study supports the possibility of differences in how youth conform to peer expectations. This possibility, however, has not yet been tested longitudinally. Therefore, this study adds to the literature by examining the developmental trajectories of autonomy from both parents and peers.

The overall objective of the study was to examine the development of a lack of autonomy (dependence) from parents and peers across adolescence, and investigate their relationship with one another. The first objective was to identify the developmental trajectories of parent and peer dependence in adolescence. We hypothesized that at least two different trajectories for the lack of autonomy (dependence) with parents would emerge to account for possible individual differences: 1) one group reporting high dependence, and 2) a group reporting lower levels of dependence. Consistent with the literature, we expected a decrease in dependence with age for both trajectories. For peers, we also hypothesized that at least two different trajectories would emerge based on the two existing theories of peer dependence (i.e., curvilinear and linear). The first trajectory group would be characterized by an inverted U-shaped, curvilinear trend in dependence that peaks in mid-adolescence. The second trajectory group would have a linear decline in peer dependence across adolescence. We predicted that girls would be more likely to follow a high trajectory for dependence on parents than boys, and that boys would be more likely to follow a high trajectory for dependence on peers than girls. The second objective was to investigate how parent and peer trajectories of dependence overlap. Four joint trajectories of
parent and peer dependence were possible (e.g., high parent dependence with high peer
dependence, high parent dependence with low peer dependence, low parent dependence with
high peer dependence, and low parent dependence with low peer dependence). We had no a
priori hypothesis of the number of joint trajectories that would develop.

Methods

Study Design

The current study analyzed archival data from a seven-year longitudinal study (Connolly,
Craig, & Pepler, 2003). Data were first collected from seven elementary schools in a large
Canadian city when participants were in Grades 5 to 8 (forming four cohorts) and continued until
participants were in Grades 11 to 12. This resulted in seven waves of data, each collected one
year apart; however, due to incomplete data collection, data from year three was not included in
this study, resulting in six waves. Parents provided consent if students were under the age of 18,
and as well, student assent was obtained. Participation rates were over 80% at each of the six
waves of data collection.

Participants

Participants were included in the analyses if they had completed questions pertaining to
peer and parent dependence at least three points in time. The largest sample, based on peer
dependence responses, consisted of 863 students (44.6% male). For parent dependence and joint
peer and parent dependence trajectory analyses, the sample was smaller. Sub-samples were
formed based on the parent dependence responses \( n = 857; 44.3\% \) male) and the joint peer and
parent dependence responses \( n = 842; 44.1\% \) male). T-test analyses were conducted on the
mean levels of parent and peer dependence across the three subsamples to assess the effect of
missing data. No significant differences were found between the largest \((n = 863)\) and smallest samples \((n = 842)\) at any grade point for either peer or parent dependence means. There were no significant differences on any demographic measures between the larger and smaller samples. Participation rates were over 80% at each of the six waves of data collection. Based on the full sample, the majority of participants self-identified as European Canadian (73%). Participants also identified as East Asian (11%), South Asian (4%), African/ Caribbean Canadian (3%), Aboriginal (1%), Middle Eastern (2%), and Hispanic (3%); in addition, 3% of participants identified as “Other.” Eighty-three percent of the larger sample reported being born in Canada.

During the first wave of data collection, the majority of participants reported living in a two-parent household (either both natural parents or step-parents; 85%) or living with only their mother (10%). During the last wave of data collection, again, the majority of participants reported living in two-parent households (81%) or single mother households (12%). Parental education data from the larger sample indicated that the majority of participants’ mothers had graduated university (30%) or had received a post-graduate or professional degree (28%). Similarly, the majority of participants’ fathers had graduated from university (28%) or received post-graduate training or a professional degree (39%).

Measures

During each wave of data collection, students were asked to self-report on relationships with parents and peers, bullying/victimization incidences, and mental health problems. For each of the measures the means of the scales were used in the analyses. Participants’ responses to both parent dependence and peer orientation questions were standardized to a scale of 1 to 5. Cronbach’s alphas were calculated at each wave of data collection; ranges are reported across the six waves of data collection.
**Parent Dependence.** Dependence on parents was assessed using the Encouragement of Independence subscale of the Mother-Father-Peer Scale (MFP; Epstein, 1983) at T1 and T3. Sample items included: “My parents encourage me to make my own decisions” and “My parents encourage me to do things for myself,” on a scale of 1 (*almost never or never true*) to 5 (*almost always or always true*). Cronbach’s αs ranged from .84 to .85. Items were reverse coded such that higher scores indicated higher levels of dependence on, or less autonomy, from parents. This subscale was dropped in later waves of data collection due to methodological constraints (i.e., in later waves, survey packets were condensed to ensure completion).

Thus the MFP was replaced by the Autonomy in Close Relationships Scale (ACR; Montgomery et al., 1995) in T5 – T8. The MFP and ACR can be conceptualized as theoretically analogous because they both assess the same construct of autonomy from parents, and were significantly correlated at the .01 level (Pearson’s rs ranged from .15 to .21). A factor analysis of the original six items on the ACR indicated that the scale was composed of two factors, with an additional item that did not load significantly onto either factor. Therefore, three items, conceptualized as perceived behavioral autonomy were used. Sample items included: “I feel capable doing things without help from my mother” and “I manage my time without help from my mother” rated on a scale of 1 (*almost never or never true*) to 5 (*almost always or always true*). These items were also reverse coded so that higher scores indicated lower levels autonomy from parents. Cronbach’s αs ranged from .78 to .80.

**Peer Dependence.** Dependence on peers was assessed using four items from the Extreme Peer Orientation scale (Fuligni & Eccles, 1993). Sample items included: “How often do you break some of your parents’ rules in order to keep your friends?” and “How often do you let your
schoolwork slip or get a lower grade in order to be popular with your friends?" Participants rated items on a scale from 1 (little or none) to 5 (all the time). Cronbach’s alphas ranged from .63 to .73.

Parent and peer dependence were all significantly correlated at the .01 level at T1 (r = .23), T2 (r = .17), T4 (r = .10), T5 (r = .17), T6 (r = .11), and T7 (r = .14).

Procedure

Following informed consent and assent, participants were provided with questionnaires by trained research assistants and they were completed in the classroom. Upon completion, participants were debriefed about the study. This study followed Canadian Psychological Association ethical guidelines (Canadian Psychological Association, 2000).

Results

Developmental Trajectories of Parent and Peer Dependence

We evaluated how parent and peer dependence change over time by using a semiparametric group-based modeling analysis to identify distinct subgroup clusters of individuals that follow similar trajectories of parent and peer dependence (Jones, Nagin, & Roeder, 2001; Jones & Nagin, 2007). Proc Traj, a macro in SAS®, estimates multiple groups rather than only one mean within a population. Proc Traj is useful in longitudinal data, as it handles data that are missing completely at random. In other words, because no systematic or identified reason for missing participant data exists, the analyses can be conducted as if there are no missing data. To determine the best fit trajectories, three selection criteria were used: 1) the Bayesian information criterion (BIC); 2) group membership posterior probabilities greater than 70% (Nagin, 2005); and 3) current theories and past research on parenting behaviors across adolescence. Once the optimal number of trajectories was selected based on the BIC, posterior
probabilities, and developmental theory, the shape for each trajectory (constant, linear, quadratic, cubic, or quartic) was selected based on levels of significance as recommended by Nagin (2005; i.e., $p < .05$). We tested various models by constraining the shape of each trajectory line to constant, linear, quadratic, cubic or quartic functions, and comparing models based on levels of significance.

**Parent Dependence.** Several competing trajectory group models were assessed (one-, three-, and four-trajectory groups), but as expected, a two-trajectory group was identified as the best fit model for parent dependence (BIC = -3751.95), based on a sample size of 857 participants. The posterior probabilities of group membership for the two group trajectories were 91.8% and 83.0%, indicating excellent model fit. The majority of participants (72.5%) followed the low parent dependence trajectory, $B_0 = 2.58, p < .001; B_1 = -.10, p < .001$, represented by a linear function. About one-quarter of participants followed the high quadratic trajectory (27.5%), $B_0 = 1.68, p = .005; B_1 = .31, p = .03; B_2 = -.02, p = .003$. To validate this two-class model, trajectory analyses were run separately on the male and female samples. For both the boys and girls sub-samples, a two-trajectory group solution with emerged as the best fit model. Similar proportions of youth followed the low and high trajectories (Boys: low = 74.3%; high = 25.7%; Girls: low = 72.0%; high = 28.0%). Therefore the optimal numbers of trajectories were the same according to the combined and separate analyses of male and female samples. See Figure 2.1 for the best fit model of parent dependence trajectories.
Chi-square tests of association for the overall parent dependence sample indicated a significant gender difference in the proportion of boys and girls in the low and high trajectories, Pearson $\chi^2(1) = 9.18, p = .002$, Cramer’s $V = .10$. Specifically, there were more boys in the high parent dependence trajectory than girls, and more girls in the low dependence trajectory than boys. See Table 2.1 for proportion of boys and girls in each trajectory.
Table 2.1

Proportion of boys and girls in parent dependence trajectory groups

<table>
<thead>
<tr>
<th>Trajectory</th>
<th>Boys</th>
<th></th>
<th></th>
<th></th>
<th>Girls</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low Dependence</td>
<td>42</td>
<td>263</td>
<td>58</td>
<td>369</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High Dependence</td>
<td>53</td>
<td>117</td>
<td>47</td>
<td>192</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Next, t-tests were conducted to confirm that adolescents in the low and high trajectories reported significantly different levels of parent dependence in Grades 5, 9, and 12. We chose these grades to represent early-, mid-, and late-stages of adolescence, as well as to maximize the number of participants included in the following analyses. Bonferroni corrections were used ($\alpha = .05/6 = .008$). Students in the high trajectory reported significantly more parent dependence than students in the low trajectory. Levene’s test indicated unequal variance at Grade 9, $F = 15.74, p < .001$; and Grade 12, $F = 17.59, p < .001$, so degrees of freedom were adjusted from 446 to 141.87, and 472 to 162.64, respectively. See Table 2.2 for t-test results and descriptive statistics.

Table 2.2

Results of t-tests and descriptive statistics for parent dependence across grades by trajectory

<table>
<thead>
<tr>
<th></th>
<th>Low Trajectory</th>
<th></th>
<th>High Trajectory</th>
<th></th>
<th>95% CI for Mean Difference</th>
<th>t</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>n</td>
<td>M</td>
<td>SD</td>
<td>n</td>
<td></td>
</tr>
<tr>
<td>Dependence</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade 5</td>
<td>2.09</td>
<td>.66</td>
<td>87</td>
<td>2.68</td>
<td>.72</td>
<td>24</td>
<td>-.89, -.28</td>
</tr>
<tr>
<td>Dependence</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade 9</td>
<td>1.58</td>
<td>.59</td>
<td>338</td>
<td>2.68</td>
<td>.88</td>
<td>110</td>
<td>-1.28, -.92</td>
</tr>
<tr>
<td>Dependence</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade 12</td>
<td>1.44</td>
<td>.53</td>
<td>352</td>
<td>2.22</td>
<td>.77</td>
<td>122</td>
<td>-.93, -.63</td>
</tr>
</tbody>
</table>

**p < .001
Finally, t-test analyses with Bonferroni corrections (α = .05/6 = .008) were conducted to determine whether there were significant developmental changes in the levels of dependence reported in early-, mid- and late-adolescence in each trajectory. For the low trajectory, parent dependence means were significantly different at each grade point (Grades 5, 9, and 12), such that older students reported more autonomy than younger students. For the high trajectory, there were no significant differences between students in Grades 5 (M = 2.68, SD = .72) and Grade 9 (M = 2.68, SD = .88), t(132) = .02, p = .99 in the level of parent dependence reported. Students in Grade 12 (M = 2.22, SD = .77), however, reported significantly less parent dependence than students in Grade 9 (M = 2.68, SD = .88), t(230) = 4.30, p < .001. Results suggest that youth in the low trajectory increasingly gain autonomy across adolescence, while those in the high trajectory may experience similar increases in autonomy later in adolescence (mid- to late-adolescence).

**Peer Dependence.** Competing trajectory group models were assessed (one-, three-, and four-trajectory groups), but as hypothesized, a two-trajectory group solution was identified as the best fit model for peer dependence (BIC = -2399.23), based on a sample size of 863 participants. The posterior probabilities of group membership for this model achieved excellent fit (97.4% and 88.8%). The majority of participants followed a consistently low trajectory (82.6%), B₀ = .55, p < .001; B₁ = .17, p < .001; B₂ = -.01, p < .001, represented by a quadratic function. The remaining 17.4% of participants followed a high curvilinear trajectory with a peak in mid-adolescence, B₀ = 14.81, p < .001; B₁ = -7.28, p < .001; B₂ = 1.37, p < .001, B₃ = -.10, p < .001, B₄ = .003, p < .001, represented by a quartic function. See Figure 2.2 for trajectories of peer dependence. Next, trajectories were run separately on male and female samples to validate the overall peer dependence trajectories. Two-trajectory group solutions were identified for both the boys and
girls sub-samples, with a similar proportion of youth following each trajectory (Boys: low = 82.6%; high = 17.4%; Girls: low = 86.4%; high = 13.6%). Thus the optimal number of trajectories was the same for the overall sample and for separate male and female subsamples.

Figure 2.2. Trajectories of peer dependence

Next, chi-square tests of association on the overall peer dependence sample revealed significant gender differences in the proportion of participants in the low peer dependence and those in the high peer dependence trajectories, Pearson $\chi^2(1) = 24.91, p < .001$, Cramer’s $V = .17$. Specifically, there were more boys in the high peer dependence trajectory than girls, and more girls in the low dependence trajectory than boys. See Table 2.3 for proportion of boys and girls in each trajectory.
Table 2.3

Proportion of boys and girls in peer dependence groups

<table>
<thead>
<tr>
<th>Trajectory</th>
<th>Boys</th>
<th></th>
<th></th>
<th>Girls</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
<td></td>
</tr>
<tr>
<td>Low Dependence</td>
<td>41</td>
<td>290</td>
<td>59</td>
<td>417</td>
<td></td>
</tr>
<tr>
<td>High Dependence</td>
<td>63</td>
<td>95</td>
<td>37</td>
<td>55</td>
<td></td>
</tr>
</tbody>
</table>

To validate that the low and high peer dependence trajectories represent distinct groups of adolescents, t-tests were conducted with Bonferroni corrections ($\alpha = .05/6 = .008$) at three grade points. Students in the high trajectory in Grades 9 and 12 reported significantly more peer dependence than students in the low trajectory. No significant differences in peer dependence were found for Grade 5 students in either the low or high trajectory. Levene’s test indicated unequal variance at Grade 5, $F = 5.54, p = .02$; Grade 9, $F = 73.42, p < .001$; and Grade 12, $F = 44.33, p < .001$, so degrees of freedom were adjusted from 107 to 27.57, 461 to 99.46, and 474 to 83.38, respectively. See Table 2.4 for results of t-tests and descriptive statistics.

Table 2.4

Results of t-tests and descriptive statistics for peer dependence across grades by trajectory

<table>
<thead>
<tr>
<th>Trajectory</th>
<th>Low M</th>
<th>SD</th>
<th>n</th>
<th>High M</th>
<th>SD</th>
<th>n</th>
<th>95% CI for Mean Difference</th>
<th>t</th>
<th>df</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dependence</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade 5</td>
<td>1.23</td>
<td>.30</td>
<td>85</td>
<td>1.40</td>
<td>.52</td>
<td>24</td>
<td>-.39, .06</td>
<td>-1.48</td>
<td>27.57</td>
</tr>
<tr>
<td>Dependence</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade 9</td>
<td>1.44</td>
<td>.37</td>
<td>373</td>
<td>2.51</td>
<td>.76</td>
<td>90</td>
<td>-1.06, .08</td>
<td>-12.84**</td>
<td>99.46</td>
</tr>
<tr>
<td>Dependence</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade 12</td>
<td>1.41</td>
<td>.37</td>
<td>400</td>
<td>2.16</td>
<td>.70</td>
<td>76</td>
<td>-.91, -.58</td>
<td>-9.05**</td>
<td>83.38</td>
</tr>
</tbody>
</table>

**p < .001
Finally, the developmental patterns within each trajectory group were examined to determine whether peer dependence significantly increased across early-, mid-, and late-adolescence. Post hoc t-tests with Bonferroni corrections ($\alpha = .05/6 = .008$) were conducted. For the low trajectory, students in Grade 9 ($M = 1.44, SD = .37$) reported significantly more peer dependence than students in Grade 5 ($M = 1.23, SD = .30$), $t(456) = 4.88, p < .001$. No significant differences were found between students in Grade 9 ($M = 1.44, SD = .37$) and Grade 12 ($M = 1.41, SD = .37$), $t(771) = 1.12, p = .26$. For the high trajectory, students in Grade 9 ($M = 2.51, SD = .76$) reported significantly more dependence than students in Grade 5 ($M = 1.40, SD = .52$), $t(112) = 6.72, p < .001$. Students in Grade 9 ($M = 2.51, SD = .76$) also reported significantly more peer dependence than those in Grade 12 ($M = 2.16, SD = .70$), $t(164) = 3.04, p = .003$. Results suggest that there may be shifts pertaining to autonomy development that take place between early and mid-adolescence, such that adolescents are more peer-dependent in earlier years than in later years.

**Joint Trajectories of Parent and Peer Dependence**

A joint trajectory model of parent and peer dependence was estimated using Nagin’s Proc Traj macro. The results from this analyses describes the overlap between two variables by using joint probabilities, which estimate the proportion of participants that concurrently belong to both trajectories. The joint probabilities of membership in both parent and peer dependence are shown in Table 2.5, and are based on a sample size of 842 respondents (98% of the original sample). As hypothesized, the largest group followed a low parent dependence and low peer dependence joint trajectory (64.2%), while the second largest group (18.3%) followed a high parent dependence and low peer dependence joint trajectory. One-eighth of students followed a low parent and high
peer dependence joint trajectory, and approximately one-tenth of students followed a high
dependence trajectory for both parents and peers.

Table 2.5

Joint trajectory probabilities of parent and peer dependence

<table>
<thead>
<tr>
<th>Peer Dependence trajectory</th>
<th>Parent Dependence trajectory</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
</tr>
<tr>
<td>Low</td>
<td>64.2 (%)</td>
</tr>
<tr>
<td>High</td>
<td>8.2 (%)</td>
</tr>
</tbody>
</table>

Using Proc Traj, I estimated two sets of conditional probabilities: the probabilities of peer
dependence membership given membership in a parent dependence trajectory (see Table 2.6).
Participants in the low parent dependence trajectory were most likely to follow a low peer
dependence trajectory (88.6%). Participants who followed a high trajectory for parent
dependence were more likely to follow a low trajectory for peer dependence (66.3%). The
inverse conditional probabilities of peer dependence given parent dependence trajectories
indicated that participants low on peer dependence were more likely to follow a low parent
dependence trajectory (77.9%). Those high on peer dependence were almost equally likely to
follow a low (47.1%) or high parent dependence (52.9%) trajectory. In general, the conditional
probability results indicate that participants were likely to report consistent levels of parent and
peer dependence.
Table 2.6

*Probability of peer dependence membership, given parent dependence trajectory membership*

<table>
<thead>
<tr>
<th>Peer Dependence trajectory</th>
<th>Parent Dependence trajectory</th>
<th>Low</th>
<th>High</th>
</tr>
</thead>
<tbody>
<tr>
<td>Probabilities (%) of Peer Dependence conditional on Parent Dependence (vertical sum = 100.0)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>88.6</td>
<td>66.3</td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>11.4</td>
<td>33.7</td>
<td></td>
</tr>
</tbody>
</table>

Finally, parent and peer dependence means were compared at Grades 5, 9, and 12 for each trajectory to determine whether youth indicated different levels of autonomy with their peers versus with their parents. Independent sample t-test analyses with Bonferroni corrections ($\alpha = .05/6 = .008$) were conducted. For the low trajectory, students in Grade 5 reported significantly more parent dependence ($M = 2.05, SD = .63$) than peer dependence ($M = 1.21, SD = .27$), $t(72) = -11.20, p < .001$. Students in Grade 9 also reported significantly more parent dependence ($M = 1.59, SD = .60$) than peer dependence ($M = 1.45, SD = .37$), $t(295) = -3.42, p = .001$. No significant differences were found for students in Grade 12, $t(309) = -1.15, p = .25$. For the high trajectory, students in Grade 5 reported significantly more parent dependence ($M = 2.64, SD = .65$) than peer dependence ($M = 1.46, SD = .59$), $t(13) = -6.73, p < .001$. However, no significant differences were reported by students in Grade 9, $t(42) = -1.31, p = .20$, or by those in Grade 12, $t(41) = .50, p = .62$. Results suggest that in early- to mid- adolescence, the majority of youth tend to have greater dependence on parents than on peers; however by Grade 12, students in both trajectories report similar levels of parent and peer dependence. See Figure 2.3 for both parent and peer trajectories.
Discussion

This study provides new insights into the development of parent and peer dependence in adolescence. First, as hypothesized, two different developmental trajectories (high, low) emerged for both parent and peer dependence, suggesting that individual differences exist in the development of autonomy in both relationships. Consistent with our hypothesis, both the high and low parent dependence trajectories were characterized by declines across development. The two peer dependence trajectories that emerged were also consistent with our predictions: one trajectory declined linearly across adolescence, while the other followed an inverted U-shaped curvilinear trend. Second, gender differences were found in both the parent and peer dependence trajectories, with a higher proportion of boys following the high peer dependence trajectory than...
girls. Although we expected a higher proportion of boys to follow the high peer dependence trajectory, the finding that more boys than girls followed the high parent dependence trajectory was not consistent with our hypothesis. Third, joint trajectory analyses revealed four groups, with the majority of participants reporting low levels of dependence with both parents and peers. Findings are discussed within a developmental framework to conceptualize how cognitive, social, and biological changes may affect adolescents’ relationships with their parents and peers.

*Developmental Trajectories of Parent Dependence*

Trajectory analyses revealed two pathways of parent dependence across adolescence. The majority of youth (over 70%) reported that they often felt capable, independent, and autonomous from their parents. These youth became increasingly less dependent on parents with age, indicating normative patterns consistent with developmental changes of adolescence. During early adolescence (i.e., approximately age 10-11), youth undergo puberty and experience a number of physical and cognitive changes, such as the development of secondary sex characteristics, and increased emotion and behavior regulation (Steinberg, 2005). There is evidence to suggest that increases in adolescent autonomy may be causally linked to stages of pubertal maturation (Steinberg, 1988). Youth also begin to experience higher rates of conflict and detachment from parents (Larson, Moneta, Richards, & Wilson, 2002; Steinberg, 1987). Conflict over everyday issues and struggles regarding autonomy and parental authority are characteristic of many parent-adolescent relationships, and are more likely to emerge in early- to mid-adolescence rather than in late adolescence (Smetana & Asquith, 1994). Consistent with this study’s findings, parent-child distancing increases throughout early- and mid-puberty. Following mid-adolescence, youth in the low dependence trajectory continued to become less dependent on their parents. As youth age, they are better able to weigh long-term consequences and display
improved decision-making abilities (Keating, 1990). These skills are likely associated with improvements in autonomy assertion since adolescents are able to think and work independently.

On the other hand, adolescents in the high dependence trajectory (approximately 30%) reported consistently elevated levels of parent dependence across early- to mid-adolescence, after which they experienced declines later in development (between mid- to late-adolescence). When these youth were in Grade 12, they reported comparable levels of parent dependence as youth in the low dependence trajectory in Grade 5. If the trajectories had continued beyond late adolescence and into emerging adulthood, youth in the high group may have reported similar levels of autonomy as those on the low trajectory. Perhaps adolescents on the high dependent trajectory are slower to mature or cultivate psychosocial skills that aid in autonomy development. Some research suggests that puberty, rather than chronological age, is the mechanism by which adolescent autonomy increases (Steinberg, 1988). Thus, it is possible that this group experienced a later onset of puberty, and that is related to their later onset of autonomy development.

This delay in autonomy development may not necessitate poor adjustment. For some youth, relying on parents and having less autonomy across development may be protective (i.e., for youth who are cognitively, emotionally, and/or physically delayed compared to same-aged peers). For these youth, continued dependence on parents may compensate for their developmental lag by allow for scaffolding and guidance from parents as they navigate the challenges of adolescence. Adolescents who experience delayed transitions into puberty may be perceived as deviating from normative development relative to their peers, and thus be at risk for negative outcomes (Brooks-Gunn, & Petersen, 1983). However, if they are able to rely on parents, their relationships with parents may be protective against negative outcomes associated with delayed pubertal maturation. Conversely, when adolescents are given too much freedom too
quickly in the home, they are often unable to seek guidance from parents and instead turn to peers for advice (Dishion et al., 2004). This process is problematic for youth entering mid-adolescence, as degradation in levels of family management during puberty is predictive of significant problems in later adolescence (Dishion et al., 2004). Future research should examine the correlates associated with this trajectory group, such as pubertal development stage or the quality of relationships with parents or peers to increase understanding of following one trajectory over the other.

Although research on gender differences in parent dependence is mixed (Berndt, 1979; Chassin et al., 1986; Steinberg & Monahan, 2009; Steinberg & Silverberg, 1986), this study found that a higher proportion of boys were in the high parent dependence trajectory and a higher proportion of girls were in the low dependence trajectory. These trends may be better understood through a developmental framework. Because boys enter and complete each stage of puberty later than girls (i.e., beginning approximately age 13 for boys and age 11 for girls; Rogol, Roemmich, & Clark, 2002), they may also experience a later onset of autonomy. Thus, boys may be more likely to follow the developmental patterns of youth in the high parent dependence trajectory.

Notably, regardless of trajectory group membership, by late adolescence all youth reported being more autonomous from their parents. This finding may reflect the changes during adolescence that contribute to significant transformations in adolescent-parent relationships. As youth develop psychosocial maturity and interpersonal skills, hierarchical relationships shift to become more egalitarian by the end of adolescence (Montemayor, 1983). Consistent with the literature, these results highlight that increasing independence and individuation are reflective of typical adolescent development (Berndt, 1979).
Developmental Trajectories of Peer Dependence

Similar to parent dependence, two trajectories of peer dependence emerged. Adolescents in both the low and high peer dependence trajectories reported an increase in peer dependence from early- to mid-adolescence. It is possible that these initial increases reflect developmental differences between in adolescence. Younger, pre-pubertal youth generally have smaller social networks and are more closely monitored by their parents. In contrast, older adolescents are exposed to larger social circles and are less closely followed by their parents (Kuczniski, 2003; Wray-Lake, Crouter, & McHale, 2010). Moreover, youth in mid-adolescence tend to display more crowd affiliation and conformity because peer groups are able to provide them with much needed emotional or instrumental support, can help foster friendships, and may facilitate social interaction (Brown, Eicher, & Petrie, 1986). Our results suggest that when compared to youth within their own developmental trajectory (i.e., low or high) youth in mid-adolescence are more dependent on peers than those in early adolescence.

The vast majority of youth (over 80%) reported low levels of peer dependence, indicating that they perceived little or no conformity to others. Youth in this low trajectory experienced increases in peer dependence in early adolescence, but after mid-adolescence they reported no increases and had relatively low, near-minimal levels. These varying levels of peer dependence may reflect the changing nature of peer groups. In early adolescence, youth tend to affiliate in same sex cliques (i.e., small group of peers with approximately six to twelve members) (Smetana, Campione-Barr, & Metzger, 2006). In middle adolescence cliques become increasingly mix-gendered and peer groups function to introduce youth to appropriate heterosexual behavior (Dunphy, 1972). These changes may influence youth’s socialization patterns and increase youth’s conformity behaviors to be accepted by opposite-sex clique
members. Additionally, when youth affiliate with crowds, or reputation-based groups, youth take on positive or negative behaviors that are endorsed and supported by the crowd in which they belong (Brown et al., 1986). Although changing peer group structures may explain the increase in peer dependence in elementary school years, it is important to note that levels of peer dependence remain quite minimal for youth in this low peer dependence trajectory. In high school, low peer dependent youth do not report increases in the level of peer dependence. These youth have a history of autonomy from elementary school, and may be better able to manage the increased social pressures despite entering a new school environment. Overall, despite stereotypical views that adolescents are especially susceptible to peer influences, results from this study suggest that most youth experience relatively low levels of peer dependence (or high levels of autonomy) from peers.

On the other hand, a smaller proportion (approximately 20%) of adolescents followed a high, curvilinear pattern of dependence. During mid- and late-stages of adolescent development, youth on the high peer dependence trajectory reported being more dependent on peers than youth in the low trajectory. The high peer dependence trajectory may represent a more vulnerable group of adolescents who are more emotionally or instrumentally dependent on their peers than the other peer dependent trajectory. These youth may have poorer social skills or be less self-efficacious, and subsequently may be at greater risk for negative psychosocial functioning than those in the low group. Adolescents in the high peer dependence trajectory initially reported similarly low levels of peer dependence as youth in the low trajectory group, but became progressively dependent on peers until mid-adolescence. Around age 14, these youth became less dependent on peers, which may be related to increased abilities to regulate behaviors. This overall pattern is consistent with other findings that reported decreases in susceptibility to peer
influence between age 14 and 18, but not in early adolescence (Steinberg, 1990). From a
developmental perspective, this curvilinear trajectory parallels key adolescent transitions. The
peak in peer dependence at ages 14-15 may be associated with the transition into a new school
environment. Most youth undergo this stressful transition into high school, during which time
adolescents socialize with new peers, seek acceptance, and develop affiliations with new peer
groups (Steinberg & Silk, 2002). Although high school youth in the low peer dependence
trajectory are able to navigate this transition without increases in peer dependence, youth who
are highly peer dependent experience a peak in peer dependence, which may reflect this group of
youth’s vulnerabilities and sensitivity to peer rejection. This transition can be particularly
difficult for some students, and is often associated with increases in social anxiety and decreases
in self-esteem (Galton, Gray, & Ruddock, 2003; Seidman, Larue, Aber, & Feinman, 1994). For
youth who are especially sensitive to social rejection or are not as self-efficacious and seek
reinforcement from peer acceptance (Rotter, 1966), this move to an unfamiliar environment may
encourage them to be more dependent on friends and conform to peer group expectations. Youth
in the high dependence trajectory reported decreases in dependence after the initial high school
transition. Since high school offers opportunities for social interactions with a diverse group of
people, these adolescents may have found peers similar to themselves. In this case, youth may
feel less pressure to conform to peer group expectations or norms because they have self-selected
for like-minded friends. Alternatively, with increasing age, even the more vulnerable high-peer
dependent youth are better able to recognize the consequences and advantages associated with
crowd affiliation (Brown et al., 1986). Being highly dependent on peers may become a less
attractive option for older adolescents, especially if conforming puts individual gains (e.g.,
academic, relationships with parents) at risk. It is also possible that as adolescents improve in
impulse control, are more responsible, and have greater self-awareness than their younger counterparts, they are less likely to forgo personal interests for the sake of maintaining peer group status (Weinberger, 1997).

Gender also plays a role in youth’s ability to be more autonomous from peers, as boys were more likely to belong in the high peer dependence trajectory than girls, which is consistent with and replicates recent studies (Berndt, 1979; Brown et al., 1986; Steinberg & Monahan, 2009; Sumter et al., 2009). Girls develop faster and exhibit greater psychosocial maturity at earlier ages than do boys (Cohn, 1991), which may contribute to their more autonomous behaviors. Some researchers argue that girls’ increased autonomy is related to the type of behavior assessed (e.g., antisocial behaviors, tobacco use) rather than maturity levels (Chassin et al., 1986; Steinberg & Silverberg, 1986). The current study measured general autonomy; it is possible that if measures of dependence emphasized social or relationship-based consequences, rather than academic or home-life consequences, different gender patterns may emerge. This is an area for future research.

*Joint Parent and Peer Dependence Trajectories*

Joint trajectory analyses were conducted to examine how parent and peer dependence may co-develop. Results indicate that the majority of youth (approximately 65%) follow a low parent and low peer dependence joint trajectory. This group experienced decreases in parent dependence across development and increases in peer dependence until approximately age 14, after which time peer dependence remained at low levels. Although some theorists believe that increasing peer influences replace previous parental influences (Ausubel, Montemayor, & Svajian, 1977), our results suggest that overall, most adolescents simultaneously gain autonomy from both parents and peers. Adolescents in the high parent and high peer dependence joint
trajectory also reported having similar levels of autonomy in each relationship by late adolescence. This finding suggests that by age 18, most adolescents may become sufficiently mature in emotional, social, and cognitive domains to regulate their own behaviors (albeit to varying degrees based on the trajectories followed), and be equally autonomous and independent in each relationship context.

This study also supports that parents remain important and play an ongoing role in children’s development. Results from conditional probability analyses suggest that given membership in the low parent dependence trajectory, youth were almost 90% likely to also follow a low peer dependence trajectory. Previously, researchers suggested that adolescents who have autonomy in parent interactions tend to also be autonomous with their peers (Allen & Loeb, 2015). Relationships with parents may provide youth with a context for establishing peer relationships and lay the foundations for learned independent behavior, such that there is continuity of behaviors across contexts (Smetana et al., 2006). Moreover, parents can model desirable behaviors and/or scaffold children’s autonomy development by helping them improve their decision-making abilities and learn strategies to manage emotions or social pressures (Smetana et al., 2006). Indeed, this study provides longitudinal evidence that autonomy interaction patterns established early in life with family members may carry over into interaction styles with peers across the development for the majority of adolescents.

Finally, joint trajectory analyses may provide insight into identification of potential risk groups for increased antisocial involvement. Less than ten percent of youth in this sample followed a low parent and high peer dependence joint trajectory. These youth are more likely to break their parents’ rules to be with friends, or behave in ways that would disadvantage them academically, while also being less dependent on their parents (Fuligni & Eccles, 1993). When
youth do not have support and guidance from parents in the face of normative increases in peer pressures towards more deviant behaviors, they may be more likely to conform to peers’ expectations and be at increased risk for engaging in delinquent behaviors (Dishion, Nelson, & Bullock, 2004). Youth with increased autonomy assertion may experience decreased parent monitoring, as adolescents may actively withhold information or deliberately disobey parental demands to develop their own individualized identity (Masche, 2010). Moreover, there is significant evidence that inadequate parental monitoring is associated with negative outcomes such as increased externalizing behaviors, drug use, truancy, and deviant peer selection (Dekovic, 1999; Dishion & McMahon, 1998; Tilton-Weaver, Burk, Kerr, & Stattin, 2013). A recent evaluation of students in Ontario estimated that 7% of students engage in antisocial behavior, with 10% of older students (Grades 10 through 12) reporting engagement in antisocial behaviors (Center for Addiction and Mental Health (CAMH; 2013). It is possible that a proportion of these youth in the low parent dependence and high peer dependence joint trajectory are at risk for developing problem behaviors. More research is needed to identify at-risk youth to provide targeted interventions that may alter their developmental outcomes.

**Limitations and Future Directions**

While the current study contributes to the literature on adolescent autonomy development, a number of factors limit its generalizability. First, this study surveyed a predominantly European-Canadian sample in a large North American city. In Western cultural contexts, autonomy and identity development are considered desirable goals for adolescence; however, in many East Asian cultures, these goals may not be as important (Fung & Lau, 2012). Chinese parents tend to inhibit, rather than cultivate development of independence or self-direction (Pettit et al., 2001). Furthermore, there may be a variety of other contexts (i.e.,
socioeconomic status, parent education levels, rural versus urban contexts, neighborhood resources, etc.) that may affect autonomy attainment. Examining how cultural contexts interact would provide a clearer understanding of normative and context-specific autonomy development.

Second, this study assessed general, behavioral autonomy from parents and peers. Future research should also examine how susceptibilities to specific influences (i.e., antisocial and prosocial) to understand variability in autonomous behaviors. Furthermore, autonomy attainment in specific domains of adolescent life may also be examined. For instance, Smetana and Asquith (1994) differentiated between moral, conventional, prudential, and personal domains in which parents may have authority or influence. Although parental authority was viewed as legitimate for moral, conventional, and prudential issues, adolescents did not believe that parents should exert influence over personal domains. Similarly, by examining domain-specific contexts, it is possible that different developmental patterns may emerge for autonomy attainment in each of the aforementioned domains.

This study used self-report measures, and it is possible that responses did not reflect youth’s behavioral autonomy experiences. There may have been a social desirability effect especially since the questions implied negative consequences for conformity behaviors (i.e., breaking parents rules, failing to show full intellectual capacity). Other studies have employed vignettes or hypothetical situations to assess susceptibility to peer conformity (Berndt, 1979, Steinberg & Silverberg, 1986). Using these types of questions in addition to self-report measures provide important information. Moreover, using multiple informants to assess autonomous behaviors (i.e., parents, teachers, peers) may help to better understand and assess youth’s behavioral patterns, especially if there are inconsistencies in perceptions of autonomy attainment.
Finally, parent and peer dependence were assessed using different self-report scales due to limitations associated with analyzing data from an archival, longitudinal data set. Although these constructs are theoretically related and reflect heterotypic continuity in autonomy development, future research may consider using the same scales to assess parent and peer dependence.

The current research contributes to the literature on autonomy by examining how dependence develops in adolescence in two relationship contexts. One of the strengths of this study is its longitudinal examination of autonomy development and the identification of two distinct developmental trajectories for both parent and peer dependence. In particular, the use of group-based modeling analysis allowed us to identify subgroups of youth that followed distinct patterns of development, unlike previous research that used aggregate indices, or a single estimate of youth dependence. This study better addresses and highlights the variation in autonomy development across individuals. In addition, historically, there have been competing theories of peer autonomy development (i.e., curvilinear versus linear trends). This study suggests that both theories may be equally valid because they may capture the individual differences in peer autonomy development. More importantly, this study provides unique insight into the relative importance of parent and peer influences: one relationship does not supersede the other. Instead, in both parent and peer relationships, there is an increase in autonomy in adolescence. Not only does autonomy change by function of age, with older adolescents generally being more independent, there may be other underlying factors inherent to youths’ functioning or environment that influence their ability to be autonomous in their relationships. Understanding the psychosocial outcomes associated with joint parent and peer trajectories of autonomy is an important next step in the research.
CHAPTER THREE

JOINT PARENT AND PEER DEPENDENCE:

RELATIONSHIP AND PSYCHOSOCIAL OUTCOMES

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Abstract

Previous longitudinal research identified two trajectories of parent dependence and two trajectories of peer dependence (Hong & Craig, in preparation). From these, four joint parent and peer dependence groups emerged (i.e., low parents–low peers, low parents–high peers, high parents–low peers, and high parents–high peers dependence). It remains unclear, however, how parent and peer dependence function together to influence adolescent adjustment. The main goal of this study was to assess the effects of joint dependence groups on relationship quality and psychosocial behaviors in early and late adolescence. The current study analyzed archival data from a seven-year longitudinal study (Connolly, Craig, & Pepler, 2003). Data were collected at two time points, one year apart from two cohorts of youth (elementary and high school) to examine developmental changes. Results from Mixed-Model MANCOVAs yielded several interaction and main effects. Follow up univariate analyses indicated that for elementary school youth, students in the low parents–low peers group reported more parent and peer trust than students in the high parents–low peers and high parents–high peers groups ($ps < .001$). Students in the high parents–high peers and low parents–high peers groups reported more externalizing and bullying perpetration than students in the low parents–low peers group ($ps < .02$). For high school youth, students in the low parents–high peers and high parents–high peers dependence groups reported more internalizing, victimization, externalizing, and bullying perpetration than students in the low parents–low peers group ($ps < .02$). The results highlight the following: 1) youth who have low dependence on both parents and peers report the fewest problematic behaviors; 2) younger youth who are highly parent dependent may have more problems trusting others; and 3) adolescents with high peer dependence may experience psychosocial problems. Parent and peer autonomy may have differential roles in influencing adolescent functioning.
Introduction

Autonomy development is one of the central normative psychosocial developmental processes in adolescence (Zimmer-Gembeck & Collins, 2003). Adolescents’ ability to act independently from others is related to improved relationships and psychosocial adjustment (i.e., emotion regulation, self-esteem, and self-efficacy; Zimmer-Gembeck & Collins, 2003). Both parents and peers play a role in adolescents’ autonomous functioning across development (Allen, Hauser, Eickholt, Bell, & O’Connor, 1994; Allen & Loeb, 2015). Positive or negative learned patterns of behaviors in one context can influence how adolescents interact in subsequent peer and romantic relationships (Greenberg, Siegel, & Leitch, 1983). Very few studies have examined how the overlaps in dependence (or lack of autonomy) across these two relationships relate to relationship quality with parents and peers and to youth’s psychosocial adjustment. This study aimed to assess how the joint parent and peer dependence groups protect against or exacerbate risks for adjustment in adolescence.

Autonomy and Quality of Relationships and Psychosocial Adjustment

Adolescence is a developmental period with major physical, social, and cognitive changes (Steinberg & Morris, 2001). During this time, significant changes in the parent-adolescent relationship (i.e., increased conflict, decreased closeness, shift to more egalitarian relationships), as well as increases in youth’s internalizing (i.e., depression, anxiety, victimization) and externalizing (i.e., rule breaking, bullying perpetration) behaviors emerge (Galambos, Barker, & Almeida, 2003; Steinberg & Morris, 2001). Adolescent autonomy may play an important role in these changes. First, having high quality relationships helps facilitate adolescent autonomy development (Eccles et al., 1997). Caring relationships characterized by warmth, trust, and commitment provides youth with support that promotes the development of a
sense of self-efficacy and competencies for independent action (Noom et al., 1999). Conversely, negative relationships may hinder autonomy. Second, lack of autonomy from family and peers have independently been linked to internalizing (i.e., negative affect, loneliness) and externalizing (i.e., delinquency, norm-violation) behaviors in adolescence (Allen, Hauser, Eickholt, Bell, & O’Connor, 1994; Fuligni, Eccles, Barber, & Clements, 2001; Mead, 1934; Noom, Dekovic, & Meeus, 1999; Sullivan, 1953). Although these associations between adolescent dependence and relationship quality and psychosocial adjustment have been well documented, much of what we know is from studies that examine dependence on parents only or from peers only. This study examined how high and/or low dependence in both parent and peer relationships differentially increase or decrease risks for problematic adjustment.

Patterns of Parent and Peer Autonomy

Youth’s experiences with autonomy in family relationships is closely related to their ability to be autonomous in peer relationships (Allen & Loeb, 2015). The majority of adolescents tend to report low levels of dependence on both their parents and peers (Hong & Craig, in preparation). Youth who are able to attain autonomy from parents and peers are more likely to be self-reliant, regulate their behaviors, and develop their own identity than those who do not (Ryan & Lynch, 1989). Their ability to be autonomous in relationships enables feelings of connectedness, trust, and satisfaction with others (Noom et al., 1999), thereby reducing risks for problematic relationships and behaviors. This link between autonomy and positive relationships begins as early as toddlerhood (Ispa et al., 2015). When mothers respect their toddlers’ autonomy, they are more likely to report positive attitudes and connectedness with their mothers, eight years later than toddlers whose mothers did not. This relationship with parental support for autonomy is stable across early childhood and may continue to be important in mid- and late-
adolescence. We predicted that youth with low dependence on parents and peers would have more positive psychosocial adjustment and higher quality relationships with both parents and peers than youth who are highly dependent in these relationships.

When youth lack autonomy from both parents and peers, they may be at greater risk for poor quality relationships as well as a range of psychosocial problems. Youth who are highly dependent on parents are more likely to be dependent on and be easily influenced by peers than autonomous youth (Allen et al., 2012). Adolescents who experience intrusive parenting (i.e., when parents disallow autonomy in day-to-day activities) tend to be peer-oriented and associate with negative peers (Goldstein, Davis-Kean, & Eccles, 2005). When youth’s autonomy is restricted, they often have poor quality relationships with parents and report increased negative affect and dampened emotional expressiveness (Ispa et al., 2015; McCord, 1990). Similarly, adolescents who are highly peer-oriented tend to excessively desire acceptance from peers and behave in ways that reflect insecurity in relationships (Bretherton, 1992; Fuligni, Eccles, Barber, & Clements, 2001). In addition, youth who lack autonomy from parents and peers are more likely to have anxiety and depressive problems than autonomous youth, especially if they perceive their relationships to be poor (Allen et al., 1994; Harter & Whitesell, 1996; Masten & Curtis, 2000). Being highly peer-oriented can negatively influence youth’s self-worth and, in adverse contexts, increase risks for negative psychosocial adjustment (Masten & Curtis, 2000). They also may be more likely to exhibit externalizing behaviors, including aggression (Fuligni et al., 2001). To date, research on parent and peer autonomy has examined the effects of autonomy separately, not with a joint trajectory approach. In this study, we considered the level of dependence in both relationships and predicted that increased dependence on both parents and
peers would be associated with increased risk for more problematic parent and peer relationships, and increased internalizing and externalizing behavior problems.

From a developmental perspective, being more dependent on parents may not be related to negative outcomes for younger adolescents. It is possible that delaying autonomy granting may be advantageous and protect youth against delinquency and substance use, especially in dangerous contexts (i.e., environments with high crime or gang affiliation; Allen & Loeb, 2015). For older adolescents however, being highly dependent on parents may increase the risk for internalizing problems. Compared to younger adolescents, they have been less successful in fulfilling one of the developmental tasks of adolescence (Erikson, 1968). Dependence on peers also may be more detrimental for older youth than younger youth. Although peer affiliation in early adolescence can help with identity formation and provide social support, youth’s need for peer affiliation generally diminish as they become older (Brown et al., 1986). However, older adolescents who remain strongly dependent on peer groups may have limited development of autonomous identity and be less self-reliant. Taken together, when high parent dependence is coupled with high peer dependence, older adolescents may have had limited opportunities to learn self-efficacy and management of their own behaviors; thus risks for maladjustment may be heightened compared to younger adolescents.

There is strong research examining the quality relationships and psychosocial problems associated with lack of autonomy from parents and peers separately. Very few studies however, have examined the psychosocial correlates of adolescents who are more highly dependent in one relationship than the other (i.e., highly dependent on parents but not peers or highly dependent on peers but not parents). Unlike relationships characterized by high dependence on both parents and peers, discordantly autonomous relationships (i.e., at least one relationship characterized by
autonomy) may buffer youth from some of the negative effects associated with dependence on both relationships. As previously delineated youth with low dependence on parents benefit from positive adjustment outcomes associated with autonomy, such as improved relationships (Ispa et al., 2015). When youth are highly peer-oriented, however, they are more likely to display delinquency and externalizing problems, and may also bully others (Cook, Williams, Guerra, Kim, & Sadek, 2010; Monahan, Steinberg, & Cauffman, 2009). Younger adolescents who gain autonomy too quickly from parents (i.e., premature parent autonomy) are more likely to be dependent on peers and become involved in substance use and antisocial behaviors (Dishion, Nelson, & Bullock, 2004). These youth may not have adequate support, guidance, and scaffolding from parents that shape positive behaviors and inhibit development of negative behaviors. Therefore from a joint group perspective, adolescents who are autonomous from parents but highly peer-oriented may report positive relationships with parents but be at risk for externalizing problems and bullying perpetration. Younger adolescents who gain autonomy too quickly, however, may have problematic relationships with parents and also be at risk for negative psychosocial outcomes.

On the other hand, youth who are highly dependent on parents may have negative relationships with their parents (Ispa et al., 2015) and have more depressive or anxious symptoms (Allen et al., 1994). Youth who have autonomy from peers may report positive friendships since autonomous youth tend to have high social competence and ability to establish healthy relationships. Thus it is possible that this joint group of high parent dependence and low peer dependence may experience more problems in parent-adolescent relationships, have increased internalizing problems, but have relatively healthy relationships with peers.
We expected that youth with discordant autonomy from parents and peers would experience more relationship and psychosocial problems than adolescents who follow the normative developmental pattern of concordantly low dependence. Their ability to be autonomous in at least one relationship may serve a protective function. As such, they may report fewer problems than youth who are highly dependent on both parents and peers. There is very little research that directly assesses how autonomy from parents and peers are associated with psychosocial functioning and relationship quality. Therefore, this study adds to the literature by examining how joint parent and peer dependence are negatively or positively related to adolescent development.

Previous longitudinal research identified two trajectories of parent dependence and two trajectories of peer dependence, indicating that individual differences exist in how parent and peer dependence develop across adolescence (Hong & Craig, in preparation). From these, four joint parent and peer dependence groups emerged (i.e., low parent–low peer dependence, high parent–low peer dependence, low parent–high peer dependence, high parent–high peer dependence). The overall objective of this study was to assess the effects of the four, parent and peer dependence groups on relationship quality and psychosocial behaviors in elementary school and high school-aged youth. We hypothesized that youth in the high parent and high peer dependence group would report: 1) more problematic relationships with parents and peers (i.e., less trust and commitment, as well as parental monitoring) and 2) poorer psychosocial adjustment (i.e., more internalizing and externalizing problems, bullying perpetration, and victimization) than youth in the low parent–low peer dependence group. We expected adolescents in the low parent and high peer dependence group to report more externalizing problems and bullying perpetration than youth in the low parent and low peer dependence group.
Older youth who are high on parent and peer dependence may also report more relationship and psychosocial problems than younger youth. We also expected developmental changes across time, with elementary and high school youth who are highly dependent on parents and peers to report more relationship and psychosocial problems one year later (i.e., from T1 to T2). Overall, we expected youth in discordant dependence groups (i.e., low parent–high peer dependence and high parent–low peer dependence) to report more problematic adjustment than youth who are autonomous from both parents and peers.

Methods

Study Design

The current study analyzed archival data from a seven-year longitudinal study (Connolly, Craig, & Pepler, 2003). Data were collected from two cohorts of youth (elementary and high school) from seven schools in a large Canadian city. Data from both the elementary and high school samples were collected at the beginning of the school year, and again one year later. Parents provided consent if students were under the age of 18, and as well, student assent was obtained. Only participants who had data at both waves of data collection were included in this study.

Participants

*Elementary School Sample.* Participants in the elementary school were 470 children (47.1% male). During the first wave of data collection, 112 students were in Grade 5, 164 were in Grade 6, and 195 were in Grade 7. Children were between the ages of 9 and 13, with a mean age of 11.2 years (SD = 0.8). The majority of students self-identified as being European Canadian (74%). Participants also identified as East Asian (13%), South Asian (2%), African/
Caribbean Canadian (3%), or Aboriginal (1%). In addition, 7% of participants identified as “Other.” Eighty-five percent of this sample reported being born in Canada. Most students (85%) reported living in a two-parent household (either both natural parents or step-parents), or living with only their mother (10%). The majority of participants’ mothers had graduated from university (32%) or had received a post-graduate or professional degree (19%). Similarly, most fathers had graduated from university (29%) or had post-graduate education (27%).

High School Sample. Participants in the high school sample were 521 adolescents (42.9% male). During the first wave of data collection, 151 students were in Grade 9, 205 students in Grade 10, and 165 students in Grade 11. Participants ranged in age from 14 to 17 with a mean age of 16.3 years (SD = 0.9). The composition of the high school sample was very similar to that of the elementary school sample; there were no significant differences on any demographic measures.

Measures

Students were asked to self-report on relationships with parents and peers, bullying/victimization incidences, and mental health problems. See Appendix A for descriptive statistics for each measure.

Relationship Quality with Parents – Elementary and High School Samples. Parent-child relationship quality was assessed using 3 subscales: trust, commitment, and monitoring. Parental trust was assessed using 10 items (only five items were used in the High School sample). A sample item included: “I trust my parents.” Commitment was assessed with three items (e.g., “I am sure that this relationship with my parents will last no matter what.”) Participants rated all items on a scale from 1 (almost never or never true”) to 5 (almost always or always true). Both scales reported above were from the People in My Life measure (Cook, Greenberg, & Kusche,
Parental monitoring was assessed using the Strictness-Supervision Scale-Revised (SSS; Steinberg, Maounts, Lamborn & Bornbusch, 1991). Sample items included: “How much do your parents really know where you go in the evening?” and “How much do your parents really know what you do with your free time?” rated on a scale of 1 (don’t try to know) to 4 (my parents know exactly where I am).

Relationship Quality with Peers – Elementary and High School Samples. Relationship quality with peers was assessed using two subscales from the PML measure: trust and commitment. All items were the same as those used to assess parent relationship quality, but were directed towards peer relationships.

Psychosocial Adjustment – Elementary and High School Samples. Participants filled out a shortened version of the Youth Self-Report (YSR; Achenbach & Edelbrock, 1991). The YSR asks youth to provide self-ratings for competence and problem items on a three-point scale (0= not true; 1= somewhat or sometimes true; 2 = very true or often true). Participants rated Internalizing subscale items including “I prefer to be alone,” and “I am self-conscious.” Higher total scores on subscales indicated increased endorsement of internalizing symptoms. They also completed the Externalizing subscale of the YSR, which included items such as “I destroy things belonging to others” and “I am mean to others.” Participants rated these items on a three-point scale (0= not true; 1= somewhat or sometimes true; 2 = very true or often true). Higher scores on the YSR scales indicated greater levels of problem behaviors.

A modified version of the Safe School Questionnaire (Olweus, 1989) was also used to assess self-reported bullying and victimization. Students were first provided with a definition of bullying, and were asked how often they had been bullied in the past two months and in the past
five days, as well as how often they had perpetrated bullying in the past two months and in the past five days. Items were rated on a 5-point scale from 0 (not at all) and 4 (5 or more times).

Pubertal Status – Elementary Sample. The Pubertal Development Scale was used to assess elementary school students’ stage in development (PDS; Peterson, Crockett, Richards, & Boxer, 1988). They answered five questions such as “Compared to other girls/boys your age, at the present time, are you” on a five-point scale (1 = much less physically developed, 2 = less physically developed, 3 = about as physically developed, 4 = more physically developed, and 5 = much more physically developed).

Procedure

Following informed consent and assent, participants were provided with questionnaires by trained research assistants and they were completed in the classroom. Upon completion, participants were debriefed about the study. This study followed Canadian Psychological Association ethical guidelines (Canadian Psychological Association, 2000).

Data Analysis

From a larger data set, we selected two consecutive years with the least missing data from an elementary-aged sample and high school-aged sample. For the elementary school sample, Time 1 data collection took place in the fall of 1995, and Time 2 data collection took place one year later in the fall of 1996. For the high school sample, the first wave of data collection took place in 1999, and the second wave took place one year later in 2000. This approach was taken to examine within-subjects longitudinally across one year, and to investigate effects of developmental stage (i.e., early versus late adolescence). Moreover, because two of the joint parent and peer dependence groups had relatively low base rates (i.e., 8.2% and 9.3%), we aimed
to maximize sample sizes to make conclusions about the associations between group membership, and relationship quality and psychosocial outcomes.

Results

Mixed Model Multivariate Analyses of Covariance (MANCOVAs) were conducted to assess the associations between parent and peer dependence group membership and gender differences for relationships with parents and peers and psychosocial outcomes at two time points, one year apart. Grade was included as a covariate. Because two MANCOVAs were conducted for each sample (i.e., elementary versus high school), a Bonferroni correction was applied to the multivariate effects ($\alpha = .025$). For all pairwise comparisons, Bonferroni adjustments were applied for multiple comparisons ($\alpha = .05 / 6 = .008$; however results are presented at $p < .05$ because of the way SPSS applies post-hoc Bonferroni corrections). See Tables 3.1 and 3.2 for a summary of relationship quality and psychosocial outcomes.

Elementary School Sample

Relationship Quality with Parents and Peers. Perceptions of parent trust, parent commitment, parent monitoring, peer trust, and peer commitment (adjusted for grade) were assessed. Several significant main effects were observed (See Table 3.3). However, these were qualified by a significant multivariate two-way interaction effect between group and time, $V = .08, F(15, 1152) = 2.14, p = .007$, partial $\eta^2 = .04$. The interaction was significant for parent trust, $F(3, 386) = 3.03, p = .03$; and peer trust, $F(3, 386) = 3.56, p = .01$, but not for parent commitment, parent monitoring, or peer commitment. Univariate between-group analyses (adjusted for grade) of the interaction for parent trust showed significant joint dependence group differences in the level of parent trust at Time 1, $F (3, 455) = 15.79, p < .001$, partial $\eta^2 = .09$;
and Time 2, $F (3, 439) = 18.16, p < .001$, partial $\eta^2 = .11$. Post hoc analyses with Bonferroni corrected comparisons showed that at both times, students in the low parents–low peers group reported more parent trust than students in the high parents–low peers group and high parents–high peers group ($ps < .001$). Moreover at Time 1, students in the low parents–high peers group reported more parent trust than students in the high parents–high peers group ($p = .02$). Mixed-model t-test analyses indicated that students in the low parents–low peers group, $t(386) = 2.00, p = .05$, and the high parents–low peers group, $t(386) = 2.90, p = .004$, reported significantly less parent trust at Time 2 than at Time 1. No changes were reported for students in the low parents–high peers group or the high parents–high peers group across time. We expected youth in the low parents–low peers group to have fewer relationship problems with parents, compared to those in the concordantly high dependence or discordant dependence groups. Our results were consistent with hypothesized group differences; however, results were significant only for trust, and not for other relationship quality indicators (i.e., commitment, monitoring). See Figure 3.1.

![Figure 3.1. Parent trust across time (elementary school)](image-url)
Univariate follow up between-group analyses (adjusted for grade) of the interaction for peer trust showed significant joint dependence group differences in the level of peer trust at Time 1, $F(3, 456) = 11.95, p < .001$, partial $\eta^2 = .07$; and Time 2, $F(3, 436) = 7.44, p < .001$, partial $\eta^2 = .05$. Post hoc analyses indicated that as expected, at both times students in the low parents–low peers group had more trust in peers than students in the high parents–low peers groups ($p < .001$). Moreover, at Time 1, students in the low parents–low peers group and low parents–high peers group both reported more peer trust than students in the high parents–high peers group ($p < .04$). Unexpectedly, students in the high parents–high peers group, $t(386) = -1.94, p = .05$, reported more peer trust at Time 2 than at Time 1. No changes were reported for students in the low parents–low peers group, the low parents–high peers group or the high parents–low peers group. In general, results were parallel to those of parent trust, and suggest that students in the low parents–low peers group have higher levels of peer trust than youth in other joint groups. See Figure 3.2.

*Figure 3.2. Peer trust across time (elementary school)*
Finally, another significant multivariate two-way interaction between group and gender emerged, $V = .08$, $F(15, 1152) = 1.98$, $p = .01$, partial $\eta^2 = .03$. This interaction was significant for only peer commitment, $F(3, 386) = 2.75$, $p = .04$. Post hoc analyses indicated that at both time points, boys in the low parents–low peers group reported more peer commitment than boys in the high parents–low peers group ($ps = .006$). No significant effects were found for girls at either time point. Results were unexpected, but suggest that boys who are not dependent on peers, but are highly dependent on parents may not feel secure in their relationships with peers. See Figure 3.3.

![Figure 3.3](image-url)

*Figure 3.3. Peer commitment for boys and girls at T1 (elementary school)*
Table 3.1

Summary of relationship quality and psychosocial adjustment of joint parent and peer dependence membership – elementary school sample (all significant at p < .05 after Bonferroni correction)

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<td>Parent Trust</td>
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<td>T1: LH &gt; HH</td>
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<td>Parent Commitment</td>
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<td>Parent Monitoring</td>
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<tr>
<td>Peer Trust</td>
<td>T1: LL &gt; HL; HH</td>
<td>T1: LH &gt; HH</td>
<td></td>
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<td>Peer Commitment</td>
<td>Boys: LL &gt; HL</td>
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<td>Internalizing</td>
<td></td>
<td>T1: LH &gt; LL</td>
<td>HH &gt; LL; HL</td>
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<tr>
<td>Externalizing</td>
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<td>T2: LH &gt; LL; HL</td>
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<td>Puberty</td>
<td></td>
<td>T2: LH &gt; LL; HL</td>
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<td>Bullying</td>
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<td>Victimization</td>
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Psychosocial Adjustment. Dependence group and gender differences on internalizing symptoms, externalizing symptoms, puberty, bullying, and victimization (adjusted for grade) were assessed at two time points. A significant main effect for dependence group was observed (See Table 3.3). However, it was qualified by a significant multivariate interaction effect between time and dependence group, $V = .11, F(15, 978) = 2.53, p = .001$, partial $\eta^2 = .04$. This interaction was significant for externalizing symptoms, $F (3, 328) = 3.83, p = .01$; and bullying, $F (3, 328) = 5.11, p = .002$; but not for internalizing symptoms, victimization, or puberty.

Univariate between-group analyses (adjusted for grade) of the interaction for externalizing symptoms showed significant joint dependence group differences in the level of externalizing reported at Time 1, $F (3, 459) = 14.87, p < .001$, partial $\eta^2 = .09$; and Time 2, $F (3, 438) = 17.02, p < .001$, partial $\eta^2 = .10$. Post hoc analyses with Bonferroni corrected comparisons showed that
at both time points, students in the high parents–high peers group reported higher levels of externalizing than youth in the low parents–low peers group as well as youth in the high parents–low peers group ($ps < .002$). Students in the low parents–high peers group also reported higher levels of externalizing than those in the low parents–low peers group at both time points ($ps < .02$). Moreover, at Time 2, students in the low parents–high peers group reported more externalizing than those in the high parents–low peers group ($p = .02$). There were no changes in externalizing symptoms reported between Time 1 and Time 2 for students in the low parents–low peers group, the low parents–high peers group, the high parents–low peers group, or the high parents–high peers group. Results were consistent with our hypotheses that youth in the low parents–high peers and high parents–high peers groups would report more externalizing problems than those in the low parents–low peers and high parents–low peers groups. Findings suggest that youth with high peer dependence may be at risk for more externalizing problems than youth with low peer dependence. See Figure 3.4.

![Figure 3.4. Externalizing symptoms across time (elementary school)](image-url)
Univariate follow up between-group analyses (adjusted for grade) of the interaction for bullying perpetration indicated no main effects for time at Time 1. However, at Time 2, post hoc analyses indicated that students in the low parents–high peers group reported perpetrating bullying more often than youth in the low parents–low peers group and the high parents– low peers group ($p < .004$). Students in low parents–high peers group, $t(328) = -2.48, p = .01$, reported significantly more incidences of bullying perpetration at Time 2 than at Time 1. No changes were reported for students in the low parents–low peers group, the high parents–low peers group or the high parents–high peers group. Results suggest that there are developmental changes in the frequency of bullying perpetration across joint parent and dependence groups, and that students in high peer dependence groups (i.e., low parents–low peers and high parents–low peers) engage in more bullying behaviors than youth in low peer dependence groups. See Figure 3.5.

![Figure 3.5. Bullying perpetration across time (elementary school)]
There was also a significant multivariate main effect for gender, \( V = .11, F (4, 324) = 8.04, p < .001 \), partial \( \eta^2 = .11 \). Post hoc analyses (adjusted for grade) revealed that girls (\( M = .45, SE = .03 \)) were more likely to report more internalizing symptoms and pubertal development (\( M = 2.43, SE = .06 \)) than boys (internalizing: \( M = .33, SE = .03 \); pubertal development: \( M = 2.11, SE = .07 \)) (\( ps < .005 \)) above and beyond the interaction effects. Boys reported more bullying perpetration (\( M = 1.00, SE = .12 \)) than girls (\( M = .55, SE = .11 \)). Results were consistent with gender differences found in the literature on pubertal development, internalizing problems, and bullying perpetration.

Table 3.3

**Multivariate tests (main effects all significant at \( p < .05, p < .01^*, p < .001^{**} \))**

<table>
<thead>
<tr>
<th>Effect</th>
<th>Pillai’s Trace</th>
<th>( F )</th>
<th>( df )</th>
<th>Error ( df )</th>
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<tbody>
<tr>
<td><strong>Relationship Quality</strong></td>
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<tr>
<td>(Elementary)</td>
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</tr>
<tr>
<td>Group</td>
<td>.17</td>
<td>3.90**</td>
<td>15</td>
<td>978</td>
</tr>
<tr>
<td>Gender</td>
<td>.10</td>
<td>8.86**</td>
<td>5</td>
<td>382</td>
</tr>
<tr>
<td>Time</td>
<td>.10</td>
<td>8.53**</td>
<td>5</td>
<td>382</td>
</tr>
<tr>
<td><strong>Psychosocial Adjustment</strong></td>
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<tr>
<td>(Elementary)</td>
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<tr>
<td>Group</td>
<td>.17</td>
<td>3.90**</td>
<td>15</td>
<td>978</td>
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<tr>
<td><strong>Relationship Quality</strong></td>
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<tr>
<td>(High School)</td>
<td></td>
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</tr>
<tr>
<td>Group</td>
<td>.16</td>
<td>4.93**</td>
<td>15</td>
<td>1281</td>
</tr>
</tbody>
</table>

**High School Sample**

*Relationship Quality with Parents and Peers.* Reports of parent trust, parent commitment, parent monitoring, peer trust, and peer commitment (adjusted for grade) were assessed for each joint dependence group and for each gender, one year apart. A significant main effect of group was observed (See Table 3.3). However, it was qualified by a significant multivariate two-way
interaction effect between group and time, $V = .08$, $F(15, 1281) = 2.43$, $p = .002$, partial $\eta^2 = .03$. The interaction was significant for parent monitoring, $F(3, 429) = 3.47$, $p = .02$; and peer trust, $F(3, 429) = 3.28$, $p = .02$; but not for parent commitment, parent trust, or peer commitment.

Univariate between-group analyses (adjusted for grade) of the interaction for parent monitoring showed significant joint dependence group differences in the level of parent monitoring at Time 1, $F(3, 508) = 26.52$, $p < .001$, partial $\eta^2 = .16$; and Time 2, $F(3, 510) = 15.55$, $p < .001$, partial $\eta^2 = .09$. Post hoc analyses with Bonferroni corrected comparisons showed that at both times, students in the low parents–low peers group as well as students in the high parents–low peers group reported more parent monitoring than students in the low parents–high peers group and high parents–high peers group ($ps < .006$). No changes were reported between Time 1 and Time 2 for any of the groups. Results were consistent with the literature and indicate that parents of students with low peer dependence monitor their adolescents more closely than parents of youth with high peer dependence. See Figure 3.6.

![Figure 3.6. Parent monitoring across time (high school)](image-url)

Figure 3.6. Parent monitoring across time (high school)
Univariate follow up between-group analyses (adjusted for grade) of the interaction for peer trust showed significant joint dependence group differences in the level of peer trust at Time 1, $F(3, 487) = 17.26, p < .001$, partial $\eta^2 = .10$; and Time 2, $F(3, 501) = 9.38, p < .001$, partial $\eta^2 = .05$. Post hoc analyses indicated that at both times, students in the low parents–low peers group and the low parents–high peers group had more trust in peers than students in the high parents–high peers group ($ps < .03$). At Time 1, students in the low parents–low peers group reported more peer trust than those in the low parents–high peers group ($p = .03$). As well, students in the high parents–low peers group had more peer trust than students in the high parents–high peers group ($p = .001$). At Time 2, students in the low parents–low peers group had more trust in peers than those in the high parents–low peers group ($p = .03$). There were no changes between T1 and T2 for any of the groups. In general, as hypothesized, students in the high parents–high peers group reported less peer trust than youth in any other joint dependence group. See Figure 3.7.

*Figure 3.7. Peer trust across time (high school)*
There was also a significant multivariate main effect for gender, $V = .09, F(4, 425) = 9.10, p < .001$, partial $\eta^2 = .10$. As expected, girls ($M = 2.70, SE = .06$) reported more monitoring than boys ($M = 2.54, SE = .06$) ($p = .05$). Girls also had more peer trust ($M = 4.34, SE = .06$) and peer commitment ($M = 4.28, SE = .07$) than boys (peer trust: $M = 3.92, SE = .05$; peer commitment: $M = 3.84, SE = .07$) ($ps < .001$).

Table 3.2

Summary of relationship quality and psychosocial adjustment of joint parent and peer dependence membership – high school sample (all significant at $p < .05$ after Bonferroni correction)

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Parent Trust</td>
<td>LL &gt; LH; HH</td>
<td>T1: LH &gt; LH; HH</td>
<td>T1: LH &gt; HH</td>
<td>T1: HL &gt; HH</td>
</tr>
<tr>
<td>Parent Commitment</td>
<td></td>
<td>T2: LL &gt; HL; HH</td>
<td>T2: LH &gt; HH</td>
<td></td>
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<tr>
<td>Parent Monitoring</td>
<td></td>
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<tr>
<td>Peer Trust</td>
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<tr>
<td>Internalizing</td>
<td>LH &gt; LL; HL</td>
<td>HH &gt; LL</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Externalizing</td>
<td>LH &gt; LL; HL</td>
<td>HH &gt; LL; HL</td>
<td></td>
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<tr>
<td>Bullying</td>
<td>LH &gt; LL; HL</td>
<td>HH &gt; LL; HL</td>
<td></td>
<td></td>
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<tr>
<td>Victimization</td>
<td>LH &gt; LL</td>
<td>HH &gt; LL; HL</td>
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</tbody>
</table>

Psychosocial Adjustment. Reports of internalizing symptoms, externalizing symptoms, bullying, and victimization (adjusted for grade) were assessed for each joint dependence group and for each gender, one year apart. There was no significant multivariate interaction effect between any of the factors. There was, however, a significant multivariate main effect for dependence group, $V = .13, F(12, 1458) = 5.52, p < .001$, partial $\eta^2 = .04$ for internalizing, victimization, externalizing, and bullying perpetration. Post hoc analyses of the univariate
outcomes (adjusted for grade) indicated that students in the low parents–high peers dependence group reported more internalizing symptoms ($M = .56, SE = .04$) and victimization ($M = .85, SE = .16$) than students in the low parents–low peers group (internalizing: $M = .36, SE = .02$; victimization: $M = .40, SE = .06$) ($p < .04$). These students also reported more internalizing symptoms than those in the high parents–low peers group ($M = .39, SE = .03$) ($p = .009$).

Students in the high parents–high peers group reported more internalizing ($M = .52, SE = .05$) and victimization ($M = 1.33, SE = .19$) than those in the low parents–low peers group, $p < .02$. These students also reported more victimization than those in the high parents–low peers group ($M = .33, SE = .13$), ($p < .001$). Students in the low parents–high peers group reported higher levels of externalizing symptoms ($M = .65, SE = .04$) and bullying perpetration ($M = 1.00, SE = .16$) than students in the low parents–low peers group (externalizing: $M = .44, SE = .02$; bullying: $M = .51, SE = .06$) and the high parents–low peers group (externalizing: $M = .45, SE = .03$; bullying: $M = .28, SE = .13$) ($p < .003$). Similarly, students in the high parents–high peers group reported more externalizing ($M = .68, SE = .05$) and bullying ($M = 1.57, SE = .19$) than those in either the low parents–low peers group and high parents–low peers group ($p < .001$). Overall, youth who are highly dependent on peers (i.e., those in low parents–high peers or high parents–high peers joint dependence groups) reported more psychosocial problems than youth who are not highly peer-oriented.

There was also a significant multivariate main effect for gender, $V = .07$, $F (4, 484) = 9.36, p < .001$, partial $\eta^2 = .07$. Post hoc analyses of the univariate outcomes (adjusted for grade) indicated that girls ($M = .53, SE = .03$) had more internalizing symptoms than boys ($M = .39, SE = .02$), while boys had more incidences of bullying ($M = 1.10, SE = .09$) and victimization ($M = .88, SE = .09$) than girls (bullying: $M = .57, SE = .11$; victimization: $M = .57, SE = .11$) ($p < .003$).
Findings are consistent with the literature. Finally, a multivariate main effect for time was found, $V = .02, F(4, 484) = 2.89, p = .02$, partial $\eta^2 = .02$. Post hoc analyses of the univariate outcomes (adjusted for grade) indicated that as hypothesized, more externalizing symptoms were reported at Time 1 ($M = .57, SE = .02$) than at Time 2 ($M = .53, SE = .02$).

Discussion

The purpose of this study was to investigate the relationship quality and psychosocial correlates of parent and peer dependence groups. As expected, results suggest that adolescents in the low parents–low peers joint dependence group generally had more positive interactions with parents and peers and fewer psychosocial problems than youth in any other joint dependence groups (i.e., high parents–high peers, high parents–low peers, and low parents–high peers dependence groups). Being autonomous in relationships – regardless of the stage in adolescence – is associated with normative functioning. We also found that as hypothesized, older youth who are highly dependent on parents and peers reported higher levels of problematic behaviors than younger youth. In addition, unexpected developmental differences emerged between younger, elementary school youth and older, high school youth for relationship quality and psychosocial behaviors. For younger youth, being highly parent dependent (i.e., high parents–high peers or high parents–low peers dependence groups) was related to lower levels of trust in relationships. For older youth, however, endorsing high peer dependence (i.e., high parents–high peers or low parents–high peers groups) was related to increased levels of psychosocial problems. Finally, although we expected an increase in adjustment problems one year later, our results generally did not support this hypothesis. Parent and peer autonomy play an important role in adolescents’ relationships and psychosocial adjustment.
Consistent with the literature, youth in the low parents–low peers dependence group reported more trust in relationships with both parents and peers and fewer psychosocial problems (i.e., internalizing, externalizing, victimization, bullying) than youth in all other groups. These adolescents may have successfully individuated – a process by which youth develop a distinct sense of self that is separate from parents or peers (Blos, 1979). They have readjusted their relationships with parents, and progressively view themselves as autonomous, competent, and separate individuals (Steinberg & Silk, 2002). Highly autonomous youth feel secure in their relationships, have more trust in both parents and peers, and experience fewer internalizing and externalizing symptoms than youth who are not autonomous. On the other hand, youth who are highly dependent on both parents and peers are more easily influenced by others and behave according to others’ expectations and demands, rather than developing their own opinions, ideas, and behaviors (Steinberg & Silk, 2002). Our results were consistent with the literature and indicated that these youth tend to have less trust in relationships with parents and peers, as well as more behavioral problems than youth who are autonomous (Allen & Loeb, 2015; Ispa et al., 2015). In other words, autonomous youth may have healthier adjustment, while highly parent- and peer-dependent youth may be at greater risk for experiencing problematic functioning. For autonomous youth there is continuity in autonomy across relationships, which may be related to positive outcomes.

We expected that when youth were autonomous in one relationship, it would mitigate negative behaviors associated with high dependence in the other relationship context. Our results however, did not support this hypothesis. Instead, we found developmental differences in behaviors associated with asynchronous autonomy in parent and peer relationships. Adolescents’ ability to be autonomous from parents was associated with relationship outcomes in elementary
school, while their ability to be autonomous from peers was related to psychosocial adjustment in both elementary and high school. In other words, autonomy in parent and peer relationships may be relevant for different areas of youth functioning.

*High Parent Dependence*

For elementary school-aged children, youth in the high parents–high peers and high parents–low peers dependence groups reported less parent and peer trust than youth who are autonomous from both parents and peers. These variations in levels of trust emerged for youth who had high parent dependence rather than low parent dependence, suggesting that the level of parent dependence may be associated with increased risk for relationship problems. Parental response to adolescents’ efforts for greater autonomy have been linked to parent-adolescent relationship quality (Allen, Hauser, Eickholt, Bell, & O’Connor, 1994; Collins, Laursen, Mortensen, Luebker, & Ferreira, 1997). In particular, youth who are highly parent dependent tend to have problematic interpersonal relationships, including lowered perceptions of parental acceptance (Ispa et al., 2015; Hale, VanderValk, Aske, & Meeus, 2008). When parents do not provide their children with opportunities for autonomy, they may be signaling that they do not trust their child. They prevent youth from being exposed to outside influences and limit opportunities for social interactions. These behaviors negatively influence development of positive self-concept and social competence (Silk et al., 2003), which are important in establishing positive, healthy relationships (Allen & Land, 1999). Thus, youth may also experience less trust in their friendships.

This association between parent dependence and trust only emerged for younger adolescents in elementary school and not for older youth in high school. Younger adolescents spend more time with parents than do older adolescents (Bowerman & Kinch, 1959). As such,
parents may represent a more salient and influential relationship for elementary school-aged children than for high school students. Older youth, on the other hand, gradually gain autonomy from parents and increasingly value peer relationships (Laible et al., 2000). Although both parents and peers remain important through adolescence, for older adolescents, healthy, autonomous interactions with peers may be protective against negative effects associated with being highly parent-dependent. This finding highlights the importance of taking adolescents’ developmental stage (i.e., early versus late adolescence) into account when assessing how autonomy from parents is associated with youth’s trust in others.

High Peer Dependence

On the other hand, youth’s peer relationships were most related to psychosocial outcomes. Similar patterns of psychosocial behaviors emerged between youth who are highly dependent on both parents and peers (i.e., high parents–high peers dependence group) and youth who have low parent dependence and high peer dependence. Youth with high peer dependence, irrespective of their level of parent dependence, reported more externalizing problems and bullying perpetration than youth with low peer dependence. When youth are highly dependent in peer relationships, they may be at increased risk for engaging in more aggressive, rule-breaking, norm-violating behaviors. The significance of the peer group in this developmental period increases the risk for problematic behaviors, despite the level of autonomy with parents.

Adolescence is a developmental period when peer relationships become increasingly important (Parker, Rubin, Erath, Wojslawowicz, & Buskirk, 2006). During this time, the majority of youth report belonging to cliques, or voluntary social groups ranging in size from three to ten members (Henrich, Kuperminc, Sack, Blatt, & Leadbeater, 2000). Most of youth’s socializing occurs within this important peer environment (Henrich et al., 2000). As adolescents
become increasingly focused on peer acceptance, they expend a great deal of time and energy to avoid social rejection (Parker et al., 2005). Although desires for peer acceptance are normative during this developmental period, vulnerable youth have heightened sensitivity to acceptance and may be highly peer oriented (London, Downey, Bonica, & Paltin, 2009). Peer affiliations characterized by high peer-orientation represent problematic relationships and differ from healthy, supportive friendships (Fuligni & Eccles, 1993). High peer-orientation reflects adolescents’ willingness to behave in ways in which their friends want. If the adolescent belongs to a clique where antisocial behaviors are supported, when they are highly peer oriented, they may behave in maladaptive ways (i.e., skipping school, stealing others’ belongings, bullying others) to gain and maintain approval from peers despite negative intra- and inter-personal consequences (Fuligni et al., 2001).

Adolescents report spending almost a third of their waking hours (discounting class time) with peers and only approximately a tenth of their time with parents or other adults (Csikszentmihalyi & Larson, 1984). As youth spend time with and interact with peers, they are exposed to peer contagion effects, or the transmission of potentially positive or harmful behaviors and emotions. If these friends engage in negative behaviors, the peer contagion effect can undermine healthy development by contributing to increases in aggression, bullying, and other delinquent behaviors (Dishion & Tipsord, 2011). Adolescents with high autonomy and self-regulation are less susceptible to peer contagion effects and are less likely to engage in problem behaviors (Dishion & Tipsord, 2011), while adolescents who have heightened peer-orientation may be more vulnerable and be at greater risk for engaging in these behaviors.

Having high peer orientation may also prevent youth from acquiring other skill sets and competencies that may facilitate positive adjustment and development. For instance, youth who
are preoccupied with others’ opinions have difficulties establishing a stable sense of self-worth (Harter & Whitesell, 2003). Their self-esteem may fluctuate depending on the quality and content of their peer interactions. Low, unstable self-esteem is associated with both internalizing (Mann, Hosman, Schaalma, & Vries, 2004) and externalizing problems (Donnellan, Trzesniewski, Robins, Moffitt, & Caspi, 2005), while high, stable self-esteem is associated with increased initiative-taking and overall happiness (Baumeister, Campbell, Krueger, & Vohs, 2003). In addition, highly peer-oriented youth likely constantly monitor their environment for social cues and feedback (Donnellan et al., 2005). This heightened vigilance for peer approval may impede youth’s ability to engage in classroom instruction and schoolwork (Donnellan et al., 2005). Academic engagement plays an important role in youth’s academic achievement and completion of school (Furrer & Skinner, 2003). Finally, being highly peer-oriented may prevent youth from being involved in positive socializing experiences (e.g., extracurricular activities) that reduce risks for externalizing and risk-taking behaviors, especially if peers express disapproval for these experiences. Overall, high peer-orientation may be problematic because it impedes development of competencies that support positive adjustment and healthy relationships.

**Differential Effects of Developmental Stage**

Although high peer dependence was related to externalizing behaviors in both the elementary school and high school samples, we found developmental differences in how peer dependence is linked to other psychosocial adjustments. Older adolescents who are highly dependent on peers reported more internalizing, more victimization, and less parent monitoring, than younger adolescents. Older, peer-dependent youth may have more anxious and depressive symptoms than younger youth for a number of reasons. First, adolescence is a period of
increased risk for psychosocial problems, including internalizing symptoms. Depression, generalized anxiety, and social anxiety begin to emerge in early- to mid-adolescence and continue to increase during mid- and late-adolescence (Steinberg & Avenevoli, 2000; Zahn-Waxler, Klimes-Dougan, & Slattery, 2000). Even in normative samples, high school students generally report negative moods during the week (Csikszentmihalyi & Larson, 1984). Peer contagion effects of emotional distress and depressive symptoms have also been observed, suggesting that negative thinking and attribution styles are also influenced by peers (Stevens & Prinstein, 2005). Being highly peer-dependent in late adolescence may further heighten risks for developing internalizing problems, particularly if their peers are experiencing similar issues. Second, there may be more negative consequences associated with high peer dependence in high school than in elementary school. For instance, breaking parents’ rules to maintain friendships may have more undesirable ramifications for high school students than for elementary students. When faced with the serious consequences of their actions, youth may feel anxious and distressed, especially if they have not developed self-reliance and coping skills.

Compared to elementary school, social environments in high school are more complex. In addition to formation of cliques, older youth also begin to navigate their place in crowds, or “reputation-based groups of similarly stereotyped individuals” (Brown & Klute, 2003). Crowd labels and membership are important to adolescents in high school, as they indicate youth’s social identity and standing within the social sphere (Brown & Klute, 2003). There are pressures to be accepted and belong to a high status crowd, as peer crowd affiliation provides opportunities for social interaction and protect against social exclusion (La Greca & Harrison, 2005). Highly peer-oriented adolescents may behave in nonprosocial ways to gain peer approval and entry into crowds, which may place them at risk for victimization and social manipulation. Alternatively,
highly peer-dependent youth may affiliate with groups that are at higher risk for victimization in an effort to fit in. Emergence of these new social environments may help explain findings that older, highly peer-oriented youth experienced more frequent peer victimization than younger, autonomous youth. Additionally, in high school, there are expectations for more sophisticated social skills than in elementary school. Youth who are highly peer-oriented, however, are generally less socially competent and have more difficulties establishing positive peer relationships than autonomous youth (Noom, Dekovic, & Meeus, 1999). Youth who lack social competence and have few supportive friendships also tend to experience more peer victimization than youth who are able to connect with peers in appropriate ways (Finnegan et al., 1998).

Consistent with the literature (Fuligni & Eccles, 1993), our results indicated that youth who have low peer dependence reported more parental monitoring than highly peer-oriented dependence, regardless of their level of parent dependence. Parent monitoring of adolescent behavior has a positive, protective function in youth’s psychosocial development (Patterson, Reid, & Dishion, 1992; Steinberg, Elmen, & Mounts, 1989). High levels of monitoring (i.e., more parental knowledge of adolescents’ whereabouts) are associated with decreased delinquent peer selection and reduced involvement in problematic, externalizing behaviors (Dishion & McMahon, 1998; Masche, 2010; Tilton-Weaver, Burk, Kerr, & Stattin, 2013). Our findings indicated that low peer dependence youth, who also reported fewer externalizing problems, had high parent monitoring compared to highly peer-dependent youth. Perhaps parent monitoring functions as a protective factor against deviant behaviors for these low peer-dependent youth. This association between high parent monitoring and low peer orientation was present only in the high school sample, which is somewhat counterintuitive. Since parental knowledge of adolescents’ activities steadily declines as youth age (Masche, 2010), we expected higher levels
of monitoring in early or mid-adolescence for youth who were highly peer oriented. Tilton-Weaver and colleagues (2013) also found that parental monitoring reduced youth’s affiliation with delinquent peers for older adolescents, but not for younger adolescents. Perhaps older adolescents are better able to understand their parents’ concerns for safety and bids for knowledge about their spare-time activities. As such, despite having autonomy, older adolescents may voluntarily provide parents with this information. Alternatively, parents of highly peer-oriented youth may not closely monitor their adolescents in high school because previous efforts to monitor and circumvent delinquent peer affiliation have been unsuccessful. The directionality of these findings remains unclear, and may be an area for future research.

In assessing the behaviors associated with joint parent and peer dependence groups, it is important to consider the role of both the parents and youth in establishing autonomous or non-autonomous relationships. Although parents are primary socializing agents that influence their youth’s ability to function autonomously, parents’ autonomy supportive behaviors likely represent a bidirectional transaction. The extent to which parents support their child’s autonomy development is partly a response to their child’s temperament, and levels of self-regulation and competence (Grolnick & Ryan, 1989). Parents of children who are highly self-regulated and competent may be likely to grant their children more opportunities to make independent decisions. On the other hand, parents of children who are less competent may view their children’s uncertainty or lack of independence as cues to provide more guidance. Autonomy development takes place within the context of a relationship, and it is important that both parents’ and youth’s temperaments and needs are considered.

Limitations and Future Directions
This study is one of the first to examine the relational and psychosocial implications of concordant and discordant autonomy in parent and peer relationships. It adds to the literature by highlighting the differential role of parent and peer dependence on relationship and psychosocial outcomes for elementary and high school aged youth. However, a number of factors limit its generalizability. First, parent and peer dependence were assessed using different scales (Parents: MFP, Epstein, 1983; and ACR, Montgomery et al., 1995; Peers: EPO, Fuligni & Eccles, 1993). This approach was a function of the constraints and limitations associated with using an archival, longitudinal data set. Although the scales for parent and peer autonomy have been used widely, this study is the first to compare them in joint dependence groups. Since the measures of parent and peer autonomy are not directly parallel with one another, it is possible that different aspects or degrees of autonomy were assessed. These constructs are theoretically connected; however, correlations between parent and peer dependence were relatively weak ($r = .11$ to $.23$). Although we had expected a higher correlation between these scales, the scales reflected the heterotypic continuity of autonomy. Thus, in navigating the developmental changes in autonomy, the scale was changed to being developmentally relevant. Future research may consider assessing autonomy with several measures to assess both homotypic continuity and heterotypic continuity in the development of autonomy. Moreover, this study used only self-report measures, which introduces the possibility for social desirability effects or other biases (i.e., lack of insight or fatigue). Using observational data of parent-adolescent and peer-adolescent autonomy (as outlined in Allen et al., 1994) or adolescent adjustment may add valuable insight into how autonomy is related to adolescent development.

Second, this study did not take into account sociocultural factors that influence how autonomy influences adolescent psychosocial functioning. In low-risk (i.e., rural location of
residence and/or above-poverty family income) families, autonomy support is considered vital for positive adolescent adjustment and social functioning (McElhaney & Allen, 2001). In higher-risk families and environments, however, the opposite may be true (i.e., dependent youth reporting positive adjustment). Although the majority of participants in this sample were low risk (i.e., European-Canadian with well-educated parents and a two-parent household), it is possible that environmental risk moderated the relation between autonomy and adolescent functioning for a subset of higher-risk participants. In addition, there are differences in cultural expectations for autonomy between Western and East Asian cultural contexts (Fung & Lau, 2012). Perhaps high dependence on parents and peers may be less detrimental in cultures that have lower expectations for youth autonomy and independence. It will be important for future studies to take environmental risk and cultural factors into account when assessing how autonomy from parents and peers is associated with adolescent psychosocial functioning.

Finally, we examined autonomy in only two relationships. We selected parents and peers because they are the primary, most influential relationships in this phase of development. Autonomy, however, is an ongoing developmental process that reflects how youth relate to other people. To fully understand how autonomy is related to adolescent functioning, it may be important to examine autonomy development in other relationship contexts such as romantic partners, or even teachers or other non-parental authority figures.

The current research examined the role of parent and peer dependence in two relationship contexts in adolescents’ relationships and psychosocial functioning. Overall, results suggest that it is important to consider autonomy from parents and peers together as complementary, rather than competing developmental processes. Parents continue to play an important role in adolescence, especially in the context of relationship quality with others. On the other hand,
dependence on peers especially in late adolescence may increase risks for problem behaviors, regardless of relationships with parents. Autonomy development in peer relationships may be an area for intervention. By teaching youth about self-efficacy, self-competence, healthy relationships, and encouraging growth of intra- and inter-personal competencies, we may be able offset problem behaviors associated with being highly dependent on peers. Autonomy is a critical psychosocial developmental process that is important in multiple relationship contexts, and is associated with normative functioning in adolescence.
CHAPTER FOUR

General Discussion

The primary objective of this thesis was to examine how autonomy from parents and peers develop jointly, rather than as independent processes. Study 1 identified individual differences in autonomy development, while Study 2 demonstrated associations between the different levels of autonomy with relationship and psychosocial behaviors. Overall, results indicated that autonomy from parents and peers are related and continue to develop across adolescence. As well, the current studies highlight the importance of adolescents’ developmental stage when assessing risks associated with being dependent in parent and peer relationships. These findings may be used to guide future child and adolescent developmental research on autonomy and related processes.

This thesis is the first study to use a semiparametric group-based modeling analysis to identify distinct subgroups of individuals for autonomy development in adolescence. Results provide evidence for individual differences in autonomy development, as indicated by the two pathways (high, low) that emerged for both parent and peer dependence. Prior research treated autonomy as a single, uniform process experienced by all youth. This research, however, supports the existence of discrete, developmental trajectories of adolescents’ experiences of peer dependence and parent dependence. Trajectory analyses also demonstrated that overall, youth become increasingly autonomous from parents and peers as they become older. Although peer influences play an important role in adolescence, they do not seem to replace parent influences.

Additionally, this thesis illustrated that most youth are able to develop autonomy, but that individual differences in levels of autonomy are associated with normative or risky behaviors. In the first study, the majority of adolescents reported being relatively autonomous from both
parents and peers. The second study demonstrated that these youth generally had higher quality relationships with others, and fewer externalizing and internalizing problems than highly dependent youth. Normative autonomy development appears to be associated with healthy functioning. Only a small proportion of youth (i.e., fewer than ten percent of adolescents) remained highly dependent on both parents and peers, suggesting that the risks associated with non-normative autonomy are not as widespread as commonly perceived. This group however, reported the most difficulties with relationships and psychosocial adjustment across adolescence. Although joint parent and peer dependence groups did not have the expected buffering or exacerbating effects, younger highly parent-dependent adolescents (approximately thirty percent) had less trust in others than autonomous youth. In addition, there may a cause for concern over youth’s peer interactions, as highly susceptible youth (approximately 20 percent) tended to endorse higher levels of psychosocial problems. Parent and peer dependence may influence different domains in youth’s lives.

Results from both studies emphasize the interrelatedness of parent and peer relationship contexts in autonomy development. Conditional probabilities analyses from the first study demonstrated that adolescents who had low dependence on parents were most likely to also have low dependence on peers. Parents’ behaviors and interactions with their adolescents lay the framework for future interactions and relationships with peers and romantic partners (Steinberg & Silk, 2002). In much the same way, how youth behave with peers also influences how parents interact with their children. Inverse conditional probability analyses indicated that adolescents who had low peer dependence were also more likely to also have low parent dependence. When youth were highly peer-oriented, however, they were almost equally likely to have low or high parent dependence. Parents respond to their adolescents’ peer interactions and may try to manage
their adolescents’ peer relationships, thereby promoting or reducing opportunities for youth autonomy (Mounts, 2002). They may guide (i.e., talk to adolescents about consequences associated with affiliating with certain peers), prohibit (i.e., explicitly state that they do not want their adolescents to be friends with certain peers), or support (i.e., provide environments that facilitate friendships) adolescents’ peer relationships (Mounts, 2002). There is continuity between relationships on how autonomy is experienced. Youth’s ability to behave autonomously in parent and peer relationships is influenced by interactions experienced in other relationship contexts. When research focuses on autonomy in only one socializing context, we may miss valuable information about youth’s functioning and development.

This thesis also identified age differences that may represent key transition points in adolescence. The first study indicated that youth in the high peer dependence trajectory reported a significant increase in peer dependence in the mid- to late-stages of adolescence, as compared to early adolescence. The second study built on this finding by demonstrating that these highly peer-dependent high school youth reported more externalizing problems, bullying perpetration, internalizing problems, and peer victimization than younger, autonomous youth. In general, entry into high school may be a vulnerable time for youth as they face increasing social and academic challenges (Steinberg & Silk, 2002). This transition seems especially risky for highly peer-oriented adolescents, and may be a critical period for psychoeducational opportunities to enhance youth’s skills for autonomy. Providing support and education to parents and youth on concepts such as self-reliance, self-competence, peer pressure, and healthy relationships may 1) help youth to follow a low peer dependence trajectory rather than a high dependence trajectory, or 2) mitigate some of the risky behaviors associated with high peer dependence. When appropriately scaffolded and supported by parents, youth may be better able to resist negative peer influences.
Future Research

Although the current thesis clarified the role of parent and peer dependence in adolescent functioning, there are a number of areas that require further exploration. Youth become autonomous through interactions with the environment (Zimmer-Gembeck & Collins, 2003). To better understand the function of autonomy, future research should examine how autonomy develops in different cultural, environmental, and family contexts. Autonomy, or lack of autonomy, may have differential outcomes depending on environmental risk and cultural contexts (Fung & Lau, 2012; McElhaney & Allen, 2001). A longitudinal examination of these specific contexts will aid in enhancing understanding about individual differences in autonomy development. Culturally specific knowledge may be especially important in a multi-cultural country such as Canada, to better understand normative and non-normative development for youth with diverse backgrounds. Additionally, autonomy from parents and peers may develop differently in single-parent households, in re-married families, or in families in which youth may take on caretaker roles (i.e., in the case of adolescents with unavailable or ill parents; Murphy et al., 2008). Broadening our understanding of context-specific autonomy development may help identify environmental risk factors that may then be targeted for intervention.

Autonomy begins to develop in toddlerhood and continues to develop into adulthood. Parent-child relationships are important throughout the lifespan, as parents continue to provide support during key transition periods to varying degrees (Zarit & Eggebeen, 2002). The first study of this thesis highlights that youth in the high dependence trajectories (i.e., youth with low autonomy) may continue to develop autonomy from both parents and peers. However, whether these adolescents will be able to attain comparable levels of autonomy and the same competencies as youth who attained autonomy early in adolescence is unknown. It may be
important to follow these youth into adulthood for a number of reasons. Extending the research beyond adolescence will illustrate whether there is continuity of autonomy into other relationships (e.g., romantic partners, work colleagues). Finally, since learned patterns of interactions are carried into other relationship contexts, it is possible that highly dependent youth will also foster these dependent, non-autonomous behaviors with their own children in the future. Following autonomy development into adulthood will enhance our developmental understanding throughout the lifespan. In doing so, we may be able to examine potential mechanisms of intergenerational transmission and clarify potential cycles and patterns of dependent behavior.

Adolescence is a developmental period characterized by numerous social, cognitive, and behavioral changes. During this period of development, autonomy characterizes the normative shifts in parent-adolescent and peer-adolescent relationships. This current research clarifies the developmental patterns of adolescent autonomy, and provides evidence for the importance of considering both parent and peer relationship contexts when examining youth functioning. Autonomy from parents and peers play a crucial role in adolescent development.
REFERENCES


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Conversations with friends: Speculations on affective development (pp. 192–237). New York: Cambridge University Press.


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APPENDIX A

Descriptive Statistics for Study 2

Table A1

Descriptive statistics for relationship quality – elementary school

<table>
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<tr>
<th>Measure</th>
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<td>Mean</td>
<td>SD</td>
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