

Intergenerational Relationships across the Life Course:
Links with Adolescent Well-Being

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Dedication

This work is dedicated to Tom and Rita Muraski, my parents who overcame risk factor after risk factor with love.

Abstract

Grounded in the life course perspective, the author used data from three generations of the Youth Development Study (YDS) to conduct two studies on intergenerational relationships between parents and children. Using growth mixture modeling, [Study 1](#) identified prospective patterns of perceived closeness with fathers ($n = 913$) and mothers ($n = 966$) from adolescence into adulthood over 24 years in the first generation (G1 – G2). Analyses identified a continuous, slightly increasing pattern of perceived closeness with fathers. Three quadratic, latent class patterns of perceived closeness with mothers fit the data best: high closeness over time, average but decreased closeness in adulthood, and low but increased closeness in adulthood. Demographic and family correlates are discussed. In a subset of second generation, parent-adolescent dyads ($n = 262$), [Study 2](#) examined the relationship between G1- G2 patterns of perceived closeness and G3 well-being and perceived closeness with parents in adolescence. The mean trajectory of G2 perceived closeness with grandfathers did not predict perceived closeness with parents, depression, or well-being in G3 adolescents; nor did patterns of G2 perceived closeness with grandmothers differentiate levels of depressed mood, self-esteem, or closeness with mother in G3 adolescents. A marginal difference in G3 closeness with fathers was found by G2 patterns of closeness with mothers, such that those in families with G2 low but increased closeness reported lower closeness with fathers compared to those in families with high G2 closeness over time.

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Intergenerational Relationships across the Life Course: Links with Adolescent Well-Being

The association between family relationship quality and adolescent well-being is well established. Quality of relationships with both mothers and fathers have been uniquely linked to adolescent self-esteem and have been identified as protective factors against depression (Laible, Carlo, & Roesch, 2004; Sheeber, Davis, Leve, Hops, & Tildesley, 2007; Videon, 2005). Research has indicated that close relationships with parents in childhood had a distal effect on well-being in adulthood (Englund, Sally, Kuo, Puig, & Collins, 2011; Fluori & Buchanan, 2003). Furthermore, past research has provided evidence of intergenerational influences of quality parent-child relationships. For example, growing up in a home with a stepfather also increased the likelihood of becoming a stepfather (Goldscheider & Sassler, 2006), implying intergenerational socialization. Also, youth who experienced positive parent involvement and warmth were later more likely to report a positive, effective experience in their own parenting (Friesen, Woodward, Horwood, & Fergusson, 2013; Hofferth, Pleck, & Vesely, 2012).

However, little research has followed the trajectory of parent-child relationships from adolescence, through young adulthood, and into adulthood. In addition, relationship quality has been found to vary more among fathers than mothers (Videon, 2005), and the positive influence of parent-child relationships on mental health has been found to vary by child gender (e.g., Meadows, Brown, & Elder, 2006). Further, most research has examined mean effects rather than multiple trajectories of relationship quality over time.

Using the Youth Development Study (YDS), the current research addresses these gaps in the literature by examining various pathways of perceived closeness with father and perceived closeness with mother from adolescence to adulthood. In turn, the intergenerational links between patterns of perceived closeness with parents and well-being in a third generation of YDS participants are analyzed. The YDS prospectively follows a cohort of adolescents over nearly 25 years, from 1987 to 2011, and has collected data from the children of the now-grown adolescents.

Theoretical Framework

Life course theory focuses on continuity and change over developmental trajectories (Elder & Giele, 2009). According to this perspective, unique social contexts in history give meaning to events across the life course. For example, children are much more likely than they were a few decades ago to grow up with a single mother who never married and experience multiple family structures (Furstenberg, 2010; Grall, 2013). Often these changes are stratified by socioeconomic constraints and opportunities (Furstenberg, 2010). The YDS, in particular, covers a time of rapid social change as young adulthood has become extended and family formation has been delayed (Mortimer, 2012). Life course theory suggests that social changes impact development and emphasizes the consequences of previous life transitions for outcomes later in life, even decades later (Elder & Giele).

Life course theory is also based on the assumption that lives are linked from one generation to the next (Elder & Giele, 2009). As individuals move through their lives, the relationships with people close to them have an influence on the direction and quality

of their lives. For example, marital relationships were found to influence parenting quality, and in turn, the relationship between parents and children (Cui, Donnellan, & Conger, 2007). Also, Amato and Cheadle (2005) found that divorce in one generation has an effect on family members lives years later, including children who had not been born at the time of the divorce. These examples underscore the importance of examining the strength of connections between family members and the influence of family relationships across time.

The current studies integrate the concept of linked lives by following the perception of closeness in parent-child relationships over time and the influence of these relationship perceptions on the next generation. First, in Study 1 I examined patterns of perceived closeness with mothers and fathers from adolescence to adulthood. Then, in Study 2 I analyzed the influence of those relationship perceptions on adolescent report of closeness with their parents and adolescent well-being in the next generation.

Study 1: Trajectories of Perceived Closeness with Mothers and Fathers from Adolescence to Adulthood

Understanding continuity and change in parent-child relationships across time requires a multidimensional approach (Alder & Scher, 1994; McGue, Elkins, Walden, & Iacono, 2005). In a review of the literature, most studies on parent-child relationship trajectories focused on a change in mean scores over time. In other words, they presented aggregated relationship scores in the form of a mean at each time point. However, the mean often hides extreme experiences or the experiences of subgroups in the population

(George, 2009; Jung & Wickrama, 2008). An important approach to understanding variation in parent-child relationships is to examine disaggregated patterns of parent-child relationship experience across time. I consider both of these approaches in this literature review across three developmental periods: adolescence, young adulthood, and adulthood.

An abundant literature focuses on parent-child relationships in adolescence, but much less research has examined parent-child relationships in young adulthood or continuing further into adulthood. Below, I review literature on parent-child closeness in adolescence with an emphasis on longitudinal studies. In particular, I focus on trajectories of relationship experience across time. Next, I consider continuity and change in parent-child relationships over the transition to young adulthood. Lastly, I review research regarding parent relationships with adult children.

Parent-Child Closeness across Adolescence

Although the majority of adolescents reported having a strong relationship with parents (Galambos & Kotylak, 2012; Steinberg, 2001), adolescents typically experienced diminished closeness with their parents when they enter early adolescence. Research has found that, on average, adolescents reported high levels of closeness before adolescence, dropping in early adolescence, and then increasing or stabilizing in late adolescence (Kim, Conger, Lorenz, & Elder, 2001; McGue et al., 2005; Shanahan, McHale, Crouter, & Osgood, 2007; Tsai, Telzer, & Fuligni, 2013). Other research found parent-child interactions changed as well: Once children reached adolescence, conversations and

communication were more important to relationship quality than physical play (Laursen & Collins, 2009).

To understand variation in parent-adolescent relationships across the life course, an examination of patterns of stability over time is necessary. Overall, adolescents' relationships with fathers tended to be more volatile over time than relationships with mothers (Videon, 2005). In other words, on average, adolescents reported a greater decline in relationship satisfaction with their father after two years compared to their mother. Furthermore, fathers have less clear societal expectations than mothers and a wide range of circumstances (Palkovitz, Trask, & Adamsons, 2014). As a result of this ambiguity, more variation may exist in father-child relationships compared to mother-child relationships (Doherty, Kouneski, & Erickson, 1998; Williams & Kelly, 2005). For example, increasingly men are assuming non-traditional roles such as non-custodial fathering or stepfathering, and this trend may contribute to a wide spectrum of father-child experiences (King, 2006).

One study examined genetic contribution to variability in parent-child relationships. Comparing twins over the transition to adolescence, McGue et al. (2005) found that variance increased in perceived parent-child relationships over time with some relationships staying stable while others improved or deteriorated. This was in part due to the child's genetic influences on the relationship. The authors speculated that as adolescents grow older they had more influence on their environment, and their influence on the parent-child relationship increased. Although parent-child relationships declined in

early adolescence on average, some parent-child relationships were stable and a small minority improved.

A German study took a different approach to variation in parent-child relationships, and unique latent patterns of parent-child relationships in adolescence were related to romantic relationships in young adulthood (Seiffge-Krenke & Pakalniskiene, 2011). Growth mixture models revealed three patterns of mother-child relationships: a high quality group with a slight decrease over time and low negativity; a low, declining relationship quality group with decreasing negativity; and a low, declining quality group with increases in negativity. The three patterns of father-child relationships were similar, though the third group had high negativity throughout adolescence. Different pathways of parent-child relationships predicted connectedness, sexual attraction, and anxiety in romantic relationships at two time points in young adulthood. This study underscores the necessity of examining various patterns of parent-child relationships over time rather than an aggregate mean score that would hide variability. The current study extends this previous research by examining patterns of parent-child closeness as they continue through young adulthood into adulthood.

Differences by demographic characteristics. Demographic characteristics of parents and adolescents have been found to explain some variation in trajectories of parent-child closeness over time. Adolescents generally reported that they felt closer to mothers than fathers (Tsai et al., 2013; Williams & Kelly, 2005), and this may be in part because mothers spent more time with their children than fathers during adolescence (Laursen & Collins, 2009; Williams & Kelly, 2005). On average, though, girls reported

lower closeness with mothers compared to boys in early adolescence (Laursen & Collins, 2009; Tsai et al., 2013). However, in another study, mothers' and fathers' levels of warmth were higher with daughters and sons respectively compared to an opposite sex child (Shanahan et al., 2007).

Socioeconomic status has also been found to be related to parent-adolescent relationships. Educational attainment may have allowed fathers material and financial resources to support parent-child closeness in adolescence (King, Harris, & Heard, 2004). This implies that those who had more human capital (e.g., educational attainment) may also have garnered more social capital with children, including qualities such as trust and connectedness (King, 2006). Highly-educated parents also tended to invest in developmentally targeted parenting and spend time managing experiences and activities as their children approached adolescence, which may be interpreted by adolescents as supportive (Kalil, Ryan, & Corey, 2012). In addition, strong parent-child relationships were also found to be a buffer against stress, in particular difficult economic circumstances (Conger & Conger, 2002).

Step-parents and non-residential parents. Other factors to consider in understanding parent-child closeness are the relationships adolescents have with step-parents and non-residential parents. Regardless of the relationship, most adolescents report being closer to the parents they live with than non-resident parents, which implies that residential stepparents have an important role in the lives of many young people (King, 2006; King, 2007). Men are about five times more likely to become stepfathers than women are to become stepmothers (Goldscheider & Sassler, 2006). A study of

stepfathers and non-residential father-child relationships found that generally boys reported being closer to both stepfathers and non-residential fathers than girls (King, 2006). Another study found that African American adolescents felt more supported by resident fathers than non-resident fathers, though no differences emerged in attachment (Smetana, Metzger, & Campione-Barr, 2004). However, great variation has been found in both stepfather and non-residential relationships. Adolescents' relationships with step- or non-residential fathers were also positively associated with adolescents' report of closeness with mothers (King, 2006; King, Thorsen, & Amato, 2014).

In a national sample, non-residential father involvement with adolescents was related to socioeconomic resources; among White fathers, education was particularly important (King et al., 2004). Uneducated, White fathers spent little time with children and tended to communicate less and have lower quality relationships than educated, White fathers. Non-resident father involvement has also been found to vary by ethnic and racial background, with minority fathers more likely to invest in intensive efforts such as helping with school work or religious activity compared to White fathers who were likely to watch television or play sports with their children. The authors suggested that investment in intensive activities and time spent communicating may have social capital pay off by building strong father-child relationships that impact child well-being (King et al.).

Findings regarding adolescent relationships with stepmothers and non-resident mothers are mixed. Some adolescents reported being closer to stepmothers than non-resident mothers (Berg, 2004; King, 2007), but some reported having a better relationship

with non-resident mothers than stepmothers (Hetherington & Stanley-Hagan, 2002).

Because there are relatively few stepmothers compared to stepfathers, much of the research has focused on stepfathers and omitted stepmothers from analyses (e.g., King et al., 2014; King, Boyd, & Thorsen, 2015). The current study includes both stepfathers and stepmothers in the analyses for individuals who identify a stepparent as a primary parental figure from adolescence into adulthood. Furthermore, the current study extends prior research by examining the long-term effect of residence in adolescence on parent-child relationships (i.e., non-resident fathers versus resident fathers or step-fathers).

Parent-Child Relationships during the Transition into Young Adulthood

Although little research has examined family relationships in young adulthood (Bucx & van Wel, 2008; Tsai et al., 2013), emerging evidence suggests that the nature of parent-child relationships changes as children enter young adulthood. Young adults from diverse ethnic backgrounds tended to spend more time engaged with other people and activities and less of their leisure time with parents and siblings (Fuligni & Masten, 2010). A survey of college students found that most young adults reported an improvement in their relationship with parents after transitioning into a university setting (Lefkowitz, 2005). In contrast, a qualitative study of parents revealed that as young adults develop autonomy, some parents have a hard time letting go, which may create tension in the relationship (Kloep & Hendry, 2010).

One study has examined trajectories of parent-child closeness across the transition from adolescence to young adulthood. In an 8-year longitudinal study, Tsai et al. (2013) found a decline in the quality of adolescent relationships with fathers that continued into

young adulthood. In contrast, although relationships with mothers declined in adolescence, they stabilized in young adulthood. Throughout both developmental time periods, young people reported closer perceived relationships with mothers compared to fathers. Marital status moderated parent-child relationships such that those whose parents were married experienced less decline in their father-child relationship in both adolescence and young adulthood. Additionally, other aspects of family relationships stabilized or strengthened during this period. Little variation in parent-child relationships by gender or ethnicity was found. However, these analyses were conducted on aggregate data, and the mean may obscure the experiences of subgroups in a population (George, 2009; Jung & Wickrama, 2008).

Evidence also suggests that life course transitions impact parent-child relationships in young adulthood. Young adults whose parents had divorced reported low relationship quality with fathers and little emotional support from them, but high relationship quality with mothers and emotional support from mothers (Riggio, 2004). In a Dutch study, relationships with parents improved from age 12 to 24, on average (Bucx & van Wel, 2008). However, moving out of the parental home has been associated with a weaker parent-child bond, suggesting that with increased independence and autonomy of young adult children, there was less emotional reliance on parents (Aquilino, 1997; Bucx & van Wel, 2008). Having children at a young age predicted a weaker parent-child bond, but having children at an older age had the opposite effect (Bucx & van Wel, 2008). Another study found that marriage, cohabitation, and employment were related to having a closer relationship with parents in young adulthood, but becoming a parent was

not (Aquilino, 1997). According to life course theory, timing may be relevant in the results of these studies (Elder & Giele, 2009): Parent-child relationships in adulthood may be negatively affected by transitions that are seen to be different from cultural norms but positively affected by “normative” transitions.

Some studies have linked parents’ support for young adults with the quality of parent-child relationships. Levitt, Silver, and Santos (2007) examined parent-child relationships at two time points across the transition out of high school. They found stability in father-child relationships but improvements in mother-child relationships. Parents’ support in young adulthood was positively associated with father and mother relationship satisfaction in young adulthood. In another study, adolescents who were close to mothers in adolescence tended to receive more instrumental support in young adulthood than those who were not, but the opposite relationship was found with fathers (Swartz, Kim, Uno, Mortimer, & O’Brien, 2011). These studies highlight the importance of examining relationships with mother and father separately.

Parent-Child Relationships in Adulthood

Life course transitions in adult children’s lives such as marriage, parenthood, or divorce are associated with a change in the relationship adults have with their parents (Aquilino, 1997; Sarkisian & Gerstel, 2008). A national study of adult children found that those who were married were less likely than their non-married counterparts to live nearby their parents or to give and receive financial or practical support (Sarkisian & Gerstel, 2008). Generally, mothers were more involved with adult children than fathers

(McHale, Crouter, & Whiteman, 2003); however, more research on father-child relationships in adulthood is needed.

Using the first wave of data from a panel study from the Netherlands, one study identified five latent classes of parent-child relationships in adulthood (vanGalen & Dykstra, 2006). The five types of relationships were 1) “harmonious” relationships similar to friendships, 2) “ambivalent” relationships where mutual support was given but with some tension, 3) “obligatory” relationships focused on care-taking, 4) “affective” relationships where mainly emotional support was given and received often over a distance, and 5) “discordant” relationships with low likelihood of contact or support. Although this study found variation between groups of participants, in a three year follow-up study, Schenk and Dykstra (2012) found very little change across time within these classes. They concluded that parent-child relationships need to be followed for longer periods of time to detect change, and they also found that it may take a substantial change such as parental divorce or moving apart to influence parent-child relationship patterns. What is lacking in this literature is a prospective view of parent-child relationships that bridges the span between childhood and adulthood.

The Current Study

Life course perspective suggests a prospective, longitudinal view of parent-child trajectories across time is important to detect different patterns of change and continuity. Past research indicates that the context of linked lives can range from being a source of support to a source of discord (e.g., vanGalen & Dykstra, 2006). Across the life course, patterns of closeness with parents in adolescence, young adulthood, or adulthood may

differ among subgroups of the population. Although some have found relative stability in parent-child relationships across time (e.g., Schenk & Dykstra, 2012; Tsai et al., 2013), a variety of parent-child experiences are evident across a number of studies. Some past research has explained variation of parent-child relationships by examining different classes of parent-child experience (Seiffge-Krenke & Pakalniskiene, 2010; vanGaalén & Dykstra, 2006) or by examining covariates of different parent-child relationship experiences over time (McGue et al., 2005). The assumption that the mean best represents the experience of all people, or even most people, can be misleading and obscure the experience of individuals who differ substantially from the mean (George, 2009; Jung, 2008). Family scholars have recently called for a disaggregated approach to understanding family relationships (e.g., Amato, 2014), and the current study answers this call by examining patterns of closeness with parents over time.

In this study, I used a novel approach to understanding variation in trajectories: growth mixture models. This method empirically identifies subgroups of trajectories; in other words, variation in the sample is categorized by patterns over time that may represent subgroups in the larger population (Jung & Wickrama, 2008). With this approach, the current study takes an important step toward understanding the patterns of variability in parent-child relationships from adolescence through young adulthood to adulthood. More specifically, this research advances the field in two ways. First, this study considers perceived closeness with parents across the life course through three developmental periods (adolescence, young adulthood, and adulthood), which few previous studies have done. Second, the current study uses growth mixture models to

describe different patterns of closeness trajectories with parents and predictors of these patterns. The hypotheses are as follows:

- H1** A greater number of classes will emerge in trajectories of perceived closeness with father compared to trajectories of perceived closeness with mother.
- H2** Adolescent's residence status (lived with natural parent or not) at wave 1, the identity of the primary mother/father (G1 natural parent or step-parent/guardian), and demographic characteristics of both G1 (household income and education) and G2 (adolescent reported gender and race) will predict class membership.

Methods

Participants

YDS is an ongoing longitudinal study of youth in the Midwest of the U.S. as they transition into adulthood. This study provides data from three generations (G1 refers to the natural parents or stepparents/guardians of the original participants; G2, to the adolescents followed over time; and G3, to the children of the original participants). In 1987, YDS participants ($N = 1,139$) were recruited as ninth graders from the St. Paul, Minnesota, public school district via random sampling. A probit analysis comparing the consenting sample to those who did not consent using 1980 census data showed no significant differences in socioeconomic contextual variables (Finch, Shanahan, Mortimer, & Ryu, 1991).

The first four waves of data were collected while the participants were in high school (1988-1991); parents of the students were also mailed surveys in 1988 and 1991. After high school, participants completed surveys for waves 5 - 19 via mail every one or two years. In the current study, I used data from wave 1 (1988), wave 4 (1991), wave 8 (1995), wave 12 (2000), wave 16 (2005), wave 18 (2009), and wave 19 (2011). For the first analysis, the sample was based on individuals who answered questions about closeness with the same person they considered as father in both adolescence and adulthood ($n = 913$). The second analysis was based on individuals who answered questions about closeness with the same person they considered as mother in both adolescence and adulthood ($n = 966$; see Figure 1.1). Those in the analytic samples were more likely to be female and White, reflecting patterns of attrition in the YDS sample (Staff & Mortimer, 2007; Swartz et al., 2011), and G2 participants reported higher household income and education. For demographic information see Table 1.1.

Measures

Quality of relationships with primary parent(s). I operationalized quality of parent-child relationships through adolescent report of closeness with mother/father from adolescence to adulthood at 6 time-points: wave 1 (age 15), wave 4 (age 18), wave 8 (age 22), wave 12 (age 27), wave 16 (age 32), and the most recent information from either wave 18 (age 36) or 19 (age 38). For waves 1 and 4, respondents had the opportunity to answer questions regarding the father and/or the mother they lived with (natural parent, step-parent, or guardian) and a parent they did not live with (natural parent or step-parent).

In waves beyond high school (waves 8 – 19), respondents were asked to report closeness with a primary male parent and a primary female parent. The primary father/mother was matched to responses in waves 1 and 4. For both fathers and mothers, categorical variables were created indicating which parent the G2 respondent chose as the primary parent most often over time, including at least one time point in adolescence (waves 1 and 4) and one time point in adulthood (waves 8 to 19). For both fathers and mothers, categories included the following: natural parent (biological or adopted parent), stepparent, and guardian (relative, foster parent, or other). Some respondents answered about different parent figures at different time points; when this occurred, responses that did not refer to the primary parent (the parent respondents chose to answer about most often over time) were dropped from the analysis.

At wave 1, 78.7% (896/1139) of respondents answered questions about a natural father, and 16.0% (181/1139) of respondents answered questions about a step-father or a male guardian (at wave 1, these were not mutually exclusive). Over time, 86.6% (791/913) consistently answered questions about a primary parent they identified as a natural father, and 13.4% (122/913) consistently answered questions about a primary father they identified as a step-parent or guardian. At wave 1, 92.7% (1056/1139) of respondents answered questions about a natural mother, and 8.0% (91/1139) of respondents answered closeness questions about a step-mother or female guardian (at wave 1, these were not mutually exclusive). Over time, 96.5% (932/966) consistently answered questions about a primary mother they identified as a natural mother, and 3.5% (34/966) consistently answered questions about a primary mother they identified as a

step-parent or guardian. For an analysis of the stability of primary parent figures over time, see Appendix A.

Perceived closeness to mother/father at each time point was measured by a four item scale. For example, “How close do you feel to him/her?” and “When you are faced with personal concerns and decisions, do you talk them over with him/her?” At each time point, a scale for mothers and a scale for fathers was computed by averaging the responses (1 = *not close*; 4 = *close*). Reliability for the perceived closeness with father scales ranged from $\alpha = .77$ to $\alpha = .90$; reliability for the perceived closeness with mother scales ranged from $\alpha = .78$ to $\alpha = .91$ (for means, see Table 1.2).

Demographic variables. Gender of G2 respondents at wave 1 was provided in response to the question “What is your sex?” (1 = *male*; 2 = *female*). At wave 1, G1 respondents answered the following question regarding income: “What was your total household income in 1987 before taxes?” and a variable with income in thousands of dollars was calculated from the average responses of fathers and mothers. Household education, the highest reported educational attainment reported by G1 father or mother at wave 1 (1991), ranged from 1 = *elementary or junior high school* to 7 = *Ph.D. or professional degree*. Race of G2 respondents was coded as a dichotomous variable (0 = *non-White*; 1 = *White*).

At wave 1, respondents had the option to answer questions about different parents (e.g., natural mother who does not live with me, step-father who lives with me). In doing so, G2 respondents indicated whether they lived with their natural father/mother at wave

1, which was then dichotomized (0 = *did not live with natural father/mother at wave 1*; 1 = *lived with natural father/mother at wave 1*).

Analysis

To address the first hypothesis that there would be more classes of trajectories of perceived closeness with fathers from adolescence to adulthood compared to trajectories of perceived closeness with mothers, growth mixture models (GMM) were conducted using MPlus, version 7.2. GMM allows an examination of trajectories using a person centered approach rather than a variable centered approach (Jung & Wickrama, 2008). This method identifies unobserved subgroups within a population, accounting for variation within subgroups.

Observed data, statistical criteria, and theoretical considerations guided the selection of the optimal number of classes. The model with the lowest Akaike information criterion (AIC) and Bayesian information criterion (BIC), a significant Lo-Mendell-Rubin adjusted likelihood ratio test (LMR-LRT), and a significant bootstrapped likelihood ratio test (BLRT) were considered the best fit statistically (Nylund, Asparouhov, & Muthén, 2007). The BIC and the BLRT, however, have been shown to be the best indicators of model fit (Nylund et al.) and will be deferred to in this study in case of contradictory evidence. An average entropy of .80 has been considered high entropy (Clark & Muthén, 2009) and indicates better classification of individuals (i.e., low entropy would suggest that individuals are not clearly fitting into one class or another). Classes were also examined to ensure that they were conceptually distinct. When one class was identified as the optimal model, a second analysis was conducted,

latent growth curve, and the following structural equation modeling criteria were used to assess model fit: the comparative fit index (CFI) and the root mean square error of approximation (RMSEA). These methods have been identified as appropriate for the analysis of trajectories over time guided by the life course theory (George, 2008).

Then, using a 3-step method in MPlus to ensure an additional model would not change latent class formation (Asparouhov & Muthén, 2014), a multivariate logistic regression was conducted to determine how demographic and contextual characteristics predicted membership in each group, which simultaneously adjusted for classification error. Significance was reported at the .05 level, though marginally significant levels of significance between .05 and .10 were noted. This is appropriate for this research as one of the first studies to examine closeness in parent-child relationships for such a long period of time because distal processes examined in this study may be more difficult to detect than proximal processes.

Missing data. For closeness with mothers, 8.1% of values were missing across waves in the analytic sample; for closeness with fathers, 9.4% of values were missing across waves in the analytic sample. The percentage of missing values for all study variables ranged from 0% (gender) to 26% (closeness with mother at wave 16) to 31.8% (closeness with father at wave 16). In wave 8 and beyond, closeness with a non-primary parent was coded as missing data and the remainder of missing values is due to sample attrition. In these cases, available data was used to inform the full information maximum likelihood (FIML) method of addressing missing data in the closeness variables. Rather than imputing values, FIML selects the parameter estimates based on available data

(Johnson & Young, 2011). This is considered a preferred method of dealing with missing data (Acock, 2005; Johnson & Young, 2011; McKnight, McKnight, Sidani, & Figueredo, 2007). Expectation maximization (EM), a method preferred above traditional approaches such as listwise deletion, was used to address missing data in the independent variables (McKnight et al.).

Results

Sample means and standard deviations of closeness with fathers and mothers across time are presented in Table 1.2. Latent growth classes were then estimated separately for perceived closeness with fathers and perceived closeness with mothers.

Latent Classes

To address the first hypothesis, that a greater number of classes would be found for perceived closeness with father than for perceived closeness with mothers, and to identify the number of trajectory classes that best fit the data, I tested latent growth 1-, 2-, 3-, and 4-class solutions for each. For models regarding perceived closeness with fathers, a three class solution with quadratic slopes provided the best fit with the data (see Table 1.3). However, this solution had estimation errors, the entropy was low, and an examination of a random selection of the observed data ($n = 300$) did not show distinct patterns, suggesting that a one class, continuous measurement of perceived closeness with father was most appropriate (see Figure 1.2). An unconditional growth curve of the overall mean of perceived closeness with father was conducted, and a linear model was selected (see Figure 1.3). According to criterion guidelines suggested by Hu and Bentler (1999), the fit statistics indicated that data fit was acceptable ($\chi^2 = 105.32$, $df = 16$, $p <$

0.00; CFA = 0.95; RMSEA = .08, CI [0.06 - .09]). Although the quadratic growth curve model (BIC = 8840.87) fit the data slightly better than a linear growth curve model (BIC = 8858.93), the quadratic model had estimation errors, the quadratic term was not significant, and the linear model was more parsimonious. The estimated perceived closeness with father at wave 1 was 2.48 ($SE = 0.03, p < .000$); the slope was slightly positive but significant ($\beta = 0.02, SE = 0.01, p < 0.00$). A negative association between slope and intercept ($\beta = -0.02, SE = 0.01, p = 0.05$) indicated that those with a higher intercept tended to have a slight decrease in perceived closeness with father over time.

For trajectories of perceived closeness with mother, a three class solution with quadratic slopes proved the best fit with the data (see Table 1.3). Both the AIC and BIC were lower than the two class solution. Although the LMR-LRT was not significant, the BLRT indicated that the three class solution was a significantly better fit than the two class solution ($p < 0.00$). In addition, the entropy was .76. Further, observational evidence suggested that a three class solution was best: random selection of observed data ($n = 300$) demonstrated three patterns that mirrored the estimated curve of the classes (see Figure 1.4).

The first class, labeled *High/Dynamic* was the largest ($n = 737; 79.4\%$). On average, this class had high levels of estimated closeness with mother at wave 1, as indicated by the intercept ($\beta = 3.05, SE = 0.19, p < .000$). The slope of closeness with mothers from adolescence through young adulthood increased significantly over time ($\beta = 0.30, SE = 0.14, p < .026$); the quadratic term indicated that the rate of increase significantly slowed over time ($\beta = -0.07, SE = 0.02, p < .000$).

The second class, labeled *Average/Decreased* was relatively small compared to the first class ($n = 125$, 12.9%). On average, this class had fairly high levels of estimated initial closeness at wave 1 ($\beta = 2.58$, $SE = 0.84$, $p = .002$). The direction of the slope was negative ($\beta = -0.44$, $SE = 0.35$, $p = .205$), and the positive quadratic term was marginally significant ($\beta = 0.07$, $SE = 0.040$, $p = .075$). Although the slope did not indicate a significant change in closeness with mother per unit increase (time point), a post hoc paired sample t-test revealed a significant, negative difference in mean closeness with mother at wave 1 and at wave 18/19 (M difference = -0.26 , $SD = 0.81$, $p < .000$).

The third class, labeled *Low/Increased* was the smallest ($n = 104$, 10.8%). On average, this class had low levels of estimated closeness with mother at wave 1, indicated by the intercept ($\beta = 1.81$, $SE = 0.17$, $p < .000$). The direction of the slope was positive, but not significant ($\beta = 0.45$, $SE = 0.94$, $p = .634$), and the quadratic term was negative but not significant ($\beta = -0.05$, $SE = 0.17$, $p = .784$). Although the slope did not indicate a significant change in closeness with mother per unit increase (time point), a post hoc paired sample t-test revealed a significant, positive difference in mean closeness with mother at wave 1 and at wave 18/19 (M difference = 1.11 , $SD = 0.62$, $p < .000$).

No significant correlation between intercept and slope emerged in any of the closeness to mother classes. A marginally significant relationship between the slope and quadratic term emerged in each class, indicating a correlation between change over time and the rate of change over time ($\beta = -0.01$, $SE = 0.01$, $p < .080$).

Background Variables

To address the second hypothesis, contextual and demographic variables were added to the models of perceived closeness with father and perceived closeness with mother. For perceived closeness with father, a conditional growth curve was conducted ($\chi^2 = 143.33$, $df = 40$, $p < 0.00$; CFA = 0.94; RMSEA = .05, CI [0.44 - .63]), reflecting adequate fit with the data. The intercept was positively related to child gender, household income, educational attainment, and living with natural father at wave 1. This indicated that males, those with higher SES, and those who lived with a residential natural father in adolescence had a closer relationship with their father at wave 1 than females, those with lower SES, and those with a non-residential natural father (see Table 1.4). This model explained 9% of the variance in the intercept ($R^2 = .09$).

The slope was negatively related to gender, indicating that males tended to have a decrease in perceived closeness (see Table 1.4), which explained 5% of the variance in the slope ($R^2 = .05$). The slope was significantly, negatively correlated with the intercept, indicating that those with higher initial closeness with father tended to have a more negative slope than those with lower initial closeness ($\beta = -0.02$, $SD = 0.01$, $p = .005$).

For perceived closeness with mothers, a multinomial logistic regression was conducted using a 3-step method to determine which variables best predicted class membership while accounting for classification error. Table 1.5 presents the results of the multivariate logistic regression. Compared to the *High/Dynamic* class, those in the *Low/Increased* class were significantly more likely to be female, White, and identify a step-mother or guardian as their primary mother figure. Household income was a marginally significant, negative predictor of the *Low/Increased* class. Compared to the

High/Dynamic class, those in the *Average/Decreased* class were more likely to have lower household income at wave 1 and less likely to report that they lived with their natural mother at wave 1. Being female and living with natural mother at wave 1 were marginally significant predictors of the *Average/Decreased* class. Educational attainment was not a significant predictor.

Discussion

Guided by life course theory, this study used growth mixture models to examine patterns of perceived closeness with fathers and mothers at six time points from adolescence through young adulthood to adulthood. One of the goals of growth mixture modeling is to determine whether a continuous or a categorical approach to the data is most appropriate. In this study, no distinct latent patterns of perceived closeness with fathers over time emerged; instead perceived closeness with fathers was found to be a continuous variable with a large amount of variation over time. On average participants reported a slight increase in perceived closeness with fathers over time. In other words, variation of closeness with fathers did not cluster into patterns. Some variation in the continuous pattern of closeness was explained by gender, socioeconomic status, and residence with father.

Regarding mothers, three patterns of perceived closeness from adolescence to adulthood emerged. The overwhelming majority of participants were likely to be in a class with a high, dynamic closeness with their primary mother figure over time. A second group of participants tended to report average closeness with their mother in adolescence and slightly lower closeness on average in adulthood. A third group of

participants tended to report low closeness in adolescence and higher closeness in adulthood. These findings suggest potentially different social processes with regards to parent-child relationships for mothers and fathers across the life course, which are discussed below.

Perceived Closeness with Fathers over Time

The findings were contrary to the first hypothesis that a greater number of patterns would be found in perceived closeness with fathers compared to perceived closeness with mothers. Instead, the variation in closeness with fathers resulted in a continuous array of experiences of closeness with fathers across the life course. Scholars in father research have theorized that fathers are highly sensitive to contextual influences and experience multiple fatherhood identities (Doherty et al., 1998; Palkovitz et al., 2014). Research has found that relationships with fathers are more tenuous and dependent on contextual and personal factors compared to mothers (Levitt et al., 2007). Perhaps the unique context of social change experienced by this cohort resulted in the wide range of experiences that children reported to have with fathers. In recent years, fewer children have grown up in a home with fathers, and the definition of fathering has changed, especially for non-resident and low income fathers (Edin & Nelson, 2013; Roy, Palkovitz, & Waters, 2015). In interviews, low income fathers focused on “being there” and being a friend, and many fathers acknowledged that they fall short of their own ideals, but they are doing their best (Edin & Nelson, 2013; Roy et al., 2015). Qualitative research has highlighted the fluidity of father identity, noting that fathers felt that they

were secondary to mothers (Yarwood, 2011). The spectrum of fathers' circumstances likely results in children having a wide variety of experiences with their fathers.

The theoretical concept of "multiple fatherhoods" which emphasizes differences in the practice of fatherhood (Palkovitz et al., 2014, p. 415) implies that the large range of variation in children's experience of closeness with fathers found in the current study is to be expected. Videon (2005) found more variation in father-child relationships compared to mother-child relationships. Additionally, the role of step-father is another type of fatherhood that adds variation to children's experiences. The current study found that a greater number of children reported a stepfather as a primary parent over time compared to stepmothers, reflecting normalization of the stepfather role compared to the stepmother role (Goldscheider & Sassler, 2006). In past research regarding stepfathers and non-residential fathers, wide variation was found in adolescents' report of these relationships (King, 2006; King et al., 2014). Together with the current study, this research illustrates that children's relationship with fathers across the life course cannot be easily categorized.

The challenge for researchers is to adequately describe the wide variation in experiences with fathers without over simplifying father-child relationships. In the current study, background variables in adolescence were used to understand some of the variation in the average trajectory of perceived closeness with father. Gender, socioeconomic status, and residence had an influence on closeness with fathers at baseline (freshmen year of high school). Although males were generally closer to fathers in adolescence than females, males tended to experience a slight decline in closeness with

fathers over time. Past studies have documented fathers' partiality toward sons (Dahl & Morretti, 2008; Lamb & Lewis, 2004), and in adolescence sons have reported closer relationships with their fathers than daughters (Shanahan et al., 2007). Demographic and contextual variables in this study however, explained only a small portion of the variance in the intercept and slope of closeness with fathers over time. Similar to the current study, Tsai et al. (2013) found declines in father-child closeness from adolescence over the transition to young adulthood. Future research is needed to better understand the wide variability in the experience of father-child relationships over the life course.

Perceived Closeness with Mothers over Time

In contrast to closeness with fathers, three distinct classes of perceived closeness with mothers were found. The majority of respondents were in the *High/Dynamic* class of perceived closeness with their mothers. These respondents had relatively high closeness with mothers over time compared to the other two classes, which increased slightly on average during young adulthood. According to past research, which has characterized mother-child relationships as the strongest family relationship (Gilligan, Sutor, & Pillemer, 2015), the finding that most children reported a close relationship across the life course was expected. Although past research found stability in mother-child relationships from adolescence to young adulthood (Tsai et al., 2013), others have found that closeness with mothers increased during the transition to adulthood (Levitt et al., 2007). The current study found a slight improvement during these years for most participants, which diminished in adulthood.

The increase in closeness in young adulthood suggests an increased need for emotional support from mothers during the transition to adulthood. For example, other studies have found that mother-child relationships are positively associated with adjustment during the young adulthood years and tend to be more stable than father-child relationships (Levitt et al., 2007). Additionally, as in past studies, most participants in the current study reported feeling closer to mothers than fathers (Laursen & Collins, 2009; Tsai et al., 2013). However, the current study also found two smaller classes of lower perceived emotional closeness with mothers over time, which implies that subgroups of individuals experience different patterns from the dominant pattern.

Life course theory suggests that patterns of closeness with mothers may be influenced by historical contexts. Social construction of motherhood has emphasized mothers as primary caregivers (Gilligan et al., 2015; Palkovitz et al., 2014). As a result, for children in this cohort who experienced a time of great social change (Furstenberg, 2010), instability in the mother-child relationship may have been especially stressful. For example, Gilligan and colleagues (2015) found that estrangement from mothers in adulthood only occurred in 11% of families, making poor relationships with mothers a relatively unique phenomenon that may have ripple effects on other family relationships and well-being. Evidence from the current study suggests that those who experienced instability in their relationship with their mother in adolescence reported lower levels of closeness over time.

The experience of living apart from a natural (biological or adopted) mother in adolescence predicted an *Average/Decreased* pattern of closeness with mothers compared

to a *High/Dynamic* pattern (albeit marginally). According to life course theory, experiences early in life may reverberate across time (Elder & Giele, 2009; Englund et al., 2011). In this case, living with mother early in life may have lasting impacts on mother-child relationships. Past research has shown the importance of frequent contact for close relationships between the mother and children (King, 2007), and it may be that those who had frequent contact in adolescence were more likely to have frequent contact in adulthood as well. Furthermore, past research indicates that adolescents who had a close relationship with non-resident mothers tended to have lower levels of internalizing and externalizing behaviors (King, 2007), which in turn, may have a protective influence over time on child relationships with non-residential mothers.

Finally, findings suggested that those who identified a stepmother or guardian as a primary parent figure were likely to be classified in two very different pathways compared to the *High/Dynamic* pattern of perceived closeness with mother: They were more likely to be either in the *Average/Decreased* or *Low/Increased* pattern. Perhaps these diverging pathways help explain past mixed findings (e.g., Berg, 2004; Hetherington et al., 2002; King, 2007) in reports of closeness with stepmothers. Past research has sometimes found that children report being closer to their stepmothers than non-resident mothers (King, 2007) and sometimes closer to their non-resident mothers than stepmothers (Hetherington et al., 2002). This may be because stepmother-child relationships are best represented by two or more groups with divergent experiences. The current study suggests that less emotionally close relationships may improve over time while average relationships may decline over time. Understanding divergent trajectories

is particularly important in light of research that suggests children in stepmother families have faced disadvantages (e.g., Amato & Cheadle, 2005). In the future, more research on factors that prevent declines in relationships with stepmothers is needed.

Distinct patterns of closeness with mothers is an important finding that may have been lost if all children's report of closeness with mothers had been included in a grand average. While others have found different patterns of relationships between parents and adult children (vanGaalén & Dykstra, 2006), this is among the first studies to report distinct patterns of mother-child relationships from adolescence into adulthood. Overall, these findings underscore the importance of examining relationships over time. Small, incremental changes may not be statistically significant over the course of a few years, but substantial differences may emerge over longer periods of time. Furthermore, the opposite trajectories of these classes illustrate that an average of all three classes would have obscured differences in respondents experiences, perhaps incorrectly portraying relationships with mother as stable over time.

Strengths, Limitations, and Future Directions

The strengths of this research include the use of prospective data to examine perceived parent-child closeness, the separate analyses of perceived closeness with fathers and mothers, and the use of GMM to examine various pathways of closeness with fathers and mothers over time. While much of the past work linking parent-child closeness between adolescence, young adulthood, and adulthood has been retrospective, this work adds to the literature by using 23 years of prospective data. Another strength is the separate analyses of mothers and fathers, called for by previous researchers (Tsai et

al., 2013). As in past research, distinct pathways were found for mothers and fathers, suggesting that separate analyses will continue to be important in understanding parent-child relationships over the transition from adolescence into adulthood. Finally, both family scholars and life course scholars have recently called for analyses that identify heterogeneous populations rather than using mean scores (Amato, 2014; George, 2009). This study takes an innovative approach by using GMM to examine patterns of trajectories in longitudinal data.

Notwithstanding the strengths of this study, limitations must be acknowledged. First, this sample cannot be generalized to the population at large. At the beginning of the study in 1988, YDS was representative public school students in a large Midwestern city. However, attrition has resulted in a sample with more women and higher levels of education than those who left the study. Thus, the study cannot be considered representative of the population in 1988, and the population has become much more diverse since then. Second, this study follows one cohort across time and may not be generalizable to parent-child dyads at different points in time. Third, in the current study, little of the variance in father-child relationships was explained by the covariates. Alternative approaches to further investigate patterns of variation among fathers and children from adolescence to adulthood are needed.

The current study used basic demographic and family factors at baseline to predict variation over time; however, numerous variables over time may affect patterns of closeness with fathers from adolescence, through young adulthood, and into adulthood. A life course approach predicts that stressful life events lead to successive stressful

pathways over time. Therefore, going forward, a cumulative stress process approach aggregating stressful events over time or showing relationships between stressful events and father-child relationships may be beneficial to understanding the wide array of father-child experiences and to further illuminating mother-child experiences (O’Rand, 2009).

While this study has taken the first steps toward understanding differences in patterns of perceived parent-child closeness over time, future studies should examine social support, both emotional and instrumental, in relationship to parent-child relationships across the life course using large, nationally representative samples. This approach may further illuminate processes that contribute to variation in parent-child relationships over time, particularly relationships with fathers. Cross-lagged analyses may also be warranted to better understand how personal characteristics of both parents and children such as personality or depression may influence the parent-child relationship across the life course. Long-term follow up to randomized controlled parenting interventions could help determine how changes in parenting could have affect parent-child relationships later in life. These methods have the potential to elucidate causal mechanisms.

In sum, the current study lays the foundation to examine the influence of family relationships across generations. For example, how do parent-child relationships in one generation influence parent-child relationships and grandparent-child relationship in the next generation?

Study 2: Differences in Parent-Adolescent Relationships and Well-Being by Patterns of Parent-Grandparent Relationships

Close relationships with parents in adolescence have been shown to be a key factor associated with positive mental health during this critical time of life (e.g., Bulanda & Majumdar, 2009; Liu, 2006; Videon, 2005). For example, in a national sample, perceived closeness with both mothers and fathers was related to reduced depression in adolescents (Videon, 2005). Evidence also suggests that the benefits of close parent-child relationships in adolescence extended into adulthood (Andersson, 2014; Englund et al., 2011), implying that parent-child relationships have an influence across the life course.

However, less is known about the impact of the parent-child relationships across multiple generations. Some have called for greater understanding of intergenerational influences on the well-being of the next generation through longitudinal research (Elder & Giele, 2009; Serbin & Karp, 2004). For example, how do parent-child relationships in one generation relate to well-being in the next generation? Are there transfers of risk or protection between generations? Some research has shown that the quality of parent-adolescent relationships are subsequently related to adult children's parenting characteristics, which implies that parent-child relationship quality has a long reach across time (Elder, Robertson, & Conger, 1996; Friesen et al., 2013; Hofferth et al., 2012). From a life course perspective, the concept of linked lives suggests that the history of and current state of parent-grandparent relationships would be an important context for understanding risk and well-being in the lives of adolescents (Elder & Giele,

2009). However, research is lacking in this area. The current study addresses this gap in the literature by examining patterns of linked lives across generations and the well-being of adolescents.

Parent-Child Relationships and Adolescent Well-being

The relationship between parent-child relationships and adolescent well-being has been well-established. The quality of parent-child relationships in adolescence has been positively associated with self-reported physical health and mental health and negatively associated with somatic conditions and functional limitations (Amato, 1994; Andersson, 2014; Lippold, McHale, Davis, Almeida, & King, 2014; Nygren, Bergström, Janlert, & Nygren, 2012). For example, father involvement at age seven was positively associated with mental well-being in adolescence among those in divorced and separated families and negatively associated with women's psychological distress at age 33 (Flouri & Buchanan, 2003). In the current study, two areas of mental health are examined: depression and self-esteem.

Depression. Quality parent-child relationships have been negatively associated with depressive symptoms in adolescence in numerous studies. Researchers have used the concept of attachment as one approach to assessing the quality of parent-child relationships. Attachment refers to adolescents' self-report of affective (e.g., feelings or bond) and cognitive (e.g., expectations about relationships) aspects of the relationship with respect to psychological security (Restifo & Bögels, 2009). Insecure attachment has been associated with depression, particularly among children and early adolescents who need excessive reassurance (Abela et al., 2005) and those who have recently experienced

stressful events (Jinyao et al., 2013). In a sample of Taiwanese 8th graders, secure attachment with mothers and fathers was protective against both boys' and girls' depressive symptoms both directly and indirectly through peer relationships (Liu, 2006). Secure attachment with mothers was directly related to fewer depressive symptoms for both daughters and sons, but secure attachment with fathers was directly related to fewer depressive symptoms only for daughters. Young adult women who reported feeling rejected by mothers and fathers in the last month were more likely to report depression, and the relationship between father rejection and depression was stronger if fathers also reported rejecting their daughters in the last month (Thompson & Berenbaum, 2009).

A relationship has also been found between adolescents' depressive symptoms and parent-child bonds assessed through adolescent reports of satisfaction, closeness, communication, support, and involvement. One cross-sectional study used the National Longitudinal Study of Adolescent Health and measured adolescents' perceived quality of relationships with mother by their report of closeness, communication, and satisfaction. Mother-adolescent relationship quality was negatively related to depressive symptoms, especially among single parent, mother/step-father, and nonresidential mother family structures (Merten & Henry, 2011). In the same large, national sample, Videon (2005) examined psychological well-being and found adolescents' report of relationship satisfaction with fathers and mothers independently predicted a decrease in adolescents' depressive symptoms about two years later. In addition, the negative association between relationship with father and depression remained significant after relationship with mother was added to the model, which signifies a unique influence of fathers on

adolescent well-being. A prospective Dutch study found a bidirectional relationship between adolescents' depressive symptoms and relationship quality (communication, trust, and alienation reversed) with both mothers and fathers for two cohorts of early and middle adolescents over four years (Branje, Hale, Frijns, & Meeus, 2010). Although much of the research focused on the importance of mothers as a protective factor against adolescent depression, recent research has also found that quality relationships with fathers are also protective.

However, one criticism of self-reported parent-child relationship quality and depression is the potential for concerned parents to spend more time with and give more attention to a depressed child. This tendency could cause a high correlation between the two constructs. For example, because parents may become more supportive when children are struggling with depression, the relationship between parental care and depression may be artificially high (Restifo & Bogels, 2009). However, using observational data as well as family data provided strong evidence that clinically depressed and subclinically depressed adolescents had more conflict with and less support from parents than those without depression symptoms (Sheeber et al., 2007).

Self-esteem. Self-esteem not only buffers against depression (Sowislo & Orth, 2013), but has been considered a marker of adolescent well-being in its own right (Dubois & Flay, 2004). Parental support and monitoring were related to higher self-esteem, lower risky behaviors, and greater life satisfaction (Bastaitis & Mortelmans, 2014; Parker & Benson, 2004). Support from fathers was positively related to self-esteem in children 10-18 controlling for family structure and mothers' parenting; residential and joint

custody fathers were found to provide more support than non-residential fathers (Bastais, Ponnet, & Mortelmans, 2012). Other studies have found a positive effect of warm and supportive parenting on adolescents' self-esteem (Milevsky, Schlechter, Netter, & Keehn, 2007; Plunkett, Henry, Robinson, Behnke, & Falcon, 2007), providing further evidence of a positive association between parenting and self-esteem.

More specifically, however, research has found mixed evidence regarding adolescents' perception of closeness in relation to self-esteem. In a large, nationally representative sample, adolescent report of closeness with both mothers and fathers was related to self-esteem in adolescence (Bulanda & Majumar, 2009). The effects of close relationships with parents in adolescence on self-esteem may last into adulthood. Retrospective reports of fathers' involvement and nurturing during adolescence were associated with young adults' self-esteem (Allgood, Beckert, & Peterson, 2012). However, Amato (1994) found that the relationship between young adults' self-esteem and closeness to fathers dropped in significance when closeness with mothers was controlled. Although differences between mothers and fathers influence have been found in some studies, together these studies suggest that high quality, close parent-adolescent relationships are crucial for mental health and well-being, particularly with regards to depression and self-esteem.

Background Characteristics and Well-being

Background characteristics such as gender, race, and socioeconomic status of adolescents have been shown to have a direct relationship with adolescent well-being and may also moderate the effect of parenting on adolescent well-being. For example, girls

tended to have greater depressive symptoms in adolescence compared to boys, though parenting behaviors were related to depressive symptoms in both boys and girls (Lansford, Laird, Pettit, Bates, & Dodge, 2014). Another study found that relationships between parent-adolescent relationship quality and adolescent depression may also be moderated by gender. Maternal warmth and support was associated with stressful life events and depression symptoms for girls but not for boys (Ge, Lorenz, Conger, Elder and Simmons, 1994). Furthermore, the mother-daughter relationship may be particularly salient as a protective factor for girls, while the father-son relationship may be particularly salient for boys (Andersson, 2014; Hofferth & Goldscheider, 2010). Other evidence suggests that because girls tended to be more relationally oriented than boys, they may have been more sensitive to relationship support from parents (Meadows et al., 2006). Therefore, parent-child relationships are important to both boys and girls, but they may be a more salient protective factor for girls.

Family relationships may contribute to resilience in racial and ethnic minority families that face mental health disparities. National data suggest racial and ethnic disparities in mental health among adolescents and young adults (Brown, Meadows, & Elder, 2007; Mulye et al., 2009). Higher levels of depressive symptoms, sadness, and hopelessness have been reported among Hispanics and Blacks compared to Whites (Brown et al., 2007; Merten & Henry, 2011; Mulye et al., 2009). Evidence suggests that family support and belonging may be an important protective factor, promoting prosocial behaviors and mental health in minority families (Brown et al., 2007; King et al., 2015; Pallock & Lamborn, 2006). However, other research illustrates the importance of a

nuanced understanding of these processes in ethnic minority families: Among European Americans and Asian Americans but not among Hispanics, adolescents' depressed mood negatively correlated with parental warmth and support a year later (Chung, Chen, Greenberger, & Heckhausen, 2009). This suggests that despite Hispanic adolescents' initial depressed mood, they did not later perceive lower levels of parental warmth and support, which the authors attributed to a strong sense of family commitment in the Hispanic culture.

Socioeconomic status has been linked to better psychosocial adjustment and lower depression (Brown et al., 2007; Eccles & Gootman, 2002). Socioeconomic factors such as income and education allow parents to invest time, money, and resources in children's development, which in turn promotes child well-being (Kalil et al., 2012; O'Rand, 2009). Parents of different socioeconomic status invest differently in children, with high income parents actively investing in enrichment activities and promoting autonomy (Lareau, 2011). In contrast, low income parents tend to allow children to participate in informal activities, which often do not afford the same opportunities in building human capital (Dunn, Kinney, & Hofferth, 2003; Lareau, 2011). Hofferth, Kinney, and Dunn (2009) found that children age 9-12 who were not involved with structured activities were more likely to report stress symptoms including depression, anxiety, and low self-esteem. Research also suggests that income and education may also be related to family processes such as family stability, which, in turn, have an effect on child well-being (Conger, Conger, & Martin, 2010; Hofferth et al., 2009). In another study, maternal education and income were negatively associated with child involvement in activities, and maternal

education was associated with low levels of children's stress symptoms and high self-esteem (Hofferth et al., 2009). These findings suggest that the sociodemographic context in which adolescents find themselves impacts their well-being.

Family Context and Adolescent Well-being

Life course theory suggests that strong family relationships can promote adolescent health and provide support especially in stressful circumstances (Umberson, Crosnoe, & Reczek, 2010). Most research on family context with regards to adolescent well-being has focused on the context of the immediate family: parents' relationships, siblings, or family functioning (Conger et al., 2010). For example, family context has been related to onset and course of depression (Garber & Cole, 2010; Sander & McCarty, 2005) as well as levels of self-esteem (Siffert, Schwarz, & Stutz, 2012).

Growing attention has been given to the importance of extended family for adolescents' well-being (e.g., Pallock & Lamborn, 2005). More specifically, grandparents provided financial support to young families, served as role models to adolescent grandchildren, and contributed to cross-generational solidarity, especially for single parent families (Dunifon & Bajracharya, 2012; Yorgason, Padilla-Walker, & Jackson, 2011). Emotional and financial support for grandchildren may be more likely if adult parents have a close relationship with grandparents, since evidence suggests that parents are gatekeepers between grandparents and grandchildren (Attar-Schwartz, Tan, & Buchanan, 2009; Dunifon & Bajracharya, 2012). Grandchildren may benefit from extended family support, particularly if grandparents are close with their parents. For example, grandparent involvement was an important protective factor for adolescents

growing up in single parent or step-parent households (Attar-Swartz, Tan, Buchanan, Flouri, & Griggs, 2009). Extended family support may be especially important for low income families, and in particular in the lives of single fathers (Edin & Nelson, 2013).

Some evidence also suggests intergenerational processes whereby parent-child relationships during childhood affect the parenting of adult children later in life (Elder et al., 1996; Friessen et al., 2012; Hofferth et al., 2012). What is not well known is how differences in parent-adult child relationships over time are related to family processes and adolescent well-being in the next generation. This study extends prior research by examining how intergenerational family relationships over time relate to adolescent well-being.

The Current Study

While the quality of parent-child relationships has been strongly linked to adolescents' mental health and well-being, much less is known about connections between three generations across time. According to life course theory, this is a critical consideration because the influence of linked lives reverberates across generations (Elder & Giele, 2009). Specifically, in this study parent-grandparent relationships are considered a contextual factor for parent-child relationships. For example, a warm relationship between parents and adult children may provide a connection to a supportive grandparent-grandchild relationship. This research will extend current knowledge by considering the following research question: How do patterns of G2 perceived closeness with fathers and mothers (from Study 1, now grandparents) over time relate to G3 reports

of well-being (depression and self-esteem) and G3 perceived closeness with parents in adolescence?

- H₁** Average G2 perceived closeness with G1 fathers (now grandfathers) at baseline and over time will be negatively related to G3 depressed mood and positively related to G3 self-esteem and G3 perceived closeness with G2 father and mother in adolescence.
- H₂** Three patterns of G2 perceived closeness with G1 mothers (now grandmothers) will predict differences in G3 depressed mood, self-esteem, and perceived closeness with G2 father and mother in adolescence.

Methods

Data from the Youth Development Study (YDS; Mortimer, 2012) was used in Study 2. Study 2 is comprised of a subsample of G2 and G3 dyads ($n = 262$). G2 parents (67% of those eligible by virtue of having a child in the targeted age range) gave consent for their children ages 11-20 (G3) to participate in the study in 2009, 2010, and 2011. Over three years of G3 data collection, 422 children completed the survey at one time point or more. For the current analytic sample, one child was randomly chosen from each family, yielding 262 dyads for the analytic sample. Figure 1.1 is a flow chart detailing how the analytic sample was derived. Parents who gave consent were more likely to be female, married or cohabiting, more highly educated, civically engaged, and economically stable than those who did not (Mortimer, 2012). It should be noted, however, that because the G3 child participants are children of early child-bearers, the socioeconomic status of their families is lower than in the YDS panel as a whole.

Measures

The construct of well-being was operationalized by two dependent variables: depressed mood and self-esteem (see Table 2.1). The most recent measurement reports (between 2009 and 2011) of depressed mood and self-esteem were utilized. *Depressed mood* (G3) was measured by a 4-item subscale from the Mental Health Inventory, which was developed for a non-clinical population ($\alpha = .91$; Veit & Ware, 1983). Responses were summed ($M = 8.80$, $SD = 3.91$). An example question is “How much in the past month have you felt downhearted and blue?” (1 = *no time*; 5 = *all of the time*). *Self-esteem* (G3) was measured by the 7-item Rosenberg Self-Esteem Scale ($\alpha = .72$; Rosenberg, 1965). Responses were summed ($M = 20.83$, $SD = 3.67$). An example question is “I feel I have a number of good qualities” (1 = *strongly disagree*; 4 = *strongly agree*).

For G3 participants, the independent variables *perceived closeness with mother* and *perceived closeness with father* were measured by the same four items that measured G2 parent-child relationships in Study 1 (see Table 2.1). The most recent measurement reports (between 2009 and 2011) of perceived closeness with fathers and mothers were utilized. Reliability ranged from $\alpha = .78$ to $\alpha = .90$ (closeness with fathers, $M = 2.52$, $SD = 0.87$; closeness with mothers, $M = 3.00$, $SD = 0.76$).

Additional background covariates included gender of the G2 respondent (0 = *female*; 1 = *male*), gender of G3 respondent (0 = *female*; 1 = *male*), race of G3 respondent (0 = *non-White*; 1 = *White*), age of G3 respondent, G2 relationship status at birth and most recent relationship status report between 2009 and 2011 (0 = *married or cohabiting*;

1 = *single*), and G2 socio-economic indicators of educational attainment (1 = *less than high school* to 7 = *Ph.D. or professional degree*) and income (*annual household income divided by 1000*) from most recent report between 2009 and 2011.

Analysis Plan

To examine the intergenerational influence of average G2 perceived closeness with fathers, I used MPlus, version 7.2 (Muthén & Muthén, 2012) and conducted a latent growth curve. I modeled G3 outcomes of depressed mood, self-esteem, and perceived closeness with father/mother on the intercept and slope of G2 perceived closeness with fathers (H_1). To examine the intergenerational influence of three patterns of G2 perceived closeness with mothers from Study 1, analysis of variance (ANOVA) was conducted in SPSS, version 22, to determine whether G3 depressed mood, self-esteem, and perceived closeness with father/mother, differed by class (H_2).

In a missing data analysis of G3 independent variables, 4.0% of values were missing. The percentage of missing values for study variables ranged from 0% (G2 gender, G3 gender, G3 age, and G2 marital status at birth) to 9.2% (closeness with father) to 21.8% (G3 race). Expectation maximization (EM) has been identified as a method to address missing data preferred above traditional approaches such as listwise deletion (McKnight et al., 2007).

Results

Descriptive Statistics

The mean or frequency of each background variable and the outcome variables are reported for the entire sample and for each class of closeness with mother in Table

2.1. Differences in background variables by classes were computed using ANOVA and cross tabulation. The only significant difference that emerged was a significant difference in marital status at child's birth. In the *High/Dynamic* pattern, 41.9% were single when their child was born; in the *Average/Decreased* pattern, 36.1% were single when their child was born; in the *Low/Increased* pattern, 64.3% were single when their child was born ($p = .051$).

Analysis of Variance

To test the first hypothesis that the average intercept and slope of G2 perceived closeness with fathers over time would predict G3 depressed mood, self-esteem, and perceived closeness with fathers, I conducted a latent growth curve analysis with the G3 outcomes modeled on the intercept and slope. H_1 was not supported as significant relationships were not found. The estimated relationship between G2 perceived closeness with fathers in adolescence (intercept) and G3 depressed mood was not significant ($Est. = 0.04, SE = 0.44, p = 0.93$); nor was the estimated relationship between G2 perceived closeness over time (slope) and G3 depressed mood ($Est. = 3.37, SE = 3.03, p = 0.27$). The estimated relationship between G2 perceived closeness with fathers in adolescence (intercept) and G3 self-esteem was not significant ($Est. = -0.05, SE = 0.41, p = 0.90$); nor was the estimated relationship between G2 perceived closeness over time (slope) and G3 self-esteem ($Est. = 0.35, SE = 2.83, p = 0.90$). The estimated relationship between G2 perceived closeness with fathers in adolescence (intercept) and G3 perceived closeness with fathers was not significant ($Est. = 0.09, SE = 0.10, p = 0.38$); nor was the estimated relationship between G2 perceived closeness over time (slope) and G3 perceived

closeness with fathers ($Est. = -0.20, SE = 0.72, p = 0.79$). The estimated relationship between G2 perceived closeness with fathers in adolescence (intercept) and G3 perceived closeness with mothers was not significant ($Est. = 0.07, SE = 0.09, p = 0.40$); nor was the estimated relationship between G2 perceived closeness over time (slope) and G3 perceived closeness with mothers ($Est. = -0.12, SE = 0.59, p = 0.84$).

To test the second hypothesis, I conducted a series of ANOVAS to determine if there were significant differences in G3 depressed mood, self-esteem, and perceived closeness with mothers and fathers by patterns of G2 closeness with mothers. Although overall H_2 was not supported, a marginal difference between patterns was found in G3 perceived closeness with fathers. No differences between G3 depressed mood were found by patterns of G2 closeness with mothers ($F = 0.20, p = .816$); nor between G3 self-esteem by patterns of G2 closeness with mothers ($F = 0.66, p = .518$); nor between G3 perceived closeness with mothers by patterns of G2 closeness with mothers ($F = 0.34, p = .714$). A marginally significant difference was found between G3 perceived closeness with fathers by patterns of G2 closeness with mothers ($F = 2.56, p = .079$). According to the Levene statistic, the assumption of homogeneity of variance was met in each test. A post hoc Hochberg analysis revealed that those in the *Low/Increased* pattern of G2 closeness with mothers had significantly lower G3 perceived closeness with fathers than those in the G2 *High/Dynamic* pattern ($p = .10$).

Discussion

Grounded in life course theory, this study examined the influence of intergenerational patterns of perceived closeness with parents on the well-being of the

next generation. First, I examined relationships between G2 perceived closeness with fathers and G3 outcomes, but G2 perceived closeness with fathers in adolescence and over time did not correlate with G3 depression, self-esteem, or perceived closeness with parents. Then, I examined differences in G3 depression, self-esteem, and perceived parent-child relationships by patterns of G2 perceived closeness with mother. No differences were found in G3 depressed mood, self-esteem, or perceived closeness with mother by patterns of G2 closeness with mothers. A marginal difference between G3 closeness with fathers was found by G2 patterns of closeness with mothers, such that G3 youth in families with the *Low/Increasing* pattern of G2 closeness with mothers reported a lower closeness with their fathers. This may have been due to contextual factors as G2 mothers in this group also were more likely to be single at the birth of the child rather than married or cohabiting compared to those in the *High/Dynamic* group.

The current study implies that when parents perceive poor relationships with their mothers in the past, this may signify a life course pattern of risk (see also Study 1). For example, G2 parents who had low closeness with their mothers in adolescence were more likely to have been a single parent when their child was born, and their G3 children later report comparatively low closeness with fathers. In other words, since these mothers did not report cohabiting or being married when the child was born, these children may have never lived with their father, and evidence suggests that children do not feel as close to non-resident fathers compared to resident fathers (King, 2006; King, 2007). Although the current study did not show differences in depressed mood or self-esteem based on the past parent-grandparent relationships, if the G3 children in this pattern also have low

quality relationships with their fathers, research suggests they may be at risk later in adolescence or adulthood for decreased well-being (Flouri & Buchanan, 2003; Videon, 2005). Also, several studies have found that grandparent-grandchild relationships tended to be higher quality when there was a strong parent-grandparent relationship (Attar-Swartz, Tan, Buchanan, Flouri, et al., 2009; Dunifon & Bajracharya, 2012; Mueller & Elder, 2003); conversely, children who have a poor relationship with their father may have less access to paternal grandparent support.

Past research has identified single mothers as a pattern of risk related to poor health and depression (Amato & Kane, 2011), implying that family stress may be higher in these families. Research further substantiates this idea of a pattern of risk for those with low quality relationships with mothers in the past: Instrumental support from parents to adult children was less abundant when children reported poor relationships with mothers as adolescents (Swartz et al., 2011). Altogether, children in families with the *Low/Increased* pattern of G2 closeness with mothers may be at higher risk for a number of negative outcomes.

This finding is particularly important considering that this sample was a high risk sample with a high rate of teen parents (whose children were the first to be eligible to be G3 participants). Although rates of teen pregnancy have dropped dramatically since the first wave of data collection, in 1991 when those in the sample graduated from high school, the national rate of teen pregnancy reached an all-time high (Martin, Hamilton, Osterman, Curtin & Mathews, 2015). About 6.2% of adolescent females were teen parents in the U.S.; 26.7% of the current sample of G2 parents were teen parents in a

state with a typically low rate compared to the national average (Martin et al., 2015). In other words, the life course practice of examining place and time revealed that those in families with the *Low/Increased* pattern may be a particularly high risk group among those in this sample. The unique, high risk sample may have attenuated the results of this study; greater differentiation among G3 children may have been found with a more representative sample.

With regards to perceived closeness with fathers, nonsignificant findings should not be interpreted as a lack of fathers' importance. Although no relationship was found between the average trajectory of G2 perceived closeness with a G1 father in relation to G3 depressed mood, self-esteem, or parent-child relationships, this finding may also reflect a loss of nuance and understanding of differences using an aggregate construct of closeness with fathers over time (George, 2009). According to Palkovitz and colleagues (2014), "Although fatherhood is talked about as a relatively homogenous experience...fatherhood actually encompasses a wide array of circumstances" (p. 415). In this study, the mean trajectory of perceived closeness may not have adequately reflected participants' multiple experiences of closeness with their fathers. This underscores the need to find variables or processes that differentiate patterns of closeness with fathers over time, especially since empirically derived latent classes may not be an appropriate approach (see Study 1). Prior research has established the intergenerational importance of parent-grandparent relationships in fathering the next generation (Hofferth et al., 2012) and in association with close grandparent-grandchild relationships (Yorgason

et al., 2011). However, further research is needed to understand variation in intergenerational patterns between grandfathers, parents, and adolescents.

Strengths, Limitations, and Future Directions

The strengths of this study are found in key aspects of its intergenerational approach (Thornberry, forthcoming). First, YDS has prospective data on both G2 and G3 participants. Furthermore, the same questions were used to measure G3 parent-child closeness at the same developmental stage as G2 participants, adolescence. Having detailed life course data on G2 allows an examination of intergenerational influences of family context in the lives of G3 participants.

Limitations must also be acknowledged. The G2-G3 dyads represent a reduced sample from the original YDS participants, as is common in intergenerational studies (Thornberry, forthcoming). This loss is accounted for in part by attrition and also because a large number of YDS participants did not have children 11 years of age or older who were eligible to participate in the G3 study. Additionally, some parents did not consent to have their children participate. Because of the relatively small analytic sample, there were few cases in the classifications of low quality relationships of G2 report of G1 closeness. Therefore, it was difficult to demonstrate significant effects, and the results of this study cannot be generalized to a larger population. Also, G2 parents were primarily women. Therefore, another limitation was the inability to adequately examine father-son and father-daughter relationships (G2-G3), and there was little information about mother-son relationships in the first generation (G1 mothers-G2 sons). Further research is needed to understand the intergenerational effects of trajectories of

parent-child relationships as an important part of extended family context for the next generation.

Understanding of G2 relationships with their own fathers was constrained by the use of a mean trajectory to predict variation in the next generation. Research which examines alternate ways of understanding variation in G2 closeness with fathers is needed. Cumulative stress processes may be an alternative life course approach to understanding patterns of closeness with fathers and mothers in future research (O'Rand, 2009). For example job loss, marriage and divorce patterns, or incarceration in the lives of G2 fathers may be stressful events which would potentially help to illuminate variation or moderating influences in G3 lives.

This study is also limited by the amount of information regarding family relationships included in the research. Detailed information is only available about one of the parents of G3 participants who was in the original YDS study. Thus, although this is among the first studies to examine longitudinal patterns of grandparent-parent relationships as a context for parenting the next generation, the results provide a limited picture of the family relationships. Future intergenerational research which includes both parents of G3 participants is needed (Thornberry, forthcoming). Also, this study did not include mental health variables for G1 or G2 participants. Past research suggests that an important future consideration for understanding adolescents' mental health is the trajectories of parents' own mental health history in concert with parent-child closeness (Garber & Cole, 2010).

General Conclusion

Together Study 1 and Study 2 add to life course research by providing a long view of parent-child relationships across time and generations and by exploring the importance of the intergenerational context for adolescent well-being. The results of Study 1 imply wide variation in father-child relationships and classifiable patterns of mother-child relationships. Although contextual and personal circumstances such as socioeconomic status and residence with parents influence the quality of parent-child relationships over time, future research is needed to better understand processes that explain variation over time, particularly among fathers. Study 2 built on these findings and examined patterns of intergenerational parent-child relationships as contexts for adolescent well-being. Results imply low closeness with mothers in adolescence in one generation may signify a life course pattern of risk, which could potentially affect the next generation. The interwoven, linked lives of family members as they move across the life course together have much to offer in understanding processes of risk and protection with regards to adolescent well-being.

Table 1.1. Demographic Characteristics of Full and Analytic Samples

	Initial Sample (<i>N</i> = 1139)	G2 individuals who reported father closeness (<i>n</i> = 913)*	G2 individuals who reported mother closeness (<i>n</i> = 966)**
G1			
Household income (1988) 35K or less	60.5%	57.6%	59.1%
Household education (1988) High school or less	41.1%	39.0%	40.3%
G2			
Female gender	52.0%	54.8%	55.6%
White	65.1%	72.5%	70.3%
Household income (2011) 35K or less	24.1%	23.7%	24.1%
Primary parent over time			
Natural father	--	86.6%	83.7%
Step father or guardian	--	13.4%	16.3%
Natural mother	--	96.4%	96.5%
Step mother or guardian	--	3.6%	3.5%
Lived with natural father (1988)	75.6%	76.3%	75.4%
Lived with natural mother (1988)	86.4%	94.4%	94.5%

Note. *Analytic sample for closeness with father. **Analytic sample for closeness with mother.

Table 1.2. Mean and Standard Deviation of Perceived Closeness Scales over time

	Perceived Closeness with Father (<i>n</i> = 913)	Perceived Closeness with Mother (<i>n</i> = 966)
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)
Wave 1 (1988)	2.51 (0.78)	2.93 (0.74)
Wave 4	2.44 (0.79)	2.90 (0.76)
Wave 8	2.60 (0.88)	3.18 (0.74)
Wave 12	2.58 (0.81)	3.12 (0.77)
Wave 16	2.61 (0.80)	3.12 (0.73)
Wave 18/19	2.60 (0.85)	2.81 (0.54)

Table 1.3. Fit Statistics for Growth Mixture Models Identifying Patterns over Time

Number of Classes.	Log Likelihood	Free Parameters	AIC	BIC	LMR-LRT	BLRT	Entropy
Closeness with mother (<i>n</i> = 966)							
1 linear	-4726.80	11	9475.59	9529.59	--	--	--
2 linear	-4667.42	14	9431.07	9431.07	<i>p</i> < .000	<i>p</i> < .000	.76
3 linear	-4651.97	17	9337.95	9429.79	<i>p</i> = .029	<i>p</i> < .000	.79
1 quadratic	-4532.90	15	9095.81	9168.90	--	--	--
2 quadratic	-4464.61	19	8967.21	9059.80	<i>p</i> < .000	<i>p</i> < .000	.79
3 quadratic	-4449.35	23	8944.70	9056.78	<i>p</i> = 0.89	<i>p</i> < .000	.76
Closeness with father (<i>n</i> = 913)							
1 linear	-4391.97	11	8805.95	8858.93	--	--	--
2 linear	-4357.08	14	8742.17	8809.60	<i>p</i> < .000	<i>p</i> < .000	.66
3 linear	-4346.10	17	8795.27	8808.09	<i>p</i> = .028	<i>p</i> < .000	.62
1 quadratic	-4369.31	15	8768.62	8840.87	--	--	--
2 quadratic	-4330.81	19	8699.62	8791.13	<i>p</i> < .000	<i>p</i> < .000	.64
3 quadratic	-4319.24	23	8684.48	8722.22	<i>p</i> = .240	<i>p</i> < .000	.69

Table 1.4. Latent Growth Curve of Perceived Closeness with Father from Wave 1 to Wave 18/19 ($n = 913$)

	Baseline quadratic model		Conditional model		Conditional family model	
	<i>Est.</i>	<i>SE</i>	<i>Est.</i>	<i>SE</i>	<i>Est.</i>	<i>SE</i>
Intercept	2.48***	0.03	2.10***	0.09	1.97***	0.10
Male			0.17**	0.05	0.16**	0.05
G1 Income			0.04	0.01	0.00	0.00
G1 Education			0.01***	0.00	0.05*	0.02
White			-0.06	0.06	-0.04	0.06
Lived with Father					0.20**	0.06
Stepfather/Guardian					-0.06	0.08
Slope	0.02***	0.01	0.06*	0.02	0.05*	0.03
Male			-0.06***	0.01	-0.06***	0.01
G1 Income			0.00	0.00	0.00	0.00
G1 Education			-0.01	0.01	-0.01	0.01
White			0.00	0.02	0.00	0.02
Lived with Father					0.02	0.02
Stepfather/Guardian					-0.00	0.02
CFI	0.95		0.94		0.94	
RMSEA	0.08		0.06		0.05	
	CI [0.06 – 0.09]		CI [0.05 – 0.07]		CI [0.04 – 0.06]	

Note. * $p < .10$, * $p < .05$; ** $p < .01$; *** $p < .000$

Table 1.5. Multivariate Multinomial Logistic Regression of Variables Associated with Latent Patterns of Perceived Closeness with Mother

	Low/Increasing			Average/Decreasing		
	<i>OR</i>	<i>SE</i>	<i>p</i>	<i>OR</i>	<i>SE</i>	<i>p</i>
Male	-0.83	0.40	.038	-0.91	0.48	.059
G1 Income	-0.02	0.01	.068	-0.02	0.01	.008
G1 Education	-0.07	0.21	.745	-0.06	0.15	.694
White	1.08	0.53	.042	0.04	0.26	.888
Lived with Mother	-0.98	0.63	.117	-0.91	0.48	.059
Step-mother/Guardian	2.30	0.69	.001	1.38	0.70	.048

Note. Reference Pathway = High/Dynamic Closeness

Table 2.1. Demographic Information for G3 Analytic Sample as a Whole and by Patterns of G2 Perceived Closeness with Mother

	Initial Sample (<i>N</i> = 1139)	G3 Analytic Sample (<i>n</i> = 262)	High/ Dynamic (<i>n</i> = 193)	Average/ Decreasing (<i>n</i> = 35)	Low/ Increasing (<i>n</i> = 25)
G2					
Primary parent over time					
Natural father	85.5%	78.6%	77.8%	80.6%	82.1%
Step father or guardian	14.5%	21.4%	22.2%	19.4%	17.9%
Natural mother	97.0%	96.6%	97.5%	97.2%	89.3%
Step mother or guardian	3.0%	3.4%	2.5%	2.8%	10.7%
Lived with natural father (1988)	—	72.9%	72.4%	80.6%	66.7%
Lived with natural mother (1988)	—	95.2%	96.9%	87.5%	92.6%
Female Gender	52.0%	70.0%	68.7%	66.7%	75.0%
Teen parent	—	26.5%	25.9%	20.6%	27.7%
Single (at child's birth)	—	43.5%	41.9%	36.1%	64.3%
Single (2009/2011)	—	24.0%	23.2%	22.2%	32.1%
Income (2009/2011)	—	65.7(43.6)	66.3(43.5)	60.1(38.0)	68.5(51.6)
Education (2009/2011)	—	5.0(1.7)	5.0(1.7)	4.7(1.81)	5.2(1.62)
G3					
Closeness with father	—	2.5(0.9)	2.6(0.8)	2.6(0.9)	2.2(0.9)
Closeness with mother	—	3.0(0.1)	3.0(0.7)	2.9(0.8)	2.9(0.8)
Depressed mood	—	8.8(3.9)	8.8(3.9)	8.6(4.3)	9.2(3.9)
Self-esteem	—	20.8(3.7)	20.7(3.6)	21.5(3.9)	20.8(4.1)
Female Gender	—	54.2%	52.0%	66.7%	53.6%
Non-Hispanic White	—	68.8%	68.8%	69.0%	68.2%
Age	—	15.8(2.8)	15.7(2.8)	16.1(2.6)	16.1(2.8)

Table 2.2 Intercepts, Slopes and Quadratic Terms of the Three Latent Patterns of G2 Perceived Closeness with Mother (*n* = 262)

	<i>Est.</i>	<i>SE</i>	<i>p</i>
High, Dynamic			
Intercept	3.07	0.05	.000
Slope	0.33	0.03	.000
Quadratic	-0.07	0.01	.000
Average, Decreased			
Intercept	2.62	0.14	.000
Slope	-0.46	0.11	.000
Quadratic	0.07	0.02	.000
Low, Increased			
Intercept	1.67	0.08	.000
Slope	0.51	0.10	.000
Quadratic	-0.05	0.02	.014

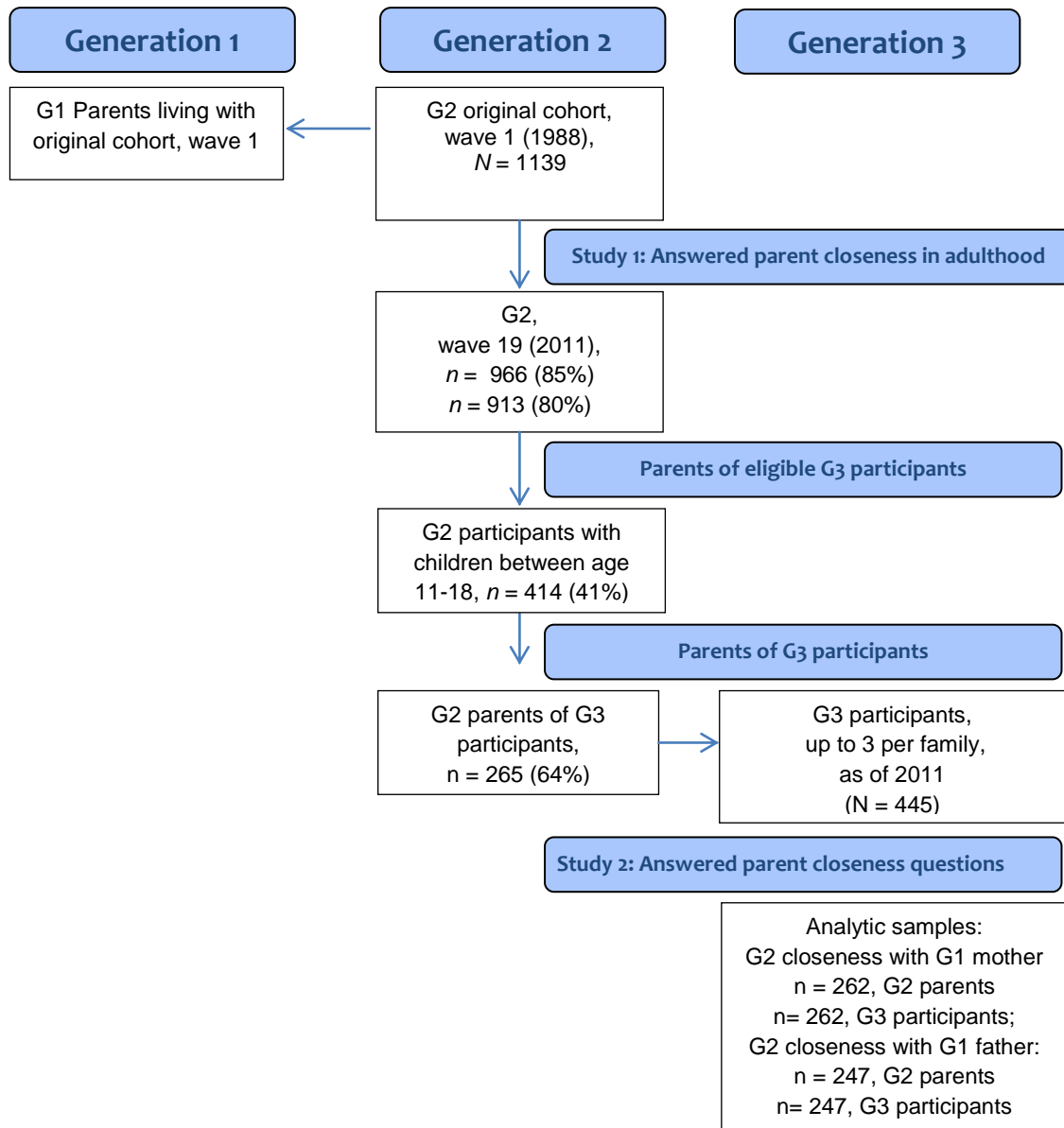


Figure 1.1. Flow chart of YDS participants in G1, G2, and G3.

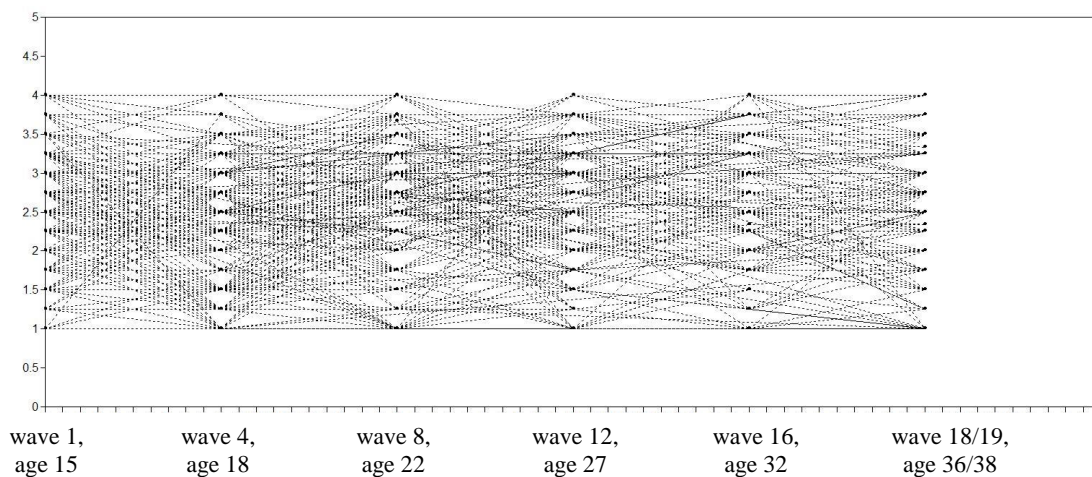


Figure 1.2. Randomly chosen observations of perceived closeness with father data showing no pattern of variation from wave 1 (1988) to wave 18/19 (2009/2011; $n = 300$).

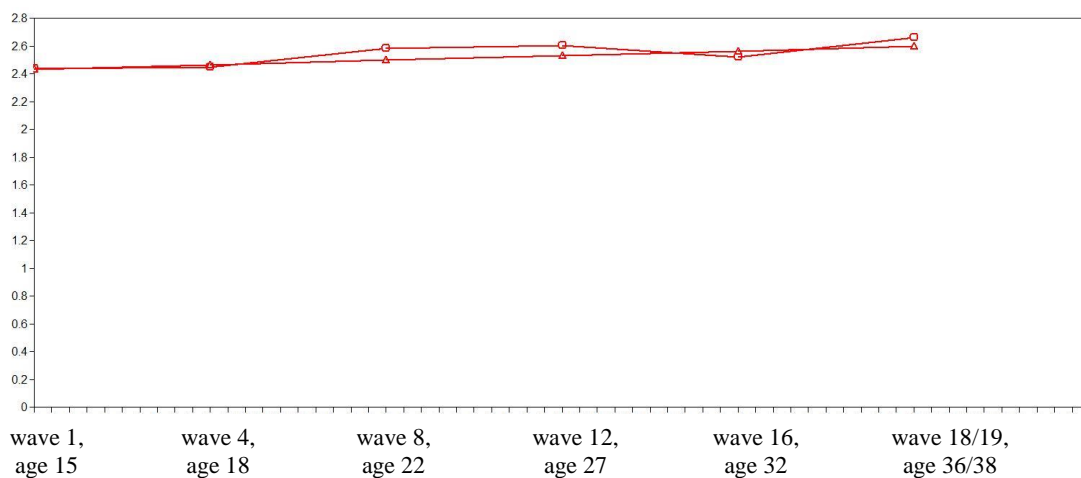


Figure 1.3. Growth curve of perceived closeness with father over six time points, from wave 1 (1988) to wave 18/19 (2009/2011).

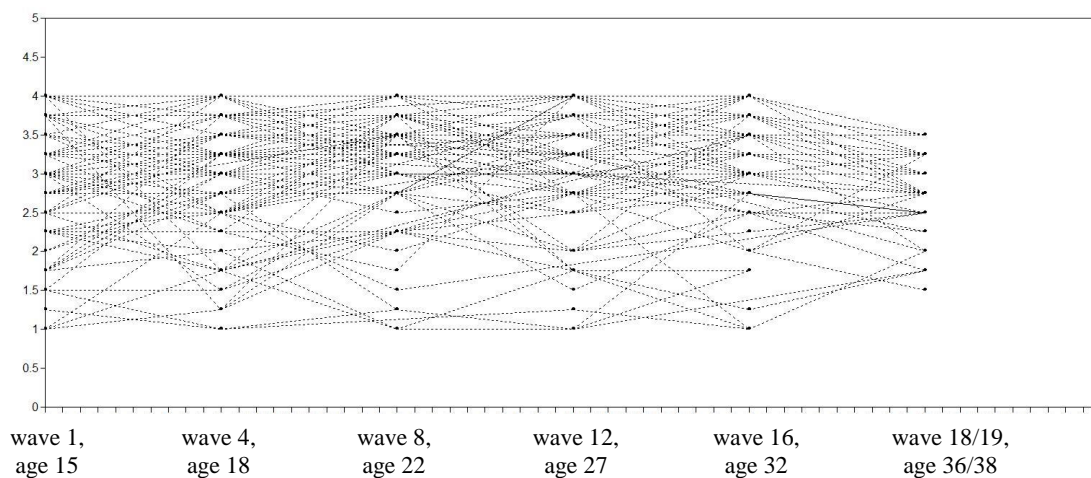


Figure 1.4 Randomly chosen observed values ($n = 300$) showing three distinct patterns of perceived closeness with mothers from wave 1 (1988) to wave 18/19 (2009/2011).

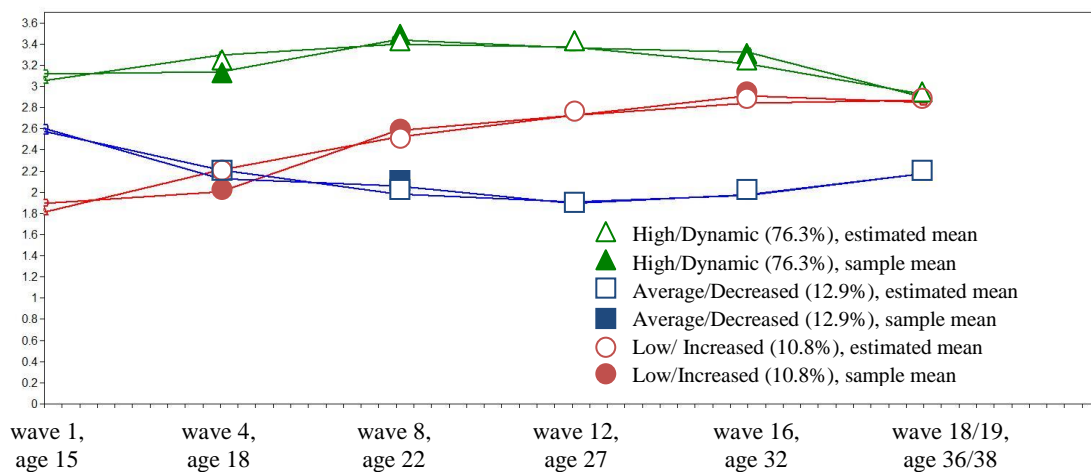


Figure 1.5 Three patterns of perceived closeness with mothers ($n = 966$) from wave 1 (1988) to wave 18/19 (2009/2011).

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Appendix

Study 1 Stability of Stepparent Relationships

Using a question about whether a G1 parent had recently remarried at each time point, descriptive analyses were conducted to assess stability of stepparent relationships (e.g., to ensure that answers about stepmother did not refer to different stepmothers at different time points). A small percentage (16.3%) of those who identified stepfathers as a primary parent reported that a parent had remarried at one of the time points from wave 8 or beyond, but the parent remarriage questions did not ask whether this was a mother or a father who remarried. The consistency in answers for most of these respondents (e.g., 12 of 20 answered about stepfather at every time point) suggests a stable relationship with step-fathers before and after the remarriage (perhaps of the biological father). One out of those who identified stepmothers as a primary parent (2.9%) also indicated that one of their parents remarried. This suggests that relationships where stepmothers were identified as the primary parent were very stable.

Study 2 Alternate Analyses of Classes

I decided to use the classes from Study 1 in Study 2. The justification for this approach was from a blog posting from Bengt Muthén on the www.statmodel.com (October 17, 2014), which stated that the use of class designations from a larger sample (generally representing latent patterns in a larger population) is acceptable in the analysis of a subsample. However, I also did a latent class analysis with just the parents in Study 2. Although the results had estimate errors, they were very similar to the Study 1 classes. The best fit for fathers was a 1-class solution, and the best fit for mothers was a 3-class

solution (see Table A and Figure A). The middle class of closeness with mothers however was very small (4.7%) and the three class solution had estimation errors.

Table A. Fit Statistics for Latent Patterns of Perceived Closeness with Parents Using Parent Sample ($n = 262$)

Number of Classes	Log Likelihood	Free Parameters	BIC	LMR-LRT	BLRT	Entropy
Closeness with mother ($n = 262$)						
1 linear	-1421.86	11	2904.97	--	--	--
2 linear	-1402.24	14	2882.44	$p < 0.00$	$p < 0.00$.77
3 linear	-1392.94	17	2880.54	$p = .250$	$p < .000$.77
1 quadratic	-1360.96	15	2805.44	--	--	--
2 quadratic	-1345.62	19	2797.04	$p = .643$	$p = .643$.78
3 quadratic	-1325.78	23	2779.63	$p < 0.00$	$p < 0.00$.86
Closeness with father ($n = 247$)						
1 linear	-1295.03		2650.67	--	--	--
2 linear	-1281.38		2639.89	$p = .009$	$p < 0.00$.76
3 linear	-1278.23		2650.11	$p = .331$	$p = .207$.67

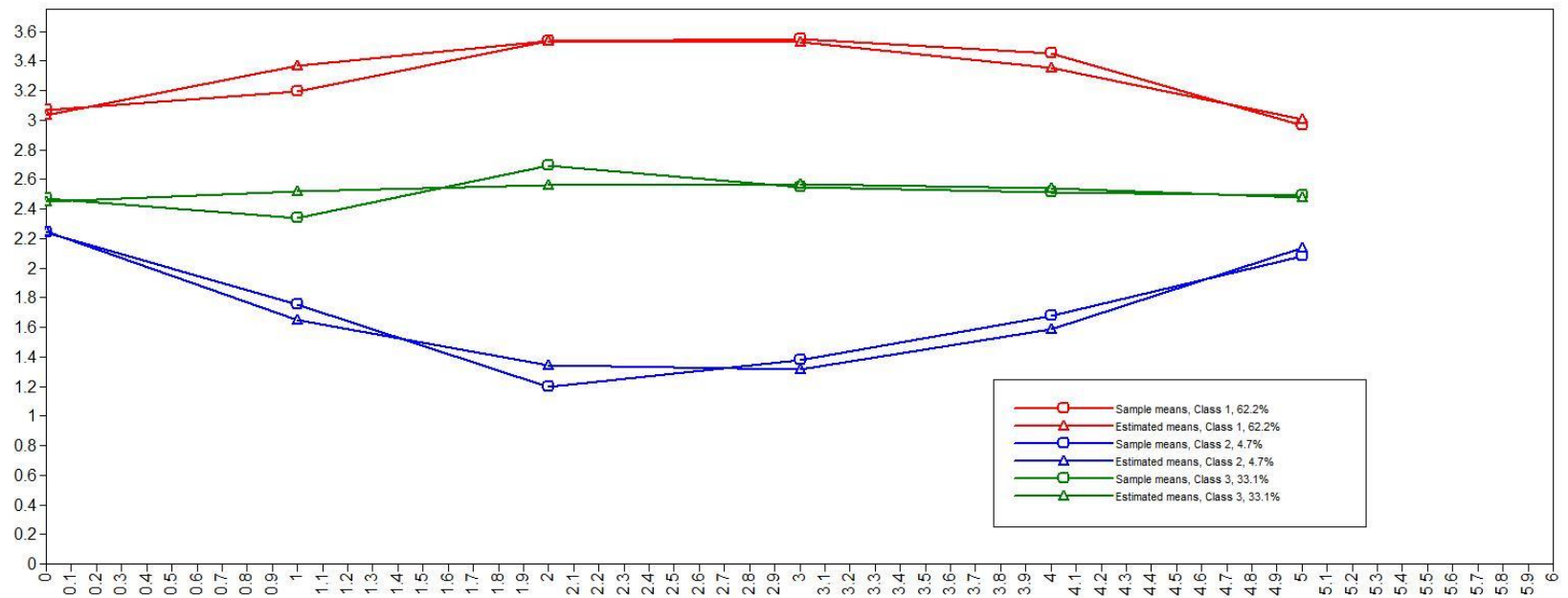


Figure A. Three class solution of perceived closeness with mothers run on subsample of YDS parents ($n = 262$).