Contextual Effects of Single Parents in Social Networks on Adolescents' Academic Achievement, Depression, and Delinquency

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ABSTRACT
A significant body of literature has documented the individual-level effects of growing up in a single-parent family. To date, however, little research has considered the contextual effects of single parenthood and none in the context of social networks. Using data from the National Longitudinal Study of Adolescent to Adult Health, I investigate the relationship between adolescent outcomes and concentration of peers from single-parent families within one's social network, focusing on academic achievement, depression, and delinquent behavior. I also consider differences between contexts of close friend groups and wider social networks and investigate the moderating effect of individual family structure. Academic achievement and depression are each associated with concentration of peers from single-parent families within wider social networks in a curvilinear fashion. Effects within close friend groups are not significant and neither of the contextual effects was moderated by individual family structure.

INTRODUCTION

Family structures in the United States have changed dramatically since the latter part of the twentieth century (Martin and Kats 2003). The Second Demographic Transition, which occurred between the 1960s and 1980s, yielded decreases in fertility and marriage rates. In addition, it brought about increases in divorce rates and the proportion of births to unmarried women (Lesthaeghe 1995; Lesthaeghe and Neidert 2006). These factors, in turn, led to a significant growth in the number of single-parent families. As a result, about half of all children in the United States can now expect to live in a single-parent home at some point before reaching adulthood (McLanahan and Percheski 2008).

A substantial body of literature has documented the relationship between family structure and adolescent outcomes. This research has shown that children living in single- parent households tend to fare worse than children in two-parent households in a variety of areas, including academic achievement, psychological well-being, and personal conduct (Amato 2001, 2005; Brown 2010). Additionally, a small number of studies have investigated the effects of single parenthood at the aggregate level (Amato, Patterson, and Beattie 2015; Cleveland and Gilson 2004; de Lange, Dronkers, and Wolbers 2014; Pong 1997, 1998). Each of these studies considers the degree to which the concentration of single-parent families within a context impacts development above and beyond the individual-level effects of family structure. The studies largely suggest that the effects are the result of two very different processes. The first is the issue of process of selection associated with single-parenthood. Because education of single mothers is lower on, on average, than those mothers in stable relationships (Ellwood and Jencks 2004), some researchers have found that the individual-level effects of single parenthood are largely spurious (Björklund, Ginther, and Sundström 2007; Björklund and Sundström 2006).

Therefore, at least some portion of the effect of single parent concentration is due to a concentration of economic disadvantage (Pong 1997, 1998).

The second process associated with contextual effects of single parenthood is the direct effect of single parenthood on developmental outcomes. Researchers suggest that children in single-parent households fare worse because of factors such as reduced parental supervision resulting from having only a single parent, as well as impaired caregiving from stressed parents (Amato 1993, 2000; Brown 2010). Based on this perceptive, the contextual effects of single parenthood are largely the result of reduced supervision and a lack of social control (Cleveland and Gilson 2004).

Within the literature on contextual effects of single parenthood, there have been widely different results across contexts. For example, Pong (1997, 1998), along with de Lange, Dronkers, and Wolbers (2014), and Anderson (2002) found that the number of children from single-parent households within schools is significantly associated with adolescent academic outcomes. Likewise, Cleveland and Gilson (2004) found that the concentration of single-parent families within neighborhoods is significantly associated with behavioral outcomes. On the other hand, Amato, Patterson, and Beattie (2015) found no significant association between single parenthood and educational outcomes at the state level. Despite looking across contexts, researchers have not yet considered the contextual effects of single parenthood within social networks. These networks are a particularly important context in adolescence as peer relationships become increasingly influential during adolescence. Therefore, given the importance of peer relationships and their influence during adolescence, I seek to understand how the contextual effects of single-parenthood within these relationships influence development. I conceptualize these contextual effects as the concentration of adolescents from

single-parent families within one's immediate circle of friends, as well as number of adolescents from single-parent families within one's larger peer network.

Another potential area of interest in the research on the aggregate effects of single parenthood is the degree to which the relationship with adolescent outcomes is moderated by individual family structure. Only a single study (de Lange et al. 2014) has addresses this issue, investigating the interaction between family structure and single parent concentration within in schools. Thus, I seek to contribute to this literature by considering the degree to which individual family structure moderates the contextual effect of single parenthood within social networks. In doing so, I consider two competing perspectives. On one hand, the "Frog Pond" perspective, a variant of social comparison theory, would suggest that adolescents in a single- parent home would benefit from a network of others from single-parent families (Crosnoe 2009). This is because adolescents from disadvantaged statuses tend to fare better when they are around peers from similar disadvantaged statuses. On the other hand, research regarding the individual-level effects of single parenthood often focus on the decreased availability of social and economic resources. These perspectives suggest that the individual-level effect of growing up in a single-parent household would be compounded by the collective disadvantage of single parenthood within the peer group, creating increased developmental disadvantage.

Overall, this research address three research questions: (1) Does the concentration of single-parent families within social networks predict adolescent developmental outcomes? (2) Are these contextual effects moderated by one's own family structure? (3) How do these contextual effects differ between one's immediate circle of friends and the entire peer network? I investigate these issues across outcomes in three distinct domains that are salient to adolescent development: academic performance, mental health, and delinquent behavior.

BACKGROUND

The Changing Structure of Families in the United States

As noted above, the Second Demographic Transition represented a period of profound change in the composition of families. The primary trends associated with the transition included delays in fertility and marriage; increases in cohabitation, divorce, and non-marital childbearing; and increases in maternal employment (Lesthaeghe 1995; Lesthaeghe and Neidert 2006; Lesthaeghe and Surkyn 1988; Mclanahan 2004), As a result, the proportion of births to unmarried women in cohabiting couples in the U.S. increased from 29 in 1980 to 39 percent in 1994. As a result, about two-fifths of all children spend some time in a cohabiting family (Bumpass and Lu 2000). The increase in the percentage of children living in unpartnered single-parent households in the United States has been even more dramatic, more than tripling since the middle of the 20th century, rising from 9% in the early 1960s to 27% in 2015 (Child Trends 2015), which is one of the highest rates of single parenthood in the world (Casey and Maldonado 2012). Because of this increase, approximately half of all children will spend some time living with a single parent before reaching adulthood (McLanahan and Percheski 2008).

Approximately 80% of single parents are single mothers. Many of these women (38%) have never married while many are divorced (34%), with the remaining share split between those who are separated (23%) and a small minority who are widowed (5%) (Casey and Maldonado 2012). Growth of single parenthood has largely been concentrated within the most disadvantaged status groups. More than two-thirds of black children are born to unmarried mothers compared to about one-half of Hispanic children and less than one-quarter of white children (Child Trends 2015; Ellwood and Jencks 2004).

Single parenthood has also become been increasingly common among those with low

education. Among children whose mothers had college degrees, the fraction living in single-parent households rose from 6 percent in 1965 to around 9 percent in 2002, while this rate grew from 13 percent in 1965 to about 35 percent in 2002 among children whose mothers had not finished high school (Ellwood and Jencks 2004). Given these disparities in education, it is not surprising that single parents are more likely to be employed in low-wage jobs. In 2009, approximately 40 percent of single parents were employed in low-wage jobs, compared to 25 percent within the entire U.S. population (Casey and Maldonado 2012).

Individual-Level Effects of Growing up in a Single Parent Home

A large body of literature has established an association between single parenthood and negative adolescent developmental outcomes. Amato (2005) points out that adolescents from single-parent families face a variety of negative outcomes in multiple domains of life, including an increased risk of repeating a grade, being suspended from school, engaging in delinquent behavior, engaging in a violent altercation, receiving counseling or therapy for an emotional problem, smoking cigarettes regularly, and attempting suicide. In addition, adolescents from single-parent families are less likely to graduate from high school than their peers in two-parent families (Sandefur, Mclanahan, and Wojtkiewicz 1992).

Although a great deal of research focuses on outcomes in childhood, some have shown that the effects of growing up in a single-parent home extend well into adulthood. Specifically, children from single-parent families have lower earnings and occupational prestige than children raised in two-parent families (McLanahan and Booth 1989; Nock 1988). In addition, single parenthood has a high rate of intergenerational transmission in that children from single- parent homes are more likely to become single parents themselves (McLanahan and Booth 1989).

McLanahan and Sandefur (2009) explain that the reason why children from single-parent families have more negative outcomes than children from two-parent families is due to a lack of economic, parental, and social resources. The lack of financial resources is due, at least in part, to issues of selection: women of lower socioeconomic status are much more likely to become single parents (Casey and Maldonado 2012; Ellwood and Jencks 2004). However, McLanahan and Sandefur (2009) also note that this lack of financial resources is present in single-parent households because of a reliance on a single income, which sacrifices certain luxuries that are present in many two-parent families (McLanahan and Percheski 2008).

In addition to the lack of economic resources, McLanahan and Sandefur (2009) explain that single-parents tend to have decreased levels of parental resources. Because single parents often work longer hours outside the home than those who are married, they often have less time to supervise their children (Astone and McLanahan 1991). As a result of these work demands, single parents often experience greater stress than their counterparts in two-parent families (Hetherington, Cox, and Cox 1978; McLeod and Shanahan 1993; McLoyd and Wilson 1991). As a result, some single parents develop a permissive parenting style (too little discipline) (Thomson, McLanahan, and Curtin 1992) or become overly authoritarian (too little warmth) (McLanahan and Sandefur 2009), both of which are harmful for children (Baumrind 1966).

Finally, McLanahan and Sandefur (2009) emphasize the lack of social resources associated with single-parent families, noting that single parents often do not possess the time or energy to maintain personal relationships. This, in turn, leads to decreased benefits of social capital, such as emotional support and information about resources in the broader community that might benefit children (Astone and McLanahan 1991).

Selection Effects of Single Parenthood

There has been a great deal of social commentary regarding the ill effects of single parenthood. For example, the founder and president of the Institute for American Values, David Blankenhorn, has stated:

> Fatherlessness is the most harmful demographic trend of this generation. It is the leading cause of declining child well-being in our society. It is also the engine driving our most urgent social problems, from crime to adolescent pregnancy to child sexual abuse to domestic violence against women (Blankenhorn 1996:1).

Such claims are not only incredibly hyperbolic, they also ignore the evidence suggesting that the relationship between single parenthood and children's outcomes are not causal, but instead exist as the result of selection processes that impact the likelihood of becoming a single parent. As noted earlier, blacks and Hispanics are disproportionately more likely to become single parents than whites or Asians (Child Trends 2015; Ellwood and Jencks 2004). Additionally, those with lower education and income are also more likely to become single parents (Casey and Maldonado 2012; Ellwood and Jencks 2004). Thus, researchers have determined that the individual-level effects of single parenthood are largely spurious (i.e., caused by disadvantage associated with race and social class, rather than direct effects of the family structure itself) (Björklund et al. 2007; Björklund and Sundström 2006).

In addition to the increased likelihood of single parenthood amongst the most socially disadvantaged groups, researchers have also investigated the role of more individual-level factors associated with single parents, such as personality and cognitive abilities. They suggest that the differences in personality characteristics and cognitive abilities of parents have two effects: First, parents influence the behaviors and characteristics of their children through genetic transmission

of phenotypic traits, the environment in the home, or some combination of both. Second, these parental characteristics impact the ability of parents to maintain stable intimate partnerships (Fomby and Cherlin 2007).

In a study on parental selection effects in family processes, Capaldi and Patterson (1991) found that mothers' antecedent "antisocial behavior" mediated the association between family structure transitions and adjustment, academic performance, and delinquent behavior in sixth grade boys. However, Capaldi, Crosby, and Stoolmiller (1996) found that a positive association between parental transitions and sexual initiation was only partially mediated when parental antisocial behavior was included in the model. In an investigation between family instability and children's cognitive and socioemotional development Fomby and Cherlin (2007) found that the relationship between family instability and children's outcomes was mediated, in part, by the background characteristics of the mother, while some direct effect of family instability remained. Results of these aforementioned studies suggest that researchers must use caution when interpreting the results of studies into family structural processes. Although results may show that family processes negatively impact development, the possibility always exists that these relationships are due, at least in part, to the parental background factors that select them into particular relationship structures.

Contextual Effects of Single-Parent Families

In addition to the large amount of research into the individual-level causes and correlates of single parenthood, a handful of studies have investigated the impact of single parenthood at the aggregate level. The studies tend to show that a high concentration of single- parent families within a context is detrimental to all children within that same environment. Within schools, a

high concentration of children from single-parent homes is associated with reduced achievement in mathematics and reading (Pong 1997, 1998), as well as a higher degree of truancy, as well as criminal offenses (Anderson 2002). This negative relationship between single parent contextual effects and student outcomes exists not only in the United States, but is found in cross-national studies as well (Dronkers 2010; de Lange et al. 2014). Researchers attribute this disparity in performance to a reduced pool of economic and social resources with schools (Pong 1998) that creates more difficult teaching and learning conditions (de Lange et al. 2014). This finding is consistent with other research that considers the disadvantages associated with low-income schools. Teachers in high poverty schools are more likely than teachers in low poverty schools to report that verbal abuse of teachers, student disrespect of teachers, physical conflicts, and weapons possession are serious problems in their schools. Thus, they are more likely to report that student misbehavior interferes with their teaching than are teachers in low poverty schools. In addition, teachers in high poverty schools are more likely to report that student absenteeism, tardiness, and lack of parental involvement are serious problems in their schools than teachers in low poverty schools (Young and Smith 1997).

Research has shown that the concentration of single-parent families is also salient at the neighborhood level. Specifically, a high concentration of single-parent homes is associated with an increased likelihood of smoking cigarettes daily (Thorlindsson, Valdimarsdottir, and Hrafn Jonsson 2012), as well as an increased number of criminal offenses against property and people (Sampson and Groves 1989). Furthermore, this relationship is present in urban, as well as rural, areas (Osgood and Chambers 2000). Researchers attribute this higher level of delinquency to a lack of informal social control mechanisms and increased social disorganization (Sampson and Groves 1989). As noted earlier, this is largely due to the fact that schedules of single parents

often prohibit them from being available to supervise their children on a regular basis (Astone and McLanahan 1991). As a result, having a high proportion of single-parent families within a neighborhood directly reduces the availability of adults who would normally serve monitoring roles (Furstenberg Jr. 1993). Additionally, research has shown that individuals from neighborhoods with a high concentration of single-parent homes tend to have lower social capital than those from neighborhoods with more two-parent families (Thorlindsson et al. 2012). Finally, a high proportion of single-parent families within a neighborhood may also reduce the number of mainstream role models, especially male role models, available to neighborhood adolescents (Wilson 2012). This may cause children and adolescents to believe that working hard and behaving prudently will not lead to eventual success (Mayer and Jencks 1989).

The Importance of Peer Relationships in Adolescence

To this point, the contextual effects of single parenthood have been studied mostly within schools and neighborhoods. Therefore, the purpose of this study is to investigate the effects of single parent concentration with social networks. Peer relationships become more salient in adolescence than at any preceding point in the life course. Relationships during this period tend to increase in intensity and complexity (Brown and Larson 2004). Young people begin to spend more time with friends during this period, often with decreased oversight by adults. As a result, peers compete with adults as a significant source of influence on attitudes, activities, and emotional well-being. Additionally, friendships during this period tend to be characterized by a high degree of similarity between partners (Kao and Joyner 2004). Similar backgrounds, values, and interests increase the likelihood of a friendship forming. However, there is also a high degree of affirmation between friends, further strengthening the similarity between them (Cohen 1977;

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Kandel 1978).

Across multiple outcomes, research has shown that social acceptance is closely tied to adolescent adjustment (Bukowski and Adams 2005). For example, Cillessen and Mayeux (2004) were able to differentiate between groups of young people who were popular (widely nominated as friends and liked by several people within a social network), rejected (widely identified as disliked), neglected (rarely nominated as either liked or disliked), and controversial (widely nominated as liked and disliked). They demonstrate that adolescents differed consistently across these groups in substantial ways on multiple behavioral and emotional outcomes. This is likely due to the importance of status and prestige within adolescent social networks. Because of hierarchies that emerge within peer networks, certain crowds develop increased prestige over their peers (Brown, Bank, and Steinberg 2008). Also, certain individuals within groups tend to differentiate themselves as leaders within their cliques (Adler and Adler 1998).

Research has also highlighted the difference between peer influences from full peer networks, as opposed to groups of close friends. Savin-Williams and Berndt (1990) note that close friendship groups tend to increase self-esteem of members, provide for the exchange of information, provide social support, and contribute to an evolving sense of identity. However, Giordano (1995) notes that while these relationships among close friends are quite important, adolescents are also influenced by "the wider circle of friends," which can be understood as one's larger peer network within which the close friend group is situated. She explains that although these relationships are likely to be less intense and all-encompassing, they offer broader messages about how an individual is received within the group. These messages are often much less warm and supportive than those offered by the close friendship group. As a result, they provide young people with a broader perspective on the world and where they fit into it.

While research has clearly demonstrated that contextual effects of single parenthood in schools and neighborhoods are important for adolescent development, the research illustrating the importance of peer networks would suggest that this would be a meaningful context in which the influence of aggregate single parent effects would play a role. Because adolescents are so heavily influenced by their peers, the lack of informal social control mechanisms and increased social disorganization associated with contextual measures of single parenthood ought to be particularly strong. Therefore, I derive my first hypothesis, which is related to my first research question regarding the effects of single parent concentrations within the context of close friendship groups:

- *Hypothesis 1: A higher percentage of single parent families within one's close group of friends and larger peer network is associated with worse developmental outcomes for adolescents.*

The Frog Pond Perspective

The frog pond perspective, which is a variant of social comparison theory, was first developed by James A. Davis (1966). He found that undergraduate occupational aspirations were dependent upon their academic performance in relation to their peers. More generally, the frog pond perspective contends that students evaluate themselves in relation to others in their specific context. Thus, a context that offers objective disadvantages might also offer subjective advantages to certain individuals. To use a colloquial metaphor, a frog will feel like a bigger deal in a small pond than in a large pond (Marsh and Hau 2003). For example, Crosnoe (2009) finds that low-income students perform worse in math and science when they attend schools with a higher proportion of students from middle- or high-income families. Additionally, these low-

income students experience more psychosocial problems when they attend school with greater proportions of students from more affluent families. This suggests that going to school with peers from a similar social position (being a big frog in a small pond rather than a small frog in a big pond) is ultimately beneficial to students. Extending this perspective further, it is reasonable to expect that children from single-parent families would feel more socially excluded in settings with large proportions of peers from two-parent families. For example, a child from a single-parent household in this setting might compare herself unfavorably to her peers who possess advantages resulting from greater economic and social resources that their families provide. Thus, children from single-parent families would likely experience a greater feeling of social inclusion in a setting with a higher concentration of peers from single-parent families and, as a result, experience more favorable developmental outcomes. Therefore, based on this perspective, I developed my second hypothesis:

- *Hypothesis 2: The relationship between the concentration of single parent families and adolescent outcomes will be weaker for adolescents who live in single-parent families.*

The Resource Deficit Perspective

As noted above, researchers attribute some of the negative outcomes of children of single parents to a lack of social resources within those families. The contextual effect of single parenthood is partially the result of social disorganization and limited parental monitoring (Sampson and Groves 1989; Veysey and Messner 1999). However, adolescents from two-parent families are more likely to be supervised by parents at the individual level (Astone and McLanahan 1991). Thus, it may be the case that the these individual-level advantages are sufficient to offset the disadvantages of the contextual effects of single parenthood. Conversely,

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because adolescents in single-parent households do not possess these individual-level advantages, it stands to reason that they would fare worse than their counterparts who live in two-parent homes. Based on these theories of social resources, I developed my third hypothesis:

- *Hypothesis 3: The relationship between the concentration of single parent families and adolescent outcomes will be stronger for adolescents who live in single-parent families.*

Adolescent Developmental Outcomes

To investigate the relationship between single parent contextual effects and adolescent development, I focus on three outcomes that represent different domains of development. The first domain is academic achievement. Education is a key factor in determining economic success (Astone and McLanahan 1991) and health (Cutler and Lleras-Muney 2006, 2010) throughout life. Additionally, higher education is associated with decreased mortality (Krueger et al. 2015). Studies have repeatedly shown that children who grow up in single-parent families are less likely to complete high school or to attend college than children who grow up with two parents (Amato 1988; Astone and McLanahan 1991; Coleman 1988). Furthermore, research has established that the concentration of adolescents from single-parent families within schools is negatively related to academic achievement (de Lange et al. 2014). Thus, I expect that this relationship will extend to the contextual effects of single parenthood within social networks. Specifically, I utilize grade point average (GPA) as an indicator of academic achievement. This is particularly salient because low GPA is an indicator of weak attachment to school and a good predictor of graduation and college attendance (Manski and Wise 1983; Suh, Suh, and Houston 2007).

The second domain that I address in this research is mental health. Specifically, I focus

on depressive symptoms. Major depression disorder is a serious disorder that is common during adolescence (Emslie, Mayes, and Ruberu 2005). While only about 1% of the population under age 12 has been diagnosed, this prevalence rises to 17-25% by the end of adolescence (Kessler, Avenevoli, and Ries Merikangas 2001), with the greatest number of cases emerging between ages 15 and 18 (Hankin et al. 1998). Prior research has shown that depression is higher among children from single-parent families (Dunn et al. 1998) and that this effect on depression extends well into adulthood (Ross and Mirowsky 1999). Therefore, I expect that the contextual effects of single parenthood will play a role in depression, as well.

Finally, the third domain that I address is adolescent delinquency. Research has established that children from single-parent homes are more likely to exhibit delinquent behaviors and to be involved with the legal system (Loeber and Stouthamer-Loeber 1986). Furthermore, a link has been established between the concentration of adolescents from single-parent families within a neighborhood and the likelihood of engaging in delinquent behavior (Anderson 2002; Sampson and Groves 1989; Veysey and Messner 1999). Thus, I expect that the contextual effects of single parents within social networks will also be related to delinquent behavior.

DATA & METHODS

Data

This study uses data from the National Longitudinal Study of Adolescent to Adult Health (Add Health). Add Health is a longitudinal study of a nationally representative sample of adolescents in grades 7-12 in the United States in 1994-95. The study used a school-based design with schools stratified by region, urbanicity, school type (public, private, parochial), ethnic mix, and size. The sample included 80 high schools and their associated feeder schools. Overall, the

study contains data from 134 schools, with school sizes ranging from 100 to more than 3,000 students. From September 1994 to April 1995, students in each of these schools completed an in-school questionnaire, resulting in an in-school sample of 90,118 students. A subsample of 20,747 students was then selected to complete an in-home survey covering a variety of issues surrounding respondents' social, economic, psychological and physical well- being (Harris 2005). What makes Add Health particularly well-suited for the present study is the inclusion of rich data on social networks within schools. Students in the in-school sample were asked to nominate up to 5 male and 5 female friends within the school. Because networks are usually studied individually, I am aware of no other nationally representative study of adolescents with such data. Thus, Add Health is ideally suited to my purposes, as it allows me to explore the effects of peer network composition on adolescent developmental outcomes.

For the purposes of this study, I limit my analytic sample to include only those adolescents who responded to the in-home survey and were attending a high school (grades 9- 12 or 10-12) during the 1994/95 academic year. This is because middle school and junior high school are different from high school in terms of the associated social dynamics.

Variables

The primary variables of interest in this study characterize the concentration of friends in peer networks who live in single-parent families. Because close friendship groups are fundamentally different from full peer networks (Giordano 1995), I construct one measure based on the concentration of single-parent families within one's group of close friends and another to capture the concentration within the broader peer network. These measures were constructed using data from the in-school sample, from which I created a dichotomous measure to identify

those who were living with an unpartnered single parent.[1] This measure was then used to construct measures of single parent family concentration within networks. To maximize sample size, I coded both people who nominated a respondent as a friend and friends nominated by the respondent as friends. The first measure is the percentage of close friends from single-parent families, which includes only first-order ties. These are the individuals who were identified by the respondent as friends or who identified the respondent as a friend.

The second measure was constructed to model the concentration of single-parent families within one's entire social network. Following the example established in his earlier work (Mollborn, Domingue, and Boardman 2014), I created this measure by weighting peers within the network based on their geodesic distance. The geodesic distance between any two respondents in the same school was the number of degrees of separation between them. Someone listed as a respondent's own friend had a geodesic distance of 1, a friend's friend had a distance of 2, and so on, while two respondents with no connection had a distance of infinity. The weights were the inverse of the geodesic distance between individuals, so close friends had a weight of 1, friends of friends had a weight of 0.5, and so on. Those who were not connected through any set of social ties were dropped based upon a weight of zero. This measure accounts for the fact that those closer in social distance are more likely to have an impact on one another than those who are separated by several degrees.

Outcome measures were created using the in-home data to represent multiple domains of adolescent development that have been identified as susceptible to contextual measures of single parenthood within schools and neighborhoods. The first domain, academic achievement, was

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[1] It is important to note that this data is based on adolescent report of family structure. Brown and Manning (2009) find that adolescent and parent reports of family structure are often discrepant as a result of boundary ambiguity that exists in cohabiting stepfamilies. Unfortunately, the in-school sample includes information from adolescents only, prohibiting me from making comparisons to parent reports.

operationalized with a pre-constructed measure of overall grade-point average from student transcript data in the 1994/95 academic year.

The second domain, depression, was measured using a scale (α=0.87) constructed from 19 items from the Center for Epidemiologic Studies Depression Scale (CES-D). Items addressed the frequency of feelings (e.g., lonely, happy, fearful) within the past week (see appendix A for the complete list). Possible responses were "never or rarely," "sometimes," "a lot of the time," and "most of the time or all of the time." The CES-D has been validated and widely used across multiple population groups, including adolescents (Goodman and Whitaker 2002; Roberts, Lewinsohn, and Seeley 1991; Swallen et al. 2005). Using these 19 items, I created a standardized score with a standard deviation of 1 and a mean of 0 to facilitate comparison across groups in my analyses.

Finally, the third domain, delinquency, was measured using a scale (α=0.85) constructed from 15 items (see Appendix B for the complete list). Respondents were asked about the frequency with which they had performed several delinquent acts in the past 12 months with responses for "never," "1 or 2 times," "3 or 4 times," and "5 or more times." Delinquent behaviors included in this measure range from relatively minor exploits (e.g., lying to parents and being loud, rowdy, or unruly in a public) to serious criminal offenses (e.g., theft, fighting, and selling drugs). To construct a single measure of delinquency, I added the number of delinquent activities that respondents reported engaging in within the last 12 month. Therefore, possible values range from 0 (those who engaged in none of the delinquent behaviors even once) to 15 (those who engaged in all behaviors at least once).

At the individual level, I also used data from the in-home interview to create a categorical measure of current family structure based on adolescents' reports of who lived in their primary

household at the time of interview. Categories include "two bio parent family (includes cohabiting and married parents)," "stepparent family" (includes social and married stepparents), "single-parent family[2]," and "other family."

Additionally, I created control variables for biological sex, age, race/ethnicity[3] (non-Hispanic white, non-Hispanic black, Hispanic, and other), and parents' highest level of education (less than high school, high school graduate or equivalent, some college, and 4-year college degree or more). Those in two-parent families were coded to reflect the higher level of education between the father or mother, while those in single-parent families were coded to reflect the education level of the residential parent. I also constructed a measure of poverty (based on income and household size) that was reflective of 1995 poverty thresholds established by the U.S. Census Bureau (Baugher and Lamison–White 1996). Descriptive statistics for all variables can be found in Table 1.

Methods

I began by looking at the bivariate correlations between the contextual measures of single parenthood and each outcome. I then used ordinary least squares regression to model depression and grade-point average because both were continuous and normally distributed. I used negative binomial regression to model delinquency because it is a count variable and was over-dispersed in the sample.[4] For each outcome, I fit a model with measures of family structure and single

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[2] Because only 2.6% of respondents were in a single-father household, I created a single category for single-parent families.

[3] Respondents who identified as multiracial were asked to identify a single race that best described them. Thus, coding for these individuals reflects responses to this question.

[4] I tested an alternative specification using multilevel models to account for the nesting of networks within schools. Because results were identical, I opted for a parsimonious approach.

parenthood concentration within overall social networks. I followed this up by fitting models to include interactions between family structure and single parenthood concentration within overall social networks. Likewise, I modeled the effects of family structure and single parenthood concentration within close friend groups on each outcome, followed by interactions between family structure and single parenthood concentration within close friend groups. Finally, I used Wald tests to evaluate the significance of interactions as a block.

Table 1. Descriptive statistics of analytic sample

	Mean	Std. Error
Male	0.48	0.01
Age (years)	16.80	0.03
Race/Ethnicity		
non-Hispanic white	0.62	0.01
non-Hispanic black	0.17	0.01
Hispanic	0.15	0.01
Asian/Pacific Islander	0.06	0.00
other	0.01	0.00
Parents' Highest Level of Education		
less than high school	0.11	0.01
high school graduate/GED	0.29	0.01
some college	0.21	0.01
college graduate (4-year degree or greater)	0.39	0.01
Household Income (thousands of dollars)	49.26	1.27
Individual Family Structure		
two biological parents	0.57	0.01
stepparents	0.15	0.01
single parent	0.21	0.01
other family	0.06	0.01
% of single parent families in network	22.03	0.53
% of single parent families in friend group	21.09	0.72
Grade-Point Average	2.59	0.02
Delinquency Score	0.22	0.00
Depression Score	-0.01	0.01

All estimates include sampling weights to account for complex survey design

All analyses were performed using Stata 13.1 (StataCorp 2013) and included sampling weights, as well as strata and cluster variables to account for complex survey design. Approximately 55% of cases were missing on at least one item due to nonresponse. Therefore, I used the "mi impute chained" command in Stata to perform multiple imputation by chained equations (see Sterne et al. (2009) for a thorough review of this procedure). As noted earlier, my

sample was limited to only those respondents who identified at least one friend. Thus, imputation of values on the single parent concentration within peer network and close friend group measures was unnecessary.

RESULTS

In order to test the degree to which the contextual measures of single parenthood were associated with each of the three outcomes, I used Pearson's correlation coefficients to determine the strength and direction of associations (see Table 2). As expected, the concentration of single parents within peer networks was positively associated with depression ($p \leq 0.01$), although the association was very weak ($r=0.02$). Additionally, there was a negative association ($p \leq 0.001$), between single parents in peer networks and GPA, although it was also weak ($r=-0.15$). The concentration of single parents within close friend groups, the only significant ($p \leq 0.001$) outcomes was with GPA, which was once again weak ($r=-0.13$).

Table 2. Pearson correlation coefficients for context and outcome measures

	(1)	(2)	(3)	(4)	(5)
1. % SP Among Friends	1.000				
2. % SP Among Peers	0.860***	1.000			
3. Depression Scale	0.052**	0.064***	1.000		
4. Grade-Point Average	0.082***	0.107***	0.210***	1.000	
5. Delinquency Scale	0.028	0.022	0.249***	0.249***	1.000

All estimates include sampling weights to account for complex survey design
*** p<0.001, ** p<0.01, * p<0.05

To test my first hypothesis that the contextual effect of single parenthood is detrimental to all adolescents, irrespective of individual family structure, I regressed each outcome on family structure and the contextual measure of single parents within peer networks (in addition to sociodemographic controls). Based on tests of the functional form of single parent concentration, I determined that a quadratic term provided the best fit.[5] Results of these models are presented in

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[5] Tests with categorical measures of single parent concentration confirmed functional form.

Table 3. Model 1 shows that the effect of single parent concentration within full social networks shared a significant (p ≤0.01) negative association with GPA. The effect of single parent concentration was associated with an increase in GPA through approximately 37.2%, where it reached a minimum value. From there, GPA decreased as single parent concentration increased. Marginal effects for this relationship are presented graphically in Figure 1. Similarly, Model 2 showed that the effect of single parent concentration was also significantly associated (p≤0.05) with depression. The effect of single parent concentration was associated with a decrease in depression through a concentration value of 47.9%. From there, depression increased as the value of single parent concentration increased. Marginal effects for this relationship are presented graphically in Figure 2. Model 3 showed there is no significant association with delinquency.

In an additional test of my first hypothesis, I regressed each outcome on family structure and the contextual measure for close friend groups (in addition to sociodemographic controls) to test the degree to which single parenthood affects individuals, regardless of individual family structure. These results are presented in Table 4. There were no significant effects of single parent concentration on any of the outcomes. Based on these results, I found support for the hypothesis that contextual effects of single parenthood are significantly associated with adolescent developmental outcomes. However, the effects of single parent concentration were significant only in full peer networks.

To test my second and third hypotheses, which posited that the contextual effects of single parenthood are moderated by individual family structure, I regressed each outcome on the interaction between family structure and the concentration of single parents within peer networks. These results are presented in Table 5. None of the interactions between single parent

Table 3. Regression models predicting grade point average, delinquency, and depression as a function of single parent concentration within peer networks

VARIABLES	Model 1 GPA	Model 2 Depression	Model 3 Delinquency
Male	-0.330***	-0.153***	0.361***
	(0.0292)	(0.0158)	(0.0223)
Age (Years)	-0.0180	0.0221***	-0.0793***
	(0.0133)	(0.00453)	(0.00979)
Race/Ethnicity [Non-Hispanic White]			
Non-Hispanic Black	-0.360***	0.0814**	-0.0299
	(0.0634)	(0.0293)	(0.0620)
Hispanic	-0.185***	0.0812**	0.114+
	(0.0529)	(0.0253)	(0.0580)
Asian/Pacific Islander	0.136*	0.182***	0.0671
	(0.0650)	(0.0355)	(0.0662)
Other Race	-0.121	-0.00276	-0.0325
	(0.105)	(0.0671)	(0.0917)
Parents' Highest Level of Education [Less than High School]			
High School Graduate/GED	0.0240	-0.0845**	0.0813
	(0.0577)	(0.0277)	(0.0570)
Some College	0.264***	-0.154***	0.0706
	(0.0578)	(0.0333)	(0.0622)
College Graduate	0.464***	-0.168***	-0.00290
	(0.0575)	(0.0315)	(0.0591)
Household Income (Thousands of Dollars)	-0.229***	0.0642**	0.0213
	(0.0576)	(0.0210)	(0.0418)
Individual Family Structure [Two Biological Parents]			
Stepparents	-0.242***	0.0896***	0.116**
	(0.0418)	(0.0242)	(0.0393)
Single Parent	-0.270***	0.0827***	0.213***
	(0.0387)	(0.0168)	(0.0333)
Other Family	-0.325***	0.148***	0.145*
	(0.0628)	(0.0289)	(0.0555)
% Single Parents in Peer Network	0.00624+	-0.00354*	-0.000391
	(0.00313)	(0.00158)	(0.00258)
% Single Parents in Peer Network^2	8.38e-05**	3.69e-05*	2.59e-06
	(2.91e-05)	(1.57e-05)	(2.48e-05)
Constant	2.936***	-0.249**	2.080***
	(0.229)	(0.0823)	(0.190)
Observations	11,093	11,093	11,093

*** $p<0.001$, ** $p<0.01$, * $p<0.05$, + $p<0.1$; Robust standard errors in parentheses

Table 4. Regression models predicting grade point average, delinquency, and depression as a function of single parent concentration within close friend groups

VARIABLES	Model 1 GPA	Model 2 Depression	Model 3 Delinquency
Male	-0.331***	-0.152***	0.362***
	(0.0288)	(0.0158)	(0.0222)
Age (Years)	-0.0184	0.0225***	-0.0792***
	(0.0134)	(0.00448)	(0.00977)
Race/Ethnicity [Non-Hispanic White]			
Non-Hispanic Black	-0.331***	0.0649*	-0.0422
	(0.0532)	(0.0280)	(0.0605)
Hispanic	-0.164**	0.0672**	0.105 +
	(0.0487)	(0.0244)	(0.0571)
Asian/Pacific Islander	0.153*	0.171***	0.0596
	(0.0625)	(0.0345)	(0.0647)
Other Race	-0.106	-0.0127	-0.0356
	(0.104)	(0.0660)	(0.0918)
Parents' Highest Level of Education [Less than High School]			
High School Graduate/GED	0.0303	-0.0882**	0.0782
	(0.0586)	(0.0277)	(0.0570)
Some College	0.267***	-0.155***	0.0686
	(0.0584)	(0.0336)	(0.0623)
College Graduate	0.461***	-0.166***	-0.00234
	(0.0574)	(0.0317)	(0.0590)
Household in Poverty	-0.222***	0.0594**	0.0209
	(0.0565)	(0.0209)	(0.0416)
Individual Family Structure [Two Biological Parents]			
Stepparents	-0.244***	0.0913***	0.117**
	(0.0419)	(0.0243)	(0.0395)
Single Parent	-0.266***	0.0807***	0.211***
	(0.0386)	(0.0167)	(0.0334)
Other Family	-0.323***	0147***	0.143*
	(0.0621)	(0.0287)	(0.0553)
% Single Parents in Close Friend Group	0.00236	-0.00104	0.00187
	(0.00185)	(0.00102)	(0.00190)
% Single Parents in Close Friend Group^2	3.70e-05+	9.97e-06	-1.98e-05
	(1.88e-05)	(1.03e-05)	(1.81e-05)
Constant	2.990***	-0.283***	2.066***
	(0.229)	(0.0803)	(0.186)
Observations	11,093	11,093	11,093

*** p<0.001, ** p<0.01, * p<0.05, + p<0.1; Robust standard errors in parentheses
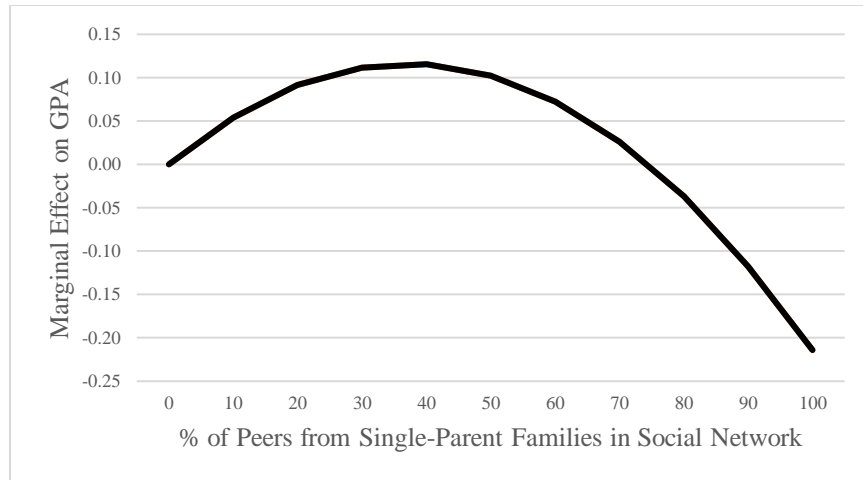
Figure 1. Marginal effect of single-parent families within social networks on GPA
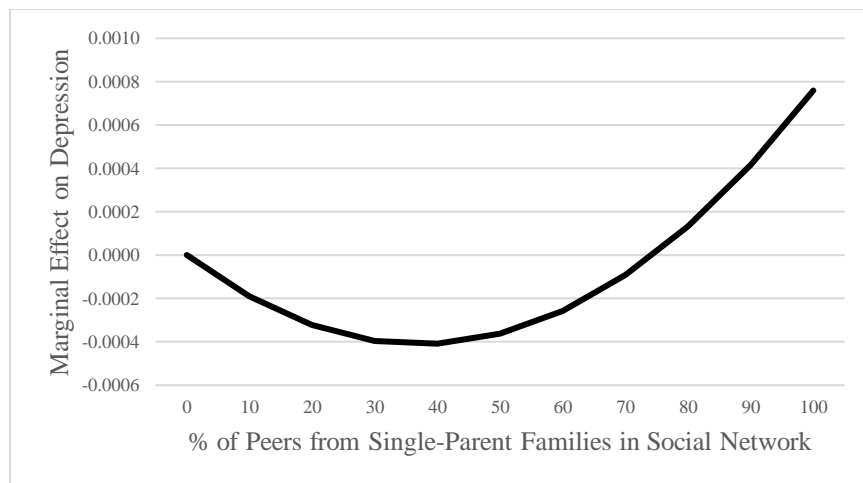

Figure 2. Marginal effect of single-parent families within social networks on depression

concentration and individual family structure are significant. Similarly, I tested the interaction

between concentration of single parents within close friend groups and individual family

structure. These results are presented in Table 6. Once again, none of the interactions are

significant. This suggests that contextual effects of single parenthood are the same regardless of

individual family structure. Thus, neither my second or third hypothesis was supported.

Table 5. Regression models predicting grade point average, delinquency, and depression as a function of single parent concentration within peer networks interacted with individual family structure

VARIABLES	Model 1 GPA	Model 2 Depression	Model 3 Delinquency
Male	-0.330***	-0.153***	0.360***
	(0.0293)	(0.0158)	(0.0223)
Age (Years)	-0.0178	0.0221***	-0.0792***
	(0.0134)	(0.00455)	(0.00979)
Race/Ethnicity [Non-Hispanic White]			
Non-Hispanic Black	-0.367***	0.0845**	-0.0317
	(0.0629)	(0.0298)	(0.0610)
Hispanic	-0.186***	0.0802**	0.116+
	(0.0527)	(0.0254)	(0.0582)
Asian/Pacific Islander	0.137*	0.182***	0.0708
	(0.0656)	(0.0356)	(0.0667)
Other Race	-0.120	-0.00248	-0.0334
	(0.104)	(0.0670)	(0.0911)
Parents' Highest Level of Education [Less than High School]			
High School Graduate/GED	0.0241	-0.0842**	0.0818
	(0.0579)	(0.0277)	(0.0572)
Some College	0.263***	-0.153***	0.0703
	(0.0579)	(0.0332)	(0.0623)
College Graduate	0.463***	-0.167***	-0.00294
	(0.0576)	(0.0314)	(0.0590)
Household Income (Thousands of Dollars)	-0.231***	0.0653**	0.0203
	(0.0573)	(0.0213)	(0.0418)
Individual Family Structure [Two Biological Parents]			
Stepparents	-0.200**	0.110*	0.0596
	(0.0736)	(0.0515)	(0.0766)
Single Parent	-0.310***	0.112**	0.163*
	(0.0841)	(0.0390)	(0.0718)
Other Family	-0.359**	0.167*	0.144
	(0.125)	(0.0704)	(0.122)
% Single Parents in Peer Network	0.00688+	-0.00344+	-0.00245
	(0.00371)	(0.00190)	(0.00339)
% Single Parents in Peer Network^2	0.000101*	4.77e-05*	2.82e-05
	(3.87e-05)	(2.18e-05)	(3.81e-05)
Family Structure $\times$ % Single Parents^2			
Stepparents $\times$ % Single Parents^2	-0.00524	-0.000199	0.00596
	(0.00502)	(0.00332)	(0.00558)
Single Parent $\times$ % Single Parents^2	0.00192	-0.000924	0.00425
	(0.00474)	(0.00261)	(0.00461)
Other Family $\times$ % Single Parents^2	0.00189	-0.00142	6.12e-05
	(0.00690)	(0.00465)	(0.00812)
Family Structure $\times$ % Single Parents			
Stepparents $\times$ % Single Parents	7.41e-05	-2.12e-05	-7.26e-05
	(5.83e-05)	(3.47e-05)	(6.35e-05)
Single Parent $\times$ % Single Parents	-4.73e-06	-1.00e-05	-4.81e-05
	(5.37e-05)	(2.91e-05)	(5.04e-05)
Other Family $\times$ % Single Parents	-6.93e-06	9.95e-06	1.21e-06
	(7.36e-05)	(5.31e-05)	(9.55e-05)
Constant	2.933***	-0.257**	2.099***
	(0.231)	(0.0840)	(0.192)
Observations	11,093	11,093	11,093

*** p<0.001, ** p<0.01, * p<0.05, + p<0.1; Robust standard errors in parentheses

Table 6. Regression models predicting grade point average, delinquency, and depression as a function of single parent concentration within close friend groups interacted with individual family structure

VARIABLES	Model 1 GPA	Model 2 Depression	Model 3 Delinquency
Male	-0.330***	-0.152***	0.361***
	(0.0288)	(0.0159)	(0.0223)
Age (Years)	-0.0183	0.0224***	-0.0790***
	(0.0134)	(0.00450)	(0.00977)
Race/Ethnicity [Non-Hispanic White]			
Non-Hispanic Black	-0.332***	0.0662*	-0.0429
	(0.0527)	(0.0284)	(0.0600)
Hispanic	-0.164**	0.0672**	0.106+
	(0.0485)	(0.0244)	(0.0572)
Asian/Pacific Islander	0.153*	0.172***	0.0611
	(0.0625)	(0.0351)	(0.0650)
Other Race	-0.107	-0.0131	-0.0364
	(0.104)	(0.0660)	(0.0917)
Parents' Highest Level of Education [Less than High School]			
High School Graduate/GED	0.0300	-0.0881**	0.0785
	(0.0587)	(0.0276)	(0.0572)
Some College	0.267***	-0.155***	0.0687
	(0.0584)	(0.0334)	(0.0623)
College Graduate	0.462***	-0.166***	-0.00215
	(0.0573)	(0.0317)	(0.0590)
Household in Poverty	-0.222***	0.0591**	0.0205
	(0.0566)	(0.0210)	(0.0415)
Individual Family Structure [Two Biological Parents]			
Stepparents	-0.229***	0.119**	0.123*
	(0.0517)	(0.0362)	(0.0535)
Single Parent	-0.268***	0.0912***	0.201***
	(0.0546)	(0.0236)	(0.0462)
Other Family	-0.320***	0.139**	0.141+
	(0.0840)	(0.0430)	(0.0803)
% Single Parents in Close Friend Group	0.00347	-0.00134	0.00166
	(0.00252)	(0.00121)	(0.00265)
% Single Parents in Close Friend Group^2	5.24e-05+	2.05e-05	-1.77e-05
	(2.79e-05)	(1.30e-05)	(2.78e-05)
Family Structure × % Single Parents^2			
Stepparents × % Single Parents^2	-0.00385	-0.00127	-0.000384
	(0.00413)	(0.00252)	(0.00468)
Single Parent × % Single Parents^2	-0.00132	0.00104	0.00126
	(0.00356)	(0.00216)	(0.00374)
Other Family × % Single Parents^2	-0.00103	0.00101	-0.000605
	(0.00510)	(0.00358)	(0.00592)
Family Structure × % Single Parents			
Stepparents × % Single Parents	4.62e-05	-3.15e-06	1.41e-06
	(4.58e-05)	(2.51e-05)	(5.05e-05)
Single Parent × % Single Parents	2.04e-05	-2.31e-05	-1.21e-05
	(3.87e-05)	(2.31e-05)	(3.92e-05)
Other Family × % Single Parents	1.45e-05	-1.28e-05	9.58e-06
	(5.48e-05)	(3.80e-05)	(6.50e-05)
Constant	2.987***	-0.287***	2.065***
	(0.228)	(0.0811)	(0.186)
Observations	11,093	11,093	11,093

*** p<0.001, ** p<0.01, * p<0.05, + p<0.1; Robust standard errors in parentheses

DISCUSSION

The percentage of children living in single-parent households has risen steadily since the middle of the twentieth century (McLanahan and Percheski 2008). Research has consistently found that children of single parents fare worse in developmental outcomes than those raised in two-parent families (Amato 2005; Brown 2010; McLanahan and Sandefur 2009). Additionally, research has shown that single parenthood has deleterious effects at the aggregate level, as well. Specifically, researchers have found that the concentration of children from single-parent families within schools (de Lange et al. 2014; Pong 1997, 1998) and neighborhoods (Anderson 2002) is associated with worse outcomes for all adolescents, regardless of own family structure. The purpose of this study was to determine whether the concentration of single-parent families within social networks is similarly associated with unfavorable outcomes associated with adolescent development.

In seeking to understand the contextual effect of single parents within social networks on adolescent outcomes, I considered the effect of single parent concentration within full peer networks, as well as within close friendship groups. I investigated these effects on outcomes from three domains of adolescent development: academic achievement, mental health, and delinquency. Across all three outcome domains, I addressed three research questions: (1) Does the concentration of single-parent families within social networks predict adolescent developmental outcomes? (2) Are these contextual effects moderated by one's own family structure? (3) How do these contextual effects differ between one's immediate circle of friends and the entire peer network?

The first research question was focused on determining whether there was a contextual effect of single parents within social networks on all adolescents, regardless of individual family

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structure. Results suggest that the concentration of single-parent families is associated with improved outcomes at lower levels of concentration for academic performance and mental health. However, this effect becomes detrimental as the concentration increases past approximately 40-50%. The reasons for the beneficial nature of single parents in lower concentrations is somewhat puzzling. However, this may suggest that adolescents benefit from heterogeneity in their networks until the contextual effect of single parenthood becomes too great and begins to have a detrimental impact.

The second research question sought to determine whether contextual effects of single parents within social networks differed based on individual family structure. Results indicated that there are no differences in the contextual effects of single parenthood. The effects of single parenthood within full peer networks was not moderated by individual family structure and there were no significant effects of single parenthood within close friend groups.

The third research question was concerned with whether the contextual effects of single parenthood differed between full peer networks and close friendship groups. Results imply that the contextual effects of single parenthood are salient only in full peer networks. This is likely due to the differences in the function of each type of relationship, as highlighted by Giordano (1995). She explains relationships with close friends tend to be largely warm and supportive, while the relationships within the "wider circle of friends" (i.e., the full peer network) are often much more critical and offer broader messages about how an individual is received in relation to peers. Given the focus on self-concept with the "Frog Pond" perspective (Marsh and Hau 2003), it makes sense that these types of appraisals would be more salient for adolescents.

This paper makes an important contribution to the literature by identifying the role of single parent contextual effects within peer networks and addressing the differing effects

between these full peer networks and close friend groups. Despite these contributions, however, this study is not without limitations. Chief among these limitations is the nature of the social network data collected. While Add Health is a great resource of network data, the way in which this data was collected may be problematic. By asking students to identify their top five female and top five male friends, researchers may have artificially constrained the size of social networks. It seems likely that some students would have been significantly more than five friends of each gender, while others may fewer friends and would not have identified five in the absence of a suggested number. Furthermore, equating friendships across genders is potentially problematic, given that the strength of social ties may differ by gender, such that adolescents may be closer with friends of the same gender. However, by asking students to name five friends of each gender, these differences in strength may have been obscured.

Another significant limitation of this study is the way in which family structure was measured in the in-school sample. Students were asked whether they lived with their biological mother, stepmother, foster mother, or adoptive mother, as well as whether they lived with their biological father, stepfather, foster father, or adoptive father. As a result, it is difficult to parse out differences by family structure outside of living with a single parent. Additionally, because of boundary ambiguity surrounding cohabiting stepparents, it is quite possible that some adolescents living in these types of families may not have identified their social stepparent (Brown and Manning 2009). Ideally, one would also have data collected from parents to address any potential disparities.

Overall, the results of this study suggest that contextual heterogeneity of family structures is beneficial to all adolescents, regardless of own family structure. Because peer networks are mostly nested within schools, district administrators and policymakers should be mindful of this

balance and ensure that adolescents from any particular family structure are not concentrated within schools.

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APPENDIX

Appendix A. Indicators used to construct depression scale

You were bothered by things that usually don't bother you.

You didn't feel like eating, your appetite was poor.

You felt that you could not shake off the blues, even with help from your family and your friends.

You felt that you were just as good as other people.*

You had trouble keeping your mind on what you were doing.

You felt depressed.

You felt that you were too tired to do things.

You felt hopeful about the future.*

You thought your life had been a failure.

You felt fearful.

You were happy.*

You talked less than usual.

You felt lonely.

People were unfriendly to you.

You enjoyed life.*

You felt sad.

You felt that people disliked you.

It was hard to get started doing things.

You felt life was not worth living.

National Longitudinal Study of Adolescent to Adult Health (Add Health) Wave 1 (1994/95).
Possible responses were "never or rarely," "sometimes," "a lot of the time," "most of the time."
* Reverse coded for consistency of meaning

Appendix B. Indicators used to construct delinquency scale

In the past 12 months, how often did you paint graffiti or signs on someone else's property or in a public place?

In the past 12 months, how often did you deliberately damage property that didn't belong to you?

In the past 12 months, how often did you lie to your parents or guardians about where you had been or whom you were with?

How often did you take something from a store without paying for it?

How often did you get into a serious physical fight?

How often did you hurt someone badly enough to need bandages or care from a doctor or nurse?

How often did you run away from home?

How often did you drive a car without its owner's permission?

In the past 12 months, how often did you steal something worth more than $50?

How often did you go into a house or building to steal something?

How often did you use or threaten to use a weapon to get something from someone?

How often did you sell marijuana or other drugs?

How often did you steal something worth less than $50?

In the past 12 months, how often did you take part in a fight where a group of your friends was against another group?

How often were you loud, rowdy, or unruly in a public place?

National Longitudinal Study of Adolescent to Adult Health (Add Health) Wave 1 (1994/95).
Possible responses were "never," "1 or 2 times," "3 or 4 times," and "5 or more times."