Trajectories of parent-child contact, affection, and conflict during the transition to adulthood

by

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A thesis submitted in partial fulfillment of the requirements for the degree of

Doctor of Philosophy

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Abstract

The parent-child relationship is one of the most influential and long-lasting social ties for many people. Much research on this relationship focuses on childhood, adolescence, and old age, while parent-child relations during the transition to adulthood remains a relatively understudied area. Additionally, many studies have gathered data from only one parent (usually mother) and the child; a full understanding of parent-child relations requires information from both mother, father, and the child. Guided by a life course perspective on human development, this study examined trajectories of perceived parent-child contact, affection, and conflict in the transition to adulthood, as well as the moderating effect of sex composition of the parent-child dyad on these trajectories. This study also investigated associations of youth life course transitions (leaving the parental home, exiting the education system, initiating a romantic relationship) with parent-child relations, controlling for parent age and education. Data used in this study were collected from a community sample of German parent-child dyads (n = 3,680, 60% mother-child) followed annually from late adolescence (age 17) into the transition to adulthood (until age 22). Dyadic latent growth models revealed that parent-child contact and conflict decreased, and parent-child affection remained stable. Mothers on average had better relations with their children than did fathers, with the mother-daughter relationship being the closest and the father-son relationship being the most vulnerable. Older parents tended to report more parent-child contact but less affection at age 17, while more educated parents experienced a greater decline in contact from ages 17 to 22. Parent-child co-residence was associated with more parent-child contact, more conflict, and more youth-reported affection toward parents. Being a student in secondary, vocational, or post-secondary schooling was related to more parent-child contact and less conflict in the late teens, and less contact in the early 20s. Being in a romantic relationship was

linked with less parent-child contact and less parent-reported affection toward children in the late teens, and less conflict and more parent-reported affection in the early 20s. Using a rigorous analytic approach, this study expands upon our knowledge about general patterns and predictors of parent-child relations in an important transitional period of life.

Acknowledgements

I would like to express my deepest gratitude to my supervisors, Dr. Nancy Galambos and Dr. Matthew Johnson, for their guidance, encouragement, and support in this research and throughout my graduate career. I am truly fortunate to have had the opportunity to learn from them and to work with them. I would also like to thank Dr. Wendy Hoglund and Dr. Sandra Wiebe for their thorough and thoughtful critiques of this research and their help over the course of my graduate program. Thanks also go to my friends and family within and beyond the University of Alberta community, and especially to my parents, Qin Li and Jun Fang, for their endless love and support since day one. Finally, this research is based on data from the German Family Panel (pairfam), thanks are extended to the pairfam research team and participating families.

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Chapter 1

Problem Statement

A few years ago, a documentary film titled *Generation Boomerang* (Bartlett, LeRose, & Ridout, 2011) aired on Canadian Broadcasting Corporation, not long after sociologist Barbara Mitchell (2006) published her book, *The Boomerang Age*. This documentary featured six families that, while coming from different cultures and countries, had one thing in common: grown children over the age of 18 living or returning home to live with their parents. One observation the film made was that while adult children living in the parental home was associated with family life in certain cultures (e.g., Asian or Latino), it was now increasingly common throughout the Western world. Indeed, surveys reveal that, in Canada, 42% of young people aged 20 to 29 lived with their parents in 2011 (Statistics Canada, 2012a). And in 2015, in the United States, 34% of young people aged 18 to 34 lived with their parents (Vespa, 2017). On average across the European Union Member States, 72% of young men and 60% of young women aged 20 to 24 lived with their parents in 2013 (Eurostat, 2015). In many Western countries over the past couple of decades, there has been an increase in the percentage of young people living at home.

With a considerable number of young people in their late teens and 20s still living at home, they likely interact with parents on a regular basis, emphasizing the importance of the parent-child relationship well beyond adolescence. As a result, the continued development of parent-child relationship during that time deserves empirical attention. However, in the past, research on parent-child relations in late adolescence and the transition to adulthood largely focused on how young people psychologically and physically separate from their parents, a process termed individuation (Cooney, 1997; Laursen & Collins, 2009). In recent years,

researchers have devoted more attention to understanding whether support from parents fosters or hinders young people's transition into self-reliant adults (Fingerman & Yahirun, 2015), still revolving around the theme of separation and individuation. This comes as no surprise given a long line of theories emphasizing the development of autonomy and independence as key developmental tasks for adolescents and young adults (Laursen & Collins, 2009; McElhaney, Allen, Stephenson, & Hare, 2009). Still, there are many unanswered questions about parent-child relations during the transition from adolescence to young adulthood.

After reviewing literature on parent-child relations during the transition to adulthood and noting the scarcity of longitudinal studies on the topic, Galambos and Kotylak (2011) advised that it was essential to have an accurate depiction of stability and change in parent-child relations during this period. In addition, considering varying individual and family characteristics and major life events (e.g., leaving home, finishing school, initiating a romantic relationship) experienced at this time, it is important to investigate the influence of individual and contextual factors on within-person stability and change in parent-child relations (Galambos & Kotylak, 2011). These goals are central to the present study, and they lead to my specific research questions designed to shed light on the continuing development of the parent-child relationship during the transition to adulthood.

My research is guided by a life course perspective on human development. This perspective contends that development is a lifelong process characterized by dynamic interactions between changing individuals and changing contexts (Elder & Shanahan, 2006). The study of the continuing development of parent-child relations requires the use of longitudinal data following the same group or groups of individuals over time to assess intraindividual change and interindividual differences in intraindividual change in parent-child relations (Elder,

Johnson, & Crosnoe, 2003; George & Gold, 1991). In addition, the life course perspective places importance on the effects of life transitions and their timing on developmental trajectories (Elder & Shanahan, 2006). The transition to adulthood provides a good point of entry for understanding how such transitions influence the development of parent-child relations during a period in life when many major life events are likely to occur, such as leaving home, initiating a romantic relationship, and exiting the education system.

I considered sex composition of the parent-child dyad as a potential moderator of developmental trajectories of parent-child relations and their associations with major life events. The life course perspective recognizes that developmental trajectories are influenced by socially defined roles (Elder & Shanahan, 2006). Gender assignment has a profound impact on development across the life course for its implications on gendered social role prescriptions and expectations for individuals and their relationships (Worell, 1981). To better understand the parent-child relationship during the transition to adulthood, it is worth investigating whether trajectories of parent-child relations differ across mother-daughter, father-daughter, mother-son, and father-son dyads.

The key constructs I chose to capture the changing nature of parent-child relations are informed by the intergenerational solidarity-conflict model, which was first proposed to account for patterns of cohesion among family members when the younger generation reaches adulthood (Bengtson & Roberts, 1991). Bengtson (2001) and colleagues define intergenerational solidarity as a multidimensional construct that captures the emotional and behavioural aspects of family relations, which includes six dimensions: associational, affectual, functional, structural, consensual, and normative solidarity (Bengtson & Roberts, 1991; Bengtson, 2001). Intergenerational conflict was later added as a seventh dimension to measure negative exchanges

among family members (Bengtson, Giarrusso, Mabry, & Silverstein, 2002). Levels of these dimensions of solidarity and conflict may vary across individuals and their family relationships. The current study focuses on three of these dimensions that may be expected to change in the transition to adulthood: associational solidarity (interaction or contact between children and parents), affectual solidarity (sentiments and emotions regarding parent-child relations), and intergenerational conflict. In this study, I refer to these dimensions as parent-child contact, affection, and conflict, respectively.

However, due to methodological constraints at the time, Bengtson and colleagues were only able to picture a "here-and-now" snapshot of intergenerational relations due to the lack of longitudinal data (Bengtson & Roberts, 1991, p. 868), and they urged future researchers to use longitudinal designs for gaining a better understanding of these dimensions of intergenerational relations. The intergenerational solidarity-conflict model has demonstrated its usefulness in guiding research on the relationship between parents and adult children (Bengtson, 2001; Cooney, 1997), but how parent-child relations develop during the transition to adulthood for young people and their middle-aged parents, remains an open question.

Limited research on this topic includes mostly cross-sectional (e.g., Bucx, van Wel, & Knijn, 2012) or two-wave longitudinal studies (e.g., Aquilino, 1997; Hogerbrugge & Komter, 2012). A majority of these studies only looked at parent-child relations from the perspective of young people (e.g., Bucx, van Wel, Knijn, & Hagendoorn, 2008) or middle-aged parents (e.g., Fingerman, Miller, Birditt, & Zarit, 2009), while only a handful incorporated responses from both generations (e.g., Cheng, Birditt, Zarit, & Fingerman, 2013). To the best of my knowledge, there is no multi-wave longitudinal research using repeated measures to look at parent-child

relations in the transition to adulthood from both generations' perspectives. Therefore, I ask the following research questions in the current study:

1. Do youth and parent perceptions of parent-child contact, affection, and conflict change over time, and are these trajectories moderated by sex composition of the parent-child dyad?
2. Do youth and parent trajectories of parent-child contact, affection, and conflict change in tandem, and are their associations moderated by sex composition of the parent-child dyad?
3. Do perceived parent-child contact, affection, and conflict vary as a function of important life course transitions, such as leaving home, initiating a romantic relationship, and exiting the education system, and are these associations moderated by sex composition of the parent-child dyad?

Chapter 2

Theoretical Background and Literature Review

In this chapter, I briefly describe the theoretical perspective that guides the present study. I also summarize research (particularly longitudinal research) on parent-child contact, affection, and conflict in the transition to adulthood.

A Life Course Perspective on the Parent-Child Relationship

The current study is guided by the life course perspective on human development which advocates for the study of "changing lives in changing contexts" since its emergence in the 1960s (Elder & Shanahan, 2006, p. 667). The life course perspective views human development as a lifelong process of transactions between individuals and their environments, both of which are considered ever-changing (Elder & Shanahan, 2006). Individuals play an active role in shaping their own development—or changes over time—through dynamic interactions with their contexts ranging from the micro-level, such as family, to the macro-level, such as society (Elder & Shanahan, 2006).

At the micro-level, individuals build and sustain relationships with significant others in their immediate contexts, including parents, friends, and intimate partners. Perceptions of these relationships constitute a part of individual development and, from the life course perspective, are not static. As people and their significant others move through their respective lives, within-person biological and psychosocial changes are associated with changes in perceptions and dynamics of their relationships; changes in relationships are also linked with various within-person outcomes (Antonucci, Birditt, Sherman, & Trinh, 2011). For example, during and after the pubertal maturation process, adolescents may experience changes in relations with their parents, such as increases in parent-child conflict, perceived by both adolescents and parents,

while heightened negativity between parents and adolescents relate to increases in adolescent behavioural and psychological problems (Laursen & Collins, 2009). Thus, evidence points to the importance of studying changing perceptions of relationships for a better understanding of human development.

The parent-child relationship is one of the most influential and long-lasting human social ties (Birditt & Fingerman, 2012). It has received a considerable amount of research attention across many disciplines. The parent-child relationship is particularly well-studied in some segments of the lifespan, such as childhood, adolescence, and late adulthood (Thornton, Orbuch, & Axinn, 1995). When the younger generation is in childhood and adolescence, parents usually carry out the responsibilities of protecting and socializing their children and serve as important attachment figures; that is, the older generation cares for the younger generation (Kreppner, 2000; Lerner & Castellino, 2000). On the other hand, aging research reveals that, when the older generation is in late adulthood, middle-aged children in many cultures and societies provide assistance and caregiving to parents in need, which in turn is linked to the physical and psychological well-being of parents (Blieszner & Wingfield, 2000). For other segments of the lifespan, such as when the younger generation makes the transition to adulthood, the parent-child relationship remains a relatively understudied area (Birditt & Fingerman, 2012; Galambos & Kotylak, 2011). From a life course perspective, advancing our understanding of parent-child relations across the lifespan requires the use of longitudinal data tracking the same group or groups of individuals to examine intraindividual change and interindividual differences in intraindividual change in their perceptions of parent-child relations (Elder et al., 2003; George & Gold, 1991).

Following a life course perspective, patterns of long-term intraindividual change in different domains of development are defined as developmental trajectories which are closely related to the concept of transitions (Elder & Shanahan, 2006; George & Gold, 1991). Transitions refer to changes in role or status; examples of transitions include becoming a parent or retiring from work (Elder & Shanahan, 2006; George & Gold, 1991). Transitions and their timing have long-term implications for developmental trajectories by triggering behavioural changes or shaping later events and experiences (Elder et al., 2003). Becoming a parent, for instance, is an important life course transition for the entire family and cannot be fully understood as an isolated event, but how it affects long-term parent-child relations differs depending on when it happens—parents are likely to react to the pregnancy of their unmarried teenage children very differently from the birth of the first grandchild after their adult children get married (George & Gold, 1991). Thus, to better understand the developmental trajectory of parent-child relations, it is important to not only describe general patterns of stability and change, but also to examine their associations with transitions.

The transition to adulthood provides an excellent entry point for this investigation; it is a period of the lifespan when young people are expected to make multiple social role transitions. In many Western countries, these social role transitions include leaving the parental home, finishing education, and initiating a serious romantic relationship (Krahn, Chai, Fang, Galambos, & Johnson, 2018; Settersten, Ottusch, & Schneider, 2015). These transitions may bring parents and children closer or drive them apart. What parent-child relations are like and how life course transitions are associated with changes in parent-child relations in the transition to adulthood is an interesting question needing more longitudinal evidence.

One possible reason why the parent-child relationship during the transition to adulthood has not received more research attention is the traditional theoretical emphasis on the process of separation and individuation from parents—especially in the context of identity development—that starts in adolescence (Koepke & Denissen, 2012). Given theories which proposed individuation and identity development occurring in adolescence were formulated a couple decades after the Second World War (Blos, 1967; Erikson, 1968), this theoretical emphasis on individuation may partly reflect the historical reality during that period. For instance, in the 1960s and 70s many young people made rapid transitions into adult roles in the domains of work and family in their late teens and early 20s with the help of a strong postwar economy in the Western world (Benson, 2013; Furstenberg, 2010). These young people, the Baby Boomers, might have indeed experienced physical and psychological separation from parents not long after adolescence.

In contrast to their parents' generation, many young people now experience a prolonged transition to adulthood characterized by "delayed" social role changes (Settersten, 2012), which is likely to have implications for their relations with parents. In addition, demographic changes over the past several decades in many parts of the world may also have implications for the connections between young people and their parents (Antonucci et al., 2011). For instance, decreases in fertility rates (worldwide from 4.98 in 1960 to 2.44 in 2016; World Bank, 2018a) suggest that many young people may have fewer children and smaller families of their own compared to their parents. But "once a parent, always a parent" (Seltzer & Bianchi, 2013, p. 276)—the close connections between children and their parents may last longer than in the past as a result of worldwide increases in life expectancy (from 53 years in 1960 to 72 years in 2016; World Bank, 2018b; Antonucci et al., 2011). These are some of the changing social and

historical circumstances that, from a life course perspective, need to be recognized for a better understanding of the development of parent-child relations during the transition to adulthood.

There are multiple ways in which long-term patterns of intraindividual change are assessed in developmental science (Lerner, 2002). One way is to use repeated measures and growth curve modeling to estimate rates of intraindividual change over time (i.e., slopes; Caspi & Roberts, 2001); a nonsignificant slope is indicative of mean-level stability over time, while significant slopes suggest changes over time in one direction or another. In addition, intraindividual changes over time may also vary depending on characteristics of the individual or dynamics of the parent-child dyad—potential sources of interindividual differences in intraindividual change (Galambos & Kotylak, 2011). To better understand perceived parent-child relations across the lifespan, especially during the transition to adulthood, it is crucial to first describe general patterns of intraindividual change in this relationship, and then to examine interindividual differences in such change.

It is important to note that the parent-child relationship is perceived by both the parent and the child, who are distinct individuals but, from a life course perspective, live interdependently (Elder et al., 2003). It is possible that parents and children, who are at different stages of their respective life courses and assuming different roles in the family, would have different perceptions of their relationship. However, it is also possible that, due to living interdependent lives, parents and children change in perceptions of their relationship in a similar fashion during the transition to adulthood. Therefore, a more holistic view of changes in the parent-child relationship benefits from not only repeated measures, but also dyadic data obtained from both parents (mothers, fathers) and children (daughters, sons).

In addition, the life course perspective recognizes the influence of socially defined roles on developmental trajectories (Elder & Shanahan, 2006). Due to its implications for social role prescriptions and expectations related to gender, sex assignment has a profound impact on development across the life course for individuals and their relationships (Worell, 1981). In the context of parent-child relations, it has long been argued that mothers and fathers are expected to fulfill different roles in the family: mothers are often considered as the caregiver and listener, while fathers are regarded as the problem solver and playmate (Galambos, Berenbaum, & McHale, 2009). As suggested by the gender intensification hypothesis, daughters and sons increasingly identify more with their same-sex parent with the onset of puberty (Galambos et al., 2009; Hill & Lynch, 1983; Laursen & Collins, 2009). Indeed, research on the parent-child relationship in childhood, adolescence, and late adulthood revealed that various aspects of parent-child relations differ depending on parent sex, child sex, or, in a limited number of studies, both (Blieszner & Wingfield, 2000; Galambos & Kotylak, 2011; Kreppner, 2000; Lerner & Castellino, 2000). In the present study, sex composition of the parent-child dyad is therefore considered as a potential source of interindividual differences in intraindividual changes in parent-child relations during the transition to adulthood.

What aspects of parent-child relations in this transitional period of life should receive focus? Research on the parent-child relationship in childhood and adolescence places great emphasis on various parenting behaviours and their effects on child outcomes, reflecting the reality of children's and adolescents' dependency on parents. For example, a great deal of research has examined parental responsiveness, warmth, and affection to the child (parental support), parental regulation of the child's behaviour through discipline (behavioural control), and parental management of the child's psychological and emotional experience and expression

(psychological control; e.g., Barber, 1996; Barber, Maughan, & Olsen, 2005; Galambos, Barker, & Almeida, 2003). But during late adolescence and especially the transition to adulthood, the parent-child relationship begins to move from the parent and the parented towards a more mutual and egalitarian relationship (Aquilino, 2006; Laursen & Collins, 2009). Because of this transformation, certain parenting practices, such as behavioural control, may have less relevance and impact on young people during the transition to adulthood as they now exercise great autonomous decision-making even if they still live at home. Therefore, I draw on the intergenerational solidarity-conflict model, originally proposed for understanding parent-child relations in later life (Bengtson & Roberts, 1991), to guide the selection of constructs for the present study.

The Solidarity-Conflict Model of Intergenerational Relations

Formulation of the intergenerational solidarity-conflict model was closely linked to the Longitudinal Study of Generations (LSOG) initiated in 1971 by family sociologist Vern Bengtson and colleagues in the United States (Bengtson, 2001; Bengtson & Roberts, 1991). The LSOG surveyed more than 300 Californian families and followed members of up to four generations in these families for over 30 years with a key focus on intergenerational relations in the adult years (Bengtson, Biblarz, & Roberts, 2002; Bengtson, Copen, Putney, & Silverstein, 2009). Because of this research emphasis and the lack of available theories of family relationships "during the adult family life course" (Bengtson & Roberts, 1991, p. 856; Cooney & Dykstra, 2012; Lüscher & Pillemer, 1998), Bengtson and colleagues developed a model to guide their conceptualization and measurement of intergenerational relations (Bengtson, 2001; Bengtson & Roberts, 1991). The overarching construct they focused on was "solidarity" as, from a sociological perspective, levels of solidarity or cohesion among group members is key to the

existence and maintenance of any human group—family, as a special case of human groups, is no exception (Roberts, Richards, & Bengtson, 1991).

Drawing upon earlier work on social organization, group dynamics, and family theories, Bengtson and colleagues first conceptualized solidarity as a unidimensional construct represented by three components: association, which is contacts or interactions among family members; affection, that refers to emotions or sentiments concerning family relationships; and consensus, which indicates agreement in values, beliefs, and opinions with other family members. Greater intergenerational solidarity between family members was thought to be manifested in higher levels of association, positive affection, and consensus (Bengtson & Roberts, 1991). However, subsequent empirical tests of this model of solidarity found relative independence among these three components. Specifically, affectual and associational solidarity were correlated, but were not linked to consensual solidarity among family members (Bengtson & Roberts, 1991). This was taken as evidence against the assumption that solidarity was a unidimensional construct (Bengtson & Roberts, 1991).

As a result, Bengtson and colleagues revised their intergenerational solidarity model by acknowledging its multidimensionality and adding three components or dimensions: functional, which refers to intergenerational support exchanges; structural, that represents opportunities for family members to interact with one another; and normative solidarity, which refers to endorsement of familial values and expectations; Bengtson & Roberts, 1991). In addition, intergenerational conflict was later recognized by Bengtson and colleagues as another important dimension of intergenerational relations, so it was incorporated into their model and measured in later waves of the LSOG (Bengtson et al., 2002).

Since its inception over forty years ago, the solidarity-conflict model has become one of the most dominant frameworks in research on adult intergenerational relations (Cooney & Dykstra, 2012). Empirical studies have examined these dimensions, both individually and collectively, with samples of various age groups in the adult population. These studies have demonstrated the diversity and complexity of adult intergenerational relations (Bengtson, 2001). For instance, Silverstein, Bengtson, and Lawton (1997) measured five solidarity dimensions in a nationally representative cross-sectional sample of American adults aged between 21 and 73. Using a typological approach, they derived five types of parent-child relationships that were characterized by combinations of varying levels of solidarity in each dimension. Some parent-child relationships were close (i.e., high on all solidarity dimensions), some were distant (i.e., low on every dimension), and some relationships were somewhere between the two extremes, displaying different emotional and behaviour patterns. Research has also found similarities in levels of solidarity dimensions within families. For example, Hank, Salzburger, and Silverstein (2017) examined affectual solidarity and conflict in a cross-sectional sample of German families surveyed in the Panel Analysis of Intimate Relationships and Family Dynamics (pairfam). Specifically, adolescents reported their relationships with their parents and parents reported their relationships with their parents. The results showed that, in this population, levels of affectual solidarity and conflict in grandparent-parent relationships positively related to how much affection and conflict were reported in parent-adolescent relationships.

Studies have also examined the associations among different dimensions of intergenerational relations. In their cross-sectional U.S. study, Bengtson and Roberts (1991) showed that levels of associational solidarity were positively associated with affectual and structural solidarity, while affectual solidarity was positively linked to levels of normative

solidarity in a group of middle-aged adults and their parents. However, they did not find any connection of consensual solidarity with other solidarity dimensions. In a two-wave longitudinal study, Hogerbrugge and Komter (2012) collected repeated solidarity measures in a group of middle-aged Dutch adults. They found that levels of associational solidarity positively related to future levels of affectual solidarity, and vice versa. They also found that functional solidarity, specifically support, was negatively related to affectual solidarity at a later wave, and earlier levels of conflict were related to later associational and functional solidarity. Contrary to some of the findings by Bengtson and Roberts, Hogerbrugge and Komter found structural and normative solidarity to be independent of other dimensions of solidarity.

This evidence for correlations among associational, affectual, functional solidarity, and intergenerational conflict suggests that they may be key solidarity dimensions that deserve particular attention. However, a full examination of functional solidarity goes beyond the scope of the present study. It is defined as intergenerational support exchange and includes the actual behaviours and perceptions of both giving help to and receiving help from other family members. In addition, functional solidarity between parents and children is often highly asymmetric during the transition to adulthood such that middle-aged parents usually provide more tangible and nontangible support to young adult children rather than the other way around (Fingerman & Yahirun, 2015; Lindell & Campione-Barr, 2017). As a result, the current study focuses on the remaining three key dimensions of the intergenerational solidarity-conflict model: associational solidarity, affectual solidarity, and intergenerational conflict. In this study, I refer to these dimensions as parent-child contact, affection, and conflict, respectively.

Research on Parent-Child Contact, Affection, and Conflict in Adolescence and the Transition to Adulthood

Despite recognizing the need to investigate intergenerational relations longitudinally, Bengtson and colleagues did not explicitly hypothesize patterns of longitudinal change in intergenerational solidarity and conflict in their model. Moreover, not all age groups have been treated equally in the adult intergenerational relations literature. A large proportion of empirical studies focused on aging parents and their middle-aged adult children, and many others had samples of adults with rather wide age ranges. In the current study, I focus on a particular age range, late teens and early 20s, sometimes referred to as the early phase of the transition to adulthood, as young people around this age are relatively understudied with respect to parent-child relations. The following paragraphs summarize research that examined parent-child contact, affection, and conflict from adolescence to the transition to adulthood, with a particular emphasis on longitudinal studies with participants in their late teens and early 20s.

Parent-child contact. Given that the vast majority of teens live with their parent or parents (OECD, 2016a; Pew Research Center, 2015; Statistics Canada, 2012b), most teens in many Western countries are expected to have daily contact with their parents in adolescence. It is not surprising that the number of studies assessing the general frequency of parent-child contact with adolescent samples is limited, with research on divorced families a notable exception. When parent-adolescent contact was examined, it was the duration of daily interaction between adolescents and parents on which studies tended to focus (Claes, 1998; Larson & Richards, 1994; Laursen & Williams, 1997).

Cross-sectional studies with young people in their late teens and early 20s indicate frequent parent-child contact in late adolescence and the transition to adulthood. For instance, Fingerman, Cheng, Tighe, Birditt, and Zarit (2012) assessed frequency of parent-child contact in a group of U.S. participants aged 18 to 24. Results showed that over half of these young people

reported talking on the phone or meeting in-person with their parents at least a few times a week. In another study, Fingerman and her colleagues (2016) surveyed college students between ages 18 and 22 in Hong Kong, Korea, United States, and Germany. They found that, on average, students talked on the phone with their parents between once a week and a few times a month. The average frequency of in-person meeting between these college students and their parents ranged between a few times a month and a few times a week, with Asian students contacting more frequently with parents than their Western peers.

A few studies with longitudinal designs suggest that frequency of contact between parents and children decreases when the younger generation makes the transition from adolescence to adulthood. Using narrative interviews, Sneed and colleagues (2006) asked a group of young adults aged 27 to 30 in the U.S. about their life experiences between ages 17 and 27, and asked them to report overall levels of family contact each month during that ten year period. The results showed that young adults' contact with immediate family members decreased from daily at age 17 to about twice a week at age 27, and the rate of decline was fastest during the participants' late teens and early 20s.

It is important to recognize the possibility of recall bias in responses when participants were asked to provide retrospective data on their behaviours for over a decade. In addition, the single measure used in this study combined both parents and siblings; as a result, it is impossible to separate the contributions parent-child and sibling relationships made to the downward trajectory of family contact. Therefore, more prospective longitudinal studies with repeated measures on specific types of family relationship are needed. For example, in a two-wave prospective longitudinal study conducted in Germany, Parker, Lüdtke, Trautwein, and Roberts (2012) surveyed a group of high school students in their senior year and two years after high

school graduation, and found that, on average, contact with parents declined between the two time points. The present study is one of the first to investigate long term intraindividual change in contact with parents when children make the transition to adulthood using prospective data with repeated measures for more than two waves.

Parent-child affection. It has been shown that, overall, the parent-child relationship can be characterized as positive, affectionate, and supportive in adolescence (Laursen & Collins, 2009). Longitudinal studies have documented decreases, however, in the affectual aspect of the parent-child relationship across adolescence with varying indicators such as warmth, supportiveness, and closeness. For instance, McGue, Elkins, Walden, and Iacono (2005) measured parent-child warmth twice in a group of young adolescents in the U.S. and found that, on average, warmth decreased between ages 11 and 14. In another U.S. study, Shanahan, McHale, Crouter, and Osgood (2007) assessed parent-child warmth with a sample of first- and second-borns four times in a five-year period and found that parent-child warmth decreased from ages 11 to 16 for both siblings. Similarly, Seiffge-Krenke, Overbeek, and Vermulst (2010) measured parent-child supportiveness and closeness in a group of German youth annually from ages 14 to 17 and documented an overall declining trend.

A number of longitudinal studies also looked at changes in the affectual aspect of the parent-child relationship over time beyond adolescence with varying measures (e.g., affection, intimacy, closeness, warmth) and revealed mixed results. For example, Rice and Mulkeen (1995) surveyed a sample of U.S. youth on parent-child intimacy three times between ages 13 and 21, and found that average levels of intimacy with parents increased over time. Parker and colleagues (2012) measured parent-child closeness while children made the transition out of high

school, and found that average closeness also increased between the late teens and early 20s for this group of young Germans.

Results were different in another study in which Whiteman, McHale, and Crouter (2011) surveyed a group of U.S. teens and their families six times from ages 13 to 20. They examined intraindividual change in parent-child intimacy as reported by the youth and revealed a declining trend in intimacy. In addition, Parra, Oliva, and del Carmen Reina (2015) assessed parental affection in a sample of Spanish adolescents four times between ages 13 to 22 years. The results showed that average levels of affection remained stable during adolescence and went down from ages 18 to 22. In a group of U.S. high school seniors, Chung, Chen, Greenberger, and Heckhausen (2009) examined parental warmth as reported by young participants at ages 18 and 19, and they did not find significant differences in parental warmth between the two waves. In light of contradictory findings revealing increases, decreases, and little change in affectual solidarity in the transition to adulthood, further research is needed to gain a better understanding. In the present study, I examined intraindividual change in parent-child affection characterized by emotional closeness and self-disclosure.

Parent-child conflict. In their meta-analysis of studies on parent-adolescent conflict, Laursen, Coy, and Collins (1998) concluded that the frequency of conflict decreases linearly from early to late adolescence, while the intensity of negative emotions associated with parent-child conflict increases from early to middle adolescence before leveling off. Without differentiating conflict frequency and intensity, McGue and colleagues (2005) still found an increase in parent-child conflict between ages 11 and 14 in their sample of young adolescents in the U.S. With an underrepresented sample of African American adolescents, Smetana, Daddis,

and Chuang (2003) measured conflict frequency and intensity twice from ages 13 to 15 but found little change in either.

A few longitudinal studies on parent-child conflict generally revealed a decreasing trend from adolescence to the transition to adulthood. Whiteman and colleagues (2011) showed that parent-child conflict decreased from middle adolescence to age 20 in their sample of U.S. teens. Parra and colleagues (2015) in their study of Spanish youth found that, on average, fewer conflicts or arguments happened between parents and these youth at age 22 compared to adolescence. Similarly, in the German study by Parker and colleagues (2012), mean levels of conflict with parents were higher in the senior year of high school than two years after high school graduation. The current study is one of the few studies investigating intraindividual changes in parent-child conflict that focuses on late adolescence and the transition to adulthood.

Parent-Child Relations by Generational Status, Individual Sex, and Sex Composition of the Dyad

Generational status. The majority of studies reviewed above only relied on responses from one generation, either the parents or children, which is common in research on parent-child relations in general (Lindell & Campione-Barr, 2017). However, when both generations were surveyed, discrepancies in their reports regarding various aspects of the parent-child relationship often emerged (Steinbach, Kopp, & Lazarevic, 2017). Across studies with samples of young people and their middle-aged parents, subjective assessments of the parent-child relationship (e.g., affection and conflict) between the two generations were only slightly or moderately correlated (Aquilino, 1999; Belsky, Jaffee, Caspi, Moffitt, & Silva, 2003; Steinbach et al., 2017).

Some researchers argued that parents, compared to their children, tend to have a rosier view of the parent-child relationship (Giarrusso, Feng, & Bengtson, 2004). Utilizing data from

both adolescent children and middle-aged parents in the U.S., Giarrusso and colleagues (2004) showed that mean levels of affection as reported by parents were indeed higher than what was reported by children. Aquilino (1999), in another U.S. sample, found that parents on average rated their relations with young adult children to be warmer and closer with less tension than did their children. Steinbach and colleagues (2017) presented similar results regarding emotional closeness and conflict in their study of German parent-child dyads from three birth cohorts.

However, studies have also yielded results that were incongruent with this proposed generational bias. For instance, parents were not always the ones who provided more positive evaluations, and they do not always disagree with children regarding the quality of the parent-child relationship. It was shown in the aforementioned German study that adolescent and adult children on average reported slightly higher levels of intimacy with parents than did their parents (Steinbach et al., 2017). Examining multiple aspects of parent-child relations, Aquilino (1999) found that parents rated the intergenerational relationship more positively than did young adult children in only a quarter of the dyads in the study, while one fifth of the dyads in the sample had children viewing the relationship more positively than did parents, and the remaining parent-child dyads—slightly more than half of the sample—actually gave quite similar assessments.

These mixed results demonstrated diversity in perceptions of parent-child relations between parents and their children in the transition to adulthood, results based largely on cross-sectional data. In a rare exception, Giarrusso and colleagues (2004) surveyed their sample of parent-child dyads twice—once when the children were in late adolescence, and then twenty years later—and found that parents on average reported higher levels of affection in the parent-child relationship than did children at both times. But whether and how children's and parents' perceptions of their relationship differ over time during the transition to adulthood await more

evidence. The present study aims to shed some light on these questions using longitudinal dyadic data from children and both mothers and fathers.

Individual sex. There is some evidence that aspects of the parent-child relationship in adolescence and the transition to adulthood may differ depending on the sex or gender of the child. In the U.S. longitudinal study of parent-child relations in early adolescence, girls reported higher initial levels of parent-child warmth than did boys at age 11, but they also perceived greater deterioration in their relationship with parents from ages 11 to 14 compared to boys (McGue et al., 2005). In the Spanish study spanning early adolescence to the transition to adulthood, girls consistently reported lower levels of parent-child conflict and higher levels of parent-child communication between ages 13 and 22, though girls and boys were comparable in perceived parent-child affection (Parra et al., 2015). When asked to recall their contact with family, daughters reported a slower decline in family contact from ages 17 to 27 and more contact with family at age 27 compared to sons in a U.S. sample (Sneed et al., 2006). These results suggest the importance of examining differences in parent-child relations based on sex of child.

There is also evidence that the sex or gender of the parent may have an impact on the parent-child relationship in adolescence and the transition to adulthood. In general, mothers' relations with children seem to be better than that of fathers. For example, analyzing data from the first wave of the National Longitudinal Study of Adolescent Health (Add Health), Hawkins, Amato, and King (2006) showed that, compared to fathers, mothers were more involved with their adolescent children aged 16 on average—even non-resident mothers engaged in a similar number of parent-child activities compared to resident fathers. Claes (1998) surveyed adolescents between ages 11 to 18 from Canada, Belgium, and Italy, and found a similar pattern.

Adolescents from all three countries reported more frequent and longer daily contact as well as more frequent and intimate conversations with mothers than with fathers or siblings in the family. They also reported being closer to their mothers than to others in their nuclear family. Whiteman and colleagues (2011) examined longitudinal parent-child relations from ages 11 to 19 in a group of U.S. families and found that, compared to fathers, mothers reported higher levels of intimacy and less frequent conflict with their adolescent children. Thornton and colleagues (1995) assessed parent-child relations twice at ages 18 and 23 in an U.S. sample and found that, compared to fathers, young people rated their relationship with mothers to be more positive and they experienced greater improvement in the relationship with mothers during the transition to adulthood.

Sex composition of the dyad. Given that research has found effects of sex or gender of both the child and the parent, it is reasonable to speculate that the sex composition of the parent-child dyad may influence what path the parent-child relationship takes during the transition to adulthood. Some evidence, mainly cross-sectional, suggests that mother-daughter, father-daughter, mother-son, and father-son dyads differ with respect to parent-child relations across the life course. For instance, in their review of parent-child relations in middle childhood and adolescence, Collins and Russell (1991) concluded that mother-daughter dyads engaged in more enjoyable activities. Using cross-sectional and retrospective ratings, Rossi and Rossi (1990) charted parent-child emotional closeness across the life course and revealed that mothers and daughters were the closest while fathers and sons were the most distant in general. They also found that the frequency of contact was the highest between mothers and daughters and the lowest between fathers and sons in adulthood.

Rice and Mulkeen (1995), using longitudinal data, documented an overall increase in intimacy with both parents from the early teens to early 20s. Upon closer inspection, they found that most of the increase in mother-daughter intimacy occurred between the late teens and early 20s, while mother-son intimacy increased between the early and late teens and levelled off after late adolescence. Moreover, sons reported higher levels of intimacy with fathers than did daughters. This shows that the sex composition of the parent-child dyad may moderate not only mean levels of various aspects of parent-child relations but also trajectories of change in parent-child relations—this association still awaits more longitudinal evidence. The present study examines the potential effects of the sex composition of parent-child dyads on changes in contact, affection, and conflict during the transition to adulthood.

Parent-Child Relations and Life Course Transitions

Consistent with the life course perspective, the current study examines parent-child relations in the context of important life events of children during the transition to adulthood. For young people in their late teens and early 20s, departing from the parental home, leaving school, and embarking on a serious romantic relationship are important life course transitions in many Western countries which may covary with changes in various aspects of parent-child relations.

For instance, not surprisingly, leaving the parental home was associated with decreased family contact and shared activities (Aquilino, 1997; Belsky et al., 2003), but in some cases not related to affection between parents and children (Belsky et al., 2003). There is some evidence, however, showing that leaving the parental home was linked with decreased levels of emotional closeness between parents and their non-resident children (Aquilino, 1997; Bucx & van Wel, 2008). Mixed results were also found regarding how home-leaving related to parent-child conflict. Some research showed that conflict decreased after young people moved out (Aquilino,

1997), but another study found that young adults who lived with parents reported less conflict over time than did young adults who left (Masche, 2008). The present study looks at the effects of home-leaving on parent-child contact, affection, and conflict specifically during the late teens and early 20s, a period when many young people start to live independently.

Most research concerning school attendance and parent-child relations focused primarily on the relationship between student status of young people and parental support. Many studies found that, in the transition to adulthood and young adulthood, students received more parental support, especially financial, housing, and practical help, than nonstudents (Bucx et al., 2012; Fingerman et al., 2009; Fingerman et al., 2015; Swartz, Kim, Uno, Mortimer, & O'Brien, 2011). However, it is less clear whether or not student status in the late teens and early 20s has an influence on other aspects of the parent-child relationship, such as parent-child contact, affection, and conflict.

Studies of the impact of young people's intimate relationship status on parent-child relations often made comparisons between married and non-married young adults. For example, in one study, married young adults reported closer and warmer relations with their parents than non-married individuals (Belsky et al., 2003). But being married and being in a relationship (without marriage) may have different implications for young people and their parents (Belsky et al., 2003). Compared to young adults in the late 20s and early 30s, individuals in their late teens and early 20s are less likely to be married given that the average age of first marriage has been increasing significantly in many Western countries (OECD, 2016b). Focusing on young people in this age range, the present study explores the influence of being in a serious romantic relationship on parent-child contact, affection, and conflict.

Parent-Child Relations and Parent Age and Education

Evidence largely from U.S. studies indicates that parent age and education are related to the parent-child relationship in the transition to adulthood and beyond. For instance, Aquilino and Supple (1991) found that larger age differences between middle-aged parents and young adult children were associated with less disagreements and more enjoyable time together. Aquilino (1997) also found that older parent age was associated with more shared activities between parents and their children aged 18 to 24. But Rossi and Rossi (1990) showed that smaller age differences between parents and sons were associated with higher affective closeness in adolescence and young adulthood. With respect to parent education, in two studies higher parent education was related to lower levels of emotional closeness and more conflicts in adolescence and the transition to adulthood (Aquilino, 1997; Rossi & Rossi, 1990). The present study controls for these two individual characteristics of the parent when examining parent-child contact, affection, and conflict.

The Current Study

In the present longitudinal study, I analyze data from a group of German parent-child dyads who were surveyed annually—six times (starting in 2009)—during the transition to adulthood. In many ways, the transition to adulthood in Germany is similar to other Western countries such that, over recent decades, young people take longer to leave the parental home, get married, and have children, while increasingly more young people attend and complete higher education (Buchmann & Kriesi, 2011; Cook & Furstenberg, 2002; Eurostat, 2015).

However, compared to peers in many other developed countries such as Canada and the U.S., the school-to-work transition is considered relatively smooth for German youth (Buchmann & Kriesi, 2011; Cook & Furstenberg, 2002). This is partly due to institutionalized vocational training in the education system: young people can be trained as apprentices in various

occupations and may be offered a position once their training is completed in the late teens and early 20s (Buchmann & Kriesi, 2011; Cook & Furstenberg, 2002). Although some argue that the German apprenticeship system may become less effective when confronted with globalization of and structural change in the economy (Buchmann & Kriesi, 2011; Cook & Furstenberg, 2002), the unemployment rate among young people in Germany continues to be one of the lowest in Europe (Eurostat, 2015).

In addition, the majority of postsecondary education institutions in Germany are public (Spiess & Wrohlich, 2012) and students do not pay tuition for higher education in over half of German states (Hübner, 2012). Among European Union Members states, Germany consistently had higher than average enrollment rates in education among young people between ages 20 to 29 in the past decade (Eurostat, 2015). But young Germans also tend to take longer to finish their higher education than peers from other countries, such as the U.S. (Cook & Furstenberg, 2002). Given that many studies on parent-child relations from adolescence to young adulthood were conducted in North America, from a life course perspective, it is both interesting and important to examine the development of this relationship in other contexts.

The current study concentrates on late adolescence and the early years of the transition to adulthood from ages 17 to 22. Annual assessments of perceived parent-child contact, affection, and conflict were obtained from both children and parents, which allows the investigation of short-term changes in parent-child relations in both generations. The sex composition of the parent-child dyad is considered as a potential moderator for changes in perceptions of parent-child relations. Living arrangement, student status, and relationship status of youth were also measured at each wave and are included as time-varying covariates of parent-child contact, affection, and conflict, which enables the examination of possible effects of contextual factors

and their timing on parent-child relations. Parent education, a proxy for socioeconomic status, and parent age are potential correlates of various aspects of parent-child relations during the transition to adulthood (Aquilino, 1997; Aquilino & Supple, 1991) and are controlled in the present study. The current study aims to answer the following research questions:

1. Do youth and parent perceptions of parent-child contact, affection, and conflict change over time, and are these trajectories moderated by sex composition of the parent-child dyad?
2. Do youth and parent trajectories of parent-child contact, affection, and conflict change in tandem, and are their associations moderated by the sex composition of the parent-child dyad?
3. Do perceived parent-child contact, affection, and conflict vary as a function of important life course transitions, such as leaving home, initiating a romantic relationship, and exiting the education system, and are these associations moderated by sex composition of the parent-child dyad?

Chapter 3

Method

In this chapter, I introduce the Panel Analysis of Intimate Relationships and Family Dynamics (pairfam) project on which the analyses were based. Then, I describe the main study variables and provide an analytical plan for the present study.

Procedure

The present study uses data from the Panel Analysis of Intimate Relationships and Family Dynamics study (German Family Panel or pairfam; http://www.pairfam.de/en/), release 7.0 (Brüderl et al., 2016). The pairfam study, funded by the German Research Foundation, is an ongoing multidisciplinary research project that aims to advance understanding of issues pertaining to partnership, parenthood, child development, and intergenerational relations. Pairfam employs a longitudinal, multi-actor design. Data are to be collected annually between 2008 and 2022 for a total of 14 years. This study uses data collected between Wave 2 (2009) and Wave 7 (2014).

Pairfam launched in 2008 (Wave 1) with a German nationally representative sample of 12,402 anchors (i.e., focal participants) from three birth cohorts: youth anchors born between 1991 and 1993 (ages 15–17), young adults born between 1981 and 1983 (ages 25–27), and adults nearing midlife born between 1971 and 1973 (ages 35–37). Intimate partners (n = 3,729 at Wave 1) of anchors were recruited from Wave 1 onwards, while anchors' children (n = 862 at Wave 2) were recruited from Wave 2 onwards. Anchors' parents (n = 5,015 at Wave 2) were recruited from Waves 2 through 8. However, at Wave 8, the inclusion criteria for parents changed; only parents of the anchors who have had at least one child were retained. Data from anchors are collected using computer-assisted personal interviews and computer-assisted self-interviews for

sensitive questions. Data from anchors' partners, parents, and children are collected using paper and pencil questionnaires. All participants are provided with a small stipend (ranges from €5 to €10) for participation. For further information on the pairfam study, see Huinink et al. (2011).

Participants

The current study aims to explore parent-child relations during the transition to adulthood from both generations' perspectives. Therefore, data from youth anchors who were born between 1991 and 1993 and their biological or adoptive parents in Waves 2 (2009) through 7 (2014) of the pairfam study are used in the analyses. The final sample includes youth in the 1991–93 birth cohort who had at least one biological or adoptive parent participate at least once in pairfam between Waves 2 through 7. Thus, we refer to these children as youth when discussing analyses and results for these participants.

At Wave 2, 3,555 youth anchors participated in pairfam, and 76% provided consent to contact at least one parent for inclusion in the study. In cases where youth provided consent to contact multiple parents, up to three of their parents were recruited. As a result, 3,075 parents for these youth joined at Wave 2, of which 96% were biological or adoptive parents. Because each youth who had a parent or parents participate in pairfam may be matched with more than one parent (e.g., mother, father, or both), the number of youth and the number of parents included in the final sample are not the same. In addition, because non-participating youth from a previous wave were contacted again, and participating youth were asked to provide consent to interview their parents at each wave, the final sample sizes of youth and parents were larger than the Wave 2 sample sizes as some youth and parents re-joined or joined for the first time at later waves. After excluding youth who had no parent or only stepparents join the study, the final sample for the present study consists of 3,680 youth-parent dyads, made of 2,301 youth from the birth

cohort 1991–93 and 3,680 of their biological or adoptive parents. Eighty-four percent of youth and 54% of parents participated three times or more between Waves 2 and 7.

One youth reported a change in sex from Waves 5 to 6. For the remaining participants, based on youth and parent sex, youth or parents fall into one of four groups varying in dyadic sex composition: there were 1,101 daughter-mother dyads (30%), 733 daughter-father dyads (20%), 1,090 son-mother dyads (30%), and 755 son-father dyads (21%).

Youth. In the final sample, 50% of the youth were female. At Wave 2, the average age of youth was 17 years (*SD* = .88). The majority (78%) of youth lived with two parents, 19% lived with one parent, and 2% had no mother or father living with them. Most youth were enrolled in educational institutions (46% in higher-level secondary school/Gymnasium, 19% in vocational training/Ausbildung, 9% in medium-level secondary school/Realschule, 6% in comprehensive school/Gesamtschule, and 16% others), while 4% were not enrolled in any school or training. Slightly over a quarter (26%) of youth were employed and their employment was primarily vocational training-related work (19%), while 3% had part-time jobs, 1% had a full-time job, and 3% reported other unspecified work. More than two-thirds (67%) were single, 31% were in a non-cohabiting relationship (e.g., dating), 2% were cohabiting, and one participant was married.

Parents. Sixty percent of parents in the final sample were women. At Wave 2, the mean age of parents was 47 years (*SD* = 5.28), and 83% of the parents were married, 12% were divorced, 1% were widowed, and 4% had never married. Most parents had between two and three children (*M* = 2.46, *SD* = 1.08), including biological, adoptive, and other types of children who were living or had ever lived with them. Counting all schooling and vocational training, these parents had an average of 11.32 years of education (*SD* = 2.03); 89% were employed, and

most had full-time employment. The average monthly net household income was €3,512 (*SD* = 5025.44), as reported by parents.

Attrition

Although youth and parents could re-join or join the pairfam study at later waves, most of the youth (*n* = 2,243) and parents (*n* = 2,938) included in the final sample were already present at Wave 2. Therefore, using independent samples *t*-tests and χ^2 tests, each wave's participants and drop-outs were compared on the main study variables (parent-child contact, affection, and conflict) measured at Wave 2, as well as the time-invariant covariates (youth sex, parent sex, parent education, and parent age) assessed at Wave 2. This was done separately for youth and parents. Bonferroni correction ($p < .001$) was applied to control for familywise error due to the large number of comparisons.

In comparisons of each wave's participants and drop-outs, for both youth and parents, there was no difference in Wave 2 youth sex, parent sex, parent-child affection, and conflict. Some significant differences in Wave 2 parent education, parent age, and parent-child contact were found in comparisons of participants vs. drop-outs across Waves 3 and 7, but all differences were small in magnitude. Specifically, four of 35 comparisons for youth (11%) revealed significant differences: Wave 5, Wave 6, and Wave 7 continuing participants' parents had more education at Wave 2 than did parents of drop-outs (Wave 5: *M* = 11.59 years, *SD* = 2.12 vs. *M* = 11.31 years, *SD* = 1.97; Wave 6: *M* = 11.62 years, *SD* = 2.10 vs. *M* = 11.31 years, *SD* = 2.04; and Wave 7: *M* = 11.65 years, *SD* = 2.09 vs. *M* = 11.32 years, *SD* = 2.08; *d*s = .14–.16). The Wave 7 comparison showed that, at Wave 2, continuing participants' parents were slightly older than parents of the drop-outs (*M* = 47.39 years, *SD* = 5.24 vs. *M* = 46.69 years, *SD* = 5.35; *d* = .13).

Thirteen of 35 comparisons for parents (37%) revealed significant differences between continuing participants and drop-outs. Among parents, continuing participants and drop-outs differed on three variables assessed at Wave 2: parent education, parent age, and parent-reported contact with anchors. At each wave between Waves 3 and 7, compared to parents who dropped out, parents who continually participated had more education at Wave 2 (Wave 3: M = 11.70 years, SD = 2.03 vs. M = 11.24 years, SD = 2.15; Wave 4: M = 11.78 years, SD = 2.03 vs. M = 11.24 years, SD = 2.12; Wave 5: M = 11.79 years, SD = 2.04 vs. M = 11.27 years, SD = 2.10; Wave 6: M = 11.82 years, SD = 1.99 vs. M = 11.32 years, SD = 2.13; Wave 7: M = 11.85 years, SD = 1.96 vs. M = 11.34 years, SD = 2.13) and more contact with youth at Wave 2 (Wave 3: M = 6.93, SD = .36 vs. M = 6.85, SD = .55; Wave 4: M = 6.94, SD = .34 vs. M = 6.86, SD = .54; Wave 5: M = 6.93, SD = .36 vs. M = 6.87, SD = .51; Wave 6: M = 6.94, SD = .31 vs. M = 6.87, SD = .52; Wave 7: M = 6.94, SD = .31 vs. M = 6.87, SD = .50). These differences were also small (ds = .22–.26 for parent education, ds = .14–.18 for contact).

Concerning Waves 5, 6, and 7, parents who continually participated were slightly older at Wave 2 than parents who dropped out (Wave 5: M = 47.51 years, SD = 5.22 vs. M = 46.75 years, SD = 5.34; Wave 6: M = 47.64 years, SD = 5.19 vs. M = 46.77 years, SD = 5.34; Wave 7: M = 47.66, SD = 5.23 vs. M = 46.82, SD = 5.31; ds = .14–.17). These analyses suggest that differences between participants and drop-outs are negligible in the youth sample; but in the parent sample, older and more educated parents and parents who had more contact with their children were more likely to remain in the study.

Measures

Parent-child contact. Contact was assessed with one item asking about the frequency of contact between youth and their parents: “How often are you in contact with your

mother/father/child, adding up all visits, letters, phone calls, etc.?" Responses were 1 = *never*, 2 = *less often*, 3 = *several times per year*, 4 = *1–3 times per month*, 5 = *once per week*, 6 = *several times per week*, or 7 = *daily*. Youth and their parents were asked this question at every wave. This single item is modified from a similar question from the German Ageing Survey (Tesch-Römer, Wurm, Hoff, & Engstler, 2002), and it has been used in previous studies to describe parent-child relationship characteristics (Becker, Salzburger, Lois, & Nauck, 2013; Hank & Salzburger, 2015; Steinbach et al., 2017; Tanskanen, 2017) or to examine associations between intergenerational and intimate relationship dynamics (Johnson, Galovan, Horne, Min, & Walper, 2017).

Parent-child affection. Affection was measured by three items concerning emotional closeness and self-disclosure between youth and their parents. To assess emotional closeness, youth were asked to respond to the question: "How close do you feel to your mother/father today emotionally?" Their parents were asked the same question with slightly different wording: "How close are you to [the child] emotionally?" Responses ranged from 1 = *not at all close* to 5 = *very close*. To assess self-disclosure, youth and parents responded to two questions: "How often do you tell your mother/father/child what you are thinking?" and "How often do you share your secrets and private feelings with your mother/father/child?" Responses ranged from 1 = *never* to 5 = *always*. These three questions were also asked annually between Waves 2 and 7. For the present study, the mean of the three items was computed for youth and parents, respectively. Higher scores were indicative of higher levels of parent-child affection.

The emotional closeness item was taken from the German Ageing Survey (Tesch-Römer et al., 2002), while the self-disclosure items were from the intimacy subscale of the Network of Relationships Inventory (NRI; Furman & Buhrmester, 1985). These items have been used in

previous studies either separately (i.e., using only the emotional closeness item or self-disclosure items; Becker, 2015; Becker, Lois, & Salzburger, 2015; Hank et al., 2017; Johnson et al., 2017; Klaus, Nauck, & Steinbach, 2012) or collectively (Steinbach et al., 2017; Tanskanen, 2017) as indicators for the affective dimension of parent-child relations. Across waves, Cronbach's α ranged from .78 to .80 for the three items completed by youth, and from .60 to .68 for the three items completed by parents. Longitudinal measurement invariance was tested on the three-item scale respectively for youth and parents. The results supported strict invariance—equal structure, factor loadings, intercepts (partial for parents), and residual variance—across time in both generations (see Appendix A, Table A1 for more details).

Parent-child conflict. Conflict was assessed using two items: "How often are you and your mother/father/child annoyed or angry with each other?" and "How often do you and your mother/father/child disagree and quarrel?" Responses ranged from 1 = *never* to 5 = *always*. Both questions were present for youth and parents from Waves 2 through 7. For the current study, the mean of the two items was computed respectively for youth and parents with higher scores representing more parent-child conflict.

The two items were adapted from the six-item conflict subscale of the Network of Relationships Inventory (NRI; Furman & Buhrmester, 1985). The stem question for the original NRI questions asked "How much…" rather than "How often…" and the original NRI response scale ranged from 1 = *little or none* to 5 = *the most.* Previous studies have used these two items for the assessment of levels of conflict in parent-child relations (Hank & Salzburger, 2015; Johnson et al., 2017; Steinbach et al., 2017; Tanskanen, 2017). Between Waves 2 and 7, concurrent correlations between the two items were all significant and ranged from .61 to .66 based on youth reports, and from .63 to .67 based on parent reports. Longitudinal measurement

invariance was tested on the two-item measure for youth and parents, respectively. Similar to affectual solidarity, the results supported strict invariance—equal structure, factor loadings, intercepts (partial), and residual variance—across time in both generations (see Appendix A, Table A2 for more details).

Time-invariant covariates. Youth sex, parent sex, parent education, and parent age were included in the study as time-invariant covariates. Sex was coded as 0 = *female* and 1 = *male* for both youth and parent sex. Parent education was measured with one item in the parent survey: "How many years of schooling did you have altogether?" The responses in years to this question was used. Parent age in years at the beginning of the study was also coded based on responses from parents.

Time-varying covariates. Living arrangement, student status, and relationship status, assessed at each wave in the youth survey, were examined as time-varying covariates for the present study. Living arrangement was coded as 0 = *not living with mother or father* and 1 = *living with mother or father*. Student status was coded as 0 = *not enrolled in any educational institution* and 1 = *enrolled in some form of educational institution,* including general schooling or vocational training. Relationship status was coded as 0 = *not in a relationship* and 1 = *in a relationship*; being in a relationship included dating, cohabiting, and marriage.

Analytic Plan

To take advantage of the longitudinal, multi-actor design of pairfam, latent growth models were used to answer my three research questions. Latent growth models are well-suited for the main purpose of the current study, namely to investigate changes over time in perceived parent-child relations. Individual latent growth models can be used for longitudinal data analysis to examine whether a variable changes over time, while dyadic latent growth models can be used

to estimate how changes over time are coordinated between two interdependent individuals, such as a parent and a child (Kashy, Donnellan, Burt, & McGue, 2008). Multi-group comparisons can be conducted on the individual and dyadic latent growth models to test possible moderating effects. In addition, time-invariant and time-varying covariates can be incorporated into latent growth models to investigate sources of variability in developmental changes.

For my first research question, how parent-child contact, affection, and conflict changed over time during the transition to adulthood, a series of individual latent growth models was estimated respectively for youth and their parents. In addition, a series of multi-group comparisons on the individual latent growth models was conducted across the four types of dyadic sex composition (i.e., mother-daughter, father-daughter, mother-son, father-son) separately for youth and parent reports to test whether sex composition of the parent-child dyad moderated changes in contact, affection, and conflict. Given that youth could have up to two parents participate in the current study, it is possible for the same youth to be in two groups for the multi-group comparisons.

My second research question concerns whether trajectories of parent-child contact, affection, and conflict changed in concordance between youth and parents, and whether sex composition of the parent-child dyad moderated associations between youth and parent changes in parent-child relations. A series of dyadic latent growth models were estimated for youth-parent dyads, and multi-group comparisons on the dyadic latent growth models were conducted across the four types of dyadic sex composition.

My third research question asks how important life course transitions correlated with parent-child contact, affection, and conflict, and whether sex composition of the parent-child dyad moderated associations between parent-child relations and life course transitions.

Covariates were incorporated into the dyadic latent growth models retained for the second research question, and multi-group comparisons on the dyadic latent growth models with covariates were conducted across the four types of dyadic sex composition. Details of the modeling process are described in the Results section.

All main analyses were conducted using Mplus 8.1 (Muthén & Muthén, 1998–2017). Full information maximum likelihood estimation was used due to its superior performance over listwise or pairwise deletion and mean or similar response pattern imputation (Enders & Bandalos, 2001). FIML also allows the inclusion of all available data from participants. Model fit was evaluated using the chi-square (χ^2) test. Although non-significant χ^2s are generally used to indicate good fit between models and data, it is worth noting that the test is sensitive to large sample sizes, such as in the current study. Therefore, a number of approximate fit indices were also considered when evaluating model fit: the Steiger-Lind Root Mean Square Error of Approximation (RMSEA), the Bentler Comparative Fit Index (CFI), the Tucker-Lewis Index (TLI), and the Standardized Root Mean Square Residual (SRMR). RMSEA values smaller than .08, CFI and TLI values equal to or greater than .95, and SRMR values equal to or smaller than .10 suggest adequate model fit (Kline, 2016). The chi-square difference ($\Delta\chi^2$) test was used to compare nested models; when two models are compared, a significant $\Delta\chi^2$ value indicates significant differences between them, among which the model with a smaller χ^2 value fits the data better (Kline, 2016).

Chapter 4

Results

In this chapter, I present the descriptive statistics for the main study variables. Then I describe the series of analyses and results that answer my three research questions. Unless otherwise specified, ages mentioned in the description refer to youth ages.

Descriptive Statistics

Table 1 provides descriptive statistics for the outcome variables (parent-child contact, affection, conflict). On the whole, frequent (between "several times per week" and "daily") parent-child *contact* was reported by youth and parents at each wave. Mean levels of *affection* reported by youth and parents fell above the mid-point of the five-point scale across the six waves. Parent-child *conflict* was generally reported as infrequent (below the mid-point of the five-point scale) by youth and parents across years. Youth and parent concurrent reports were all significantly, positively correlated: correlation coefficients ranged from .690 to .754 for contact, from .342 to .411 for affection, and from .372 to .402 for conflict. As a measure of dyadic interdependence, these correlations suggest moderate to high levels of agreement between youth and parents. Table 2 provides the descriptive statistics for the time-varying covariates (living arrangement, student status, relationship status). Between ages 17 and 22, the proportion of youth who lived with at least one parent or who were enrolled in some type of educational institution decreased from more than 95% to above half, while the proportion of youth who were in a relationship (married or not) increased from one third to over 50%.

Tables 3, 4, and 5 show bivariate correlations between outcome variables and covariates. Unless otherwise specified, significant associations reported here (in the text) were found in both youth and parent reports. With respect to *contact*, parent sex was consistently associated with

Table 1

Descriptive Statistics for the Outcome Variables as Reported by Youth and Parent

	Wave 2 M_{age} = 17		Wave 3 M_{age} = 18		Wave 4 M_{age} = 19		Wave 5 M_{age} = 20		Wave 6 M_{age} = 21		Wave 7 M_{age} = 22	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Parent-child contact[a]												
Youth	6.867	.563	6.811	.613	6.645	.785	6.428	.950	6.281	.995	6.181	1.045
Parent	6.900	.443	6.839	.546	6.699	.673	6.458	.850	6.350	.856	6.210	.920
Parent-child affection[b]												
Youth	3.403	.814	3.330	.788	3.360	.803	3.283	.803	3.316	.791	3.325	.791
Parent	3.434	.609	3.483	.630	3.356	.604	3.410	.632	3.334	.618	3.474	.626
Parent-child conflict[c]												
Youth	2.643	.728	2.650	.750	2.589	.728	2.510	.745	2.440	.702	2.356	.738
Parent	2.651	.680	2.642	.653	2.498	.649	2.489	.645	2.345	.638	2.351	.629
n												
Youth	3585–3592		3333–3339		3034–3040		2787–2800		2552–2561		2269–2281	
Parent	2914–2938		2210–2243		1912–1921		1779–1787		1489–1501		1316–1323	

Note. M_{age} = mean age of youth.

[a]Possible range: 1–7; higher scores indicate more frequent contact. [b]Possible range: 1–5; higher scores indicate higher levels of affection. [c]Possible range: 1–5; higher scores indicate more frequent conflict.

Table 2

Descriptive Statistics in Percent for the Time-Varying Covariates as Reported by Youth

	Wave 2 M_{age} = 17	Wave 3 M_{age} = 18	Wave 4 M_{age} = 19	Wave 5 M_{age} = 20	Wave 6 M_{age} = 21	Wave 7 M_{age} = 22
Living arrangement % living with at least one parent	98	94	85	75	64	54
Student status % enrolled in educational institutions	96	89	85	74	71	67
Relationship status % in a relationship	33	37	43	49	50	52
n						
Youth[a]	2232–2243	2054–2069	1868–1875	1716–1723	1562–1569	1389–1395

Note. M_{age} = mean age of youth.
[a]Only unique youth are counted.

Table 3

Bivariate Correlations between Youth- and Parent-Reported Parent-Child Contact at Waves 2 to 7 and Covariates

	Wave 2 M_{age} = 17	Wave 3 M_{age} = 18	Wave 4 M_{age} = 19	Wave 5 M_{age} = 20	Wave 6 M_{age} = 21	Wave 7 M_{age} = 22
Time-invariant covariates						
Youth sex[a]						
Youth	.006	.008	.014	.027	.017	.008
Parent	.008	.018	.003	.030	.021	.001
Parent sex[a]						
Youth	−.161*	−.162*	−.140*	−.132*	−.146*	−.157*
Parent	−.159*	−.111*	−.112*	−.101*	−.087*	−.143*
Parent education[b]						
Youth	.006	.006	−.017	−.077*	−.074*	−.099*
Parent	−.004	−.017	−.045	−.099*	−.100*	−.109*
Parent age						
Youth	.019	−.011	.011	−.021	−.017	−.018
Parent	−.018	−.035	−.004	−.034	−.028	−.068*
Time-varying covariates						
Living arrangement[c]						
Youth	.453*	.468*	.542*	.553*	.532*	.531*
Parent	.448*	.509*	.555*	.568*	.515*	.525*
Student status[d]						
Youth	.045*	.054*	.058*	−.059*	−.066*	−.086*
Parent	.042*	.057*	.062*	−.046	−.102*	−.120*
Relationship status[e]						
Youth	−.044*	−.034	−.051*	−.033	−.058*	−.086*
Parent	−.039*	−.042*	−.060*	−.050*	−.050	−.090*

Note. M_{age} = mean age of youth. Time-invariant covariates are from Wave 2; time-varying covariates are from Waves 2 to 7.
[a]1 = *male*. [b]*Total years of schooling*. [c]1 = *living with the parent*. [d]1 = *enrolled in some form of educational institution*. [e]1 = *in a relationship*.
*$p < .05$.

Table 4

Bivariate Correlations between Youth- and Parent-Reported Parent-Child Affection at Waves 2 to 7 and Covariates

	Wave 2 M_{age} = 17	Wave 3 M_{age} = 18	Wave 4 M_{age} = 19	Wave 5 M_{age} = 20	Wave 6 M_{age} = 21	Wave 7 M_{age} = 22
Time-invariant covariates						
Youth sex[a]						
Youth	−.184*	−.191*	−.186*	−.175*	−.210*	−.211*
Parent	−.097*	−.106*	−.140*	−.119*	−.146*	−.195*
Parent sex[a]						
Youth	−.269*	−.277*	−.266*	−.284*	−.275*	−.272*
Parent	−.269*	−.293*	−.242*	−.275*	−.291*	−.273*
Parent education[b]						
Youth	.008	.015	−.001	.001	.009	−.001
Parent	−.007	−.040	−.030	−.046	−.040	−.030
Parent age						
Youth	−.121*	−.093*	−.115*	−.084*	−.093*	−.085*
Parent	−.109*	−.127*	−.117*	−.080*	−.112*	−.146*
Time-varying covariates						
Living arrangement[c]						
Youth	.079*	.017	.044*	.005	.010	.019
Parent	.014	.033	.011	−.002	−.019	.038
Student status[d]						
Youth	−.019	.027	.062*	.032	.043*	.030
Parent	.009	.024	.023	.044	.009	.006
Relationship status[e]						
Youth	.065*	.014	.022	.025	.043*	.065*
Parent	−.009	−.005	.036	.024	.035	.032

Note. M_{age} = mean age of youth. Time-invariant covariates are from Wave 2; time-varying covariates are from Waves 2 to 7.
[a]1 = *male*. [b]Total years of schooling. [c]1 = *living with the parent*. [d]1 = *enrolled in some form of educational institution*. [e]1 = *in a relationship*.
*$p < .05$.

Table 5

Bivariate Correlations between Youth- and Parent-Reported Parent-Child Conflict at Waves 2 to 7 and Covariates

	Wave 2 M_{age} = 17	Wave 3 M_{age} = 18	Wave 4 M_{age} = 19	Wave 5 M_{age} = 20	Wave 6 M_{age} = 21	Wave 7 M_{age} = 22
Time-invariant covariates						
Youth sex[a]						
Youth	−.077*	−.078*	−.082*	−.072*	−.092*	−.046*
Parent	−.004	.009	.002	−.005	.035	.023
Parent sex[a]						
Youth	−.071*	−.084*	−.092*	−.074*	−.053*	−.057*
Parent	−.067*	−.050*	−.033	−.055*	−.028	−.033
Parent education[b]						
Youth	.011	.023	.039*	.015	.013	−.003
Parent	.004	.023	−.017	−.009	−.005	−.010
Parent age						
Youth	−.020	.005	.004	−.018	.000	.004
Parent	−.030	−.035	−.028	−.016	−.023	−.006
Time-varying covariates						
Living arrangement[c]						
Youth	.038*	.067*	.074*	.108*	.135*	.173*
Parent	.059*	.057*	.105*	.149*	.215*	.215*
Student status[d]						
Youth	−.013	.031	−.003	.001	.023	−.030
Parent	−.024	−.063*	−.058*	−.022	−.024	−.025
Relationship status[e]						
Youth	.017	.027	−.023	−.044*	−.045*	−.082*
Parent	−.008	.037	−.027	−.111*	−.056*	−.100*

Note. M_{age} = mean age of youth. Time-invariant covariates are from Wave 2; time-varying covariates are from Waves 2 to 7.
[a]1 = *male*. [b]Total years of schooling. [c]1 = *living with the parent*. [d]1 = *enrolled in some form of educational institution*. [e]1 = *in a relationship*.
*$p < .05$.

parent-child contact such that less frequent contact was seen for fathers than for mothers. Parents with more years of schooling had less frequent contact with youth across ages 20 to 22. Living with the parent was consistently associated with more frequent parent-child contact, being a student was associated with more contact between ages 17 and 19 but less contact from ages 20 to 22, and being in a relationship was consistently associated with less frequent contact between youth and parents. Regarding *affection*, being a son, a father, or an older parent was consistently associated with lower levels of parent-child affection. With respect to *conflict*, youth and parent sex were associated with parent-child conflict, but primarily in youth reports: more conflict was seen for daughters than for sons, and for mothers than fathers. Mothers, too, were more likely to report conflict when their children were 17, 18, and 20 years old. Living with the parent was associated with more conflict, while being in a relationship was linked with less conflict between ages 20 and 22.

Individual Latent Growth Models and Moderating Effect of Sex Composition

My first research question asks whether youth and their parents' perceptions of contact, affection, and conflict change during the transition to adulthood, and whether these trajectories are moderated by sex composition of the parent-child dyad. To answer this question, separately for youth and parents, a series of individual latent growth models were estimated and multi-group comparisons on the individual latent growth models were conducted across the four types of dyads (i.e., mother-daughter, father-daughter, mother-son, father-son) for each of the three constructs.

With respect to the individual latent growth models, preliminary analyses (see Appendix B for more details) suggested that changes in youth and parent perceptions were nonlinear for all three constructs. As a result, I used nonlinear curve fitting—the simplest approach for modeling

nonlinear change that does not assume a priori the nature of the change function (Kline, 2016; Little, 2013). To model an individual latent growth trajectory using this method, two latent growth factors, the intercept and the slope, are estimated. For scaling, the first and the last factor loadings of the slope are fixed to 0 and 1, respectively, while the rest of the loadings are freely estimated. The slope is interpreted as the total amount of change between the first and the last assessments, and the freely estimated factor loadings can be interpreted as the proportion of total change that occurred. Figure 1 depicts a prototypical individual latent growth model. Model comparison results indicated that, for all three constructs, youth and parent growth models with randomly varying intercept and slope fit the data best compared to other models.

In addition, to examine the moderating effect of sex composition on parent-child contact, affection, and conflict, a series of multi-group comparisons were conducted for the individual latent growth models across the four types of dyads. For each of the three constructs, a series of multi-group models with four individual latent growth curves were estimated and compared respectively for youth and parents. These multi-group models varied in how many parameters (i.e., slope factor loadings, means and variances of and covariances between growth factors) were constrained to be equal across the four groups. In the least constrained model, all parameters were allowed to vary across groups, while in the most constrained model, all parameters were specified to be equal across groups. Chi-square difference tests were used to compare two adjacent multi-group models, one with fewer equality constraints and one with more constraints, to determine whether adding more equality constraints significantly worsened the model fit. For all three constructs, these multi-group models fit the data well for youth and parents, while model comparisons revealed that individual growth trajectories for parent-child relations varied depending on sex composition of the parent-child dyad.

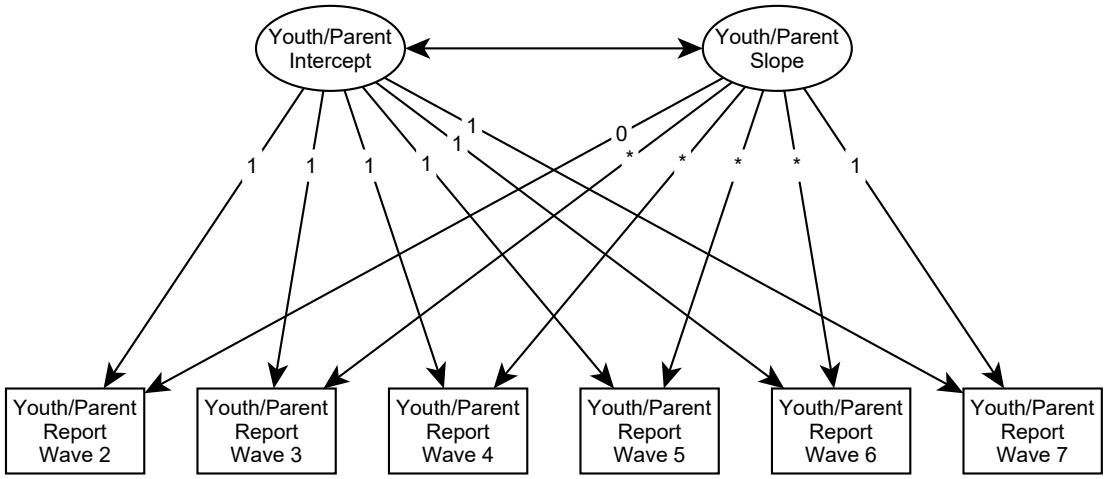

Figure 1. A prototypical individual latent growth model for youth- or parent-reported parent-child contact, affection, and conflict.

The following paragraphs describe the results of the individual latent growth models for parent-child contact, affection, and conflict, and the corresponding multi-group models with the most equality constraints. Fit statistics and model comparisons for the individual latent growth models for parent-child contact, affection, and conflict are presented in Tables 6, 7 and 8, parameter estimates are presented in Table 9, and model-implied growth trajectories are shown in Figure 2. Tables 10, 11, and 12 provide fit statistics and model comparisons for the multi-group individual latent growth models for each of the three constructs, Tables 13 to 18 provide parameter estimates, and Figures 3 to 5 depict model-implied growth trajectories based on multi-group models with the most equality constraints. Cohen's *d*s were reported as a measure of effect size for significant differences in parameter estimates across the four groups.

Parent-child contact. The estimated factor loadings for youth and parents revealed nonlinear changes in parent-child contact across six waves, as larger proportions of change occurred between ages 18 and 21 while smaller proportions of change occurred during the first and the last years (see Figure 2, panel a). On average, youth and parents reported almost daily parent-child contact at age 17, decreasing to about several times a week from ages 17 to 22 as indicated by significant negative slopes (see Table 9, means). There were significant between-youth and between-parent differences with respect to initial levels of and changes in parent-child contact (see Table 9, variances). For youth and parents, more frequent parent-child contact at age 17 was linked with a steeper decline in contact over time (see Table 9, covariances).

Across the four types of dyads, there were no significant differences across dyads in youth-reported shape of change for parent-child contact from ages 17 to 22 (see Table 13, slope factor loading). Youth, regardless of sex, reported more contact with mothers than with fathers at age 17 (d = .491; see Table 13, intercept). There was more variability in youth-reported initial

Table 6

Fit Statistics and Model Comparisons for Individual and Dyadic Latent Growth Models Examining Youth- and Parent-Reported Parent-Child Contact

Model	$\chi^2(df)$, p	RMSEA [90% CI]	CFI	TLI	SRMR	Comparator: $\Delta\chi^2(\Delta df)$, p
Individual latent growth models						
Youth (n = 3680)						
1. Fixed intercept	9755.682(20), < .001	.364 [.358, .370]	.000	.106	.436	
2. Random intercept	4967.874(19), < .001	.266 [.260, .272]	.394	.522	.480	1: 4787.808(1), < .001
3. Random intercept fixed slope	2523.386(15), < .001	.213 [.206, .220]	.693	.693	.415	2: 2444.488(4), < .001
4. Random intercept random slope[a]	**97.934(7), < .001**	**.059 [.049, .070]**	**.989**	**.976**	**.062**	**3: 2425.452(8), < .001**
Parents (n = 3660)						
5. Fixed intercept	4827.370(20), < .001	.256 [.250, .262]	.000	−.014	.471	
6. Random intercept	3455.876(19), < .001	.222 [.216, .229]	.033	.237	.600	5: 1371.494(1), < .001
7. Random intercept fixed slope	1705.557(14), < .001	.182 [.174, .189]	.524	.490	.512	6: 1750.319(5), < .001
8. Random intercept random slope[a]	**78.836(7), < .001**	**.053 [.043, .064]**	**.980**	**.957**	**.084**	**7: 1626.721(7), < .001**
Dyadic latent growth model						
Youth-parent dyads (n = 3680)						
9. Random intercept random slope[a]	**492.684(48), < .001**	**.050 [.046, .054]**	**.976**	**.967**	**.157**	

Note. Models retained are shown in bold.

[a]Residual variances of adjacent measures are correlated to improve model fit.

Table 7

Fit Statistics and Model Comparisons for Individual and Dyadic Latent Growth Models Examining Youth- and Parent-Reported Parent-Child Affection

Model	$\chi^2(df)$, p	RMSEA [90% CI]	CFI	TLI	SRMR	Comparator: $\Delta\chi^2(\Delta df)$, p
Individual latent growth models						
Youth (n = 3680)						
1. Fixed intercept	11272.945(20), < .001	.391 [.385, .397]	.000	.248	.491	
2. Random intercept	724.616(19), < .001	.100 [.094, .107]	.937	.950	.076	1: 10548.329(1), < .001
3. Random intercept fixed slope	639.456(14), < .001	.110 [.103, .118]	.944	.940	.066	2: 85.160(5), < .001
4. Random intercept random slope	**167.880(13), < .001**	**.057 [.049, .065]**	**.986**	**.984**	**.055**	**3: 471.576(1), < .001**
Parents (n = 3678)						
5. Fixed intercept	6077.085(20), < .001	.287 [.281, .293]	.000	.240	.512	
6. Random intercept	338.354(19), < .001	.068 [.061, .074]	.947	.958	.094	5: 5738.731(1), < .001
7. Random intercept fixed slope	127.493(14), < .001	.047 [.040, .055]	.981	.980	.078	6: 210.861(5), < .001
8. Random intercept random slope	**124.773(12), < .001**	**.051 [.043, .059]**	**.981**	**.976**	**.068**	**7: 2.720(2), .257**
Dyadic latent growth model						
Youth-parent dyads (n = 3680)						
9. Random intercept random slope[a]	**328.055(58), < .001**	**.036 [.032, .039]**	**.985**	**.983**	**.050**	

Note. Models retained are shown in bold.

[a]The parent slope is allowed to vary randomly to test its covariances with the youth intercept and slope.

Table 8

Fit Statistics and Model Comparisons for Individual and Dyadic Latent Growth Models Examining Youth- and Parent-Reported Parent-Child Conflict

Model	$\chi^2(df)$, p	RMSEA [90% CI]	CFI	TLI	SRMR	Comparator: $\Delta\chi^2(\Delta df)$, p
Individual latent growth models						
Youth (n = 3678)						
1. Fixed intercept	6759.693(20), < .001	.303 [.297, .309]	.000	.210	.384	
2. Random intercept	921.452(19), < .001	.114 [.107, .120]	.859	.889	.083	1: 5838.241(1), < .001
3. Random intercept fixed slope	326.647(14), < .001	.078 [.071, .085]	.951	.948	.059	2: 594.805(5), < .001
4. Random intercept random slope	**73.994(13), < .001**	**.036 [.028, .044]**	**.990**	**.989**	**.040**	**3: 252.653(1), < .001**
Parents (n = 3678)						
5. Fixed intercept	5392.409(20), < .001	.270 [.264, .276]	.000	.192	.461	
6. Random intercept	839.329(19), < .001	.108 [.102, .115]	.836	.870	.091	5: 4553.080(1), < .001
7. Random intercept fixed slope	161.117(14), < .001	.053 [.046, .061]	.970	.968	.069	6: 678.212(5), < .001
8. Random intercept random slope	**41.292(12), < .001**	**.026 [.017, .035]**	**.994**	**.993**	**.046**	**7: 119.825(2), < .001**
Dyadic latent growth model						
Youth-parent dyads (n = 3678)						
9. Random intercept random slope	**144.569(58), < .001**	**.020 [.016, .024]**	**.993**	**.992**	**.037**	

Note. Models retained are shown in bold.

Table 9

Parameter Estimates for the Individual Latent Growth Model Examining Youth- and Parent-Reported Parent-Child Contact, Affection, and Conflict

	Contact			*Affection*			*Conflict*		
Parameter	*B*	*SE*	*p*	*B*	*SE*	*p*	*B*	*SE*	*p*
Slope factor loadings									
Youth									
W2	.000	.000	—	.000	.000	—	.000	.000	—
W3	.104	.010	< .001	−.065	.000	—	−.005	.000	—
W4	.389	.016	< .001	.319	.036	< .001	.243	.030	< .001
W5	.685	.022	< .001	.687	.041	< .001	.534	.033	< .001
W6	.927	.022	< .001	.981	.052	< .001	.783	.039	< .001
W7	1.000	.000	—	1.000	.000	—	1.000	.000	—
Parent									
W2	.000	.000	—	.000	.000	—	.000	.000	—
W3	.133	.012	< .001	−1.434	.808	.076	.000	.039	.994
W4	.360	.018	< .001	1.737	.941	.065	.424	.035	< .001
W5	.701	.025	< .001	1.266	.573	.027	.545	.036	< .001
W6	.867	.025	< .001	3.899	1.682	.020	.972	.048	< .001
W7	1.000	.000	—	1.000	.000	—	1.000	.000	—
Means									
YI	6.870	.009	< .001	3.358	.012	< .001	2.649	.011	< .001
YS	−.652	.021	< .001	−.033	.011	.002	−.276	.014	< .001
PI	6.897	.008	< .001	3.439	.011	< .001	2.654	.012	< .001
PS	−.689	.024	< .001	−.030	.013	.020	−.293	.016	< .001
Variances									
YI	.228	.012	< .001	.450	.013	< .001	.310	.010	< .001
YS	.665	.041	< .001	.176	.014	< .001	.190	.016	< .001
PI	.169	.014	< .001	.266	.008	< .001	.305	.010	< .001
PS	.658	.046	< .001	.003	.003	.382	.107	.014	< .001
Covariances									
YI–YS	−.042	.016	.011	−.065	.009	< .001	−.078	.010	< .001
PI–PS	−.052	.023	.024	.000	.002	.856	−.067	.010	< .001

Note. Average youth ages are 17 at Wave 2 (W2), 18 at Wave 3 (W3), 19 at Wave 4 (W4), 20 at Wave 5 (W5), 21 at Wave 6 (W6), and 22 at Wave 7 (W7). YI = youth intercept. YS = youth slope. PI = parent intercept. PS = parent slope. — Fixed parameter, *p*-value is not available.

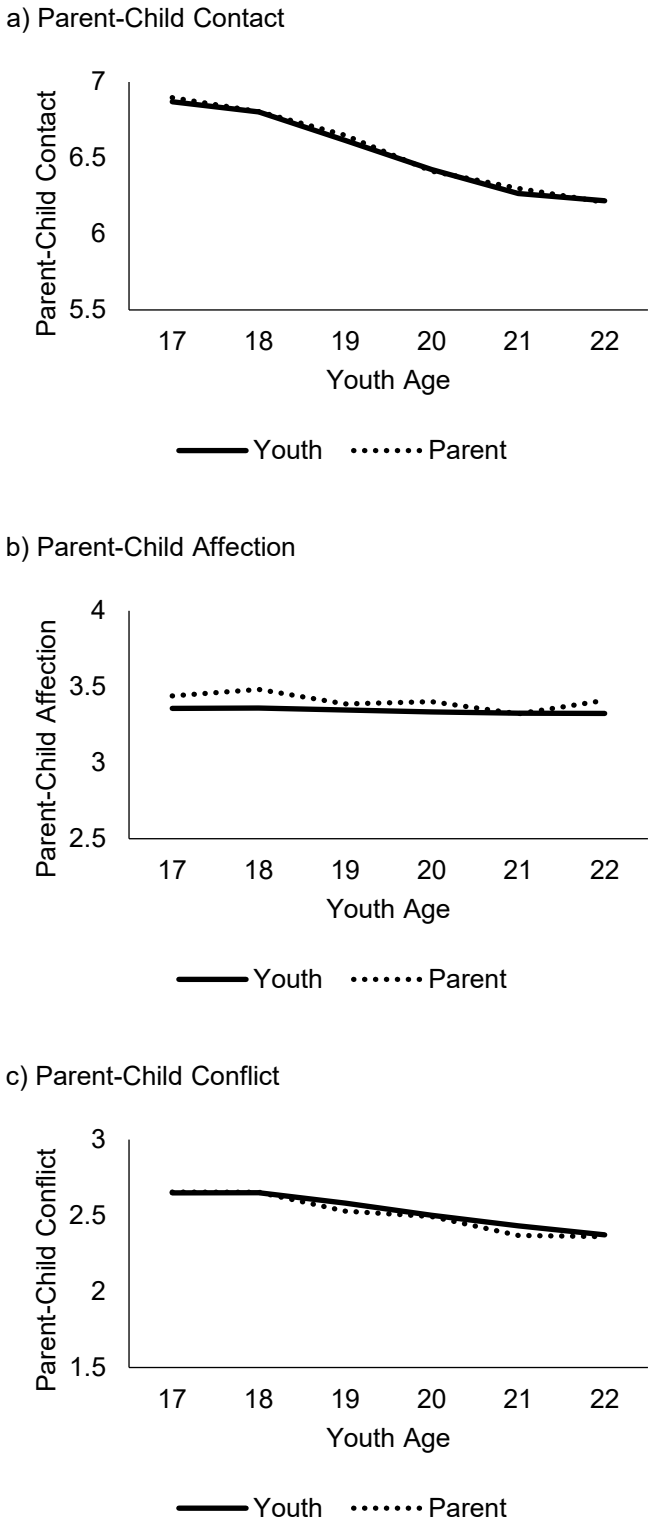

Figure 2. Growth trajectories for youth- and parent-reported parent-child contact, affection, and conflict.

Table 10

Fit Statistics and Model Comparisons for Multi-Group Individual Latent Growth Models Examining Youth- and Parent-Reported Parent-Child Contact

Model	$\chi^2(df), p$	RMSEA [90% CI]	CFI	TLI	SRMR	Comparator: $\Delta\chi^2(\Delta df), p$
Youth (n = 3679)						
1. No equality constraint	112.349(32), < .001	.052 [.042, .063]	.989	.979	.063	
2. Equal slope factor loadings	123.237(40), < .001	.048 [.038, .057]	.988	.983	.073	1: 10.888(8), .208
3. Equal intercepts[a]	127.210(42), < .001	.047 [.038, .056]	.988	.983	.073	2: 3.973(2), .137
4. Equal slopes[a]	129.438(44), < .001	.046 [.037, .055]	.988	.984	.074	3: 2.228(2), .328
5. Equal intercept variances[a]	132.460(45), < .001	.046 [.037, .055]	.988	.984	.078	4: 3.022(1), .082
6. Equal slope variances[a]	134.170(47), < .001	.045 [.036, .054]	.988	.985	.078	5: 1.710(2), .425
7. Equal intercept-slope covariances	136.448(50), < .001	.043 [.035, .052]	.988	.986	.078	6: 2.278(3), .517
Parents (n = 3659)						
8. No equality constraint	133.642(31), < .001	.060 [.050, .071]	.970	.941	.126	
9. Equal slope factor loadings[a]	142.532(40), < .001	.053 [.044, .062]	.970	.954	.130	8: 8.890(9), .447
10. Equal intercepts[a]	145.191(42), < .001	.052 [.043, .061]	.969	.956	.131	9: 2.659(2), .265
11. Equal slopes[a]	149.240(44), < .001	.051 [.042, .060]	.969	.957	.131	10: 4.049(2), .132
12. Equal intercept variances[a]	151.605(46), < .001	.050 [.041, .059]	.969	.959	.134	11: 2.365(2), .307
13. Equal slope variances[a]	153.654(47), < .001	.050 [.041, .059]	.968	.960	.140	12: 2.049(1), .152
14. Equal intercept-slope covariances[a]	157.200(49), < .001	.049 [.041, .058]	.968	.961	.158	13: 3.546(2), .170

Note. Comparisons are made based on the sex composition of the parent-child dyad (i.e., daughter-mother, daughter-father, son-mother, son-father).

[a]At least one group differs from the others.

Table 11

Fit Statistics and Model Comparisons for Multi-Group Individual Latent Growth Models Examining Youth- and Parent-Reported Parent-Child Affection

Model	$\chi^2(df)$, p	RMSEA [90% CI]	CFI	TLI	SRMR	Comparator: $\Delta\chi^2(\Delta df)$, p
Youth (n = 3679)						
1. No equality constraint	206.131(50), < .001	.058 [.050, .067]	.984	.980	.069	
2. Equal slope factor loadings	223.491(61), < .001	.054 [.046, .061]	.983	.983	.071	1: 17.360(11), .098
3. Equal intercepts[a]	225.597(62), < .001	.054 [.046, .061]	.983	.983	.071	2: 2.106(1), .147
4. Equal slopes	228.534(65), < .001	.052 [.045, .060]	.983	.984	.073	3: 2.937(3), .401
5. Equal intercept variances	235.780(68), < .001	.052 [.045, .059]	.982	.984	.079	4: 7.246(3), .064
6. Equal slope variances	239.265(71), < .001	.051 [.044, .058]	.982	.985	.078	5: 3.485(3), .323
7. Equal intercept-slope covariances[a]	239.410(73), < .001	.050 [.043, .057]	.983	.986	.078	6: .145(2), .930
Parents (n = 3677)						
8. No equality constraint	147.613(54), < .001	.043 [.035, .052]	.982	.980	.091	
9. Equal slope factor loadings[a]	160.394(61), < .001	.042 [.034, .050]	.981	.981	.093	8: 12.781(7), .078
10. Equal intercepts[a]	161.546(62), < .001	.042 [.034, .050]	.981	.982	.094	9: 1.152(1), .283
11. Equal slopes[a]	161.835(64), < .001	.041 [.033, .049]	.981	.983	.094	10: .289(2), .865
12. Equal intercept variances	164.548(67), < .001	.040 [.032, .048]	.981	.983	.097	11: 2.173(3), .438
13. Equal slope variances[a]	164.548(67), < .001	.040 [.032, .048]	.981	.983	.097	—
14. Equal intercept-slope covariances[a]	164.548(67), < .001	.040 [.032, .048]	.981	.983	.097	—

Note. Comparisons are made based on the sex composition of the parent-child dyad (i.e., daughter-mother, daughter-father, son-mother, son-father). Model fit statistics are identical for models 12, 13, and 14 as a number of slope variances are fixed at zero for this series of multi-group models for parents to arrive at admissible solutions.

[a]At least one group differs from the others.

Table 12

Fit Statistics and Model Comparisons for Multi-Group Individual Latent Growth Models Examining Youth- and Parent-Reported Parent-Child Conflict

Model	$\chi^2(df), p$	RMSEA [90% CI]	CFI	TLI	SRMR	Comparator: $\Delta\chi^2(\Delta df), p$
Youth (n = 3677)						
1. No equality constraint	102.291(49), < .001	.034 [.025, .044]	.991	.990	.047	
2. Equal slope factor loadings	120.920(60), < .001	.033 [.025, .042]	.990	.990	.048	1: 18.629(11), .068
3. Equal intercepts[a]	124.183(62), < .001	.033 [.025, .041]	.990	.990	.049	2: 3.263(2), .196
4. Equal slopes	129.704(65), < .001	.033 [.025, .041]	.990	.990	.050	3: 5.521(3), .137
5. Equal intercept variances[a]	133.755(67), < .001	.033 [.025, .041]	.989	.990	.054	4: 4.051(2), .132
6. Equal slope variances	137.707(70), < .001	.032 [.024, .040]	.989	.991	.054	5: 3.952(3), .267
7. Equal intercept-slope covariances	138.814(73), < .001	.031 [.023, .039]	.989	.991	.054	6: 1.107(3), .775
Parents (n = 3677)						
8. No equality constraint	88.771(48), < .001	.030 [.020, .040]	.992	.990	.053	
9. Equal slope factor loadings	102.822(60), .001	.028 [.018, .037]	.991	.991	.053	8: 14.051(12), .297
10. Equal intercepts[a]	104.257(62), .001	.027 [.018, .036]	.992	.992	.054	9: 1.435(2), .488
11. Equal slopes	107.945(65), .001	.027 [.017, .036]	.991	.992	.055	10: 3.688(3), .297
12. Equal intercept variances	111.646(68), .001	.026 [.017, .035]	.991	.992	.062	11: 3.701(3), .296
13. Equal slope variances	117.033(71), .001	.027 [.018, .035]	.991	.992	.063	12: 5.387(3), .146
14. Equal intercept-slope covariances	124.605(74), < .001	.027 [.019, .035]	.990	.992	.070	11: 7.572(3), .056

Note. Comparisons are made based on the sex composition of the parent-child dyad (i.e., daughter-mother, daughter-father, son-mother, son-father).

[a]At least one group differs from the others.

levels of contact with fathers than variability in age 17 contact with mothers (*d*s = .614–.775; see Table 13, intercept variance). From ages 17 to 22, daughters reported a steeper decline in contact with fathers compared to youth in other groups (*d* = .177; see Table 13, slope). Compared to youth in other dyads, there was slightly less variability in the slope, which showed daughter-reported contact with mothers declined (*d* = .135; see Table 13, slope variance).

On the other hand, there were some significant differences in parent-reported parent-child contact as it decreased from ages 17 to 22 (see Table 14). Specifically, mothers of daughters, compared to parents in other dyads, experienced a greater decline in contact with daughters between ages 19 and 20 (see Table 14, slope factor loading). Corresponding to youth reports, mothers reported more contact with youth than fathers did at age 17 (*d* = .401; see Table 14, intercept). There was also less variability in mother-reported initial levels of contact than father-reported contact with youth (*d* = .853; see Table 14, intercept variance). Fathers, compared to mothers, reported slightly more decline in contact with youth (*d* = .161; see Table 14, slope). Across the four dyads, father-reported decline in contact with sons between ages 17 and 22 varied the most (*d*s = .133–.265; see Table 14, slope variance). Only in the father-son dyads, fathers who reported more contact with sons at age 17 were more likely to experience greater decline in contact with sons (*d* = .319; see Table 14, intercept-slope covariance).

Parent-child affection. The estimated factor loadings for youth and parents also revealed nonlinear changes in parent-child affection over time; most change occurred between ages 18 and 21 according to youth, while most change in parent-reported affection occurred when their children were between ages 20 and 22 (see Figure 2, panel b). On average, youth and parents reported moderate levels of parent-child affection (i.e., above 3 on a 5-point scale) at age 17 and small significant decreases in affection between ages 17 and 22 (see Table 9, means). Significant

Table 13

Parameter Estimates for Individual Latent Growth Models Examining Youth-Reported Parent-Child Contact According to Dyad Sex Composition

	Youth in											
	Daughter-Mother dyads (n = 1101)			Daughter-Father dyads (n = 733)			Son-Mother dyads (n = 1090)			Son-Father dyads (n = 755)		
Parameter	*B*	*SE*	*p*	*B*	*SE*	*p*	*B*	*SE*	*p*	*B*	*SE*	*p*
Slope factor loading												
Wave 2 (M_{age} = 17)	.000	.000	—	.000	.000	—	.000	.000	—	.000	.000	—
Wave 3 (M_{age} = 18)	.102	.009	< .001	.102	.009	< .001	.102	.009	< .001	.102	.009	< .001
Wave 4 (M_{age} = 19)	.384	.015	< .001	.384	.015	< .001	.384	.015	< .001	.384	.015	< .001
Wave 5 (M_{age} = 20)	.689	.022	< .001	.689	.022	< .001	.689	.022	< .001	.689	.022	< .001
Wave 6 (M_{age} = 21)	.926	.021	< .001	.926	.021	< .001	.926	.021	< .001	.926	.021	< .001
Wave 7 (M_{age} = 22)	1.000	.000	—	1.000	.000	—	1.000	.000	—	1.000	.000	—
Intercept[a]	6.952	.007	< .001	6.756	.019	< .001	6.952	.007	< .001	6.756	.019	< .001
Slope[a]	−.612	.021	< .001	−.788	.045	< .001	−.612	.021	< .001	−.612	.021	< .001
Intercept variance[a]	.054	.008	< .001	.398	.021	< .001	.105	.011	< .001	.398	.021	< .001
Slope variance[a]	.514	.042	< .001	.689	.044	< .001	.689	.044	< .001	.689	.044	< .001
Intercept-slope covariance	−.032	.010	.002	−.032	.010	.002	−.032	.010	.002	−.032	.010	.002

Note. M_{age} = mean age of youth. — Fixed parameter estimates, *p*-values not available.
[a]The parameter estimate for at least one group differs from the others.

Table 14

Parameter Estimates for Individual Latent Growth Models Examining Parent-Reported Parent-Child Contact According to Dyad Sex Composition

	Parents in											
	Daughter-Mother dyads (n = 1091)			Daughter-Father dyads (n = 730)			Son-Mother dyads (n = 1085)			Son-Father dyads (n = 753)		
Parameter	*B*	*SE*	*p*	*B*	*SE*	*p*	*B*	*SE*	*p*	*B*	*SE*	*p*
Slope factor loading												
Wave 2 (M_{age} = 17)	.000	.000	—	.000	.000	—	.000	.000	—	.000	.000	—
Wave 3 (M_{age} = 18)	.146	.012	< .001	.146	.012	< .001	.146	.012	< .001	.146	.012	< .001
Wave 4 (M_{age} = 19)	.364	.017	< .001	.364	.017	< .001	.364	.017	< .001	.364	.017	< .001
Wave 5 (M_{age} = 20)[a]	.794	.039	< .001	.654	.037	< .001	.707	.029	< .001	.707	.029	< .001
Wave 6 (M_{age} = 21)[a]	.893	.032	< .001	.820	.033	< .001	.893	.032	< .001	.820	.033	< .001
Wave 7 (M_{age} = 22)	1.000	.000	—	1.000	.000	—	1.000	.000	—	1.000	.000	—
Intercept[a]	6.957	.006	< .001	6.815	.017	< .001	6.957	.006	< .001	6.815	.017	< .001
Slope[a]	−.617	.027	< .001	−.777	.040	< .001	−.617	.027	< .001	−.777	.040	< .001
Intercept variance[a]	.028	.008	< .001	.362	.018	< .001	.028	.008	< .001	.362	.018	< .001
Slope variance[a]	.451	.039	< .001	.701	.092	< .001	.451	.039	< .001	1.071	.111	< .001
Intercept-slope covariance[a]	−.002	.012	.855	−.002	.012	.855	−.002	.012	.855	−.271	.041	< .001

Note. M_{age} = mean age of youth. — Fixed parameter estimates, *p*-values not available.
[a]The parameter estimate for at least one group differs from the others.

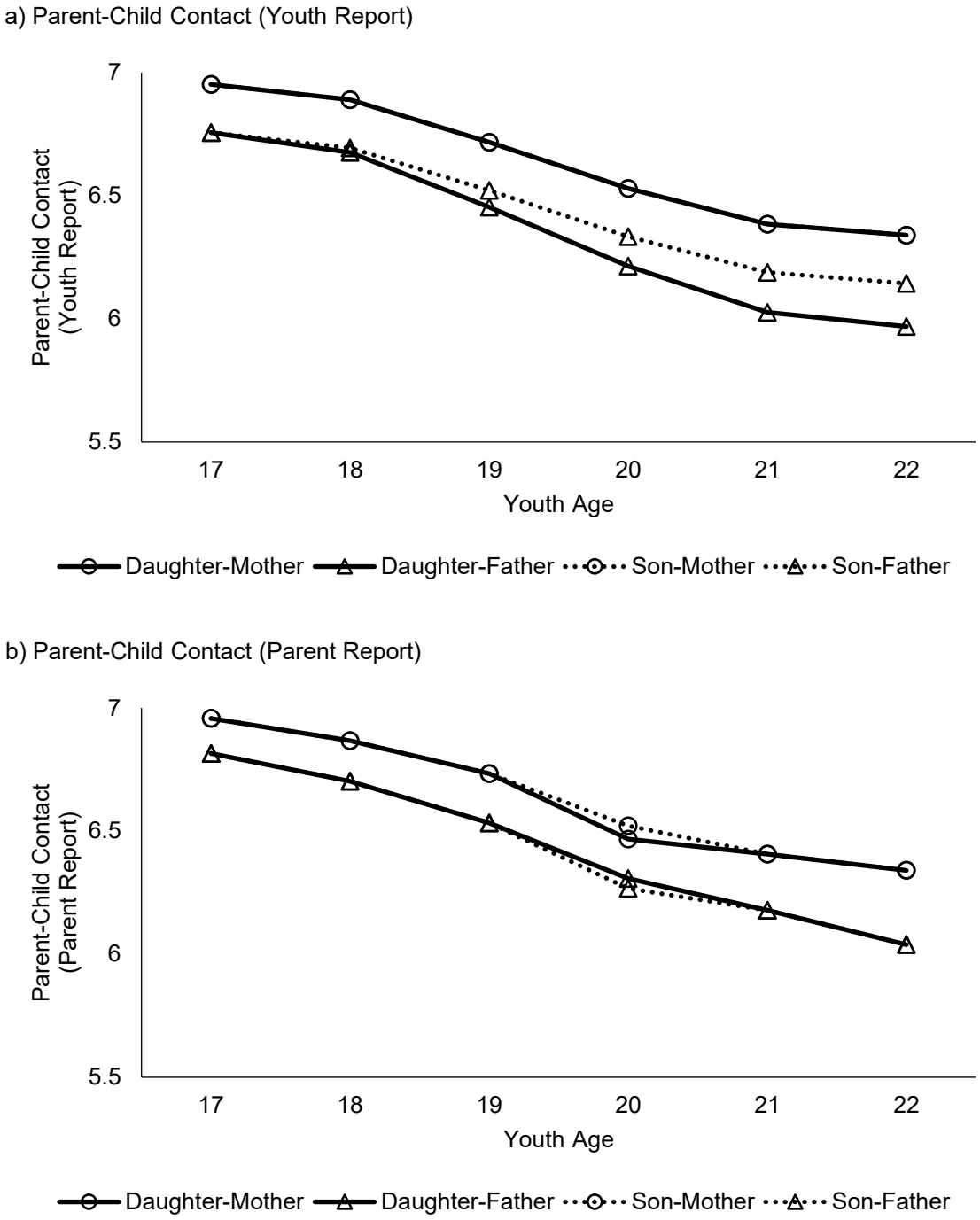

Figure 3. Growth trajectories for parent-child contact based on source of report and sex composition of the parent-child dyad. Estimated trajectories for daughter-mother and son-mother dyads (based on youth report) completely overlap, resulting in three visible lines in the top panel.

between-persons differences in initial levels of parent-child affection were observed for youth and parents; with respect to changes in affection, differences among youth were considerable but differences among parents were not significant (see Table 9, variances). Higher parent-child affection at age 17 was associated with a larger decrease in affection between ages 17 and 22 for youth, but the initial level of affection was not associated with the amount of change in affection for parents (see Table 9, covariances).

Similar to contact, youth, regardless of dyad, did not differ in the shape of change in parent-child affection from ages 17 to 22 (see Table 15, slope factor loading). At age 17, youth reported higher levels of affection toward mothers than fathers (*d*s = .394–1.194), among which daughters reported the highest levels of affection toward mothers (see Table 15, intercept). There was no difference in variability in initial levels of youth-reported affection toward parents across groups (see Table 15, intercept variance). The total amount and level of variability in youth-reported decrease in affection toward parent between ages 17 and 22 were the same across the four groups (see Table 15, slope and slope variance). Compared to daughters, sons who reported more affection toward parents at age 17 were slightly more likely to experience a larger decrease in affection (*d* = .113; see Table 15, intercept-slope covariances).

Parents in all types of dyad configurations reported ups and downs in affection toward youth, but they differed slightly in the proportions of change experienced between assessments (see Table 16, slope factor loading). Similar to youth reports, mothers reported higher initial levels of affection toward youth than did fathers (*d*s = .395–.899), with mothers reporting the highest affection toward daughters (see Table 16, intercept). Variability in initial levels of parent-reported affection toward youth was the same across groups (see Table 16, intercept variance). Interestingly, fathers reported a small decrease in affection toward sons but a small

Table 15

Parameter Estimates for Individual Latent Growth Models Examining Youth-Reported Parent-Child Affection According to Dyad Sex Composition

	Youth in											
	Daughter-Mother dyads (n = 1101)			Daughter-Father dyads (n = 733)			Son-Mother dyads (n = 1090)			Son-Father dyads (n = 755)		
Parameter	*B*	*SE*	*p*	*B*	*SE*	*p*	*B*	*SE*	*p*	*B*	*SE*	*p*
Slope factor loading												
Wave 2 (M_{age} = 17)	.000	.000	—	.000	.000	—	.000	.000	—	.000	.000	—
Wave 3 (M_{age} = 18)	−.063	.054	.241	−.063	.054	.241	−.063	.054	.241	−.063	.054	.241
Wave 4 (M_{age} = 19)	.326	.000	—	.326	.000	—	.326	.000	—	.326	.000	—
Wave 5 (M_{age} = 20)	.699	.036	< .001	.699	.036	< .001	.699	.036	< .001	.699	.036	< .001
Wave 6 (M_{age} = 21)	.991	.051	< .001	.991	.051	< .001	.991	.051	< .001	.991	.051	< .001
Wave 7 (M_{age} = 22)	1.000	.000	—	1.000	.000	—	1.000	.000	—	1.000	.000	—
Intercept[a]	3.772	.020	< .001	3.090	.017	< .001	3.308	.019	< .001	3.090	.017	< .001
Slope	−.034	.012	.004	−.034	.012	.004	−.034	.012	.004	−.034	.012	.004
Intercept variance	.372	.011	< .001	.372	.011	< .001	.372	.011	< .001	.372	.011	< .001
Slope variance	.176	.018	< .001	.176	.018	< .001	.176	.018	< .001	.176	.018	< .001
Intercept-slope covariance[a]	−.048	.011	< .001	−.048	.011	< .001	−.091	.012	< .001	−.091	.012	< .001

Note. M_{age} = mean age of youth. — Fixed parameter estimates, *p*-values not available.
[a]The parameter estimate for at least one group differs from the others.

Table 16

Parameter Estimates for Individual Latent Growth Models Examining Parent-Reported Parent-Child Affection According to Dyad Sex Composition

	Parents in											
	Daughter-Mother dyads (n = 1101)			Daughter-Father dyads (n = 733)			Son-Mother dyads (n = 1089)			Son-Father dyads (n = 754)		
Parameter	*B*	*SE*	*p*	*B*	*SE*	*p*	*B*	*SE*	*p*	*B*	*SE*	*p*
Slope factor loading												
Wave 2 (M_{age} = 17)	.000	.000	—	.000	.000	—	.000	.000	—	.000	.000	—
Wave 3 (M_{age} = 18)[a]	1.410	.344	< .001	.031	.186	.869	1.410	.344	< .001	.031	.186	.869
Wave 4 (M_{age} = 19)[a]	−.782	.349	.025	−.782	.349	.025	−1.211	.464	.009	1.002	.234	< .001
Wave 5 (M_{age} = 20)[a]	−.093	.218	.670	−.093	.218	.670	−.093	.218	.670	.995	.233	< .001
Wave 6 (M_{age} = 21)[a]	−1.429	.481	.003	−1.429	.481	.003	−1.429	.481	.003	1.903	.437	< .001
Wave 7 (M_{age} = 22)	1.000	.000	—	1.000	.000	—	1.000	.000	—	1.000	.000	—
Intercept[a]	3.681	.017	< .001	3.239	.015	< .001	3.441	.018	< .001	3.239	.015	< .001
Slope[a]	.060	.015	< .001	.060	.015	< .001	.060	.015	< .001	−.088	.023	< .001
Intercept variance	.228	.007	< .001	.228	.007	< .001	.228	.007	< .001	.228	.007	< .001
Slope variance[a]	.000	.000	—	.000	.000	—	.000	.000	—	.030	.015	.051
Intercept-slope covariance[a]	.000	.000	—	.000	.000	—	.000	.000	—	−.011	.009	.262

Note. M_{age} = mean age of youth. — Fixed parameter estimates, *p*-values not available.
[a]The parameter estimate for at least one group differs from the others.

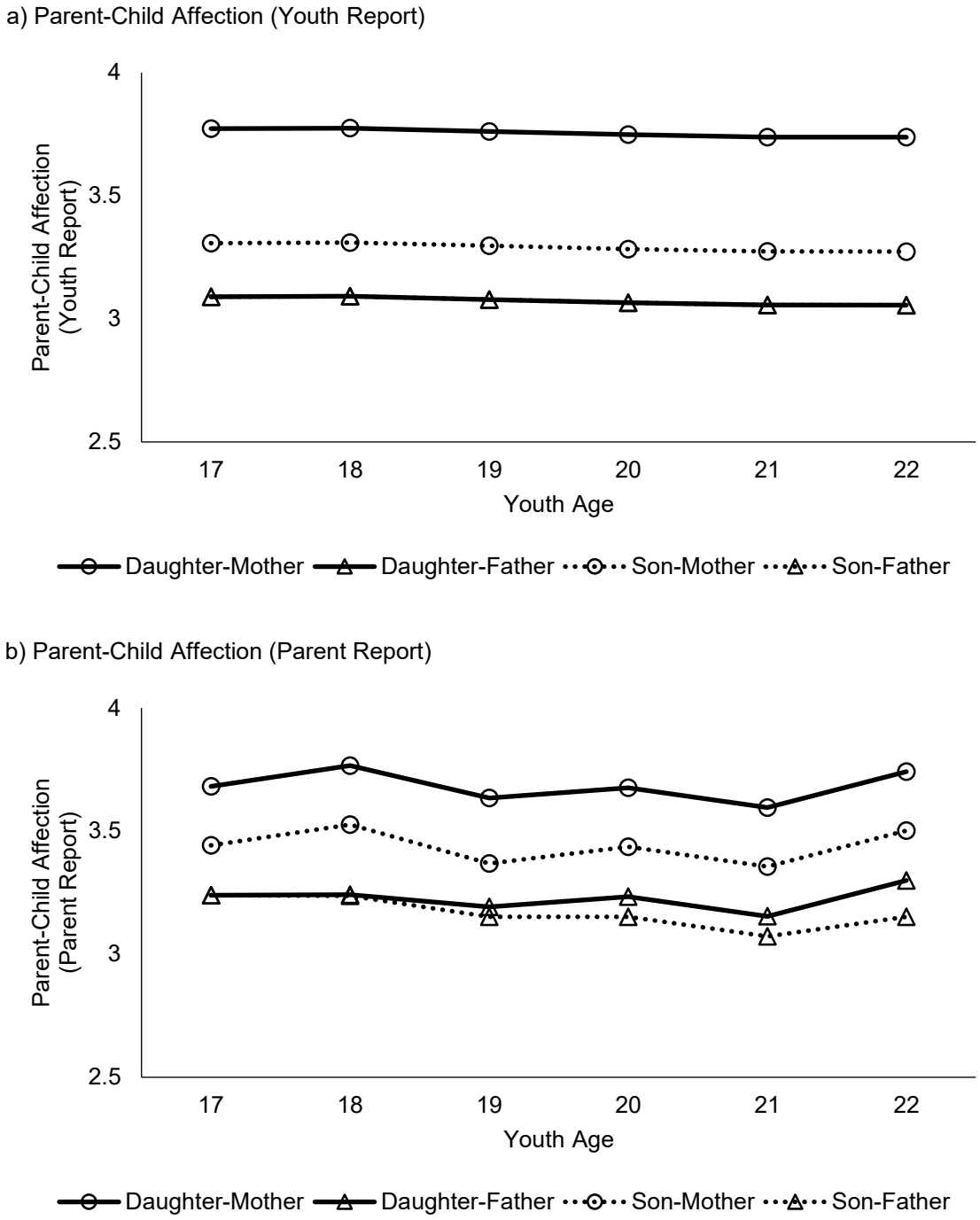

Figure 4. Growth trajectories for parent-child affection based on source of report and sex composition of the parent-child dyad. Estimated trajectories for daughter-father and son-father dyads (based on youth report) completely overlap, resulting in three visible lines in the top panel.

increase in affection toward daughters from ages 17 to 22 (d = .260), while mothers reported the same amount of increase in affection toward both daughters and sons (see Table 16, slope). To facilitate model convergence, variance of the slope factor was fixed to zero for three out of the four groups during the modeling process. As a result, the father-reported decrease in affection towards sons between ages 17 and 22 showed slightly more variability (d = .103; see Table 16, slope variance), and fathers who reported higher levels of affection toward sons at age 17 were slightly more likely to experience a larger decrease in affection (d = .063).

Parent-child conflict. Nonlinear changes were again revealed by the estimated factor loadings; almost all changes in parent-child conflict occurred between ages 18 and 22 for youth, and between ages 18 and 21 for parents (see Figure 2, panel c). On average, youth and parents reported low levels of parent-child conflict at age 17 and decreases in conflict between ages 17 and 22 (see Table 9, means). There were significant between-persons differences in initial levels of and changes in parent-child conflict for youth and parents, respectively (see Table 9, variances). Higher levels of parent-child conflict at age 17 were associated with a larger decline in youth- and parent-reported conflict over time (see Table 9, covariances).

Across the four dyads, youth differed only in the initial level of and the amount of variability in age 17 conflict (see Table 17). Specifically, daughters reported more conflict with mothers than did youth in the other three dyads at age 17 (d = .343; see Table 17, intercept). Compared to other groups, there was slightly less variability in sons' report of conflict with mothers at age 17 (d = .109; see Table 17, intercept variance). Parents across groups were even more similar in reports of parent-child conflict (see Table 18). The only difference was that mothers reported slightly more conflict with youth than fathers did at age 17 (d = .145; see Table 18, intercept).

Table 17

Parameter Estimates for Individual Latent Growth Models Examining Youth-Reported Parent-Child Conflict According to Dyad Sex Composition

	Youth in											
	Daughter-Mother dyads (n = 1101)			Daughter-Father dyads (n = 733)			Son-Mother dyads (n = 1090)			Son-Father dyads (n = 753)		
Parameter	*B*	*SE*	*p*	*B*	*SE*	*p*	*B*	*SE*	*p*	*B*	*SE*	*p*
Slope factor loading												
Wave 2 (M_{age} = 17)	.000	.000	—	.000	.000	—	.000	.000	—	.000	.000	—
Wave 3 (M_{age} = 18)	.000	.035	.990	.000	.035	.990	.000	.035	.990	.000	.035	.990
Wave 4 (M_{age} = 19)	.249	.033	< .001	.249	.033	< .001	.249	.033	< .001	.249	.033	< .001
Wave 5 (M_{age} = 20)	.540	.034	< .001	.540	.034	< .001	.540	.034	< .001	.540	.034	< .001
Wave 6 (M_{age} = 21)	.790	.039	< .001	.790	.039	< .001	.790	.039	< .001	.790	.039	< .001
Wave 7 (M_{age} = 22)	1.000	.000	—	1.000	.000	—	1.000	.000	—	1.000	.000	—
Intercept[a]	2.774	.019	< .001	2.599	.013	< .001	2.599	.013	< .001	2.599	.013	< .001
Slope	−.275	.015	.004	−.275	.015	.004	−.275	.015	.004	−.275	.015	.004
Intercept variance[a]	.317	.012	< .001	.317	.012	< .001	.272	.013	< .001	.317	.012	< .001
Slope variance	.192	.016	< .001	.192	.016	< .001	.192	.016	< .001	.192	.016	< .001
Intercept-slope covariance	−.078	.011	< .001	−.078	.011	< .001	−.078	.000	—	−.078	.011	< .001

Note. M_{age} = mean age of youth. — Fixed parameter estimates, *p*-values not available.
[a]The parameter estimate for at least one group differs from the others.

Table 18

Parameter Estimates for Individual Latent Growth Models Examining Parent-Reported Parent-Child Conflict According to Dyad Sex Composition

	Parents in											
	Daughter-Mother dyads (n = 1101)			Daughter-Father dyads (n = 733)			Son-Mother dyads (n = 1089)			Son-Father dyads (n = 754)		
Parameter	*B*	*SE*	*p*	*B*	*SE*	*p*	*B*	*SE*	*p*	*B*	*SE*	*p*
Slope factor loading												
Wave 2 (M_{age} = 17)	.000	.000	—	.000	.000	—	.000	.000	—	.000	.000	—
Wave 3 (M_{age} = 18)	.006	.038	.883	.006	.038	.883	.006	.038	.883	.006	.038	.883
Wave 4 (M_{age} = 19)	.424	.035	< .001	.424	.035	< .001	.424	.035	< .001	.424	.035	< .001
Wave 5 (M_{age} = 20)	.544	.036	< .001	.544	.036	< .001	.544	.036	< .001	.544	.036	< .001
Wave 6 (M_{age} = 21)	.973	.048	< .001	.973	.048	< .001	.973	.048	< .001	.973	.048	< .001
Wave 7 (M_{age} = 22)	1.000	.000	—	1.000	.000	—	1.000	.000	—	1.000	.000	—
Intercept[a]	2.682	.014	< .001	2.615	.017	< .001	2.682	.014	< .001	2.615	.017	< .001
Slope	−.295	.016	< .001	−.295	.016	< .001	−.295	.016	< .001	−.295	.016	< .001
Intercept variance	.303	.010	< .001	.303	.010	< .001	.303	.010	< .001	.303	.010	< .001
Slope variance	.105	.014	< .001	.105	.014	< .001	.105	.014	< .001	.105	.014	< .001
Intercept-slope covariance	−.066	.010	< .001	−.066	.010	< .001	−.066	.010	< .001	−.066	.010	< .001

Note. M_{age} = mean age of youth. — Fixed parameter estimates, *p*-values not available.
[a]The parameter estimate for at least one group differs from the others.

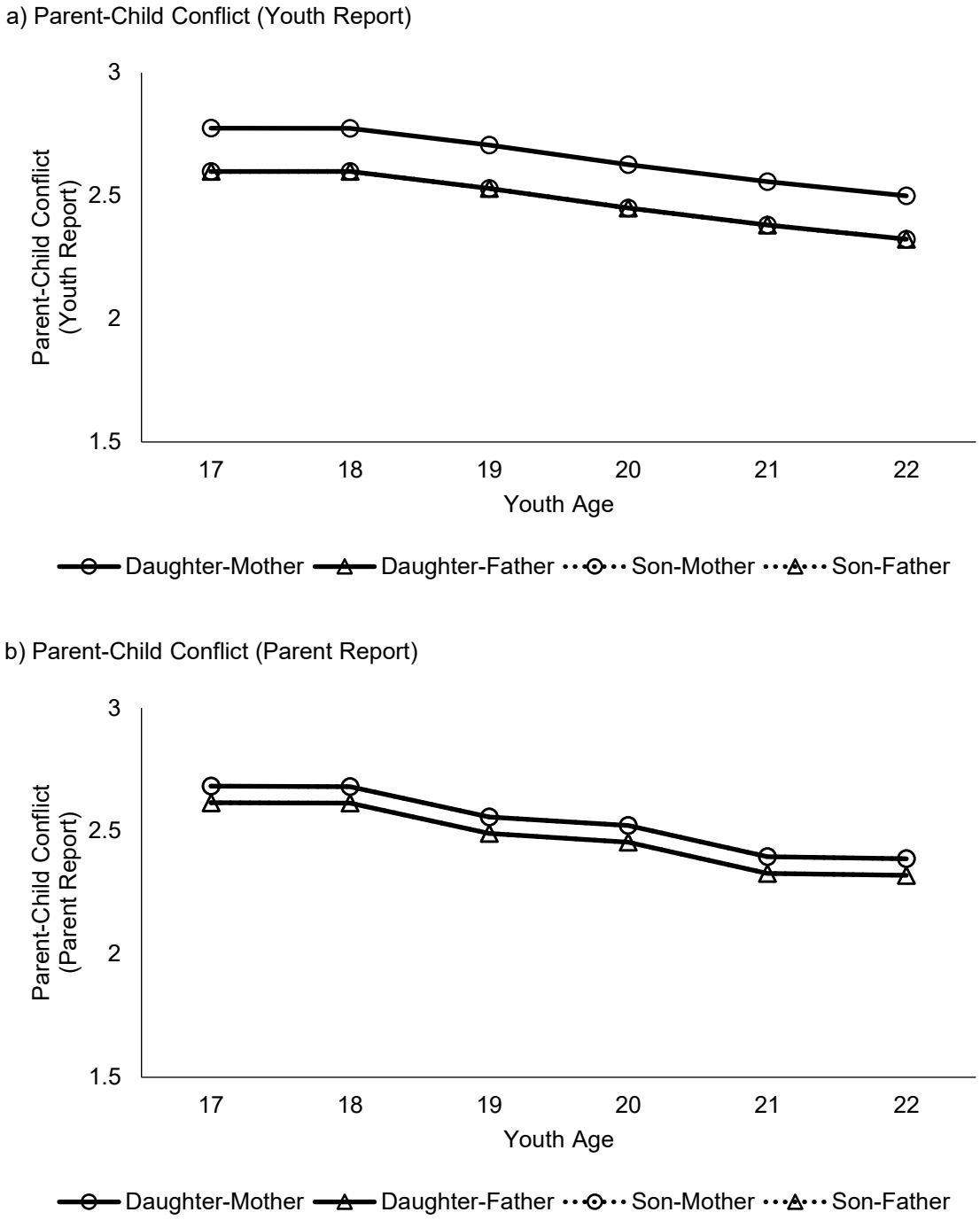

Figure 5. Growth trajectories for parent-child conflict based on source of report and sex composition of the parent-child dyad. Estimated trajectories for daughter-father, son-mother, and son-father dyads (based on youth report) completely overlap, resulting in two visible lines in panel a. Estimated trajectories for daughter-mother and son-mother dyads completely overlap, and estimated trajectories for daughter-father and son-father dyads (based on parent report) completely overlap, resulting in two visible lines in panel b.

Dyadic Latent Growth Models and Moderating Effect of Sex Composition

Following the procedure recommended by Kashy and Donnellan (2008), for each of the three constructs, after estimating individual latent growth models for youth and parents separately, I estimated a series of dyadic latent growth models in which the individual latent growth models and the associations among the individual latent growth factors (i.e., intercepts and slopes) were estimated simultaneously. Specifically, building on the best fitting individual latent growth models mentioned above, the dyadic latent growth models in addition estimated the between-persons covariances among individual latent growth factors and concurrent covariances between youth and parent responses. Figure 6 depicts a prototypical dyadic latent growth model. To reduce the computational burden, estimated factor loadings for slopes were carried over from the individual to the dyadic latent growth models.

Then I attempted to estimate and compare a series of multi-group dyadic latent growth models of parent-child relations to examine whether associations among youth and parent growth factors differed depending on the dyad's sex composition. This attempt was unsuccessful for all three constructs. These multi-group dyadic models, possibly too complicated to estimate, all failed to converge. As a result, the following paragraphs only describe the results of the dyadic latent growth models for parent-child contact, affection, and conflict. Fit statistics for the dyadic latent growth models are presented in Tables 6, 7 and 8, and parameter estimates are presented in Table 19. For all three constructs, estimated means and variances of and covariances between growth factors were very similar in individual and dyadic latent growth models (see Tables 9 and 19). For conciseness, parameter estimates unique to the dyadic latent growth models (i.e., covariances between youth and parent growth parameters) are discussed in the following

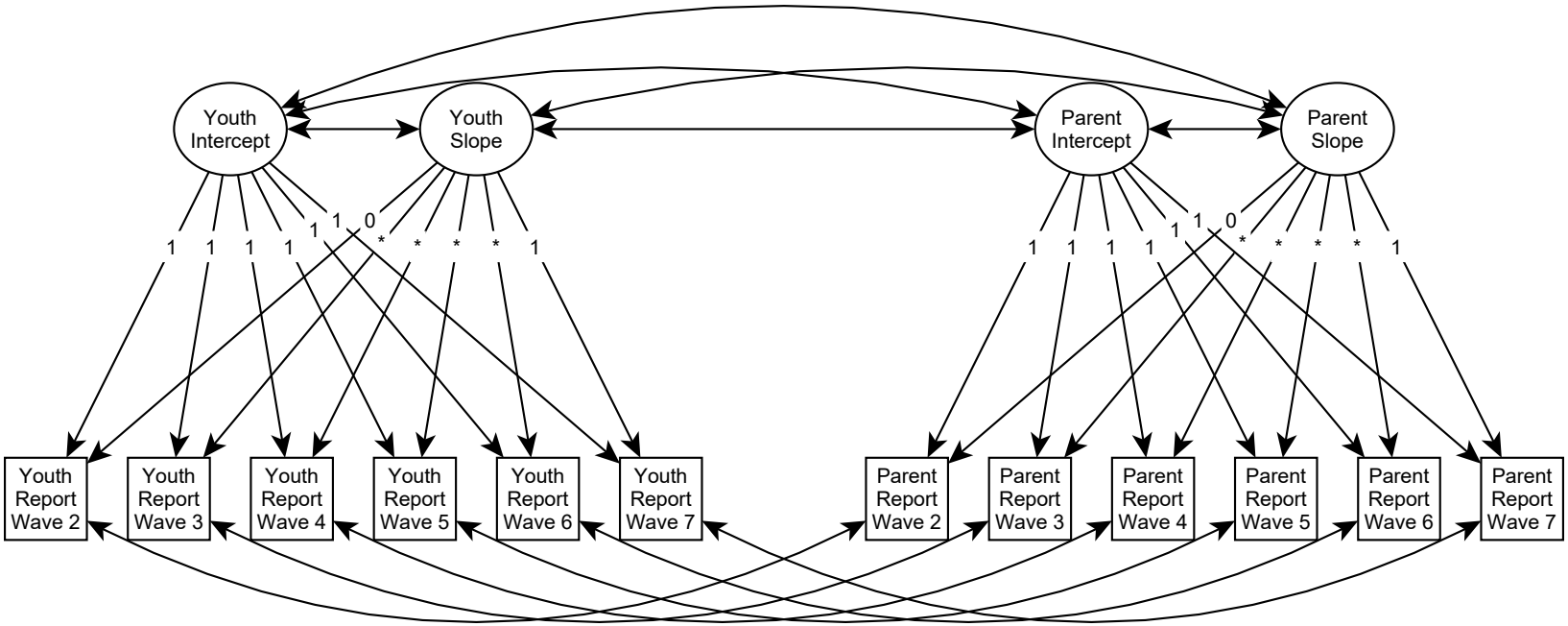

Figure 6. A prototypical dyadic latent growth model for parent-child contact, affection, and conflict.

Table 19

Parameter Estimates for the Dyadic Latent Growth Model Examining Youth- and Parent-Reported Parent-Child Contact, Affection, and Conflict

	Contact			*Affection*			*Conflict*		
Parameter	*B*	*SE*	*p*	*B*	*SE*	*p*	*B*	*SE*	*p*
Slope factor loadings									
Youth									
W2	.000	.000	—	.000	.000	—	.000	.000	—
W3	.104	.000	—	−.065	.000	—	−.005	.000	—
W4	.389	.000	—	.319	.000	—	.243	.000	—
W5	.685	.000	—	.687	.000	—	.534	.000	—
W6	.927	.000	—	.981	.000	—	.783	.000	—
W7	1.000	.000	—	1.000	.000	—	1.000	.000	—
Parent									
W2	.000	.000	—	.000	.000	—	.000	.000	—
W3	.133	.000	—	−1.434	.000	—	.000[a]	.000	—
W4	.360	.000	—	1.737	.000	—	.424	.000	—
W5	.701	.000	—	1.266	.000	—	.545	.000	—
W6	.867	.000	—	3.899	.000	—	.972	.000	—
W7	1.000	.000	—	1.000	.000	—	1.000	.000	—
Means									
YI	6.871	.009	< .001	3.359	.012	< .001	2.650	.011	< .001
YS	−.651	.018	< .001	−.037	.011	.001	−.275	.013	< .001
PI	6.887	.008	< .001	3.436	.010	< .001	2.654	.011	< .001
PS	−.682	.020	< .001	−.031	.002	< .001	−.287	.012	< .001
Variances									
YI	.230	.009	< .001	.451	.013	< .001	.308	.010	< .001
YS	.666	.029	< .001	.172	.010	< .001	.190	.014	< .001
PI	.193	.009	< .001	.266	.008	< .001	.304	.010	< .001
PS	.727	.035	< .001	.003	.001	< .001	.112	.012	< .001
Covariances									
YI–YS	−.034	.012	.006	−.065	.009	< .001	−.077	.009	< .001
PI–PS	−.035	.014	.014	.000	.001	.845	−.069	.009	< .001
YI–PI	.196	.006	< .001	.167	.008	< .001	.177	.008	< .001
YS–PS	.642	.025	< .001	.003	.002	.043	.081	.010	< .001
YI–PS	−.014	.012	.227	−.001	.002	.720	−.051	.008	< .001
YS–PI	−.034	.009	< .001	.001	.006	.919	−.042	.009	< .001

Note. Average youth ages are 17 at Wave 2 (W2), 18 at Wave 3 (W3), 19 at Wave 4 (W4), 20 at Wave 5 (W5), 21 at Wave 6 (W6), and 22 at Wave 7 (W7). YI = youth intercept. YS = youth slope. PI = parent intercept. PS = parent slope. — Fixed parameter, *p*-value is not available.
[a]Factor loading fixed to .0003.

paragraphs (see Table 19, covariances), and standardized covariances (i.e., correlations) are presented.

Parent-child contact. Youth- and parent-reported initial levels of contact were significantly and positively related (r = .932); youth who reported more frequent parent-child contact at age 17 were more likely to have parents who also reported more frequent contact at the beginning of the study. Youth- and parent-reported decreases in contact were also significantly and positively related (r = .923); youth who reported a larger decline in contact were more likely to have parents who also reported a larger decline in contact across waves. Youth-reported initial levels of parent-child contact were not related to parents' changes in contact, but more frequent parent-reported contact at age 17 was significantly related to a larger decline in anchor-reported contact (r = −.094).

Parent-child affection. Similar to contact, youth- and parent-reported initial levels of affection were significantly and positively related (r = .481); youth who reported higher levels of parent-child affection at age 17 were likely to have parents who also reported higher initial levels of affection. Youth- and parent-reported decreases in affection were also significantly and positively related (r = .153); youth who reported a larger decline in affection between ages 17 and 22 were likely to have parents who also reported a larger decline in affection. But youth- and parent-reported initial levels of parent-child affection were not associated with each other's changes in affection from ages 17 to 22.

Parent-child conflict. Consistent with contact and affection, youth- and parent-reported initial levels of conflict were significantly and positively related (r = .579); youth who reported higher levels of parent-child conflict at age 17 were likely to have parents who also reported higher initial levels of conflict. Youth- and parent-reported decreases in conflict were also

significantly and positively related (r = .558); youth who reported a larger decline in conflict between ages 17 and 22 were likely to have parents who also reported a larger decline in conflict. Youth-reported initial levels of parent-child conflict were significantly and negatively related to parents' changes in contact (r = −.274); higher initial levels of youth-reported conflict were associated with a larger decline in parent-reported conflict. More frequent parent-reported conflict at age 17 was significantly related to a larger decline in youth-reported conflict (r = −.173).

Dyadic Latent Growth Models with Covariates and Moderating Effect of Sex Composition

The third research question concerns whether important life course transitions (leaving the parental home, entering a romantic relationship, exiting the education system) covary with perceived parent-child contact, affection, and conflict. For each of the three constructs, covariates were added to the dyadic latent growth model established earlier. Specifically, the time-varying covariates, which assessed youth life course transitions at each wave, were simultaneously regressed on concurrent youth- and parent-reported contact, affection, or conflict. In addition, the growth factors were regressed on two time-invariant covariates, parent education and parent age.

To examine whether effects of the life course transitions on parent-child relations differed across time, path coefficients between the time-varying covariates and concurrent contact, affection, or conflict were constrained to be equal across waves. For each of the three constructs, the models with and without the equality constraints were compared using chi-square difference tests to determine whether adding the equality constraints significantly worsened the model fit. All three dyadic latent growth models incorporating time-invariant and time-varying covariates fit the data well. Model comparisons showed that the influences of living arrangement, student

status, and relationship status on parent-child relations were not always equal across time during the transition to adulthood (see Appendix C for more details on model comparisons).

To examine whether associations between life course transitions and parent-child relations are moderated by sex composition of the parent-child dyad, I attempted to estimate and compare a series of multi-group dyadic latent growth models with covariates. These multi-group dyadic models with covariates failed to converge. Given the moderating effect of sex composition on individual growth trajectories of parent-child relations, youth and parent sex were then included as two additional time-invariant covariates to control for effects of sex. Figure 7 depicts a prototypical dyadic latent growth model with covariates.

Parent-child contact. Table 20 presents the parameter estimates based on the dyadic latent growth model with covariates predicting parent-child contact. These results contain cross-time equality constraints (that did not worsen model fit) on the association between the time-varying covariates and parent-child contact. All three time-varying covariates predicted concurrent youth- and parent-reported parent-child contact. Model comparison results showed that effects of living arrangement and relationship status on parent-child contact were equal across all six waves for youth, while effects of student status were not equal across time (see Table 20, time-varying covariates). Effects of all three time-varying covariates on parent-child contact were not equal across time for parents. Living with parents predicted more contact at each assessment according to youth and parent reports. For youth, the magnitudes of the effect of living arrangement on contact were equal across time, while for parents, the magnitudes of the effect were smaller at ages 21 and 22 (βs = .436–.452) compared to earlier ages (βs = .390–.489). Youth student status predicted more parent-reported contact at ages 17 and 18 (βs = .019–.025) but less youth- (βs = −.044–−.048) and parent-reported contact (βs = −.029–−.031) between ages

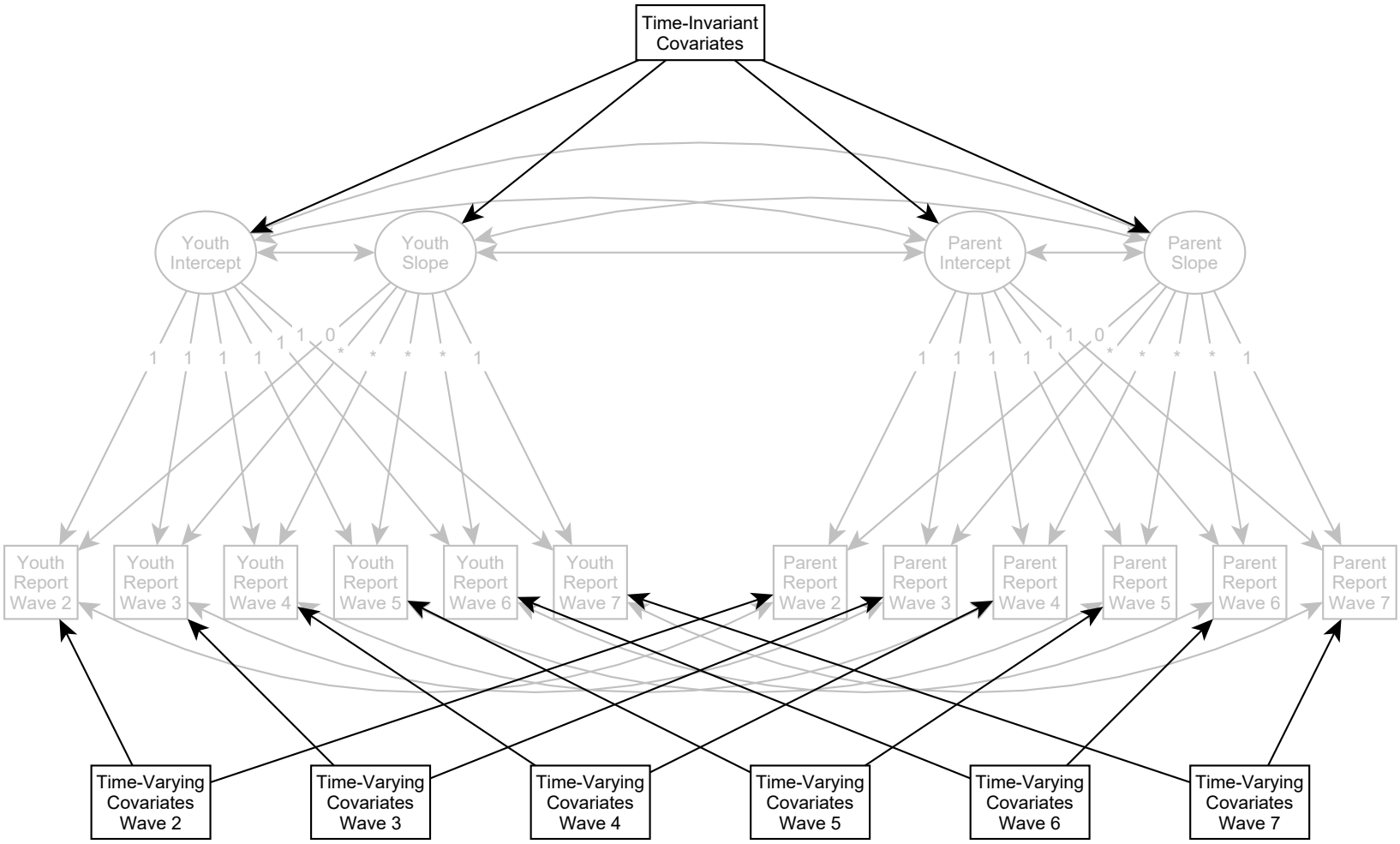

Figure 7. A prototypical dyadic latent growth model with covariates for parent-child contact, affection, and conflict. Time-invariant covariates include youth sex, parent sex, parent education, and parent age. Time-varying covariates include living arrangement, student status, and relationship status.

Table 20

Parameter Estimates for Dyadic Latent Growth Model with Covariates Examining Youth- and Parent-Reported Parent-Child Contact

	Youth				Parent			
Parameter	*B*	*SE*	*p*	β	*B*	*SE*	*p*	β
Growth factors and time-invariant covariates								
Intercept	6.055	.026	.000		6.044	.028	.000	
Youth sex	−.005	.016	.771	−.006	−.005	.015	.713	−.007
Parent sex	−.177	.017	.000	−.212	−.142	.016	.000	−.191
Parent education[a]	.001	.004	.851	.004	.003	.004	.428	.016
Parent age[a]	.006	.002	.000	.074	.002	.001	.097	.035
Slope	−.091	.034	.007		−.084	.042	.046	
Youth sex	−.098	.030	.001	−.076	−.115	.033	.001	−.086
Parent sex	−.132	.031	.000	−.101	−.098	.035	.006	−.072
Parent education[a]	−.027	.007	.000	−.087	−.036	.008	.000	−.112
Parent age[a]	−.004	.003	.212	−.030	−.004	.003	.250	−.030
Time-varying covariates								
Living with a parent[b]								
Wave 2 (M_{age} = 17)	.908	.015	.000	.345	.900	.016	.000	.390
Wave 3 (M_{age} = 18)	.908	.015	.000	.416	.900	.016	.000	.434
Wave 4 (M_{age} = 19)	.908	.015	.000	.451	.900	.016	.000	.489
Wave 5 (M_{age} = 20)	.908	.015	.000	.460	.900	.016	.000	.471
Wave 6 (M_{age} = 21)	.908	.015	.000	.461	.852	.021	.000	.452
Wave 7 (M_{age} = 22)	.908	.015	.000	.441	.852	.021	.000	.436
Being a student[b]								
Wave 2 (M_{age} = 17)	.027	.017	.101	.010	.046	.018	.012	.019
Wave 3 (M_{age} = 18)	.027	.017	.101	.014	.046	.018	.012	.025
Wave 4 (M_{age} = 19)	−.025	.014	.085	−.012	−.007	.017	.666	−.004
Wave 5 (M_{age} = 20)	−.096	.016	.000	−.048	−.061	.019	.001	−.031
Wave 6 (M_{age} = 21)	−.096	.016	.000	−.045	−.061	.019	.001	−.030
Wave 7 (M_{age} = 22)	−.096	.016	.000	−.044	−.061	.019	.001	−.029
In a relationship[b]								
Wave 2 (M_{age} = 17)	−.026	.009	.003	−.022	−.019	.011	.082	−.018
Wave 3 (M_{age} = 18)	−.026	.009	.003	−.021	−.060	.012	.000	−.051
Wave 4 (M_{age} = 19)	−.026	.009	.003	−.017	−.019	.011	.082	−.013
Wave 5 (M_{age} = 20)	−.026	.009	.003	−.015	−.060	.012	.000	−.036
Wave 6 (M_{age} = 21)	−.026	.009	.003	−.014	−.060	.012	.000	−.033
Wave 7 (M_{age} = 22)	−.026	.009	.003	−.013	−.060	.012	.000	−.031

Note. n = 3680. Fit statistics: $\chi^2(284) = 1060.124$, $p = .000$; RMSEA [90% CI] = .027 [.026, .029]; CFI = .967; TLI = .961; SRMR = .088. M_{age} = mean age of youth.
[a]Grand-mean centered. [b]The parameter estimates differ between at least two waves for youth or parents.

20 and 22. For youth, being in a relationship predicted less contact with parents between ages 17 and 22 (βs = −.013–−.022), while for parents, less contact with youth who were in a relationship was seen four out of six times between ages 17 and 22 (βs = −.031–−.051).

Among the time-invariant covariates, parent sex and age predicted initial levels of contact, while youth and parent sex as well as parent education predicted the total amount of change in contact (see Table 20, growth factors and time-invariant covariates). Youth reported more contact with mothers compared to fathers, and mothers reported more contact with youth at age 17 as compared to fathers. Youth also reported slightly more contact with older parents than younger parents at age 17. Sons, compared to daughters, experienced a greater decline in contact with parents, while parents also experienced a greater decline in contact with sons from ages 17 to 22. Similarly, fathers, compared to mothers, reported a greater decrease in contact with youth, and youth reported a greater decrease in contact with fathers. Youth whose parents had more years of schooling experienced a greater decline in contact than did youth with parents who had fewer years of education; parents with more years of schooling also experienced a greater decline in contact with youth between ages 17 and 22.

Parent-child affection. Table 21 provides the parameter estimates based on the dyadic latent growth model with covariates predicting parent-child affection. These results contain cross-time equality constraints (that did not worsen model fit) on the association between the time-varying covariates and parent-child affection. Model comparison results showed that effects of living arrangement and student status on parent-child affection were not equal across time for youth, and effects of relationship status were not equal across time for parents (see Table 21, time-varying covariates). Living with parents predicted higher levels of affection for youth only at age 17 (β = .016), and it was not associated with parent-reported affection at any wave. Being

Table 21

Parameter Estimates for Dyadic Latent Growth Model with Covariates Examining Youth- and Parent-Reported Parent-Child Affection

	Youth				Parent			
Parameter	*B*	*SE*	*p*	β	*B*	*SE*	*p*	β
Growth factors and time-invariant covariates								
Intercept	3.665	.025	.000		3.655	.021	.000	
Youth sex	−.300	.023	.000	−.223	−.153	.018	.000	−.148
Parent sex	−.424	.024	.000	−.309	−.347	.019	.000	−.330
Parent education[a]	.006	.005	.251	.020	−.005	.004	.286	−.019
Parent age[a]	−.006	.002	.006	−.049	−.005	.002	.006	−.050
Slope	.001	.019	.963		−.031	.004	.000	
Youth sex	−.008	.022	.713	−.010	−.009	.005	.056	−.084
Parent sex	−.018	.023	.430	−.021	.007	.005	.146	.067
Parent education[a]	−.003	.005	.545	−.016	−.001	.001	.625	−.023
Parent age[a]	.003	.002	.181	.037	.000	.000	.578	.027
Time-varying covariates								
Living with a parent[b]								
Wave 2 (M_{age} = 17)	.063	.016	.000	.016	.009	.013	.477	.003
Wave 3 (M_{age} = 18)	−.023	.013	.084	−.008	.009	.013	.477	.004
Wave 4 (M_{age} = 19)	−.023	.013	.084	−.011	.009	.013	.477	.005
Wave 5 (M_{age} = 20)	−.023	.013	.084	−.013	.009	.013	.477	.006
Wave 6 (M_{age} = 21)	−.023	.013	.084	−.014	.009	.013	.477	.007
Wave 7 (M_{age} = 22)	−.023	.013	.084	−.014	.009	.013	.477	.007
Being a student[b]								
Wave 2 (M_{age} = 17)	.007	.012	.524	.002	−.001	.012	.961	.000
Wave 3 (M_{age} = 18)	.007	.012	.524	.003	−.001	.012	.961	.000
Wave 4 (M_{age} = 19)	.057	.014	.000	.026	−.001	.012	.961	.000
Wave 5 (M_{age} = 20)	.007	.012	.524	.004	−.001	.012	.961	.000
Wave 6 (M_{age} = 21)	.007	.012	.524	.004	−.001	.012	.961	.000
Wave 7 (M_{age} = 22)	.007	.012	.524	.004	−.001	.012	.961	.000
In a relationship[b]								
Wave 2 (M_{age} = 17)	−.014	.010	.150	−.008	−.039	.011	.001	−.028
Wave 3 (M_{age} = 18)	−.014	.010	.150	−.009	−.039	.011	.001	−.030
Wave 4 (M_{age} = 19)	−.014	.010	.150	−.009	−.039	.011	.001	−.031
Wave 5 (M_{age} = 20)	−.014	.010	.150	−.009	.012	.013	.378	.009
Wave 6 (M_{age} = 21)	−.014	.010	.150	.009	.012	.013	.378	.009
Wave 7 (M_{age} = 22)	.020	.016	.218	.012	.060	.017	.001	.046

Note. n = 3680. Fit statistics: $\chi^2(295) = 606.493$, $p = .000$; RMSEA [90% CI] = .017 [.015, .019]; CFI = .984; TLI = .982; SRMR = .027. M_{age} = mean age of youth.
[a]Grand-mean centered. [b]The parameter estimates differ between at least two waves for youth or parents.

a student predicted higher levels of affection toward parents among youth only at age 19 (β = .026) and it was not related to parent-reported affection between ages 17 and 22. For youth, relationship status was not linked with affection toward parents over the course of the study, while for parents, levels of affection toward youth who were in a relationship were lower between ages 17 and 19 (βs = −.028–−.031) but higher at age 22 (β = .046) compared to youth not in a relationship.

For youth and parents, the time-invariant covariates only predicted initial levels of but not the total amount of change in affection (see Table 21, growth factors and time-invariant covariates). Specifically, daughters, compared to sons, reported higher levels of affection toward parents at age 17, while parents also reported higher levels of affection toward daughters. Youth reported lower initial levels of affection toward fathers compared to mothers, and fathers reported lower initial levels of affection toward youth. At age 17, youth whose parents were older reported slightly less affection toward their parents than youth with younger parents; older parents also reported slightly less affection toward youth than younger parents.

Parent-child conflict. Table 22 presents the parameter estimates based on the dyadic latent growth model with covariates predicting parent-child conflict. These results contain cross-time equality constraints (that did not worsen model fit) on the association between the time-varying covariates and parent-child conflict. All three time-varying covariates predicted concurrent parent-child conflict at some point during the study. Model comparison results showed that effects of living arrangement and relationship status on parent-child conflict were not equal across time for youth, effects of living arrangement were equal across time for parents, and effects of student and relationship status were not equal across time for parents (see Table 22, time-varying covariates). For youth and parents, youth living with parents predicted more

Table 22

Parameter Estimates for Dyadic Latent Growth Model with Covariates Examining Youth- and Parent-Reported Parent-Child Conflict

	Youth				Parent			
Parameter	*B*	*SE*	*p*	β	*B*	*SE*	*p*	β
Growth factors and time-invariant covariates								
Intercept	2.579	.025	.000		2.586	.027	.000	
Youth sex	−.121	.021	.000	−.109	.002	.021	.930	.002
Parent sex	−.127	.022	.000	−.112	−.065	.023	.004	−.058
Parent education[a]	.007	.005	.178	.026	.004	.005	.449	.015
Parent age[a]	.002	.002	.426	.016	−.003	.002	.190	−.027
Slope	−.188	.024	.000		−.265	.025	.000	
Youth sex	−.017	.026	.507	−.020	−.021	.024	.384	−.033
Parent sex	.039	.027	.148	.045	.045	.026	.081	.069
Parent age[a]	−.006	.006	.338	−.029	−.011	.006	.077	−.070
Parent education[a]	.000	.003	.892	−.004	−.001	.002	.649	−.018
Time-varying covariates								
Living with a parent[b]								
Wave 2 (M_{age} = 17)	.191	.015	.000	.053	.180	.014	.000	.054
Wave 3 (M_{age} = 18)	.191	.015	.000	.071	.180	.014	.000	.074
Wave 4 (M_{age} = 19)	.191	.015	.000	.098	.180	.014	.000	.104
Wave 5 (M_{age} = 20)	.191	.015	.000	.115	.180	.014	.000	.125
Wave 6 (M_{age} = 21)	.191	.015	.000	.131	.180	.014	.000	.138
Wave 7 (M_{age} = 22)	.241	.021	.000	.160	.180	.014	.000	.139
Being a student[b]								
Wave 2 (M_{age} = 17)	.009	.012	.477	.002	−.080	.016	.000	−.023
Wave 3 (M_{age} = 18)	.009	.012	.477	.004	−.080	.016	.000	−.037
Wave 4 (M_{age} = 19)	.009	.012	.477	.004	−.080	.016	.000	−.044
Wave 5 (M_{age} = 20)	.009	.012	.477	.005	−.006	.015	.691	−.004
Wave 6 (M_{age} = 21)	.009	.012	.477	.006	−.006	.015	.691	−.004
Wave 7 (M_{age} = 22)	.009	.012	.477	.006	−.006	.015	.691	−.004
In a relationship[b]								
Wave 2 (M_{age} = 17)	−.019	.011	.074	−.012	−.012	.013	.360	−.008
Wave 3 (M_{age} = 18)	−.019	.011	.074	−.012	−.012	.013	.360	−.009
Wave 4 (M_{age} = 19)	−.019	.011	.074	−.013	−.012	.013	.360	−.009
Wave 5 (M_{age} = 20)	−.019	.011	.074	−.013	−.075	.014	.000	−.059
Wave 6 (M_{age} = 21)	−.019	.011	.074	−.013	−.075	.014	.000	−.059
Wave 7 (M_{age} = 22)	−.109	.020	.000	−.072	−.075	.014	.000	−.058

Note. n = 3680. Model fit: $\chi^2(296) = 488.048$, $p = .000$; RMSEA [90% CI] = .013 [.011, .015]; CFI = .985; TLI = .984; SRMR = .021. M_{age} = mean age of youth.
[a]Grand-mean centered. [b]The parameter estimates differ between at least two waves for youth or parents.

conflict. For youth, the magnitudes of the effect of living arrangement on conflict were equal from ages 17 to 21, and was larger at age 22 (β = .160) compared to early ages (βs = .053–.131), while the magnitudes of the effect were equal across time for parents. Youth student status was not associated with youth-reported conflict over the course of the study, but it predicted less parent-reported conflict between ages 17 and 19 (βs = −.023–−.044). For youth, being in a relationship predicted less conflict with parents only at age 22 (βs = −.072), while for parents, similar effects were found between ages 20 and 22 (βs = −.058–−.059).

Among the time-invariant covariates, youth and parent sex predicted initial levels of but not change in conflict for youth and parents (see Table 22, growth factors and time-invariant covariates). Daughters, compared to sons, reported more conflict with parents at age 17. Youth reported more conflict with mothers than fathers, while mothers also reported more conflict with youth at age 17 as compared to fathers.

Chapter 5

Discussion

For many people, the parent-child relationship is one of the most prominent and long-lasting social relations in life. Much of the research examining parent-child relations focuses on the early and late phases of the lifespan, investigating parenting of children and adolescents or caregiving for older adults. Less research attention has been devoted to parent-child relations in the years between adolescence and late adulthood (Birditt & Fingerman, 2012) yet a comprehensive understanding of the parent-child relationship is contingent on adequate evidence from these understudied segments of the lifespan. Guided by the life course perspective and the intergenerational solidarity-conflict model, using six waves of data from a sample of German parent-child dyads, the current study examined developmental trajectories of parent-child contact, affection, and conflict from ages 17 to 22. The current study also investigated the moderating effect of sex composition of the parent-child dyad on changes in parent-child relations. Last but not least, the current study explored associations of important life course transitions (leaving the parental home, exiting the education system, initiating a romantic relationship) with parent-child relations. The results revealed both change and stability in parent-child relations during the transition to adulthood and that the developmental trajectories differed depending on sex composition of the parent-child dyad. Finally, effects of youth life course transitions on changes in parent-child relations in the transition to adulthood varied across time and generation (i.e., youth or parent perceptions).

Change and Stability in Parent-Child Relations

Similar to other longitudinal research (Parker et al, 2012; Sneed et al., 2006), perceived parent-child contact decreased during the transition to adulthood in the current study. Based on

individual and dyadic growth models without covariates, contact between parents and youth, on average, decreased from daily to several times per week from ages 17 to 22. This decreasing trend in parent-child contact can be seen as a continuation of the same behavioural pattern in adolescence. It has been shown that, while shared time between adolescents and peers rises across the adolescent years (Smetana, Campione-Barr, & Metzger, 2006), the shared time between adolescents and parents declines from early to late adolescence (Lam, McHale, & Crouter, 2012). As the quest for autonomy and independence continues in the transition to adulthood, many youth may expand their own social network, develop more social relations beyond their family of origin, spend a considerable amount of time and energy to maintain these relations, and move out of the parental home. As a result, it is not surprising that contact between youth and their parents continues to decline.

However, despite the decreasing trend in contact, at the end of the study when youth were at age 22, they and their parents still maintained frequent contact (about several times a week) with each other. It is also worth noting that the cohort of youth surveyed in this study were born in the early 1990s and grew up with the widespread use of mobile devices; technological advances may have made it easier to maintain contact with families compared to older generations. In addition, the measure assessed all forms of contact, from in-person visits to instant messaging, which may contribute to the observed high frequency of parent-child contact during the transition to adulthood in the present study.

Previous longitudinal research on changes in parent-child affection during the transition to adulthood yields mixed results with respect to the direction of change. For instance, Parker and colleagues (2012) found that parent-child closeness increased, Whiteman and colleagues (2011) showed that parent-child intimacy declined, while Chung and colleagues (2015) revealed

no difference across time in parental warmth. Consistent with Chung et al. (2015), the current study found that parent-child affection remained stable from ages 17 to 22, based on results from individual and dyadic growth models without covariates. Discrepancies across studies may be due, in part, to the fact that affection in the parent-child relationship is often measured differently from one study to the next. For example, emotional closeness (Parker et al., 2012), intimate behaviours such as sharing feelings (Rice & Mulkeen, 1995; Whiteman et al., 2011), and parental warmth, acceptance, and emotional support (Chung et al., 2009; Parra et al, 2015) have all been used as indicators of parent-child affection.

In addition to the use of different measures across studies, previous research has examined samples of varying age ranges in different contexts, which may also contribute to discrepancies in findings. For instance, among the aforementioned studies, Parker and colleagues (2012) surveyed a group of German youth twice from the late teens to early 20s, Parra and colleagues (2015) followed a group of Spanish youth four times from ages 13 to 22, and Chung and colleagues (2009) studied a group of U.S. youth twice at ages 18 and 19. The current study assessed parent-child affection annually with a measure consisting of emotional closeness and self-disclosure and found little change overall across the early years of the transition to adulthood. Nevertheless, youth and parents reported levels of affection toward each other that were above the midpoint of the scale, which is consistent with the observation that the parent-child relationship is generally positive in late adolescence and the transition to adulthood, as perceived by young people and their parents (Galambos & Kotylak, 2011).

With respect to parent-child conflict, the current study revealed a small but steady decrease in conflict from ages 17 to 22, which is consistent with other longitudinal research (Parker et al., 2012; Parra et al., 2015; Whiteman et al, 2011). This decreasing trend in conflict

extends the same behavioural pattern found in adolescence. In their review of parent-adolescent conflict, Laursen and Collins (2009) concluded that frequency of conflict decreases linearly from early to late adolescence. The downward trend in parent-child conflict during the transition to adulthood observed in the current study may be due to developmental changes in both youth and parents. For example, as youth mature, it is possible that they become better at managing family discord; or as youth become more mature and autonomous, parents likely become less involved in directing the daily life of the child and, thus, avoid the types of interactions likely to create conflict. It is worth noting that this group of German youth and parents generally reported low levels of parent-child conflict from late adolescence to the transition to adulthood, with the average response for the frequency of conflict between "seldom" and "sometimes," which is comparable to what was observed in other longitudinal studies with samples from Spain (Parra et al., 2015) and the U.S. (Whiteman et al., 2011).

Overall, youth and parents in this study were similar in their perceptions of parent-child contact, affection, and conflict, as well as how this relationship changed between ages 17 to 22. It has been argued that parents' and teens' perceptions of parent-child relations diverge the most in early adolescence and gradually converge over time (Laursen & Collins, 2009). Given that youth surveyed in the present study were in their late teens and early 20s, it provides evidence that the gradual convergence of perceptions may start to stabilize through the transition to adulthood. The observed similarity in perceptions of parent-child relations between parents and youth is also consistent with findings from Aquilino (1999) in which the majority of parents and young adult children rated their relationship similarly. Nonetheless, one result that seems to suggest a generational bias in perception is that parents, on average, reported slightly more affection toward children than the other way around (see Figure 2). Furthermore, youth and

parents appeared to be more alike with respect to perceptions of parent-child contact than with parent-child affection and conflict, possibly because frequency of contact is one of the more objective aspects of a relationship, whereas perceived parent-child affection and conflict are more subjective. On the one hand, visits and phone calls between youth and parents are concrete and countable. On the other hand, youth and parents may not totally agree with each other on how close they are emotionally or what constitutes an argument.

The decision to examine contact, affection, and conflict in the parent-child relationship was guided by the intergenerational solidarity-conflict model. Bengtson and colleagues (2002) proposed that intergenerational relations are multidimensional and cannot be represented by a single indicator. They also considered different dimensions of the solidarity-conflict model to be "orthogonal," especially affection and conflict (Bengtson et al., 2002, p. 574). In particular, they urged researchers to include conflict when assessing intergenerational relations, as a lack of affection does not imply high levels of conflict and vice versa. The current study revealed distinct developmental trajectories of parent-child contact, affection, and conflict, which provides evidence supporting the multidimensionality of intergenerational relations, in this case between parents and youth. In addition, the current study analyzed core dimensions of the solidarity-conflict model not only longitudinally but also in a sample of the current generation of youth and their parents. Altogether, this study makes valuable additions to the literature on intergenerational relations by going beyond the typical cross-sectional snapshot, providing further evidence for multidimensionality, extending the application of the solidarity-conflict model to a younger age group in contrast to previous research highlighting middle-age people and their parents, and analyzing recently collected data on youth and their parents.

Sex Composition of the Parent-Child Dyad and Parent-Child Relations

In addition to the general patterns of change in parent-child relations, multi-group comparisons on individual latent growth models revealed that changes in perceived parent-child contact, affection, and conflict differed depending on the sex composition of the parent-child dyad. For instance, despite an average decline, mothers continued to be in close contact with both daughters and sons in the transition to adulthood. In humans in different types of societies as well as nonhuman primates, mothers are centrally important to their offspring and their bonds with children are crucial, particularly at the beginning of life (Hrdy, 2011). The current study suggests that the close connections between mothers and children continue well into late adolescence and young adulthood. This is consistent with the idea that, even with increases in labor force participation of women over the past century, mothers are still socialized to have a strong focus on families and family relations (Larson & Richards, 1994). In support, North American and European mothers who were employed with comparable earnings to fathers still spent more hours per week in child care than did fathers (Fagan, Day, Lamb, & Cabrera, 2014).

Youth-father contact was lower than youth-mother contact in late adolescence, while contact also decreased more between youth and their fathers during the transition to adulthood. Although Sneed and colleagues (2006) found that daughters' contact with family members decreased more slowly than sons', in the present study contact with a parent decreased the most in daughter-father dyads according to reports from the daughter. In addition, compared to contact between mothers and youth, there was more variability in both the initial levels of and changes in contact between fathers and youth. Anthropologist Sarah Hrdy (2008) pointed out that paternal care of offspring is much more variable in humans across different cultures than in other primates; the former ranges from highly close and supportive to absent with little support. The current study shows that, even within the same society, fathers' involvement with children varies

more than that of mothers. One possible explanation for these findings is that, despite an increase in fathers' involvement in the daily life of children and youth in the past couple of decades (Fagan et al., 2014; Lamb, 2000), the social expectation for fathers' involvement is still not as high and consistent as for mothers. For example, a discourse analysis of journalists' assumptions regarding fatherhood appearing in a series of Canadian newspaper articles concluded that mothers continued to be considered as the primary caregiver while fathers, whose involvement in child care was supported culturally to some extent, continued to be seen as the secondary parent (Wall & Arnold, 2007). As a result, fathers' contact with youth may be more subject to the influences of other personal or contextual factors.

Multi-group comparisons of parent-child affection across the four parent-child dyads showed that, consistent with previous research in adolescence and the transition to adulthood (Laursen & Collins, 2009; Thornton et al., 1995; Whiteman et al., 2011), mothers had better relations with daughters and sons than did fathers in the current study. Specifically, the relationship between mothers and daughters was the most affectionate, followed by the relationship between mothers and sons; the relationship between fathers and youth was less emotionally close and intimate. This is true from the reports of both youth and parents. In a study of Canadian university students, Marshall, Liu, Wu, Berzonsky, and Adams (2010) found that youth perceptions of mattering to mothers decreased over a 3-year period, which may indicate that young people gradually realized that they were not the center of their mothers' lives. But considering evidence from the current study, the affectual aspect of the relationship between mothers and youth may not be negatively impacted. An interesting finding is that, although on average there was a small decrease in affection for youth and their parents, parents did not uniformly experience this decrease. In fact, only fathers in the son-father dyad reported a decline

in affection toward sons, whereas parents in other types of dyads reported small increases in affection. This suggests that, compared to relationships between mothers and youth or between fathers and daughters, the father-son relationship may be more vulnerable and become more distant as time goes on.

Parent-child dyads with different sex compositions were typically similar in terms of initial levels of and changes in parent-child conflict in the present study. One noteworthy difference was that mothers consistently had more conflict with youth, especially daughters, than did fathers. This finding differs from results of another longitudinal study in which Whiteman and colleagues (2011) found that mothers had less conflict with youth in the late teens than did fathers within the same family. But mothers and daughters having more conflict was consistent with patterns of parent-child conflict observed in adolescence such that rates of conflict are highest in mother-daughter dyads (Laursen & Collins, 1994). The higher levels of contact and affection in mother-daughter dyads implies that mothers and daughters interact more, communicate more, and are closer with each other; higher levels of interaction and communication between mothers and daughters may naturally lead to an increase in the frequency of disagreements. Nevertheless, it is important to keep in mind that, on the whole, conflicts were infrequent between youth and parents. The slightly elevated levels of conflict between mothers and daughters do not necessarily mean that the mother-daughter relationship is worse than other relationships during the transition to adulthood, especially when other dimensions such as parent-child contact and affection are considered.

Individual Characteristics and Parent-Child Relations

In addition to parent and youth sex, two other individual characteristics of parents, namely parent age and education, were associated with parent-child relations. Slightly more

parent-child contact at age 17 was observed in parent-child dyads in which the parents were older. Given that most parents surveyed have multiple children, it is possible that older parents have more parenting experience and are better at monitoring their teenage children in late adolescence, which resulted in more contact. One puzzling finding is that older parental age was also related to lower parent-child affection at age 17. Considering that only a small number of studies for parent-child relations in the transition to adulthood included parent age, with inconsistent results (Aquilino & Supple, 1991; Aquilino, 1997), the findings from the current study need to be interpreted with caution.

Higher levels of parent education, on the other hand, were associated with a greater decrease in parent-child contact during the transition to adulthood. One contributing factor may be that youth with highly educated parents are more likely to pursue higher education (Tomkowicz & Bushnik, 2003), and possibly move out of the parental home for schooling, which results in a greater decline in contact with parents.

Life Course Transitions and Parent-Child Relations

An important set of findings in the present study was that youth life course transitions not only played varying roles at different time points in changes in parent-child relations, but also affected youth and parent perceptions of their relations differently. These results provide support for understanding human development from a life course perspective: both transitional events and their timing impact individuals; individuals may be influenced by transitional events in other individuals' lives with whom they share interdependent relationships (i.e., "linked lives"; Elder et al., 2003, p. 13).

Compared to those who did not live together, parent-child dyads living in the same household naturally had more parent-child contact at any given time point due to being in close

proximity on a daily basis. Living with parents was associated with more affection toward parents from the perspective of youth, but only at age 17; whereas whether youth lived with parents or not had no relation to parents' affection toward them. This suggests that being physically close (e.g., parent-child coresidence) may have a stronger influence on youth perceptions of parent-child affection than that of parents. Parent-child coresidence was also related to more conflicts at all waves for both young people and parents. The effects of coresidence on parent-child conflict were equal across time for parents but were larger in magnitude for youth toward the end of the study than in the early years. Despite the increasing prevalence of young adults living in the parental home in many Western countries (Eurostat, 2015; OECD, 2016b), those who continue to live with parents in their 20s may find themselves facing a conundrum of developing autonomy and independence while still under the rules and regulations of the parental household; and this difficulty may become more salient for young people as they age than for parents.

In the late teens, parents reported slightly more contact with youth who were students, while in the early 20s, enrollment in educational institutions was associated with less parent-child contact. This change in direction may be partly due to youth who are students in tertiary education in the early 20s expanding their social network, which necessarily decreases contact with parents. Student status of youth had almost no effect on parent-child affection, except at age 19, with those who were students slightly more affectionate toward parents. Student status was also not related to youth perceptions of parent-child conflict, but parents reported more parent-child conflicts if their children were not enrolled in any educational institution between ages 17 to 19. Considering that 90% of German youth aged 15 to 19 enrolled in education (Eurostat,

2015), one possible explanation is that not being in school violates parents' expectations for youth at this age, creating a source of conflict.

Not surprisingly, youth and their parents generally reported less parent-child contact if the younger generation was in a romantic relationship. This is in line with findings from a cross-sectional study of Dutch youth and young adults in which married or cohabiting young people reported less frequent contact with parents (Bucx et al., 2008). Interestingly, from the youth perspective, being in a romantic relationship or not had no impact on perceived parent-child affection; but parents reported lower levels of parent-child affection if their children were dating in late adolescence and higher levels of affection if their children were in a relationship at age 22. In addition, less parent-child conflict was reported by both generations if the younger generation was in a relationship in the early 20s. One possible explanation for why effects of youth in a relationship varied across time for parent-child affection and conflict concerns spillover. As building a romantic relationship is considered one of the salient developmental tasks during the transition to adulthood (Roisman, Masten, Coatsworth, & Tellegen, 2004), young people may experience gains in social competence as a result of their intimate relations; and increased social competence may positively influence other interpersonal relations. Indeed, using data from older cohorts in the pairfam study, Johnson and colleagues (2017) revealed that intimacy and conflict in the romantic relationship often predicted intimacy and conflict in the parent-adult child relationship, but not vice versa, and suggested that efforts in improving adult couple relations might also benefit family relations.

Strengths, Limitations, and Future Directions

This study is one of the first to investigate the parent-child relationship in the transition to adulthood longitudinally and with a large representative community sample of youth and their

parents. Mothers' (60%) and fathers' (40%) perceptions of the parent-child relationship were considered in this study. It is also unique in examining how changes in parent-child relations differ depending on the sex composition of the parent-child dyad. Improving upon earlier studies of parent-child relations and life course transitions, this study looked at the effects of not only various life course transitions, but also the timing of them on parent-child relations. Using a rigorous analytic approach, the present study expands upon our knowledge about general patterns of and influences on parent-child relations in an important transitional period.

Nevertheless, the current study is not without limitations. Although included and excluded youth were more similar than different with respect to parent-child relations, youth included in the final sample—those whose parents participated in the study—had relatively better relations with their parents in general, characterized by slightly higher levels of contact with and affection toward mothers or fathers. This selection bias is unfortunately common in studies with a multi-actor design (Steinbach et al., 2017), and it may bias the general descriptive portrait of relationships in such studies (Kalmijn & Liefbroer, 2011). Comparing models with and without bias correction, Kalmijn and Liefbroer (2011) suggested that in most cases the substantive estimates of causal effects may not be affected by this bias.

The sample of youth and parents surveyed in the present study, although representative of the population of Germans from which it was drawn, is still a single cohort in a specific historical and geographic context. But this can also be considered a unique feature, such that the parent-child relationship is examined in a current generation of youth outside the North American setting in which many prior studies were based. Whether findings from the present study apply to samples in different contexts, such as in developing countries or different cultures, is an interesting question that awaits more evidence.

Parent-child contact was assessed using a global single-item measure in the present study which is inclusive of all forms of contact. But it is impossible to differentiate different types of parent-child contact (e.g., in-person visits, phone calls, instant messaging, or communication on social networking sites) and to understand how they may uniquely change or play different roles in the parent-child relationship during the transition to adulthood, which could be a potentially fruitful avenue for future research. Considering the downward trend in parent-child contact, at the beginning of the study, the average level of contact was close to the highest possible value of the response scale. One alternative explanation for the downward trend is simply regression to the mean. But multiple assessments from both youth and parents replicated the decline from one wave to the next, providing evidence that the downward trend is not illusory. Furthermore, significant life course transitions such as leaving the parental home were connected to less parent-child contact, providing empirical support for a logical explanation. Therefore, the decrease in contact likely reflects the realities of the transition to adulthood rather than a statistical artifact.

In addition, Cronbach's αs for the 3-item measure of parent-child affection completed by parents were sometimes below the usual rule of thumb for adequacy (i.e., below .65; Vaske, Beaman, & Sponarski, 2017). The small number of items could have contributed to this. But at the same time, Cronbach's αs of the same items based on youth reports were consistently high. Of the three items on parent-child affection, two assessed self-disclosure of secrets or private feelings. It is possible that, compared to youth, parents' affection toward children may not be as strongly characterized by disclosing secrets or feelings, especially among fathers who may conform to a masculine role in which open expression of feelings is less encouraged. Thus, the results regarding trajectories of father-child affection need to be interpreted with caution. Future

research may examine further the quality of these items or consider alternative measures for parents' affection toward youth.

Due to practical reasons (e.g., model nonconvergence), I was unable to conduct multi-group comparisons for dyadic latent growth models across four types of dyadic sex composition. Continuing advances in statistical methods and software would help answer some of the remaining questions, such as whether associations between life course transitions and parent-child relations differ across daughter-mother, daughter-father, son-mother, and son-father dyads.

In terms of future directions, the present study sought to understand how parent-child relations change longitudinally during the transition to adulthood using sophisticated quantitative methods with complex time-structured data; while research using qualitative methods can shed light on the nuances in family processes associated with changes in parent-child relations. For example, Young and colleagues (2008) conceptualized the transition to adulthood as a joint project that involved both youth and parents and illustrated the complexity of parent-child relational processes associated with youth making the transition to adulthood. Future research may examine whether and how negotiations in personal and social domains between youth and parents affect the quality of their relationship.

The present study examined parent-child relations and life course transitions from late adolescence to the early years of the transition to adulthood. It has been argued that many contemporary youth take longer to complete the traditional passage to adulthood in many developed countries (Furstenberg, 2010) and some voluntarily choose to not engage in certain life course transitions (e.g., marriage, childbearing). Future research should extend to the late 20s and early 30s or even later to explore how decisions regarding some important life course transitions and the timing of completion for those transitions influence developmental

trajectories of parent-child relations. Although fewer parents will be recruited into the pairfam project, youth in the present study will still be followed to their late 20s and early 30s, which allows us to expand our knowledge about developmental changes in the parent-child relationship in young adulthood.

Last but not least, many studies on parent-child relations during the transition to adulthood tend to focus on how parents help facilitate the transition to adulthood and the development of autonomy and independence. But the parent-child relationship is never a one-way street. With a better understanding of normative changes in parent-child relations and the continuing interdependence between youth and parents, future research can ask whether developmental trajectories of parent-child relations during the transition to adulthood and young adulthood has short-term or long-term implications, for both youth and parents, in various domains such as physical and psychological well-being and intergenerational support exchange.

Conclusion

Guided by a life course perspective on human development, this study presents important longitudinal evidence regarding developmental trajectories of perceived parent-child contact, affection, and conflict during the transition to adulthood. Results showed that parent-child contact and conflict decreased, while affection remained stable over time, supporting the notion that the parent-child relationship generally stays positive or shows signs of improvement from late adolescence to the transition to adulthood. Youth and their parents were quite similar in their perceptions of the relationship. In addition, this study offers interesting insights into the role that sex composition of the parent-child dyad plays in changes in parent-child relations. On average, mothers had better relations with children than did fathers, with the mother-daughter relationship the closest and the father-son relationship the most vulnerable. More importantly, this study

provides support for two of the key principles proposed by the life course perspective, the principles of linked lives and timing (Elder et al., 2003). For today's young people, there is great variability in when important life events or role changes occur (i.e., leaving the parental home, exiting the education system, initiating a romantic relationship). These life events may affect not only youth but also their parents, and the effects of these life course transitions could also vary according to when they happen. Living with parents in the late teens can strengthen parent-child ties, but it can also create more conflicts once the child reaches the early 20s. Exiting the education system and starting a relationship at a younger age may strain the parent-child relationship, but the same transitions undertaken later on are a boon to parent-child ties. Taken together, this study highlights the unique contributions longitudinal and multi-actor designs can offer for a better understanding of the development of human relations.

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Appendix A

Longitudinal Measurement Invariance Testing

Table A1

Fit Statistics and Model Comparisons for Parent-Child Affection Longitudinal Measurement Invariance Testing

Model	$\chi^2(df)$, p	RMSEA [90% CI]	CFI	TLI	SRMR	Comparator: $\Delta\chi^2(\Delta df)$, p	ΔRMSEA	ΔCFI
Youth (n = 3680)								
1. Equal structure	5582.606(120), < .001	.111 [.109, .114]	.838	.793	.072			
2. Equal structure[a]	142.168(75), < .001	.016 [.012, .019]	.998	.996	.013			
3. Equal factor loading	157.621(85), < .001	.015 [.011, .019]	.998	.996	.016	2: 15.453(10), .116	.001	.000
4. Equal intercept	387.942(100), < .001	.028 [.025, .031]	.991	.987	.023	3: 230.321(15), < .001	.013	.007
5. Equal residual	**469.929(115), < .001**	**.029 [.026, .032]**	**.989**	**.986**	**.033**	**4: 81.987(15), < .001**	**.001**	**.002**
Parents (n = 3678)								
6. Equal structure	3653.274(120), < .001	.089 [.087, .092]	.773	.710	.117			
7. Equal structure[a]	100.390(75), .027	.010 [.003, .014]	.998	.997	.015			
8. Equal factor loading	138.654(85), < .001	.013 [.009, .017]	.997	.994	.029	7: 38.264(10), < .001	.003	.001
9. Equal intercept[b]	210.607(96), < .001	.018 [.015, .021]	.993	.988	.031	8: 71.953(11), < .001	.005	.004
10. Equal residual	**356.957(111), < .001**	**.025 [.022, .027]**	**.984**	**.978**	**.072**	**9: 146.350(15), < .001**	**.007**	**.009**

Note. Models retained are shown in bold. Equal structure = configural invariance; equal factor loading = metric/weak invariance; equal intercept = scalar/strong invariance; equal residual = strict invariance.
[a]To improve model fit, residual variances for the same indicator are correlated across different time-points. [b]Partial invariance achieved.

Table A2

Fit Statistics and Model Comparisons for Parent-Child Conflict Longitudinal Measurement Invariance Testing

Model	$\chi^2(df), p$	RMSEA [90% CI]	CFI	TLI	SRMR	Comparator: $\Delta\chi^2(\Delta df), p$	ΔRMSEA	ΔCFI
Youth (*n* = 3678)								
1. Equal structure	291.683(39), < .001	.042 [.038, .047]	.984	.973	.015			
2. Equal factor loading	300.690(44), < .001	.040 [.036, .044]	.984	.975	.018	1: 9.007(5), .109	.002	.000
3. Equal intercept[a]	350.925(50), < .001	.040 [.037, .044]	.981	.975	.018	2: 50.235(6), < .001	.000	.003
4. Equal residual	**390.664(60), < .001**	**.039 [.035, .042]**	**.979**	**.977**	**.024**	**3: 39.739(10), < .001**	**.001**	**.002**
Parents (*n* = 3678)								
5. Equal structure	343.719(39), < .001	.046 [.042, .051]	.974	.955	.023			
6. Equal factor loading	353.050(44), < .001	.044 [.040, .048]	.973	.960	.026	5: 9.331(5), .097	.002	.001
7. Equal intercept[a]	436.357(50), < .001	.046 [.042, .050]	.967	.956	.030	6: 83.307(6), < .001	.002	.006
8. Equal residual	**447.010(60), < .001**	**.042 [.038, .046]**	**.967**	**.963**	**.030**	**7: 10.653(10), .385**	**.004**	**.000**

Note. Models retained are shown in bold. Equal structure = configural invariance; equal factor loading = metric/weak invariance; equal intercept = scalar/strong invariance; equal residual = strict invariance.
[a]Partial invariance achieved.

Appendix B

Individual Latent Growth Models Specifying the Nature of the Change Function

Table B1

Fit Statistics and Model Comparisons for Individual Latent Growth Models Examining Parent-Child Contact

Model	$\chi^2(df), p$	RMSEA [90% CI]	CFI	TLI	SRMR	Comparator: $\Delta\chi^2(\Delta df), p$
Youth (n = 3680)						
1. FI	9755.682(20), < .001	.364 [.358, .370]	.000	.106	.436	
2. RI	4967.874(19), < .001	.266 [.260, .272]	.394	.522	.480	1: 4787.808(1), < .001
3. RI FL	2628.613(18), < .001	.199 [.192, .205]	.681	.734	.418	2: 2339.261(1), < .001
4. RI RL	731.415(16), < .001	.110 [.103, .117]	.912	.918	.175	3: 1897.198(2), < .001
5. RI RL FQ	698.845(15), < .001	.111 [.104, .118]	.916	.916	.184	4: 32.570(1), < .001
6. RI RL RQ	342.449(12), < .001	.087 [.079, .095]	.960	.949	.146	5: 356.396(3), < .001
7. RI RL RQ FC	232.346(11), < .001	.074 [.066, .082]	.973	.963	.123	6: 110.103(1), < .001
8. RI RL RQ RC	**58.279(7), < .001**	**.045 [.034, .056]**	**.994**	**.987**	**.056**	**7: 174.067(4), < .001**
Parents (n = 3660)						
9. FI	4827.370(20), < .001	.256 [.250, .262]	.000	−.014	.471	
10. RI	3455.876(19), < .001	.222 [.216, .229]	.033	.237	.600	9: 1371.494(1), < .001
11. RI FL	1773.083(18), < .001	.163 [.157, .170]	.506	.589	.496	10: 1682.793(1), < .001
12. RI RL	536.236(16), < .001	.094 [.087, .101]	.854	.863	.215	11: 1236.847(2), < .001
13. RI RL FQ	516.892(15), < .001	.096 [.089, .103]	.859	.859	.228	12: 19.344(1), < .001
14. RI RL RQ	256.461(13), < .001	.072 [.064, .079]	.932	.921	.137	13: 260.431(2), < .001
15. RI RL RQ FC	207.161(12), < .001	.067 [.059, .075]	.945	.931	.131	14: 49.300(1), < .001
16. RI RL RQ RC	**88.542(8), < .001**	**.052 [.043, .063]**	**.977**	**.958**	**.114**	**15: 118.619(4), < .001**

Note. Models retained are shown in bold. F = fixed; R = random. I = intercept; L = linear slope; Q = quadratic slope; C = cubic slope.

Table B2

Fit Statistics and Model Comparisons for Individual Latent Growth Models Examining Parent-Child Affection

Model	$\chi^2(df)$, p	RMSEA [90% CI]	CFI	TLI	SRMR	Comparator: $\Delta\chi^2(\Delta df)$, p
Youth (n = 3680)						
1. FI	11272.945(20), < .001	.391 [.385, .397]	.000	.248	.491	
2. RI	724.616(19), < .001	.100 [.094, .107]	.937	.950	.076	1: 10548.329(1), < .001
3. RI FL	698.272(18), < .001	.101 [.095, .108]	.939	.949	.073	2: 26.344(1), < .001
4. RI RL	222.871(16), < .001	.059 [.053, .066]	.982	.983	.055	3: 475.401(2), < .001
5. RI RL FQ	192.799(15), < .001	.057 [.050, .064]	.984	.984	.046	4: 30.072(1), < .001
6. RI RL RQ	**88.849(12), < .001**	**.042 [.034, .050]**	**.993**	**.991**	**.021**	**5: 103.950(3), < .001**
7. RI RL RQ FC	88.305(11), < .001	.044 [.036, .052]	.993	.991	.022	6: .544(1), .544
8. RI RL RQ RC	Failed to converge					
Parents (n = 3678)						
9. FI	6077.085(20), < .001	.287 [.281, .293]	.000	.240	.512	
10. RI	338.354(19), < .001	.068 [.061, .074]	.947	.958	.094	9: 5738.731(1), < .001
11. RI FL	322.760(18), < .001	.068 [.061, .074]	.949	.958	.090	10: 15.594(1), < .001
12. RI RL	252.172(16), < .001	.063 [.057, .070]	.960	.963	.079	11: 70.588(2), < .001
13. RI RL FQ	221.269(15), < .001	.061 [.054, .068]	.965	.965	.061	12: 30.903(1), < .001
14. RI RL RQ	203.980(12), < .001	.066 [.058, .074]	.968	.960	.036	13: 17.289(3), < .001
15. RI RL RQ FC	**121.662(11), < .001**	**.052 [.044, .061]**	**.981**	**.975**	**.016**	**14: 82.318(1), < .001**
16. RI RL RQ RC	Failed to converge					

Note. Models retained are shown in bold. F = fixed; R = random. I = intercept; L = linear slope; Q = quadratic slope; C = cubic slope.

Table B3

Fit Statistics and Model Comparisons for Individual Latent Growth Models Examining Parent-Child Conflict

Model	$\chi^2(df)$, p	RMSEA [90% CI]	CFI	TLI	SRMR	Comparator: $\Delta\chi^2(\Delta df)$, p
Youth (n = 3678)						
1. FI	6759.693(20), < .001	.303 [.297, .309]	.000	.210	.384	
2. RI	921.452(19), < .001	.114 [.107, .120]	.859	.889	.083	1: 5838.241(1), < .001
3. RI FL	362.485(18), < .001	.072 [.066, .079]	.946	.955	.052	2: 558.967(1), < .001
4. RI RL	119.314(16), < .001	.042 [.035, .049]	.984	.985	.031	3: 243.171(2), < .001
5. RI RL FQ	88.044(15), < .001	.036 [.029, .044]	.989	.989	.039	4: 31.270(1), < .001
6. RI RL RQ	28.172(12), .005	.019 [.010, .028]	.997	.997	.018	5: 59.872(3), < .001
7. RI RL RQ FC	**17.925(11), .083**	**.013 [.000, .024]**	**.999**	**.999**	**.020**	**6: 10.247(1), .001**
8. RI RL RQ RC	Failed to converge					
Parents (n = 3678)						
9. FI	5392.409(20), < .001	.270 [.264, .276]	.000	.192	.461	
10. RI	839.329(19), < .001	.108 [.102, .115]	.836	.870	.091	9: 4553.080(1), < .001
11. RI FL	224.514(18), < .001	.056 [.049, .062]	.959	.965	.073	10: 614.815(1), < .001
12. RI RL	104.614(16), < .001	.039 [.032, .046]	.982	.983	.046	11: 119.900(2), < .001
13. RI RL FQ	103.788(15), < .001	.040 [.033, .048]	.982	.982	.048	12: .826(1), .036
14. RI RL RQ	80.865(12), < .001	.040 [.032, .048]	.986	.983	.026	13: 22.923(3), < .001
15. RI RL RQ FC	**55.618(11), < .001**	**.033 [.025, .042]**	**.991**	**.988**	**.018**	**14: 25.247(1), < .001**
16. RI RL RQ RC	Failed to converge					

Note. Models retained are shown in bold. F = fixed; R = random. I = intercept; L = linear slope; Q = quadratic slope; C = cubic slope.

Appendix C

Dyadic Latent Growth Model Testing Time-Varying Effects of Covariates

Table C1

Fit Statistics and Model Comparisons for Time-Varying Effects of Time-Varying Covariates Testing with Dyadic Latent Growth Models for Parent-Child Contact

Model	$\chi^2(df), p$	RMSEA [90% CI]	CFI	TLI	SRMR	Comparator: $\Delta\chi^2(\Delta df), p$
1. No equality constraint	1024.611(260), < .001	.028 [.026, .030]	.967	.958	.085	
2. EEs of LA for youth	1030.860(265), < .001	.028 [.026, .030]	.967	.959	.085	1: 6.249(5), .283
3. EEs of LA for parents[a]	1039.908(269), < .001	.028 [.026, .030]	.967	.959	.086	2: 9.048(4), .060
4. EEs of SS for youth[a]	1043.894(272), < .001	.028 [.026, .030]	.967	.960	.086	3: 3.986(3), .263
5. EEs of SS for parents[a]	1050.848(275), < .001	.028 [.026, .029]	.967	.960	.087	4: 6.954(3), .073
6. EEs of RS for youth	1053.071(280), < .001	.027 [.026, .029]	.967	.961	.087	5: 2.223(5), .818
7. EEs of RS for parents[a]	**1060.124(284), < .001**	**.027 [.026, .029]**	**.967**	**.961**	**.088**	**6: 7.053(4), .133**

Note. Models retained are shown in bold. Model 1 is the least restrictive model, and Model 7 is the most restrictive model. EE = equal effects; LA = living arrangement; SS = student status; RS = relationship status.
[a]Effects differ between at least two waves.

Table C2

Fit Statistics and Model Comparisons for Time-Varying Effects of Time-Varying Covariates Testing with Dyadic Latent Growth Models for Parent-Child Affection

Model	$\chi^2(df)$, p	RMSEA [90% CI]	CFI	TLI	SRMR	Comparator: $\Delta\chi^2(\Delta df)$, p
1. No equality constraint	565.466(270), < .001	.017 [.015, .019]	.984	.981	.026	
2. EEs of LA for youth[a]	568.059(274), < .001	.017 [.015, .019]	.984	.981	.026	1: 2.593(4), .628
3. EEs of LA for parents	577.332(279), < .001	.017 [.015, .019]	.984	.981	.027	2: 9.273(5), .099
4. EEs of SS for youth[a]	583.270(283), < .001	.017 [.015, .019]	.984	.982	.027	3: 5.938(4), .204
5. EEs of SS for parents	594.260(288), < .001	.017 [.015, .019]	.984	.981	.027	4: 10.990(5), .052
6. EEs of RS for youth[a]	602.800(292), < .001	.017 [.015, .019]	.984	.981	.027	5: 8.540(4), .074
7. EEs of RS for parents[a]	**606.493(295), < .001**	**.017 [.015, .019]**	**.984**	**.982**	**.027**	**6: 3.693(3), .297**

Note. Models retained are shown in bold. Model 1 is the least restrictive model, and Model 7 is the most restrictive model. EE = equal effects; LA = living arrangement; SS = student status; RS = relationship status.
[a]Effects differ between at least two waves.

Table C3

Fit Statistics and Model Comparisons for Time-Varying Effects of Time-Varying Covariates Testing with Dyadic Latent Growth Models for Parent-Child Conflict

Model	$\chi^2(df)$, p	RMSEA [90% CI]	CFI	TLI	SRMR	Comparator: $\Delta\chi^2(\Delta df)$, p
1. No equality constraint	452.174(270), < .001	.014 [.011, .016]	.986	.983	.020	
2. EEs of LA for youth[a]	457.749(274), < .001	.013 [.011, .016]	.986	.983	.020	1: 5.575(4), .233
3. EEs of LA for parents	467.991(279), < .001	.014 [.011, .016]	.986	.983	.020	2: 10.242(5), .069
4. EEs of SS for youth	474.700(284), < .001	.014 [.011, .016]	.985	.983	.020	3: 6.709(5), .243
5. EEs of SS for parents[a]	483.311(288), < .001	.014 [.011, .016]	.985	.983	.020	4: 8.611(4), .072
6. EEs of RS for youth[a]	486.070(292), < .001	.013 [.011, .016]	.985	.983	.020	5: 2.759(4), .599
7. EEs of RS for parents[a]	**488.048(296), < .001**	**.013 [.011, .015]**	**.985**	**.984**	**.021**	**6: 1.978(4), .740**

Note. Models retained are shown in bold. Model 1 is the least restrictive model, and Model 7 is the most restrictive model. EE = equal effects; LA = living arrangement; SS = student status; RS = relationship status.
[a]Effects differ between at least two waves.