# Single motherhood and parent-child relations in Japan:
# The role of living arrangements

August 14, 2009

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**Abstract**

The goal of this paper is to shed light on the well-being of single-mother families in Japan. Using nationally representative survey data, we compare parent-child interactions in single-mother families and two-parent families. We pay particular attention to the ways in which relationships between family structure and parent-child interactions may be moderated by the presence of coresident grandparents. Results of baseline models indicate that, on average, single mothers report significantly lower frequency of playing with children, instructing children, and eating dinner with children. Allowing these relationships to vary by living arrangements, we see that more limited parent-child interactions are concentrated among single mothers who do not coreside with parents. We find only limited evidence that these relationships are mediated by the characteristics of single mother families. Taken as a whole, our results suggest that the rapid rise in divorce may have important implications for parent-child relationships in Japan and that the relatively high prevalence of intergenerational coresidence may temper these implications to some extent.

In the U.S. and other Western societies where levels of divorce and non-marital childbearing are relatively high, the well-being of single-parent families is a subject of great interest to scholars and policy makers. Research on outcomes associated with single parenthood has consistently demonstrated that parents (usually mothers) and children in single-parent families fare less well on a range of outcomes relative to their counterparts in two-parent families. Single mothers' poor financial circumstances are particularly well-documented (e.g., Smock, Manning, and Gupta 1999) and other studies have shown that divorce is related to lower levels of physical and psychological well-being (Amato 2000). Relative to children raised in two-parent families, those raised in single-parent families exhibit more behavioral problems, perform less well in school, complete less schooling, and are more likely to engage in risky behaviors (Amato 2001; Amato and Keith 1991; McLanahan and Sandefur 1994). These relationships, in combination with the higher prevalence of single parenthood at the lower end of the socioeconomic spectrum (Ellwood and Jencks 2004), are seen as an important mechanism in the intergenerational reproduction of inequalities/disadvantage (McLanahan and Percheski 2008).

The less favorable outcomes of children from single-parent families are, to a large extent, explained by the relatively limited economic resources of divorced and never married mothers (Carlson and Corcoran 2001; McLanahan and Sandefur 1994). Although less important than money, less effective monitoring and more limited parent-child interaction also contribute to less favorable outcomes of children from single-parent families (Thomson, Hanson, and McLanahan 1994). Family structure differences in parenting are thought to reflect the absence of a second parent, long work hours, financial stress, psychological stress, and perhaps the higher likelihood of single parenthood among less effective or less engaged parents.

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Relationships between family structure and parenting have received little attention in "strong family" countries in East Asia and Southern Europe despite recent increases in the prevalence of single-parent families. In Japan, recent increases in divorce (Raymo, Iwasawa, and Bumpass 2004) have resulted in substantial growth in the number of single-parent families – nearly all of which are single-mother families. Existing research on the U.S. offers theoretically ambiguous expectations regarding linkages between single-parenthood and children's well-being in Japan.

On the one hand, there are several reasons to expect that single motherhood may be particularly detrimental to the well-being of children in Japan. First, public policies are similar to those in the U.S. in focusing on the promotion of single mothers' employment (Abe 2008). However, stable, well-paid work opportunities for single mothers are extremely limited, especially for the large majority of Japanese women who leave the labor force prior to childbirth and thus have interrupted work histories. Full-time work opportunities are also limited by the fact that publicly-provided childcare is limited, expectations of long work hours are common, commute times are often long, and support from non-custodial fathers is extremely limited. Although the large majority of single mothers work relatively long hours, most have very low incomes, few benefits, and little job security (Abe and Oishi 2005). Second, the relationship between the investment of parental time (especially maternal time) and children's outcomes may be particularly pronounced in Japan where the educational system is extremely competitive. We are not aware of any empirical evidence that mother's time matters more for children's outcomes in Japan, but there is ample evidence to suggest that many Japanese parents believe this to be true (e.g., Hirao 2007).

On the other hand, the high prevalence of intergenerational coresidence may ameliorate the financial impact of divorce, at least for those women who are able to access this kind of support. Several analyses of U.S. data suggest that linkages between maternal employment, less intensive and lower quality parent-child interactions, and unfavorable child outcomes in single parent families may be ameliorated by support from other family members, especially the mother's parent(s) (DeLeire and Kalil 2002). This appears to be particularly true for African American single mothers and their children (Hogan, Hao, and Parish 1990; Stack 1974).

Japanese single mothers are much more likely than their American counterparts to coreside with their parents. The relatively high levels of intergenerational coresidence in Japan may play a particularly important role in ameliorating the unfavorable consequences of living in a single-parent family. Not only does coresidence (typically in a home that is owned by the grandparental generation) limit the economic strains associated with maintaining an independent residence on a relatively low income, but it may also provide important monitoring and adult-child interaction. Because many middle-aged women in Japan are not employed outside the home, coresident grandmothers are able to care for grandchildren while their single-mother daughters work. The presence of grandmothers may also facilitate parent-child interaction and improved parenting by reducing single mothers' responsibility for domestic work and limiting the stress they experience from competing work and family demands. Evidence potentially consistent with this scenario can be found in comparative studies demonstrating that relationships between single parenthood and children's educational outcomes are negligible in several Asian countries (Park 2007).

In this paper, we use nationally representative survey data on mothers of minor children in Japan to examine relationships between intergenerational coresidence and single mothers'

time spent with children.  To what extent is single parenthood associated with lower levels of parent-child interaction in Japan?  To what extent is this relationship moderated by coresidence with or residential proximity to grandparents?

**Background**

*Single parenthood and parent-child interactions*

Numerous studies in the U.S. have highlighted the importance of poverty and economic insecurity for explaining lower educational achievement of children from single-parent families (e.g., Biblarz and Gottainer 2000; McLanahan & Sandefur 1994).  Family economic status is an important predictor of children's educational outcomes and the relatively unfavorable economic circumstances of single-parent families explain some of the differences in educational outcomes by family structure.  This is particularly true for single-mother families, whose economic circumstances are typically less favorable than those of single-father families.  It is also clear that differences in other child outcomes, including behavioral problems, teen pregnancy, substance use, and employment outcomes, are also related to the less favorable economic circumstances of single-parent families (Amato 2005; McLanahan and Sandefur 1994; Thomson, Hanson, and McLanahan 1994).

However, it is also clear that income and other measures of economic well-being do not explain all of the disadvantages associated with single parenthood.  Another important factor that may contribute to remaining differences in educational outcomes between children two-parent and single-parent families is parental involvement or parenting practices.  Single parents have lower levels of involvement in monitoring and supervision relative to their married counterparts (Astone and McLanahan 1991) and these aspects of parenting have been linked to less favorable outcomes for children (Thomson, Hanson, and McLanahan 1994).

Explanations for observed relationships between single parenthood and the quantity and quality of parent-child interactions are varied. In addition to the obvious implications of having one less parent, explanations have emphasized single-mothers' relatively long work hours, limited income, and psychological stress (McLanahan and Percheski 2008; Thomson, Hanson, and McLanahan 1994). The absence of a male partner's earnings and the relatively limited human capital of single mothers contribute to economic strain which, combined with policy emphases on employment as a means to limit dependence on public transfers, necessitate relatively long work hours. Long work hours and limited income negatively impact parenting by limiting time with children and by increasing maternal stress (e.g., McLanahan and Percheski 2008; Thomson, Hanson, and McLanahan 1994). Less effective parenting may also reflect a more direct, shorter-term, increase in maternal depression following divorce (Meadows, McLanahan, and Brooks-Gunn 2008). Others have emphasized the selection of less effective or less engaged parents into single-parenthood and/or the impact of poor parent-child relations on the likelihood of divorce and single parent family formation (Painter and Levine 2000).

After demonstrating differences in the level of parental involvement by family structure, they (Astone and McLanahan 1991) assess the extent to which these differences explain differences in child outcomes by family structure. They conclude that, although parental involvement is significantly associated with educational outcomes, differences in involvement by family structure do not explain much of the difference in educational outcomes for children in two-parent and single-parent families (Astone and McLanahan 1991). In contrast, a subsequent study by McLanhan and Sandefur (1994) concluded that the role of parental involvement was relatively strong. Subsequent research has demonstrated that single-parent families are

characterized by more neglect of children and lower levels of parental involvement and supervision (Thomson, Hanson, and McLanahan 1994; Thomson, McLanahan, and Curtin 1992).

*Single parenthood in Japan*

Japan is a particularly interesting setting in which to evaluate relationships between single-parenthood and parental involvement. First, there is relatively limited heterogeneity in pathways to single parenthood. Unlike the U.S. and other western societies where non-marital childbearing is common, nearly all single-parent families in Japan are formed as a result of divorce. While recent increases in divorce (Raymo, Iwasawa, and Bumpass 2004) have resulted in a substantial increase in single-parent families, little is known about the circumstances of these families apart from the fact that nearly all mothers are employed and have relatively low earnings (Ministry of Health, Labour, and Welfare 2005). Second, a substantial proportion of divorced, single mothers coreside with their parents. Recent studies indicate that roughly one-third of single mothers in Japan coreside with parents (Ministry of Health, Labour, and Welfare 2005). In most cases, this is presumably the result of return to the parental home following divorce.

There are several estimates of the number of single-mother families in Japan. According to the National Survey of Single Mothers conducted by the Ministry of Health, Labour, and Welfare, the number of single-mother families (defined as unmarried women with child under age 20) rose by 55% in just 10 years, increasing from 789,900 in 1993 to 1,225,400 in 2003 (Zhou 2008). The proportion of single-mother households among all households with children nearly doubled from 5.3% in 1993 to 9.5% in 2003 (Zhou 2008). Estimates based on Census data provide a similar figure. Nishi and Kan (2007) estimated that the number of single-mother families (here, mothers are limited to age 15-49) increased from 1,038,459 in 2000 to 1,180,400

in 2005. In roughly two-thirds of these families, the single mother is the household head and in one-third she is part of an extended family household, presumably living with her parents. Using the data of National Livelihood Survey, Abe and Oishi (2005) find that proportion of children being raised by single mothers was 5.8% in 2001. The number of single-father families is much lower – estimated at 203,000 in 2005 (Nishi and Kan 2007).

Unlike the U.S. and many European countries, where nonmarital childbearing is common, the increase in single-parent families in Japan is due almost entirely to increases in divorce (and concurrent declines in male mortality). The number of divorces increased from 141,689 in 1980 to 254,832 in 2007 (NIPSSR 2009) with roughly one in three marriages now projected to end in divorce (Raymo, Iwasawa, and Bumpass 2004). Currently, about 60% of all divorces involve children and in 80% of those cases the mother receives full custody of all children (NIPSSR 2009). The proportion of single-mother families formed via divorce increased from 49% in 1985 to 80% in 2006 (Zhou 2008).

Three notable characteristics of single mothers in Japan are (a) their high rates of labor force participation, (b) their low earnings, and (c) the relatively high prevalence of coresidence with parents. In 2006, 85% of single mothers in Japan were employed, the second highest figure among 24 OECD countries (Zhou 2008). Despite high rates of employment, earnings are low. According to the 2005 National Livelihood Survey, the average annual income of independent single mother families is 2.33 million yen, roughly one-third the value for all households with children (Zhou 2008). In addition to pervasive gender discrimination in the labor market (Brinton 2001), single mothers' earnings capacity is hampered by a shortage of convenient childcare options and the fact that better paying jobs typically do not allow for flexible work scheduling. As a result, single mothers are typically employed in relatively unstable low-paying

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jobs, often on a part-time basis (Japan Institute for Labor Policy and Training 2001).

Furthermore, unmarried mothers lose eligibility for dependent exemptions and public child

support if the biological father recognizes the child (Kongaishi Sabetsu to Tatakau Kai 2004) and

relatively few single mothers receive any child support from the father (Ministry of Health,

Labour, and Welfare 2005). For these reasons, single-mother households have much lower

incomes than other household types (Ministry of Health, Labour, and Welfare 2004). Per capita

household income in single-mother families is 0.83 million yen, which is only about half the

amount of all households with children (Zhou 2008).

　　　High rates of labor force participation and the stress associated with work and low

income may result in single mothers spending less time with their children relative to their

married counterparts. However, it is possible that support from parents may moderate this

relationship for those women who receive such support. Results of a 2001 survey of single

mothers (conducted by the Japan Institute of Labor) document the high prevalence of

intergenerational support, with 60% of single mothers reporting that they have received some

form of support from relatives, primarily parents. The type of support is varied, with about one-

in-five single mothers reporting that they have received financial support, help taking care of

children, and help with housework and nearly one-in-three reporting assistance with housing. In

some cases, housing assistance entails help with rent or mortgage, but in the large majority of

cases this refers to coresidence with parents. According to the National Survey of Single

Mothers (conducted by the Ministry of Health, Labour, and Welfare) the proportion of single

mothers coresiding with parents was 28% in 2006 (Zhou 2008).

　　　Just as coresidence with grandparents appears to be an important strategy among lower-

income Americans (Casper and Bianchi 2002; Stack 1974), it may be that single mothers in

Japan seek to limit the economic, temporal, and emotional strains of single parenthood by coresiding with their parents. To date, very little attention has been paid to the implications of increasing single-parenthood in "strong family countries" like Japan and the ways in which the high prevalence of intergenerational coresidence and associated exchanges may limit the implications of changing family structure for interactions with children and children's subsequent well-being. If coresidence does indeed moderate differences between two-parent and single-parent families, it is important to pay particular attention to who does and who does not have access to such support. Single mothers who do not or cannot take advantage of the benefits of intergenerational coresidence may be particularly disadvantaged.

**Data and methods**

*Sample*

To evaluate relationships between family structure and parent-child interactions, we use data from the 1998 and 2003 rounds of the National Family Research of Japan (NFRJ). The NFRJ is a large, nationally representative survey of Japanese men and women age 28-77 conducted by the Japan Society for Family Sociology. The response rates were 67% in 1998 and 63% in 2003. The total number of respondents to the two surveys was 13,287. Limiting our focus to female respondents with at least one coresident child age 18 or younger and no missing data on the variables described below leaves us with an analytic sample of 2,213 respondents, 128 (6%) of whom did not have a spouse present. The large majority (84%) of these single mothers were divorced and two-thirds (63%) were living independently while 37% were coresiding with parents.

An important strength of the NFRJ data is that respondents were asked several questions about relationships with their children, including questions about how often they played with,

instructed, and ate dinner with their children during an average week. These questions offered six response options ranging from "every day" to "never" and refer to time spent with all of the respondent's children. To our knowledge, the NFRJ is the only available Japanese survey that provides this kind of information on time that parents spend engaged in specific activities with their children. One important limitation of the NFRJ data is that the age range (28 and above) precludes us from observing young mothers. To the extent that young age at marriage and childbirth is negatively associated with parental time with children, this limitation may result in underestimation of a negative relationship between single parenthood and time spent with children (especially young children).

*Variables*

Our indicator of *single parenthood* is constructed from information on marital status and age of youngest child. Women who reported at least one child age 18 and under and were not currently married were defined as single mothers. Studies comparing the circumstances of single-parent families formed by divorce, widowhood, and nonmarital childbearing have provided important insights into the relative importance of different mechanisms linking single parenthood and well-being (Biblarz and Gottainer 2000; McLanahan and Sandefur 1994) but small sample size limits our ability to conduct similar analyses. Divorced women comprise over 80% of all single mothers in our sample and the small numbers in other groups make it difficult to estimate differences by pathway to single parenthood.[1] The decision to limit our focus to women with children age 18 and under reflects the higher likelihood that children beyond high school age are living apart from mothers and expectations that measures of parent-child interaction may be

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[1] We have estimated models using only currently married and divorced women and results are, not surprisingly, similar to those based on women of all marital statuses.

fundamentally different for children beyond high school age, even if they are coresiding with mothers.

Our three measures of *parent-child interactions* are as described above. We code these measures so that higher values correspond to more time spent with children. Based on the results of preliminary analyses, we have treated these variables as interval measures. We examine each measure separately and together as an index of activity-days per week (ranging from 3-18). *Coresidence with parents* is a two-category indicator constructed from information in the household rosters. We distinguish between those who are coresiding with their own parents and those coresiding with parents-in-law. Almost all (95%) of the single mothers in intergenerational households are coresiding with their own parents.

We estimate three sets of models. In the baseline models, we include measures of single-parent status, coresidence with parents(-in-law), mother's age, previous marriage, educational attainment, age of youngest child, number of children, and survey year. *Mother's age* is a continuous variable that ranges from 28-61 in our sample, with 97% under age 50. *Previous marriage* is a dichotomous indicator of whether married mothers are in a second or higher order marriage. *Educational attainment* is a three-category measure of highest level of education attended – high school or less, junior college/vocational school, and university. Based on the results of preliminary analyses, we define *number of children* as a continuous measure ranging from 1-5 and *age of youngest child* as a dichotomous indicator that distinguishes women with preschool age children (age 0-5) or elementary school age children (ages 6-12) from those whose youngest child was at least 13 years old. A dichotomous indicator of survey year is included to account for possible temporal differences and for minor differences in the way in which the

questions about time with children were phrased.[2] We expect that time spent with children will be positively related with number of children, presence of young children, and mothers' educational attainment, but negatively related with mothers' age and previous marriage.

In the second model, we allow the coefficient for single motherhood to vary by coresidence with parents. Comparison of model fit and examination of interaction coefficients allows us to evaluate whether differences between single mothers and married mothers in the amount of time spent with children depend on whether they are living with parents. In the third model, we add measures of time, money, and emotional stress that may be related with single parenthood, coresidence with parents, and interactions with children. *Mothers' work hours* is calculated as the sum of reported hours spent per day at work and commuting. *Household income* adjusted for family size is the reported household income divided by the square root of household size (Smeeding, Rainwater, and Burtless 2001). *Mothers' emotional health* is measured using a 12-item version of the CES-D index. The results presented below are based on observations with no missing data on any of the covariates described below. In subsequent revisions, we will use multiple imputation techniques to limit the number of observations lost to missing data.

In research on single-parent families in the U.S., a great deal of effort has been invested in identifying the extent to which observed differences between single-parent and two-parent families are causal or correlational (e.g., Cherlin et al. 1991; Painter and Levine 2000).

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[2] In the 1998 survey, questions about time with children were asked about all children in general. In 2003, separate questions were asked about time with each of the three oldest children (only 3% of our sample has more than 3 children). Based on preliminary analyses, we have used the maximum reported value for each type of interaction reported in the 2003 survey.

Theoretical linkages between single-parenthood and parenting are well established but it is also possible that causal relationships run in the opposite direction as well, with less committed or less effective parents more likely to divorce. It is also possible that poor parent-child relationships are a reason for divorce. These are important questions but are not the central focus of this study. We are less interested in the mechanisms underlying relationships between single-parenthood and parent-child interactions and more interested in assessing whether any such relationships may be moderated by coresidence with parents. This leads to a related concern about endogeneity. Our guiding hypothesis is that coresidence with parents may result in higher levels of parent-child interaction by providing resources that limit single mothers' need to work long hours as well as their financial and psychological stress. It may be however, that more effective and engaged parents are more likely to coreside with their parents. This might reflect a higher desire to access grandparental support and/or better relationships between single mothers and their own parents. In the results presented below we do not make any efforts to deal with this potential endogeneity bias. In subsequent analyses, we will use instrumental variables models in an attempt to account for informative selection into intergenerational coresidence.

**Results**

In Table 1, we present descriptive characteristics of the sample by single-parenthood status. The first several rows show that the mean values of the parent-child relationship measures are lower among single mothers. These differences are statistically significant for each of the four measures. In addition to lower levels of interaction with their children, single mothers differ from their married counterparts in several other ways. They are more likely to coreside with parents (.36 vs. .27), are slightly older on average (39 vs. 38), have markedly lower educational attainment (.79 vs. .60 have a high school education or less), have fewer children and are less

likely to have a young child. Consistent with the results of existing research summarized above, single mothers work more than their married counterparts (6.5 vs. 3.9 hours per day), have significantly lower size-adjusted household income (1.8 vs. 3.4 million yen per year), and have higher values on the CES-D scale (21 vs. 19).

[Table 1 about here]

Results of models for the parent-child interaction index, time spent playing with children, instructing children, and eating dinner with children are presented in Tables 2-5. The first column of Table 2 shows that single mothers spend significantly less time interacting with children net of differences in living arrangements, age, previous marriage, educational attainment, age of children, number of children and survey year. Other coefficients indicate that interaction with children is negatively related with age and number of children and positively related with educational attainment and presence of preschool or elementary school children.

Extending the baseline model to allow the relationship between family structure and time playing with children to vary by living arrangements produces ambiguous results. On the one hand, the interaction coefficient is not statistically significant and Model 2 does not fit the data better than Model 1 (results of F test not shown). On the other hand, the coefficient for the interaction between single-parenthood and coresidence with parents is large and positive and the sum of the coefficients for single-parent family (-1.05), coresidence (-.07), and their interaction (.42) is not significantly different from zero. In other words, single mothers living with parents do not differ from their non-coresident married counterparts in terms of time spent interacting with their children. Only single mothers living apart from parents spend less time playing with children relative to women in the reference category. These results are consistent with the conjecture that support from coresident parents facilitates parent-child interaction among single

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mothers. This interpretation depends on the choice of reference category, however. The time that non-coresident single mothers spend interacting with children is significantly lower than for their married counterparts but does not significantly differ from single mothers living with parents.

Model 3 shows that lower parent-child interactions among independently residing single mothers are not explained by differences in time, money, or stress. The difference between single mothers living alone and married mothers living alone is attenuated (-.75) but remains statistically significant while the difference between coresident single parents and coresident married parents (-.46 = -.75 + .29) is not different from zero.

[Table 2 about here]

Results are very similar for the first two models of time spent playing with children and time spent instructing children in Tables 3 and 4, respectively. Model 1 shows that unmarried parents spend less time, on average, playing with and instructing their children. The magnitude of the coefficients is the same for the two outcomes (-.34 and -.35, respectively). In Model 2, the coefficients for single-parent family remain large, negative, and statistically significant whereas the interactions between single motherhood and coresidence with parents are positive, but not statistically different from zero. The only group that is significantly different from the reference category of married mothers living apart from parents(-in-law) is non-coresident single mothers. Again, the magnitude of this difference is similar for time playing with children (-.40) and time instructing children (-.45).

The results of Model 3 are different from those in the model for the interaction index, however. Net of differences in work hours, household income, and emotional well-being, differences between single mothers and married mothers are no longer statistically significant.

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Relative to married women living apart from parents(-in-law), the measure of time spent playing with children is .10 higher for coresident married women, .05 lower for coresident single mothers, and .30 lower for non-coresident single mothers. None of these differences is significantly different from zero (although the difference between non-coresident single mothers and their married counterparts is different from zero at $p < .10$). The corresponding figures in the model for time spent instructing children are .02 higher, .04 lower, and .26 lower, respectively.

Lower levels of household income and higher levels of maternal stress do little to help us understand the lower levels of parent-child interaction among single mothers living on their own observed in Model 2 (results not shown). In both cases, the shorter time that non-coresident single mothers spend with their children reflects their longer work and commuting hours. This is an important finding in light of current policy emphases on encouraging employment as a means of reducing single mothers' reliance on public support. Other coefficients in Model 3 show that, as in Table 2, interaction with children is negatively related with age, work hours, and CES-D score but positively related with educational attainment and presence of preschool or elementary school children. Number of children and household income are both negatively related to time spent playing with children but are unrelated to time spent instructing children.

[Tables 3 and 4 about here]

The results of models for time spent eating dinner with children in Table 5 are somewhat different. As with the other measures of parent-child interactions, single mothers eat dinner with children less frequently (-.23) than married mothers. This comparison is true only for married mothers who are not coresiding with parents(-in-law) as coresidence is associated with significantly lower(-.11) frequency of eating dinner with children. In contrast to the results in

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Tables 3 and 4, there is no evidence that the relationship between single parenthood and frequency of eating dinner with children depends on coresidence with parents. The coefficient for the interaction between single parenthood and coresidence in Model 2 is -.02. Results are largely unchanged in Model 3. Net of time spent working and commuting, household income, and CES-D, frequency of dinner with children remains lower for single mothers.

[Table 5 about here]

**Discussion**

In this paper, we have described differences in single and married mothers' time with children and have assessed the extent to which these differences are moderated by coresidence with parents. We find that, as in the U.S., parent-child interactions are lower for single mothers in Japan. Baseline models indicated that single mothers spend less time, on average, playing with, instructing, and eating dinner with their children. These findings are important in light of recent increases in divorce in Japan, where roughly one-third of marriages are now projected to end in divorce and where support from non-custodial fathers is extremely limited. They are also important in light of evidence that maternal investment in children's education is particularly important in Japan and evidence that divorce is increasingly concentrated at the lower end of the socioeconomic spectrum (Ono 2009; Raymo, Iwasawa, and Bumpass 2004). To the extent that the children of less-educated parents are increasingly likely to live in single-parent families (relative to their counterparts with more highly educated parents) and have more limited parent-child interaction as a result, the relationships we document may have important implications for the intergenerational transmission of disadvantage in Japan. This may be particularly important given our finding of a strong positive relationship between maternal educational attainment and time spent with children, net of family structure and other relevant characteristics.

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These basic findings are very similar to patterns observed in the U.S. One important difference suggested by our results is that coresidence with (grand)parents may partially offset the implications of divorce for parent-child interactions in Japan (and perhaps in other "strong-family" countries). We found that the only family type in which parent-child interactions were significantly lower than in two-parent, non-coresident families was single-parent, non-coresident families. These findings are consistent with other studies showing that the disadvantages associated with single parenthood are relatively limited in East Asian countries including Japan (Park 2007) and highlight the potential importance of access to parental support (including, but not limited to, coresidence) as an important dimension of stratification among the growing population of single-parent families in Japan.

These findings represent an important step in understanding the potential implications of increases in single parenthood in Japan, but our analyses are limited in many important ways. First, the number of single-parent families in our sample is small. Without a larger sample, it is difficult to estimate relationships of interest with precision. Second, the NFRJ survey did not collect any direct measures of children's well-being. Although parental time with children is a theoretically and empirically important correlate of children's outcomes, it does not allow us to make any direct inferences about relationships between single-parenthood and outcomes for children that we are ultimately interested in. A particularly important barrier to such inferences is the lack of information about grandparent's time with children or father's time with children. Focusing on time with children from the mother's perspective rather than from the child's perspective understates adult-child interaction in a way that impacts our ability to even make indirect inferences about linkages between family structure and children's outcomes. If the coresident parents of single mothers not only facilitate mother-child interaction, but also provide

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another source of quality adult-child interaction, the relatively disadvantageous position of non-coresident single mothers may be even more extreme than suggested by our results.

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Table 1: Descriptive statistics, by family structure

| Variable | Two parent family | Single parent family |
|---|---|---|
| *Frequency of playing with children* | 4.36 | 3.72 |
| *(s.d.)* | (1.59) | (1.61) |
| *Frequency of instructing children* | 4.12 | 3.61 |
| *(s.d.)* | (1.50) | (1.43) |
| *Frequency of eating dinner with children* | 5.79 | 5.52 |
| *(s.d.)* | (0.67) | (0.91) |
| *Frequency of interacting with children index* | 14.28 | 12.87 |
| *(s.d.)* | (2.88) | (2.89) |
| *Living arrangements* | | |
| Coresiding with parents(-in-law) | 0.27 | 0.36 |
| Not coresiding | 0.73 | 0.64 |
| *Age* | 37.78 | 39.21 |
| *(s.d.)* | (5.68) | (5.87) |
| *Remarried* | | |
| No | 0.96 | 1.00 |
| Yes | 0.04 | 0.00 |
| *Educational attainment* | | |
| High school or less | 0.60 | 0.79 |
| Junior college/vocational school | 0.28 | 0.15 |
| University | 0.12 | 0.06 |
| *Preschool or elementary school age child* | | |
| No | 0.57 | 0.79 |
| Yes | 0.43 | 0.21 |
| *Number of children* | 2.03 | 1.78 |
| *(s.d.)* | (0.75) | (0.79) |
| *Survey year* | | |
| 1998 | 0.48 | 0.40 |
| 2003 | 0.52 | 0.60 |
| *Hours per day working and commuting* | 3.92 | 6.52 |
| *(s.d.)* | (3.94) | (3.76) |
| *Work hours missing* | | |
| No | 0.96 | 0.97 |
| Yes | 0.04 | 0.04 |
| *Equivalent household income* | 3.35 | 1.83 |
| *(s.d.)* | (1.54) | (1.45) |
| *Household income missing* | | |
| No | 0.91 | 0.97 |
| Yes | 0.09 | 0.03 |
| *CES-D* | 19.06 | 20.98 |
| (s.d.) | (5.37) | (6.06) |
| *CES-D missing* | | |
| No | 0.96 | 0.96 |
| Yes | 0.03 | 0.04 |
| N | 1,859 | 107 |
| Proportion of total N | 0.95 | 0.05 |

Table 2: Estimated coefficients from OLS regression model for the parent-child interaction index

| Variable | Model 1 | Model 2 | Model 3 |
|---|---|---|---|
| *Family structure* | | | |
| Two-parent family (ref) | 0.00 | 0.00 | 0.00 |
| Single-parent family | -0.91 ** | -1.05 ** | -0.75 * |
| *Living arrangements* | | | |
| Coresiding with parents(-in-law) | -0.05 | -0.07 | 0.05 |
| Not coresiding (ref) | 0.00 | 0.00 | 0.00 |
| *Family structure x Living arrangements* | | | |
| Single parent and coresiding | | 0.42 | 0.29 |
| *Age* | -0.14 ** | 0.14 ** | -0.13 ** |
| *Remarried* | | | |
| No (ref) | 0.00 | 0.00 | 0.00 |
| Yes | -0.40 | -0.40 | -0.30 |
| *Educational attainment* | | | |
| High school or less (ref) | 0.00 | 0.00 | 0.00 |
| Junior college/vocational school | 0.32 * | 0.32 * | 0.29 * |
| University | 0.85 ** | 0.85 ** | 0.87 ** |
| *Preschool or elementary school age child* | | | |
| No (ref) | 0.00 | 0.00 | 0.00 |
| Yes | 1.37 ** | 1.36 ** | 1.16 ** |
| *Number of children* | -0.17 * | -0.17 * | -0.16 * |
| *Survey year* | | | |
| 1998 (ref) | 0.00 | 0.00 | 0.00 |
| 2003 | 0.64 ** | 0.64 ** | 0.59 ** |
| *Hours per day working and commuting* | | | -0.11 ** |
| *Work hours missing* | | | |
| No (ref) | | | 0.00 |
| Yes | | | 0.56 # |
| *Equivalent household income* | | | -0.03 * |
| *Household income missing* | | | |
| No (ref) | | | 0.00 |
| Yes | | | -0.07 |
| *CES-D* | | | -0.04 ** |
| *CES-D missing* | | | |
| No (ref) | | | 0.00 |
| Yes | | | 0.16 |
| Constant | 18.64 ** | 18.65 ** | 19.69 ** |
| N | 1,896 | 1,896 | 1,896 |
| df | 9 | 10 | 16 |
| $R^2$ | 0.23 | 0.23 | 0.26 |

# p<.10, * p<.05, **p<.01

Table 3: Estimated coefficients from OLS regression model of frequency of playing with children

| Variable | Model 1 | Model 2 | Model 3 |
|---|---|---|---|
| *Family structure* | | | |
|   Two-parent family (ref) | 0.00 | 0.00 | 0.00 |
|   Single-parent family | -0.34 * | -0.40 * | -0.30 # |
| *Living arrangements* | | | |
|   Coresiding with parents(-in-law) | 0.06 | 0.05 | 0.10 |
|   Not coresiding (ref) | 0.00 | 0.00 | 0.00 |
| *Family structure x Living arrangements* | | | |
|   Single parent and coresiding | | 0.18 | 0.15 |
| *Age* | -0.08 ** | -0.08 ** | -0.08 ** |
| *Remarried* | | | |
|   No (ref) | 0.00 | 0.00 | 0.00 |
|   Yes | -0.06 | -0.06 | -0.02 |
| *Educational attainment* | | | |
|   High school or less (ref) | 0.00 | 0.00 | 0.00 |
|   Junior college/vocational school | 0.13 # | 0.13 # | 0.13 # |
|   University | 0.39 ** | 0.39 ** | 0.42 ** |
| *Preschool or elementary school age child* | | | |
|   No (ref) | 0.00 | 0.00 | 0.00 |
|   Yes | 1.04 ** | 1.04 ** | 0.94 ** |
| *Number of children* | -0.14 ** | -0.14 ** | -0.14 ** |
| *Survey year* | | | |
|   1998 (ref) | 0.00 | 0.00 | 0.00 |
|   2003 | 0.77 ** | 0.77 ** | 0.75 ** |
| *Hours per day working and commuting* | | | -0.05 ** |
| *Work hours missing* | | | |
|   No (ref) | | | 0.00 |
|   Yes | | | 0.11 |
| *Equivalent household income* | | | -0.04 # |
| *Household income missing* | | | |
|   No (ref) | | | 0.00 |
|   Yes | | | -0.16 |
| *CES-D* | | | -0.02 ** |
| *CES-D missing* | | | |
|   No (ref) | | | 0.00 |
|   Yes | | | 0.25 |
| Constant | 6.68 ** | 6.69 ** | 7.38 ** |
| N | 1,900 | 1,900 | 1,900 |
| df | 8 | 10 | 16 |
| R2 | 0.38 | 0.38 | 0.40 |

# p<.10, * p<.05, **p<.01

Table 4: Estimated coefficients from OLS regression model of frequency of instructing children

| Variable | Model 1 | Model 2 | Model 3 |
|---|---|---|---|
| *Family structure* | | | |
|   Two-parent family (ref) | 0.00 | 0.00 | 0.00 |
|   Single-parent family | -0.35 * | -0.45 * | -0.26 |
| *Living arrangements* | | | |
|   Coresiding with parents(-in-law) | 0.00 | -0.02 | 0.02 |
|   Not coresiding (ref) | 0.00 | 0.00 | 0.00 |
| *Family structure x Living arrangements* | | | |
|   Single parent and coresiding | | 0.29 | 0.20 |
| *Age* | -0.05 ** | -0.05 ** | -0.05 ** |
| *Remarried* | | | |
|   No (ref) | 0.00 | 0.00 | 0.00 |
|   Yes | -0.40 * | -0.40 * | -0.35 * |
| *Educational attainment* | | | |
|   High school or less (ref) | 0.00 | 0.00 | 0.00 |
|   Junior college/vocational school | 0.18 * | 0.18 * | 0.15 # |
|   University | 0.45 ** | 0.45 ** | 0.40 ** |
| *Preschool or elementary school age child* | | | |
|   No (ref) | 0.00 | 0.00 | 0.00 |
|   Yes | 0.29 ** | 0.29 ** | 0.23 ** |
| *Number of children* | -0.05 | -0.05 | -0.03 |
| *Survey year* | | | |
|   1998 (ref) | 0.00 | 0.00 | 0.00 |
|   2003 | -0.01 | -0.01 | -0.02 |
| *Hours per day working and commuting* | | | -0.04 ** |
| *Work hours missing* | | | |
|   No (ref) | | | 0.00 |
|   Yes | | | 0.42 * |
| *Equivalent household income* | | | 0.04 |
| *Household income missing* | | | |
|   No (ref) | | | 0.00 |
|   Yes | | | 0.06 |
| *CES-D* | | | -0.01 # |
| *CES-D missing* | | | |
|   No (ref) | | | 0.00 |
|   Yes | | | -0.12 |
| Constant | 5.90 ** | 5.91 ** | 6.13 ** |
| N | 1,898 | 1,898 | 1,898 |
| df | 9 | 10 | 16 |
| R2 | 0.08 | 0.08 | 0.10 |

# p<.10, * p<.05, **p<.01

Table 5: Estimated coefficients from OLS regression model of frequency of eating dinner with childre

| Variable | Model 1 | Model 2 | Model 3 |
|---|---|---|---|
| *Family structure* | | | |
|   Two-parent family (ref) | 0.00 | 0.00 | 0.00 |
|   Single-parent family | -0.23 ** | -0.22 * | -0.20 * |
| *Living arrangements* | | | |
|   Coresiding with parents(-in-law) | -0.11 ** | -0.10 ** | -0.08 * |
|   Not coresiding (ref) | 0.00 | 0.00 | 0.00 |
| *Family structure x Living arrangements* | | | |
|   Single parent and coresiding | | -0.02 | -0.03 |
| *Age* | -0.01 # | -0.01 # | 0.00 |
| *Remarried* | | | |
|   No (ref) | 0.00 | 0.00 | 0.00 |
|   Yes | 0.07 | 0.07 | 0.08 |
| *Educational attainment* | | | |
|   High school or less (ref) | 0.00 | 0.00 | 0.00 |
|   Junior college/vocational school | 0.02 | 0.02 | 0.02 |
|   University | 0.02 | 0.02 | 0.05 |
| *Preschool or elementary school age child* | | | |
|   No (ref) | 0.00 | 0.00 | 0.00 |
|   Yes | 0.04 | 0.03 | 0.00 |
| *Number of children* | 0.02 | 0.02 | 0.01 |
| *Survey year* | | | |
|   1998 (ref) | 0.00 | 0.00 | 0.00 |
|   2003 | -0.13 ** | -0.13 ** | -0.14 ** |
| *Hours per day working and commuting* | | | -0.02 ** |
| *Work hours missing* | | | |
|   No (ref) | | | 0.00 |
|   Yes | | | 0.03 |
| *Equivalent household income* | | | -0.03 * |
| *Household income missing* | | | |
|   No (ref) | | | 0.00 |
|   Yes | | | 0.02 |
| *CES-D* | | | 0.00 |
| *CES-D missing* | | | |
|   No (ref) | | | 0.00 |
|   Yes | | | 0.05 |
| Constant | 6.08 ** | 6.08 ** | 6.22 ** |
| N | 1,903 | 1,903 | 1,903 |
| df | 9 | 10 | 16 |
| R2 | 0.02 | 0.03 | 0.05 |

# p<.10, * p<.05, **p<.01