Culture and Family Life: Three Studies on Family and Marriage Relationships across Cultures

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ABSTRACT

This dissertation explores how family and marriage relationships vary according to the culture in which they occur. Based on the individualism/collectivism framework about cultural variations in familial beliefs across countries, I study three topics of family and marriage relationships across cultures. In the first study, I examine how 17 member countries of Organisation of Economic and Co-operation and Development (OECD) differ culturally in older adults' preference for family elder care. I find that older adults from countries with more traditional values that emphasize the importance of a strong parent-child tie are more likely to prefer family care rather than formal care than those from more secular-rational countries with less emphasis on the parent-child tie; the cultural difference gets smaller at a higher level of individual family income. In the second study, I select China as a representative of the collectivist culture, and look into how the collectivist culture and older parents' filial beliefs shape the intergenerational relationship in China. I find that patrilocal and patrilineal traditions are still prevail in China. A highly cohesive intergenerational relationship people idealize in the collectivist culture is more common between older parents and married sons, and least common between older parents and married daughters. In the third study, I compare an individualist society, the U.S., and China, a collectivist society to test whether marriage also isolates people from their informal social network in China as observed in the U.S. I find that marriage does not isolate but integrates people into their informal social network in China, while marriage isolate people in the U.S. The three studies present new evidence on how marriage and family experiences differ due to different cultural beliefs about family, and under what conditions the cultural influences are weakened or reinforced.

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GENERAL AUDIENCE ABSTRACT

People tend to think and behave according to their individual cultural beliefs and value system and influenced by the cultural environment they live in. Three studies in this dissertation examine how the macro cultural environment and individual beliefs about the family and family relationships influence 1) the preference for family elder care in 17 countries in Europe, North and South America, and East Asia; 2) the intergenerational relationship in China; and 3) the marriage effect on socializing with friends, neighbors, and relatives in the collectivist China and the individualist U.S. In the first study, I find that the preference for family elder care is stonger among older adults from more traditional countries that value family traditions and strong parent-child ties than those from countries with less emphasis on family traditions and the parent-child tie. The cultural influence gets weaker as older adults' family income increases. In the second study, I find that intergenerational relationship is still very traditional in China. A highly cohesive relationship idealized in the collectivist culture is more common between older parents and their married sons, and least common between older adults and married daughters. In the third study, I find that, compared to the never married and the previously married, married Chinese do not socialize less often with friends, and tend to socialize more often with neighbors and relatives. However, married Americans socialize less often with all these three groups of people in their informal social network than the unmarried. All three studies present new evidence on how marriage and family experiences differ due to different cultural beliefs about family, and how the cultural influence would change according to individuals' social conditions.

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CHAPTER 1: INTRODUCTION

Comparative research provides unique insights about how the characteristics of societies influence the behavior of individuals in marriage and the family that are universal social institutions around the world (Lee 1999). Researchers can test existing theories in different social contexts and develop new theories to embrace the diversity in societal characteristics. This dissertation explores how family and marriage relationships vary according to the culture in which they occur. While culture could refer to a rich complex of meanings, beliefs, practices, symbols, norms, and values prevalent among people in a society, I am interested in familial beliefs—cultural beliefs about the family and the relationship between individuals and their family, and the influence of familial beliefs on how individuals perceive and behave in family. I aim to expand current cross-cultural research literature on marriage and the family by testing existing theoretical frameworks and propositions in different cultural and social contexts.

Two conceptual frameworks inquire into cross-cultural variations in familial beliefs: individualism/collectivism and the Inglehart—Welzel cultural map (Inglehart and Baker 2000). Beliefs about the importance of the group wellbeing to a person's life and the interdependence among in-group members are among the indicators of individualism/collectivism (Hofstede 2001; Triandis 1995). This framework is particularly useful for studying families across cultures, because it focuses on how different cultures define the relationship between individuals and their in-groups (or collectives). In-groups, according to Triandis (1995: 9), are "groups of individuals about whose welfare a person is concerned, with whom that person is willing to cooperate without demanding equitable returns, and separation from whom leads to anxiety".

Family is often the first and the primary in-group that a person would associate themselves with around the world. Individuals socialized in the individualist culture value independence from their in-groups. Everyone is expected to look after themselves and their immediate nuclear family. They would prioritize their personal goals over those of their in-groups, especially when the two are in conflict. On the contrary, people from a collectivist society are socialized to have a strong and cohesive relationship with their in-groups. Family would refer to members from both the nuclear and the extended families. The commitment to the collective and its wellbeing is a virtue and the responsibility for everyone involved in the in-group throughout people's lifetime. A family member's individual fulfillment and prosperity have the priority over the family collectivist interests in individualist cultures, whereas collectivist cultures emphasize each family member's duty and contribution to the integrity and prosperity of the family as a whole.

The differences between individualist and collectivist cultures manifest in various aspects of family life, including family structure and behavior in the family. Involvement with the extended family is often more intense in collectivist societies than individualist societies (Goodwin 1999). The collectivist culture explains why in some more economic advanced societies, such as Japan and South Korea, people still spend substantial time and efforts to maintain close relationships with relatives while they live separately but not far from extended family members. Empirical evidence shows that adults from collectivist societies have more frequent contacts with relatives, including parents, have higher levels of exchanges of money and instrumental support with parents (Bian and Logan 2001), and feel a stronger sense of responsibilities for their parents (Whyte 2003). On the other hand, nuclear families in individualist societies are more isolated

geographically and psychologically from their extended family (Georgas 2003). In addition, patrilocal and patrilineal traditions are stronger in collectivist societies (e.g. China, Iran, and Turkey). In these societies, married women would leave their family of origin to live with their husbands' family and take up the majority load of family care in their husbands' family. Family name and legacy could only be passed down to sons rather than daughters. In individualist societies (e.g. the U.S., Britain, and Germany), relatives from both sides of the family are of similar important (Goodwin 1999).

The Inglehart-Welzel cultural map is developed based on the World Values Survey with two cultural dimensions: secular-rational/traditional and survival/self-expression (Inglehart and Baker 2000). The secular-rational/traditional dimension directly taps the cultural variation in familial values. Societies high in the traditional value place emphasis on religion, family traditions, parent-child ties, and deference to authority, whereas societies that have a high secular-rational value place less emphasis on those aspects. According to this dimension, individuals from more traditional societies value a parent-child relationship that is highly interdependent. For them, it is important that parents and children can rely on each other unconditionally. Childrearing should focus on teaching them how to be obedient instead of being independent and determined. Those traditional family beliefs are consistent with normative childrearing practices often found in collectivist societies (Triandis 1995). Individuals from countries with higher scores on the traditional value are often confirmists of thoes family traditions. A non-normative family life trajectory, e.g., delay of partnership and childlessness, increases the likelihood of feeling lonely in older adulthood for those from traditional countries, but

not for those from more secular-rational countries (Zoutewelle-Terovan and Liefbroer 2017).

A country's rating on the secular-rational/traditional value is highly associated with its levels of industrialization and urbanization (Inglehart 2007). The rising sense of "extential security" due to economic development tends to produce a shift toward secular values. Religion and interdependent family relationships thus become less important for survival. The link between the secular-rational/traditional values and the instinct for survival could explain why traditional individuals in Europe are more likely to associate their job satisfaction with the overall life satisfaction, whereas such association is weaker among more secular-rational Europeans (Georgellis and Lange 2012). Therefore, we find most individualist countries with advanced economies are rated as secular-rational, and majority of developing countries widely considered as collectivist societies are rated as more traditional. However, there are some exceptions. For example, the U.S., a widely recognized as an highly individualist country (Hofstede 2001), is high in the traditional values according to the World Values Survey, with levels of religiosity and national pride comparable to those found in developing countries. A same pattern is also found in other English speaking countries, such as Australia, Canada, Great Britain. Collectivist countries, such as Japan and South Korea, are high in the secular-rational value. As Inglehart (2007) argues, a society's cultural heritage is also strong force shaping its secular-rational/traditional values, in addition to the economic development. For exmple, the prominent presence of religion in Americans' daily life places the U.S. with other traditional countries, while the Confucian-influenced Japan is relatively secular and rational.

Despite its limited comparability with the individualism/collectivism framework, cross-country data of this dimension is public available (World Values Survey 1981-2014) for researchers to utilize in multi-national comparative studies. With some exceptions, more secular-rational societies most likely are individualist societies, and more traditional societies are also collectivist societies.

This dissertation consists of three studies on the preference for family elderly care (Study One), the intergenerational relationship type (Study Two), and the marriage effect on private social life (Study Three). Informed by the two frameworks, I expect to find that the family and marriage experience in individualist countries are different from collectivist countries in the above three aspects of family life, because of their cultural beliefs about the family and family relationships.

The first study focuses on the influences of individual characteristics (e.g., age, gender, and health), country-level structural factors (e.g., governmental provision of care) and cultural orientation on secular-rational/traditional values, and their interactions on older adults' care preferences (family care or formal care) in 17 member countries of the Organisation for Economic Co-operation and Development (OECD). I use data from the 2012 International Social Survey Programme (ISSP). This study extends previous research on cross-national studies on care preference (Mair, Quiñones,and Pasha 2015; Mair, Chen, Liu, and Brauer 2016). This study is among the first comparative studies of care preference that includes countries outside Europe and North America, adding Japan, Korea, Chile and Mexico in the analysis[1]. This study also looks at the interactive effects between individual-level factors and country-level factors, which is not examined

[1] The study by Mair and colleagues (2016) includes Chile, Japan and the Philippines in their analytical sample.

extensively by previous studies. I use the secular-rational/traditional values from World Values Survey (1981-2014) to assess the effect of the familial beliefs at the country level. I expect to find that the preference for family elder care is more prevalent in more traditional countries than more secular-rational countries.

In the second study, I use latent class analysis (LCA) to construct a typology of intergenerational relationships in China, based on the intergenerational solidarity framework and the intergenerational ambivalence perspective. I extend Guo and colleagues' study (2012) of intergenerational relationships in rural China by using national data, China Longitudinal Aging Social Survey 2012 (CLASS). I also extend the previous study by including measures of filial piety to examine how parent-adult child relationships in China can also be influenced by parents' familial beliefs about the relationship. In the second part of this study, I examine how parents and children's characteristics can explain the diversity in intergenerational relationship types both between and within parents (families).

In the third study, I test the "greedy marriage" proposition (Coser and Coser 1974) in China, and compare the effects of marital status on informal social relationships in China to those in the U.S. I want to address the question: whether the isolating effect of marriage on informal social life is a cross-cultural phenomenon regardless of social norms and individual practices in marriage, or, it is a cultural-sensitive social phenomenon. Since they are expected to have a larger social network with extended families due to its collectivist culture, married Chinese might have to divert time and energy from other informal social relationships. Therefore, I expect to find that the isolating effect of marriage is greater in China than the U.S., in terms of socializing with

friends and neighbors. Socializing with relatives would be more frequent among married Chinese than among the unmarried one, while it would be less frequent among married Americans than among unmarried Americans. First, I conduct the analysis on how marriage influences socializing with friends, neighbors and relatives in China and the United States by using the Chinese General Social Survey 2011-2013 and the General Social Survey (U.S.) 2004-2016, respectively. I test whether marriage effects are different between China and the U.S. Secondly, I look into the effects of gender and other structural factors related to life course, household structure and socio-economic status in addition to the marriage effect found/not found in the first part.

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CHAPTER 2: STUDY ONE—Family Care or Formal Care: An Examination of Elder Care Preference in 17 OECD Countries

INTRODUCTION

Aging populations, lower fertility, and increasing women's participation in the labor force around the world challenges the old models of both state-sponsored and family elder care. Countries are facing the issue of taking care of their aging citizens with fewer resources than ever before (Bengston, Lowenstein, Putney and Gans 2003; United Nations 2013). Governments and individual families become more and more interested in seeking the optimum and sustainable balance of the informal and formal involvement in elder care. Thus, the investigation of older adults' preferences, and what factors influence their preferences, has become urgently important to understand their utilization of difference sources of care and its impact on elders' well being. Convergence on the expectation and the receipt of care is an important enhancer of older adults' satisfaction with care and their wellbeing (Kane and Kane 2001). Knowing their preferences of care may be useful for older adult themselves and for their caregivers. Awareness of factors shaping older adults' care preference would help them and their caregivers better prepare for future care needs (Roberto, Allen and Bliezner 2001). In cases of caring older adults with degenerative diseases like dementia, knowing older adults' preferences may enable caregivers to accommodate care recipients' preferences (Reamny, Kim, Zarit, and Whitlatch 2013; Werner and Segel-Karpas 2016). Private care providers and social policy need to understand the factors shaping older adults' care preferences, so they can plan

and implement formal care provisions accordingly (Daly 2011; Eckert, Morgan, and Swarmy 2004).

This study examines elderly people's attitude toward elder care in 17 OECD (Organisation for Economic Cooperation and Development) countries. Should the family or non-family formal institutions, such as government and private providers, be the primary elder care provider of instrumental help for elderly people? Specifically, I ask how individual- and country-level factors interact to impact elderly people's preferences as to who should be primary provider for such elder care in these countries, in addition to the main effects of those factors. Data used in this study is from ISSP 2012 (the International Social Survey Program): Changing Family and Gender Roles.

Seventeen OECD countries are selected in this study. It is among a few studies that have used cross-national data to examine the impacts of individual-level factors in various country contexts (e.g., Daatland and Herslofson 2003; Pinquart and Sorensen 2002; Mair, Quinones, and Pasha 2015; Mair, Chen, Liu and Brauer 2016). This study is also among the first comparative studies of care preference that includes countries outside Europe and North America, adding Japan, Korea, Chile and Mexico in the analysis[2]. This study particularly focuses on the interactive effects between individual-level factors and country-level factors, which is not examined extensively by previous studies.

CULTURE AND CARE PREFERENCE

Older adults receive care from multiple sources, including kin, close friends, neighbors, community services, private providers, government, etc. The various sources

[2] The study by Mair and colleagues in 2016 includes Chile, Japan and the Philippines in their analytical sample.

of caregiving are often grouped into two forms: informal care and formal care. Informal care refers to all unregulated, mostly unpaid care work for children, elderly, or other dependents. Formal care refers to paid care provision regulated by law or other contractual arrangements, which is often provided by the state or the market (Bettio and Plantega 2004). Scholars have debated how older adults perceive and utilize these two forms of care. Some argue that older adults usually prefer informal care (Cantor 1979, 1991; Cantor and Little 1985; Cantor and Brennan 2000) government support can only compensate when family care is unavailable. For other scholars, informal care and formal care are complementary (Chappell and Blandford 1991), and they satisfy older adults' different care needs (Litwak 1985). empirical research has found evidence for both perspectives. Notwithstanding, the preference for family care rather than formal care is more prevalent in societies and communities and among individuals where family interdependence is highly valued. Specifically, individuals in collectivist societies and with strong collectivist familial beliefs tend to prefer family care.

Family interdependence and loyalty are among the core values in collectivist cultures, not just between parents and children, but members of the extended family—grandparents, uncles, aunts, and cousins (Hofstede 2001; Triandis 1995). Family often meets various needs of family members. Individuals from collectivist societies are obligated to care for extended family members, particularly elders as they age. Parents expect their children to respect and cater to their needs unconditionally as an appreciation of and return to what they have done in childrearing and nurturing.

In individualist societies, everyone is supposed to take of themselves and their immediate nuclear family only. Personal independence is highly valued and taught to

children from early on. Children are expected to leave parents' home as soon as they are able to stand on their own feet. Taking care of parents or other elders in the extended family is not culturally expected In individualist societies, the extended family has a symbolic rather than a functional role.

A tight-knit family network and culturally expected caregiving roles would motivate people to provide care for family members and to choose family members rather than formal institutions or private providers as caregivers (Liu and Kendig 2000). The primacy of family in providing and receiving care is common among countries with prevalent collectivist norms and values about the family. In Hong Kong, Confucian doctrines that emphasize the intergenerational interdependence and filial piety lead to a strong preference for family members, particularly adult children, as the primary care provider for older parents (Cheung et al. 2006). Katz and colleagues' research (2003) on five European countries (Germany, Norway, Spain, the United Kingdom, and Israel) finds that the country variation of the preference of elder care corresponds to the country difference in the endorsement of familial values among older adults (75 years or older). Older adults in countries with stronger familial values tend to prefer the family rather than formal institutions as the primary elder care provider. Ethnic differences in cultural norms and beliefs about family relationships explain the diversity of caregiving arrangements in the U.S (Pinquart and Sorenson 2005). Older adults from ethnic minority groups with stronger familial beliefs, e.g., African Americans and Hispanic Americans, show a stronger preference for family care than whites (Cantor and Brennan 2000; Min and Barrio 2009).

As an alternative cultural framework to the individualism/collectivism, the secular-rational/traditional dimension (Inglehart and Baker 2000) based on the World Values Survey[3] is concerned about family traditions and parent-child ties over 65 countries around the world. Traditional values emphasize the importance of strong parent-child ties and family traditions, while secular-rational values emphasize these family ties and traditions less. In a traditional society, parents should provide for their children and children should be obedient and respect parents unconditionally. Such kind of parent-child ties is less expected in a secular-rational society. Older adults from more traditional societies would value an intimate family relationship in which the older generation can receive supports from the family, especially from the younger generation, more than those from more secular-rational societies. Therefore, I hypothesize that,

H1: Older people who live in a country with more secular-rational values are less likely to prefer family members rather than formal institutions as the primary provider for instrumental help for elderly people than those from a country with more traditional values.

INDIVIDUAL CHARACTERISTICS AND CARE PREFERENCE

Previous research has considered how gender affects elder care preference, because of women's traditional gender role as the primary caregiver in family, as well their longer life expectancy that enables them to perform such role for a longer time than

[3] The WVS consists of nationally representative surveys conducted in almost 100 countries that contain almost 90 percent of the world's population, using a common questionnaire. The WVS currently has seven waves of survey data, including interviews with almost 400,000 respondents. Moreover the WVS is the only academic study covering the full range of global variations, from very poor to very rich countries, in all of the world's major cultural zones (World Value Survey 2016b).

men. Women, either as caregivers or care recipients are more likely to favor formal care than men (Cheung et al. 2006; Daatland et al. 2012; Logan and Spitze 1995; Mair et al. 2016; McAuley and Blieszner 1985; Min 2005; Pinquart and Sorensen 2002; Silverstein and Parrott 2001;Ward 2001; Wolff et al. 2008). The gender difference may reflect women's experiences as caregivers and their wish to spare their family members the care burdens (Montgomery 1992; Roberto, Allen and Blieszner 2001). McAuley and Blieszner (1985) have suggested that women may feel that informal care is less feasible or represents an unacceptable level of role reversal. On the other hand, men may expect informal care assistance because they are accustomed to receiving support from their wives or other female family members. Thus, the hypothesized effect of gender is that:

H2: Older women are less likely to prefer family members as the primary provider of instrumental help for elderly people than older men.

Similarly, for anyone who performs more family care work, they might find their caregiving is more burdensome as the care hours increase. Consequently, they would less likely prefer family members as the primary provider of elder care. Therefore, I hypothesize:

H3: The more time they spend on family caregiving, the less likely older adults would prefer family members as the primary provider for instrumental help for elderly people.

Older adults with greater health care needs, e.g., older elders, those with poor self-rated health, those with chronic health condition, are more likely to prefer or to choose formal care, because the needs and the burdens of elder care are expected to be long term. Daatland's study (1990) in Oslo, Norway in the late 1980s and Wielink et al's study

(1997) in Netherlands find that elder people would turn to the formal services when in need of long-term care. Adult children or other informal helpers were preferred only when elder people needed short-term assistance. Both studies also find that elderly people in poor health, e.g., with disability and poorer self-rated health, were more likely to prefer formal care. In Keysor and colleagues' study (1999) of community dwelling elders' attitude toward use of adult care homes in North Carolina, elders showed a preference for long-term service facilities for long-term disability, but not for short-term disability. Other studies also find elders with long-term and extensive care needs in the U.S. have stronger preference for formal care, such as paid home care, assisted living, and nursing home, over informal care provided by family/friend (Eckert et al. 2004; Min 2005; Pinquart and Sorensen 2002, Wolff, Kasper, and Share 2008). A more recent study in 14 OECD European countries finds that older adults with chronic disease whose health limited their ability to work are less likely to prefer family-based care over state-provided care[4] (Mair et al. 2015). Therefore, I hypothesize that age and health status are associated with a greater preference for formal over informal assistance because growing health deficits increase the probability that care needs may not be met by the informal network.

H4: The older an older adult is, the less likely he or she prefer family members as the primary provider for instrumental help for elderly people.

H5: The poorer the self-rated health, the less likely an older person prefer family members as the primary provider for instrumental help for elderly people.

[4] The care refers to personal care for older persons who are in need such as nursing or help with bathing or dressing.

Availability of family care, according to the compensatory and complementary perspectives, is one of key predictors of people's preference of the sources of elder care. People would express their preference for formal care only when informal care is not available or members from informal network are not adequate to perform care work. Many empirical studies have shown that, without serious health and medical conditions, people are more likely to prefer informal care as their primary elder care source when informal network is intact (McAuley and Blieszner 1985; Pinquart and Sorensen 2002; Wielink and Huijsman 1999). Older adults who are married or living close to their adult children or kin are more likely to prefer family care to formal care. Those who have received informal care have stronger preference for informal care over formal, than those who were not cared by members from informal social network (Mair et al. 2015; Wielink and Huijsman 1999). Thus, I hypothesize:

H6: Older adults living with adults (including spouse or partner) would prefer family members as the primary provider of instrumental help for elderly people.

In general, people with lower socioeconomic status are more likely to favor welfare state policies (Blekesaune 2007). Socioeconomic status is also related to preferences of family care and formal care. In a study of older community residents, McAuley and Bleiszner (1985) find that older adults with higher socioeconomic status prefer long-term formal care provided by professional rather than family caregivers. People with higher incomes can better afford to pay for care. Lower-income people prefer informal care because they cannot afford to pay for care. One study of Dutch older adults, those with lower SES only prefer informal home care for short-term housekeeping but residential care for long-term housekeeping care (Wielink, Huijsman and McDonnell

1997). The preference for formal care among low SES Dutch older adults is likely driven by the concern for long-term care strain imposed on family members. Meanwhile, higher level of education is associated with preference for formal care, since they have better knowledge of formal services (Roberto, Allen and Bliezner 2001; Pinquart and Sorenson 2002). Therefore, I hypothesize:

H7: The higher family income the older person has and higher level of education she/he has, the less likely they prefer family members as the primary provider for instrumental help for elderly people.

Social class, which is operationalized in empirical studies by measures of socioeconomic status, such as income, education, occupational status, etc. is a general indicator of people's lifestyle and preference for music and art (Kraus, Piff and Kelnter 2011). In other words, people from a certain social class would have distinctive cultural values, norms and attitudes. Given the hypotheses of negative relationships between the preference for family care and higher socioeconomic status (H6) and between the preference for family care and living in a country with more secular-rational values (H1), I hypothesize that:

H8: Older people with higher income from a country with more secular-rational values are less likely to prefer family members as the primary provider of instrumental help for elderly people with than those with higher income from more traditional countries.

COUNTRY-LEVEL FACTORS PREDICTING CARE PREFERENCES

Attitude toward the primary source of elder care also interact with the social-cultural environment. Cross-national studies have found that people from countries with

relatively high service provision for elders tend to prefer formal services, compared to those with fewer formal elder care services (Bettio and Plantega 2004; Daatland and Herlofson 2003; Kikuzawa, Olafsottir, and Pescosolido 2008; Marcum and Treas 2013; Mair et al. 2015; Mair et al. 2016). Daatland and Herlofson's comparative study (2003) of urban populations in Norway, England, Germany, Spain and Israel finds that a significant variation among these five countries in terms of preference for formal elder care, which can be explained by the availability of formal elder care service in each country. 74% of Norwegians in the sample preferred formal services, compared to 33% of Spaniards. Israelis, Germans and English people fell in between. Mair and colleagues' recent cross-national study (2015) of 14 OECD European countries support the patterns found in Daatland and Herlofson's 2003 study. Middle-aged and older adults with chronic disease who live in nations with generous long-term care funding are less likely to prefer family-based care and more likely to prefer state-based care. Another cross-national study led by Mair (2016) also finds that people show stronger endorsement of government-based care in countries with higher percentage of GDP invested in health care services. Therefore, older adults might favor formal care services based on their availability (Marcum and Treas 2013). Individuals in countries with weak health care infrastructure may express stronger preferences for informal care provided by family members due to a lack of state-sponsored care services (Mair et al. 2016; Pinquart and Sorensen 2002).

H9: Older people who live in a country with national expenditure on old age support are less likely to prefer family members as the primary provider for instrumental help for elderly people.

While the availability of family care at the individual level might predict the preference for family care, the availability of family elder care at the country-level could also impact people's attitude when making decisions in private. There is no official statistic about informal care provision. However, women's participation in the public sphere, e.g., education, labor force participation, and political participation may serve as a substitution for this measure. Studies have confirmed the negative association between women's employment and their time spent on informal care (both child care and elder care) in developed countries (Kotsadam 2011), and East Asia (Jang, Avendano and Kawachi 2012; Shimizutani, Suzuki and Noguchi 2008). According to the report on caregiving in 16 OECD countries (OECD 2011)[5], most late-middle-aged informal caregivers are women. These caregivers are more likely to be homemakers and less likely to be employed. Most of the 40.4 million caregivers for older adults in the United States in 2013 and 2014 are women[6]. Those female eldercare givers are nearly twice (1.89) likely to be unemployed than their male counterparts (Bureau of Labor Statistics 2015).

Women's increasing time spent in labor force is inevitably cutting off their time on elder care. This shortage of unpaid female labor for informal elder care at the country level might result in a weaker preference for family care among individuals. Thus, I hypothesize:

[5] OECD estimates based on HILDA for Australia, BHPS for the United Kingdom, Survey of Health, Ageing and Retirement in Europe (SHARE) for other European countries, and HRS for the United States.
[6] Based on data from the American Time Use Survey 2013-2014.

H10: Older people who live in countries with higher levels of female labor force participation are less likely to prefer family members as the primary provider for instrumental help for elderly people.

Older people preferences for family versus formal care are shaped by social structure at multiple levels. Previous research on public opinion regarding welfare policies suggests that disadvantaged or vulnerable populations tend to favor more comprehensive welfare policies (Blekesaune 2007; Kikuzawa et al. 2008). Elderly people with poor self-rated health and elder women are more likely to evaluate their available and desirable care options. Therefore, individual and country context would combine to shape individual preferences of elder care across countries. The hypothesized interaction effects between individual-level factors and country-level social structure factors are as follows:

H11a: Older adults with poorer self-reported health who live in a country with higher national expenditure on old age support are less likely to prefer family members as the primary provider for instrumental help for elderly people.

H11b: Older adults with poorer self-reported and with higher level of female labor force participation are less likely to prefer family members as the primary provider for instrumental help for elderly people.

H12a: Older women who live in a country with higher national expenditure on old age support are less likely to prefer family members as the primary provider for instrumental help for elderly people.

H12b: Older women who live in a country with higher level of women labor force participation are less likely to prefer family members as the primary provider for instrumental help for elderly people.

METHOD

Data

I used ISSP 2012 (the International Social Survey Program): Changing Family and Gender Roles, to conduct this study. The analytic sample includes respondents aged 50 years and older from 17 OECD countries. These countries are Australia, Austria, Canada, Chile, Czech Republic, Finland, France, Germany, Iceland, Ireland, Israel, Japan, South Korea, Mexico, Norway, Poland, Slovakia, Slovenia, Sweden, Switzerland, and the United States. I exclude 19 countries[7] that lack information on key variables. The sample size of this study is 7,337.

Measures

Dependent variable. The dependent variable measured individuals' attitudes toward the help with instrumental help for elderly people. The item asks, "Thinking about elderly people who need some help in their everyday lives, such as help with grocery shopping, cleaning the house, doing the laundry etc. Who do you think should primarily provide this help?" responses were coded as: 1 = family members, 0 = government agencies, non-profit organizations, or private providers.

Independent variables-individual level. At the individual level, I included respondents' age, gender, self-rated health, living arrangement, caregiving hours for

[7] These countries are Argentina, Austria, Bulgaria, China, Denmark, Spain, Croatia, Iceland, Ireland, Israel, Lithuania, Latvia, Philippines, Russia, Turkey, Taiwan, United Kingdom, Venezuela, and South Africa.

family members, and socioeconomic status. Gender was coded as 1=female, 0=male. Self-rated health was coded as 1=excellent, 2=very good, 3=good, 4=fair, and 5=poor. Living arrangement refers to whether the respondent has adults (including their partners) living in the same household to measure the availability of family care at the individual level: 1=living with no adults, 0=living with adults. Caregiving hours for family members was based on one item "On average, how many hours a week do you spend looking after family members (e.g. children, elderly, ill or disabled family members)?" SES was measured by two variables, family income and education level. Family income was valued in the local currency in ISSP 2012. It was recoded as the ratio of respondent's family income to the median family income in the respective country. Respondent's education level was coded as 0=no formal education, 1= primary school, 2=lower secondary, 3=upper secondary, 4=post-secondary, non-tertiary, 5=lower tertiary, and 6= upper tertiary.

Independent variables-country level. At the country level, I drew governmental expenditures on old age support from OECD databases. The percentages of old age support of GDP (Gross Domestic Production) for the 17 OECD countries in 2011 were from the OECD Social Expenditure Database (SOCX). Old age support includes pensions, early retirement pension, home-help, and residential services for the elders (OECD 2014). Labor force participation rates for women aged 15 to 64 in 2011 were from the OECD. Stat. database (OECD 2011). The scale of secular-rational/traditional values from WVS was used to measure the familial values in this study[8]. Most countries'

[8] Items in WVS to characterize the traditional/secular-rational values are shown in Appendix.

secular-rational/traditional scores were taken from the wave of 2005-2009, except for Czech republic, Slovakia and Switzerland, whose scores are from the wave of 1994-1998. The scores of traditional/secular values range from -0.78 to1.27 (standardized scores). Higher scores represent more secular values.

Control variables. At the individual level, I controlled for whether or not the respondent has a minor child in the household (1=yes, 0=no), is currently employed (1=yes, 0=no). At the country level I controlled for the population percentage aged 65 years or older in 2011 and GDP per capita in 2011 (World Bank 2014). Women's family caregiving hours was also controlled at the country-level. It refers to the average hours women spent caring for family members in ISSP2012.

ANALYTICAL STRATEGY

First, I performed descriptive statistics for all variables (Table 1). I also examined the mean percentage of preferring family care by country and means of all variables by country (Table 2 and 3). Second, I ran correlation analysis of all variables in the analysis (Table 4). Third, since the dependent variable was a binary variable, I performed multilevel logistic regression to estimate the associations between individual-level and country-level factors and their interaction terms on elder care preference for family versus formal care (Table 5). Lastly, I ran the models with main effects and interactive effects with and without the four cultural and economic unique countries, Mexico, Chile, Japan and South Korea. I used STATA to conduct all statistical analyses. Multilevel modeling is a preferred method for nested data structures, which includes individuals nested within countries. This method estimates variance at both the individual and country level, which allows for more accurate estimation of coefficients. I also tested

cross-level interactions between individual-level demographic factors (gender and self-reported health) and country-level factors (old age support, female labor force participation, and secular-rational values). Simplified versions of model equations are as follows:

Individual level (Level 1):

$$\begin{aligned} Y_{ij} = logit\left(p_{ij}/(1-p_{ij}\right) \\ &= \beta_{0j} + \beta_{1j}(gender)_{ij} + \beta_{2j}(age)_{ij} + \beta_{3j}(health)_{ij} \\ &+ \beta_{4j}(living\ arrangement)_{ij} + \beta_{5j}(family\ caregiving\ hours)_{ij} \\ &+ \beta_{6j}(family\ income\ )_{ij} + \beta_{7j}(education)_{ij} \\ &+ \beta_{8j}(control\ variables)_{ij} \end{aligned}$$

Country level (Level 2):

$$\begin{aligned} \beta_{0j} &= \gamma_{00} + \gamma_{01}(old\ age\ support)_j + \gamma_{02}(FLMP)_j \\ &\quad + \gamma_{03}(secular - rational\ values)_j \\ &\quad + \gamma_{04}(women's\ family\ caregiving\ hours) \\ &\quad + \gamma_{05}(country - level\ C.V.s) + u_{0j} \\ \beta_{1j} &= \gamma_{10} + \gamma_{11}(old\ age\ support)_j + \gamma_{12}(FLMP)_j \\ \beta_{3j} &= \gamma_{20} + \gamma_{21}(old\ age\ support)_j + \gamma_{32}(FLMP)_j \\ \beta_{6j} &= \gamma_{30} + \gamma_{31}(secular - rational\ values)_j \end{aligned}$$

Combined model:

$$\begin{aligned} Y_{ij} = logit\left(p_{ij}/(1-p_{ij}\right) \\ &= \left[\gamma_{00} + \gamma_{10}(gender)_{ij} + \gamma_{20}(health)_{ij} + \gamma_{30}(family\ income)_{ij}\right. \\ &+ \beta_{2j}(age)_{ij} + \beta_{4j}(living\ arrangement)_{ij} \\ &+ \beta_{5j}(family\ caregiving\ hours)_{ij} + \beta_{7j}(education)_{ij} \\ &+ \gamma_{01}(old\ age\ support)_j + \gamma_{02}(FLMP)_j \\ &+ \gamma_{03}(secular - rational\ values)_j \\ &+ \gamma_{04}(women's\ family\ caregiving\ hours)_j \\ &+ \gamma_{11}(gender)_{ij} \times (old\ age\ support)_j + \gamma_{12}(gender)_{ij} \times\ (FLMP)_j \\ &+ \gamma_{21}(health)_{ij} \times (old\ age\ support)_j + \gamma_{22}(health)_{ij} \times\ (FLMP)_j \\ &+ \gamma_{31}(family\ income)_{ij} \times (secular - rational\ values)_j \\ &+ \beta_{8j}(individual - level\ C.V.s)_{ij} + \gamma_{05}(country - level\ C.V.s)_j\Big] \\ &+ u_{0j} \end{aligned}$$

The individual-level (Level 1) model examines the effects of gender, age, self-reported health, living arrangement, family caregiving hours, and SES on the preference for family care (Level 1), whereas the country-level (Level 2) model examines the direct effects of national expenditure on old age support, women's labor force participation and secular-rational values on the preference for family care (Level 1). The country-level and the combined model show the test of cross-level interactions between individual-level demographics (gender, self-reported health, and family income) and country-level independent variables (national expenditure on old age support, female labor force participation and secular-rational value).

Specifically, $Y_{ij}$is the preference for family elder care for respondent i in country j. Since Y_{ij} is defined as a binary variable, it is assumed that Y_{ij} has a Bernoulli distribution. Therefore, the probability of the response equal to one is defined as $p_{ij} = P(Y_{ij})$ and $logit\left(p_{ij}/(1-p_{ij}\right)$ is approximately normally distributed. In the combined model, γ_{00} is the intercept, or mean, for respondents across all countries, $\gamma_{10} - \gamma_{30}$ are the average effects of gender, self-rated health, and family income respectively for the ith respondent in country j. γ_{01} is the average effect of national expenditure on older age support in country j on the intercept, or mean. γ_{02} is the average effect of female labor force participation in country j on the intercept, or mean, and γ_{03} is the average effect of secular-rational values in country j on the intercept, or mean. β_{2j}, β_{4j}, β_{5j}, and β_{7j} are the average effects of age, living arrangement, family caregiving hours, and education respectively for the ith respondent in country j. γ_{11} and γ_{12} are the average effects of national expenditure on older age support and female labor force participation

respectively in country j on the effect of gender for the ith respondent in country j, or on the slope of gender. γ_{21} and γ_{22} are the average effects of national expenditure on older age support and female labor force participation respectively in country j on the effect of self-reported health for the ith respondent in country j, or on the slope of gender. γ_{31} is the average effect of secular-rational values in country j on the effect of individual-level family income for the respondent in country j, or on the slope of family income. β_{8j} represents the average effects of control variables for the ith respondent in country j. γ_{05} represents the average effects of control variables for all respondents in country j. Finally, u_{0j} is the random residual term for level-2 analysis. No residual term is estimated at level-1 analysis because the variance is completely determined by the mean (Luke 2004).

RESULTS

On average, majority of respondents (M=0.52) from all 17 countries reported they would choose family members as the primary provider for instrumental help for elderly people other than formal assistance (Table 1). Slightly less than 50% of respondents were female and with the average age of 63.16. Approximately 20% of older adults were living alone. Over 70% were living with a partner. Less than 10% were living with other adults. On average, older respondents reported a moderate level of health (M=3.10). They spent 7.20 hours per week taking care of family members. Their family income was 24% higher than the respective national median family income. 47% of respondents from all 17 countries were employed and about 12% had minor children at home. The average education level was equivalent of some high school education (M=3.27, range 0-6). On average, the 17 countries spent 7.3% of GDP on old age support (ranging form 1.5 to

11.90). The 17 countries had close to two thirds of women who participated in labor force. Women in those countries spent approximately 14 hours per week taking care of family members, about twice as much family caregiving hours for both women and men at the individual level. The mean value of secular values is 0.54 (ranging from -0.78 to 1.27).

Comparing cross-nationally (Table 2), Poland had the highest percentage of respondents preferring family care over formal assistance on instrumental help for elderly people (85.32%), followed by Mexico (73.93%), while only 6.19% of respondents from Sweden would choose family members as the primary elder care provider other than formal institutions. Other countries with less-than-majority respondents who preferred family care are Finland (24.03%), Norway (25.54%), France (30.96%), South Korea (42.02%), and Slovenia (48.62%). Majority of the countries had more female respondents than male respondents, except Canada (23.10%), Germany (46.73%), Norway (46.20%), Australia (47.30%) and Chile (49.45%). The average age was similar across countries, with Slovenia as the oldest country (65.76 years old) and Finland as the youngest one (60.99 years old). Living alone was most common in the USA (39.68%) and least common in Finland, where only about 1% of older adults were living by themselves. Living with a partner was most common in Canada and Finland where over 95% of older respondents were living with their partners, while slightly over 50% of Chileans (51.36%) and Americans (50.81%) reported co-residence with a partner. Older Chileans and Mexicans were more likely to live with other adults (26.59% and 23.22 respectively), while only around 1% of older Canadians were living with other adults. Older Japanese and Polish adults had the worst self-reported health among all 17 countries (3.78 and 3.75

respectively), and Canadian and Swedes were among the healthiest (2.52 and 2.68 respectively). Chileans (13.17 hours) spent substantially more time taking care of family members than the other 16 countries, while Germans (4.45 hours) spent the least. Older respondents from Canada, Chile and France had the highest ratios of individual family income over the national median family income (1.62, 1.55, 1.67 respectively), while those from Czech Republic and South Korea had the least (0.88%). Older Norwegians were the most educated (4.09) with an equivalent high school education, while older Chileans and Mexicans were the least educated (1.73 and 1.58, respectively) with more advanced than a elementary school but less than a middle school education.

Table 3 shows the means of all country-level variables by country. France had the higher percentage of GDP spent on old age support (12.5%) in 2011, while Mexico had the lowest (1.6%). Seven countries had more than 70% of women in the general population aged between 15-64 were working for pay or actively looking for a job in 2011, while Mexico had less than majority of women (45.88%) were working for pay or actively looking for a job. Mexico had the least secular-rational values (-0.78), followed by Poland (-0.37) and Chile (-0.31). Japan was the most secular-rational country (1.27) among the 17 OECD countries, followed by Sweden (1.17) and Germany (1.01).

Correlations of all variables (Table 4) show generally weak correlations (r values are less than $|0.2|$) among individual-level factors except for two moderate associations. Older women are less likely to live with a partner ($r = -0.21$, $p < 0.05$). Higher level of education is associated with better self-reported health ($r = -0.24$, $p < 0.05$). All four country-level factors are strongly associated with each other with r values larger than $|0.4|$. The associations between women's family caregiving hours and two other

country-level variables are particularly strong. The r values for the associations between women's family caregiving hours and female labor force participation, and secular-rational values are – 0.57 and – 0.74, respectively.

Multilevel logistic regression models predicting the preference for family care are presented in Table 5. Model 1 shows that women and those with worse self-rated health were less likely to prefer family care for instrumental help for elderly people. Having higher family income was associated with a higher likelihood of preferring family care. Three of four country-level predictors were significant. People in countries with higher national expenditure on old age support, with a higher female labor force participation rate and with more secular values were less likely to prefer family care. The national average caregiving hours by women were not significant.

The cross-level interaction terms were introduced in models one at a time (Table 5, Model 2-6). The interaction effect between self-reported health and old age support at the country level was significant in Model 2, though the main effects of both self-reported health and national old age support were no longer significant. Older adults with poorer self-reported health were less likely than those with better health to prefer family care as national expenditure on old age support increased (See Figure 1). The effect of female labor force participation at the country level varies by self-reported health (Model 3). As the female labor force participation rate increased, older adults with poorer health became much less likely than those with better health to prefer family care (See Figure 2). The effect of national old age support on the preference for family care varied between women and men, as shown in Model 4. Older women were much less likely than older men to prefer family care as national expenditure on old age support increases (See

Figure 3). The effect of female labor force participation at the country level varies also by gender (Model 5). Women were much less likely than men to prefer family care (See Figure 4). Model 6 shows that the effect of family income on the likelihood of preferring family care varied by national secular-rational values. As shown in Figure 5, the probabilities of preferring family for older adults from traditional countries and secular-rational countries both increased and became similar as the family income increased.

Finally, I examined models with main effects and interaction effects with and without the four cultural and economic unique countries, Mexico, Chile, Japan and South Korea, which also have received limited attention in cross-national studies. All results are consistent except for some of the cross-level interactive effects. When Chile was removed from the sample, the interactive effects between self-reported health and old age support and between self-reported health and female labor force participation were no longer statistically significant. These results suggest that those Chileans with better self-reported health are likely driving the associations between the interactive effects related to self-reported health and the preference for family care. Moreover, when Japan was removed from the sample, the interactive effect between gender and old age support was no longer statistically significant. It suggests that Japanese women are likely driving that association.

DISCUSSION AND CONCLUSION

This study has explored determinants of older people's preference of family versus formal instrumental help for elderly people among 17 OECD countries. A country's cultural orientation is highly associated with older adults' preference for family care. Consistent with previous studies, individual characteristics, including gender, health

and socioeconomic status were related to people's elder care preference in this study. Country-level factors, national expenditure on old age support, and female labor force participation also helped explain how individual preference was influenced by macro social and cultural conditions. In addition, this study finds that the influence of macro social and cultural conditions could vary by individual older adults' gender, self-reported health, and family income.

H1 is supported. Older adults from countries with more secular-rational values were less likely to prefer family care. Older women and men were significant different in terms of their preference for family care, as hypothesized in H2. H5 was supported that individuals with poorer self-reported health were less likely to prefer family care. H7 was partially supported. More educated older people were less likely to prefer family members as the primary provider of instrumental help for elderly people than those less educated. The effect of family income was also found to be significant, however contradicts part of H7. Older adults with higher family income were more likely to choose family members as their primary provider of instrumental help for elderly people. At the country level, the effects of national expenditure on old age support and female labor force participation were found consistently significant among models, which supported H8 and H9. Older adults from countries with higher national expenditure on old age support and with higher levels of female labor force were less likely to prefer family members for instrumental help for elderly people.

Not all hypotheses about the individual-level factors were supported. Caregiving hours (H3), age (H4), and living arrangement (H6) had no effect on the preference. Living arrangement was not associated with elder care preference. Living with an adult or

not had nothing to do with older people's preference of care with instrumental help for elderly people. The lack of association might be due to an unspecified duration of care. Pinquart and Sorenson (2002) find that married elders were more likely to prefer family members for short-time care, while marital status had no effect on long-term care preference. They argue that the lack of an association between marital status and long-term care preference might be due to elders' concern for reliable help from partner for future assistance. The same explanation might apply to the non-significant relationship between living arrangement and care preference in this study. Since there was no indication whether the instrumental help for elderly people was short-term or long term in the survey, the effect of partnership status might be cancelled out by different interpretations on the duration of instrumental help for elderly people.

Previous studies have found that higher income is associated with a preference for formal care (Keysors et al. 1999; McAuley and Blieszner 1985). However, the present study finds a negative relationship between family income and the likelihood of preferring family care. This inconsistency can be explained by Wielink and colleagues' conclusion about the socioeconomic status and care preference (1997). These authors find that in Netherland the influence of income on care preference depends on whether the care is short term or long term. Lower income elders prefer formal care to family care in long-term instrumental help for elderly people assistance. Similar to the reason behind the insignificant relationship between living arrangement and the preference for family care found in this study, a non-specified duration of care could explain the negative relationship between family income and the preference for family care. The care burdens associated with a possible long-term instrumental help for elderly people could

discourage older adults with lower family income to choose their family members to the primary provider of such care.

The effects of other two country-level factors and all cross-level interactions were significant. Previous studies have found that national care infrastructure largely determines whether individuals would choose formal care as their preferred source of care (Bettio and Plantega 2004; Daatland and Herlofson 2003; Mair et al. 2015). In this study, older people in countries with greater national expenditure on old age support, which indicates greater availability of formal care, showed a weaker preference for family care. The results also show a strong influence of female participation in labor force at the country-level on older people' preference of elder care. Women's potential *un*availability for providing elder care due to employment is a strong indicator of why older people would prefer formal assistance to family care with instrumental help for elderly people, especially for older women and those with poorer health. Women's relatively low availability for care work could motivate people to seek other sources for elder care other than the family. As one of women's social status indicators, the significant effect of female labor force participation suggest that care preference is closely associated with women's expected gender roles and the level of gender equality in their country. Women, in particular, are more receptive to this social progressiveness and more likely to embrace the idea of formal elder care than men in same social conditions (Mair et al. 2016), which could explain why women living in countries with higher female labor force participation were less likely to prefer family care.

Among models with interaction terms, only those with female labor force participation interacting with other model variables (Model 3 with self-reported health,

Model 5 interacting with gender) show significant improvements from the model without any interaction terms (Model 1)[9]. Female labor force participation rate at the country level modifies the effects of self-reported health and gender, and the modifications are notable. Women's involvement in labor force shifts older adults' perception about care especially when a majority of women is working for pay in their countries. Mair and colleagues (2016) find a strong positive association between the preference for family care and gender inequality at the country level. Consistent with that study, the model improvement by incorporating female labor force participation in the models in this study indicates the importance of using the gender lens to understand people's perception about elder care.

Secular-rational values at the country level is negatively associated with older adults' preference for family care. Individuals from countries with higher scores on traditional values (lower on secular-rational values), which emphasize on religion, family traditions, parent-child ties, and deference to authority, were more likely to prefer family members for instrumental help for elderly people. However, the negative effect of secular-rational values is moderated by family income. Exceptionally richer older people from countries with more secular-rational values were as likely to prefer family care as the primary source of instrumental help for elderly people as those from traditional countries. More secular-rational and more traditional countries converge among

[9] Chi-square scores in L-R tests are significant for Model 3 and 5. See the last row in Table 5.

individuals from the upper class[10] in the 17 OECD countries. Social class transcends cultural boundaries.

Except two studies led by Mair in 2015 and 2016, few studies have examined whether and how the influences of country-level factors on care preference could be modified by individual characteristics. Findings of this study reveal that care preferences of older adults from socially disadvantaged groups, such as older women and older adults with poorer health, are particularly sensitive to the national care. A more prominent gender gap not only exists in more economic advanced societies (Mair et al. 2016), it also can be found in countries with higher public investment in old age support. The likelihood of older women's and older adults with poorer health's preferences for family care would significantly decline as national expenditure on old age support increased, while no significant change was detected among older men and older adults with better health (See Model 2 and 4 in Table 5). They tend to embrace the idea of formal elder care than older men and those with better health when more public investment in the aging population.

LIMITATIONS AND FUTURE RESEARCH

First, the measure of elder care preference is limited to two care sources, family or formal care, and respondents did not have options to have both sources of care complementing each other or utilize them sequentially. In addition, the measure does not specify the duration of the care, which has found to impact people's evaluations about the

[10] In Appendix B, the lines represented secular countries and traditional countries started to converge at the point that marked the family income three times more than the median family income in respective countries. No significant difference between the two types of countries was found around the point that marked the family income 15 times more than the median family.

potential burden on members from informal social network (Daatland 1990; Pinquart and Sorenson 2002; Wielink et al. 1997). More specific response items such as various combinations of care sources and duration of care would benefit future cross-national research about care preferences.

Second, the availability of family care was only measured by living arrangement in this study. Proximity is an important indicator that whether family care is accessible to older people, while other indicators, such as previous family/formal care experience and emotional closeness to family members could also predict whether and to what extent older people have access to family care, which are found to be closely related to care preference in previous studies (Kim and Choi 2008; Mair et al. 2015; Pinquart and Sorenson 2002; Wielink and Huijsman 1999).

Third, the measure of secular-rational/traditional values was adapted from World Values Surveys in various survey waves due to their availability for respective countries. Cultural values likely change over the years, especially for a longer period of time. Although robustness analyses without the three countries (Czech Republic, Slovakia and Switzerland) with older cultural values (from 1994-1998) did not change the overall model, we should be conservative about the conclusion regarding the relationship between cultural values and elder care preferences.

Fourth, there is likely a generational discrepancy between the cultural orientation about the family and family relationships among people from all age groups at the society level and the actual familial beliefs of older adults (50 years and older) in these countries. The national average secular-rational/traditional values could describe the general cultural orientation in a country, but it might not accurately measure the prevalent values

among older adults. The socialization and the macro sociocultural environment they experienced earlier in their life could set older adults apart from younger generations growing up in a different time period and the general population. The generational discrepancy in familial beliefs is often associated with a country's social and economic development level. Inglehart and Baker (2000) find that, birth cohort differences in the secular-rational/traditional values are larger among advanced industrialized democracies in Europe and North America. Developing and low-income countries, such as Chile, Mexico, and India, have smaller generational discrepancies. As the economic development rate of less developed countries is picking up, the generational discrepancy could become larger. Future research should take the relationship between national economic development and cohort differences in cultural values at the country level into consideration when studying the cultural influence on care preferences of people from diverse age groups.

Lastly, this study finds strong interactions between individual characteristics and the macro social environment and cultural orientation. Future cross-national research should explore more interactions between micro-level and macro-level factors. As shown in this study, care preferences of older adults from socially disadvantaged groups are very different from those with less hardship in same sociocultural conditions. Such research would be particularly informative to social policy markers about the outcomes of any welfare policy and how to implement policies to benefit the society as a whole.

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Table 2.1. Descriptive Statistics of All Variables, Pooled across Countries (N=7,337)

	Mean/Proportion	S.E.	Min	Max
Preference for Family Care	0.52	0.01	0.00	1.00
Level 1: individual level				
Female	0.49			
Age	63.16	0.11	50.00	97.00
Living arrangement				
Living with no adult	0.19			
Living with partner	0.73			
Living with other adults	0.08			
Self-rated Health (1=excellent, 5=poor)	3.10	0.01	1.00	5.00
Family caregiving hours	7.20	0.16	0.00	95.00
Family income[a]	1.24	0.03	0.00	78.57
Education (0=no formal education, 6=upper tertiary education)	3.27	0.02	0.00	6.00
Living with minor child(ren)	0.12			
Employed	0.47			
Level 2: country level				
% of old age support in GDP[b]	7.30	0.04	1.60	12.50
Female labor force participation[c]	66.48	0.11	45.88	77.37
Secular values	0.54	0.01	-0.78	1.27
Women's caregiving hours[d]	13.71	0.05	0.00	95.00
% of aged 65 and older[e]	15.87	0.05	6.12	23.67
GDP per capita[f]	46423.65	330.27	9812.13	100575.12

Note: Means and proportions are weighted. Total sample N is not weighted.

[a]: Ratio of respondent's reported family income over the medium family income of respondent's country.

[b]: % in GDP in 2011, including pension, early retirement pension, home-help, and residential services and other benefit services for the elderly, OECD Social Expenditure Database (SOCX).

[c]: % of women aged 15-64 labor market participation rate in 2011, OECD.Stat.

[d]: Aggregated measure from ISSP 2012.

[e]: Population ages 65 and above (% of total) 2011, World Bank.

[f]: GDP per capita (in 2014 US dollar) 2011, World Bank.

Table 2.2. Means and Proportions of Individual-Level Variables by Country

	AUS	CAN	CHL	CZE	FIN	FRA	DEU	JPN	KOR	MEX	NOR	POL	SVK	SVN	SWE	CHZ	USA
Preferring family care (%)	51.58	64.13	63.18	63.93	24.03	30.96	61.87	62.05	42.02	73.93	25.54	85.32	68.88	48.62	6.19	67.03	64.97
Women (%)	47.30	23.10	62.27	54.21	52.60	55.28	47.63	53.94	58.53	50.71	46.20	58.10	54.46	53.85	51.24	49.45	52.90
Age	62.96	64.39	63.91	63.21	60.99	61.11	64.37	65.24	65.26	62.49	61.48	64.56	63.21	65.76	62.93	63.50	64.06
Living arrangement																	
Living with no adult (%)	18.02	2.43	22.05	24.84	0.97	16.06	26.85	13.37	26.49	11.37	18.71	18.65	24.71	23.38	22.03	21.76	39.68
Living with partner (%)	76.13	96.35	51.36	65.66	96.43	77.29	70.77	74.94	66.44	65.40	78.75	67.58	62.47	69.23	72.28	72.97	50.81
Living with other adults (%)	5.86	1.22	26.59	9.50	2.60	6.65	2.37	11.69	7.07	23.22	2.53	13.76	12.81	7.38	5.69	5.27	9.51
Health	2.73	2.52	3.50	3.43	3.20	2.94	3.33	3.78	3.13	2.95	2.79	3.75	3.29	3.44	2.68	2.76	2.83
Family caregiving hours	8.58	7.38	13.17	6.23	6.82	9.01	4.45	6.45	5.85	9.61	5.88	7.98	8.17	6.00	6.37	5.85	7.87
Family Income	1.44	1.62	1.51	0.88	1.11	1.67	1.04	1.17	0.88	1.32	1.24	1.26	0.96	0.98	1.24	1.10	1.19
Education	3.87	4.28	1.73	2.72	3.59	3.28	4.24	3.28	1.98	1.58	4.09	2.75	2.70	2.55	3.51	3.84	3.53
Living with minor children (%)	12.61	11.55	29.09	3.67	12.01	15.83	5.19	10.74	5.55	42.18	12.48	14.68	9.38	5.85	10.40	10.77	7.89
Employed (%)	56.31	49.24	40.45	36.29	52.27	47.25	36.80	53.22	47.71	64.93	64.91	27.52	31.58	22.15	54.95	51.43	43.62
N	444	329	440	463	308	436	674	419	721	211	513	327	437	325	404	455	431

Table 2.3. Descriptive Statistics of Country-Level Variables by Country

	N	Old age support[a]	Female labor force participation[c]	Secular-rational values	Women's caregiving hours	% Aged 65 and older[d]	GDP per capita[e]
Australia	*444*	5.80	70.45	0.22	12.53	13.69	62133.61
Canada	*329*	4.00	74.10	-0.16	16.38	14.47	52086.53
Chile	*440*	2.60	53.95	-0.31	21.74	9.44	14491.90
Czech Republic	*463*	8.40	62.20	0.89	11.61	15.77	21656.40
Finland	*308*	10.60	72.71	0.50	14.63	17.67	50787.56
France	*436*	12.50	66.15	0.59	11.68	17.09	43810.58
Germany	*674*	8.60	71.90	1.01	11.46	20.99	45867.77
Japan	*419*	10.40	63.04	1.27	14.59	23.67	46203.71
South Korea	*721*	2.10	54.87	0.68	12.92	11.44	24155.83
Mexico	*211*	1.60	45.88	-0.78	20.32	6.12	9812.13
Norway	*513*	7.10	75.75	0.89	9.64	15.23	100575.12
Poland	*327*	9.00	53.13	-0.37	14.52	13.75	13776.09
Slovakia	*437*	6.40	52.71	0.40	19.15	12.49	18065.67
Slovenia	*325*	9.80	66.45	0.72	13.83	16.86	24964.80
Sweden	*404*	9.40	77.37	1.17	9.04	18.54	59593.68
Switzerland	*455*	6.50	76.43	0.56	10.99	17.17	88002.61
United States	*431*	6.00	68.39	-0.21	21.52	13.33	49781.36

[a]: Calculated based on ISSP 2012.

[b]: % in GDP in 2011, including pension, early retirement pension, home-help, and residential services and other benefit services for the elders, OECD Social Expenditure Database (SOCX).

[c]: % of women aged 15-64 labor market participation rate in 2011, OECD.Stat.

[d]: Adapted from World Values Survey (2015). Higher value indicates more secular-rational values.

[e]: Population ages 65 and above (% of total) 2011, World Bank.

[f]: GDP per capita in 2011 (in 2014 US dollar), World Bank.

Table 2.4. Correlations of All Variables

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
Dependent variable																		
(1) Preferring family care	1																	
Level 1: individual level																		
(2) Women	**-0.02**	1																
(3) Age	**0.03**	0.00	1															
Living arrangement																		
(4) Living with no adult	0.01	**0.15**	**0.17**	1														
(5) Living with partner	**-0.04**	**-0.21**	**-0.16**	**-0.80**	1													
(6) Living with other adults	**0.05**	**0.12**	0.00	**-0.16**	**-0.47**	1												
(7) Self-reported health	**0.04**	**0.08**	**0.18**	**0.10**	**-0.12**	**0.05**	1											
(8) Family caregiving hours	0.01	**0.12**	**-0.09**	**-0.12**	**0.04**	**0.12**	0.01	1										
(9) Family income	0.02	**-0.05**	**-0.13**	**-0.15**	**0.15**	*-0.02*	**-0.13**	0.02	1									
(10) Education	**-0.06**	**-0.13**	**-0.19**	**-0.09**	**0.16**	**-0.13**	**-0.24**	**-0.04**	**0.18**	1								
Controlled variables																		
(11) Living with minor children	0.02	*-0.02*	**-0.24**	**-0.11**	**0.05**	**0.08**	**-0.04**	**0.19**	**0.08**	0.01	1							
(12) Employed	**-0.05**	**-0.11**	**-0.55**	**-0.12**	**0.11**	0.00	**-0.26**	**-0.04**	**0.15**	**0.19**	**0.16**	1						
Level 2: Country level																		
(13) Old age support	**-0.10**	0.00	**-0.05**	**-0.04**	**0.09**	**-0.08**	**0.07**	**-0.04**	0.01	**0.23**	**-0.07**	**-0.04**	1					
(14) FLMP	**-0.18**	**-0.09**	**-0.05**	**-0.03**	**0.13**	**-0.17**	**-0.19**	**-0.07**	*0.02*	**0.44**	**-0.09**	**0.08**	**0.43**	1				
(15) Secular-rational values	**-0.19**	0.00	0.00	0.01	**0.07**	**-0.13**	**0.04**	**-0.11**	**-0.05**	**0.16**	**-0.15**	*0.02*	**0.50**	**0.43**	1			
Controlled variables																		
(16) Family care hours by women	**0.21**	**0.03**	**0.03**	**0.03**	**-0.12**	**0.16**	**0.07**	**0.11**	*0.02*	-0.23	**0.12**	**-0.06**	**-0.44**	**-0.57**	**-0.74**	1		
(17) % of population aged 65 or older	**-0.07**	**-0.03**	0.01	**-0.03**	**0.10**	**-0.13**	**0.06**	**-0.09**	-0.01	**0.32**	**-0.13**	-0.01	**0.77**	**0.61**	**0.75**	**-0.55**	1	
(18) GDP	**-0.16**	**-0.07**	**-0.06**	**-0.03**	**0.11**	**-0.14**	**-0.21**	**-0.06**	*0.02*	**0.39**	**-0.04**	**0.14**	**0.22**	**0.85**	**0.34**	**-0.53**	**0.39**	1

Note: Results are not weighted. Bolded numbers are statistically signficant correlations at the level of 0.05 or lower. Numbers in italic are statistically significant correlations at the level of 0.1.

Table 2.5. Unweighted Multilevel Logistic Regression of Individual- and Country-Level Factors Predicting Preference of Family Care (N=7,337)

	1			2			3			4			5			6		
Fixed effects																		
Level 1: individual level																		
Woman	-0.14	(0.05)	**	-0.14	(0.05)	**	-0.15	(0.05)	**	0.12	(0.13)		-0.15	(0.05)	**	-0.14	(0.05)	**
Age	0.00	(0.00)		0.00	(0.00)		0.00	(0.00)		0.00	(0.00)		0.00	(0.00)		0.00	(0.00)	
Living arrangement (ref=living with no adult)																		
Living with partner	-0.01	(0.07)		-0.01	(0.07)		-0.01	(0.07)		0.00	(0.07)		-0.01	(0.07)		-0.01	(0.07)	
Living with other adults	0.09	(0.11)		0.09	(0.11)		0.09	(0.11)		0.09	(0.11)		0.07	(0.11)		0.09	(0.11)	
Self-rated health	-0.05	(0.03)	#	0.06	(0.06)		-0.06	(0.03)	*	-0.05	(0.03)	*	-0.06	(0.03)	*	-0.05	(0.03)	#
Family caregiving hours	0.00	(0.01)		0.00	(0.01)		0.00	(0.01)		0.00	(0.01)		0.00	(0.01)		0.00	(0.01)	
Family income	0.04	(0.02)	*	0.04	(0.02)	*	0.04	(0.02)	*	0.04	(0.02)	*	0.04	(0.02)	*	0.08	(0.02)	**
Education	-0.07	(0.02)	***	-0.07	(0.02)	***	-0.08	(0.02)	***	-0.07	(0.02)	***	-0.07	(0.02)	***	-0.08	(0.02)	***
Living with minor child(ren)	0.04	(0.09)		0.06	(0.09)		0.03	(0.09)		0.04	(0.09)		0.04	(0.09)		0.06	(0.09)	
Employed	-0.10	(0.06)		-0.10	(0.06)		-0.11	(0.06)	#	-0.10	(0.06)		-0.10	(0.07)		-0.11	(0.07)	
Level 2: country level																		
Old age support	-0.17	(0.08)	*	-0.12	(0.09)		-0.17	(0.08)	*	-0.15	(0.08)	#	-0.16	(0.08)	*	-0.17	(0.08)	*
Female labor force participation	-0.09	(0.04)	*	-0.09	(0.04)	*	-0.07	(0.04)		-0.09	(0.04)	*	-0.08	(0.04)	*	-0.09	(0.04)	*
Secular-rational values	-1.85	(0.54)	**	-1.88	(0.54)	**	-1.83	(0.54)	**	-1.87	(0.54)	**	-1.84	(0.54)	**	-1.86	(0.54)	**
Women's caregiving hours	-0.04	(0.06)		-0.05	(0.06)		-0.04	(0.06)		-0.04	(0.06)		-0.04	(0.06)		-0.04	(0.06)	
% of aged 65 and older	0.33	(0.09)	***	0.34	(0.09)	***	0.33	(0.09)	***	0.33	(0.09)	***	0.33	(0.09)	***	0.33	(0.09)	***

GDP per capita	0.00	(0.01)		0.00	(0.01)		0.00	(0.01)		0.00	(0.01)		0.00	(0.01)		0.00	(0.01)	
Level 1 × 2: cross-level interactions																		
Health × old age support				-0.02	(0.01)	*												
Health × FLMP							-0.01	(0.00)	**									
Female × old age support										-0.04	(0.02)	*						
Female × FLMP													-0.02	(0.01)	**			
Family income × secular values																-0.07	(0.03)	*
Random intercept at Level 2	0.34	(0.12)		0.35	(0.13)		0.34	(0.12)		0.34	(0.12)		0.34	(0.12)		0.34	(0.12)	
Akaike Information Criterion (AIC)	9033.76			9037.31			9029.03			9030.98			9027.02			9026.13		
Bayesian Information Criterion (BIC)	9159.78			9162.49			9160.14			9162.09			9158.13			9157.24		
Log likelihood	-4498.88			-4496.69			-4495.52			-4496.49			-4494.51			-4496.44		
L-R test				2.19(1)			3.36(1)		#	2.39(1)			4.37(1)		*	2.44(1)		

Note: the numbers in the parentheses in the last row of the table (L-R test) indicate the degree of freedom differences between the corresponding model and Model 1.

*** $p < 0.001$, ** $p < 0.01$,* $p < 0.05$, # $p < 0.1$.

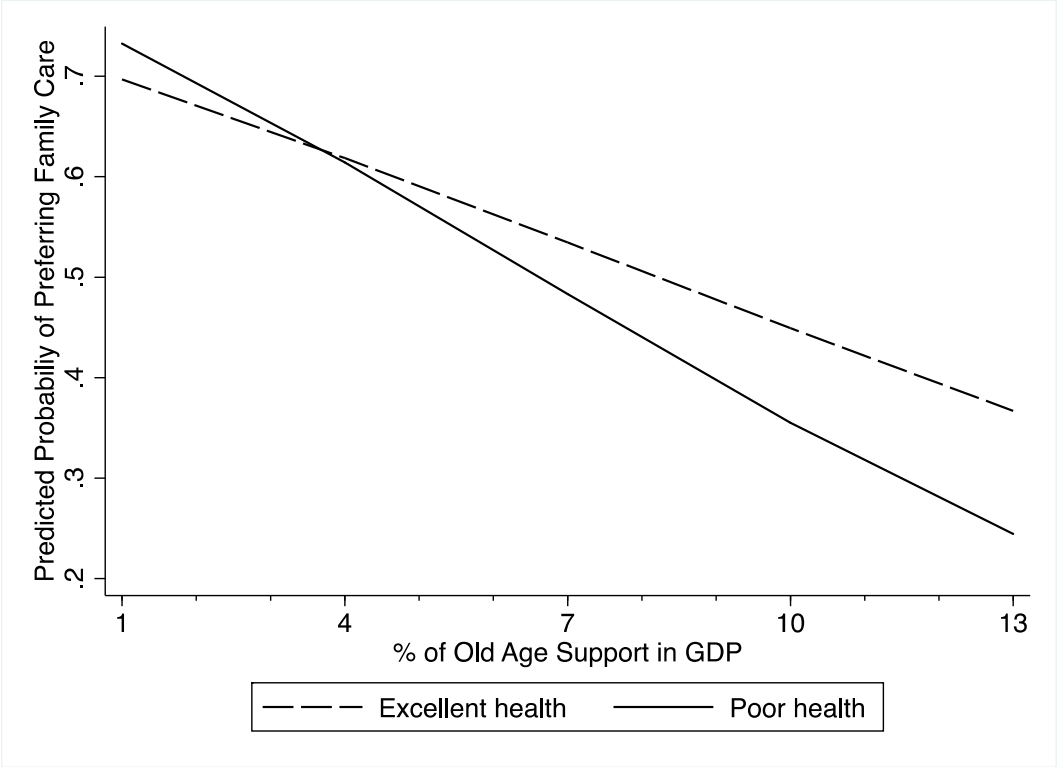


Figure 2.1. Interactive Effects between National Expenditure on Old Age Support and Self-reported Health

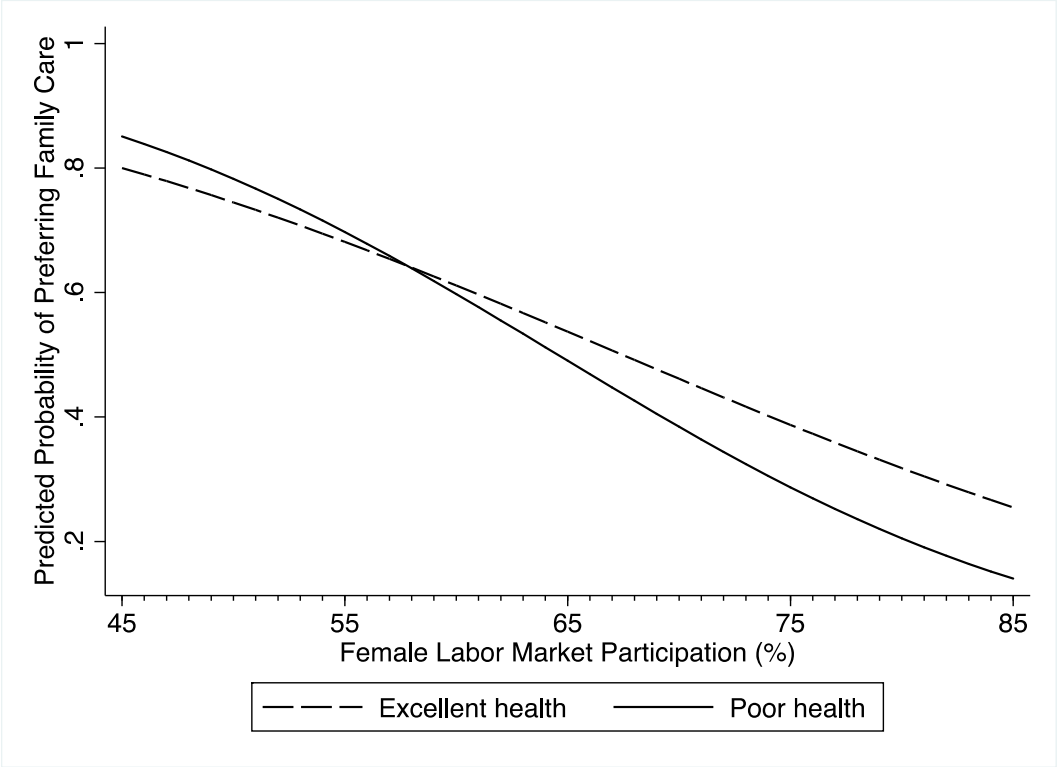


Figure 2.2. Interactive Effect between Female Labor Force Participation and Self-reported Health

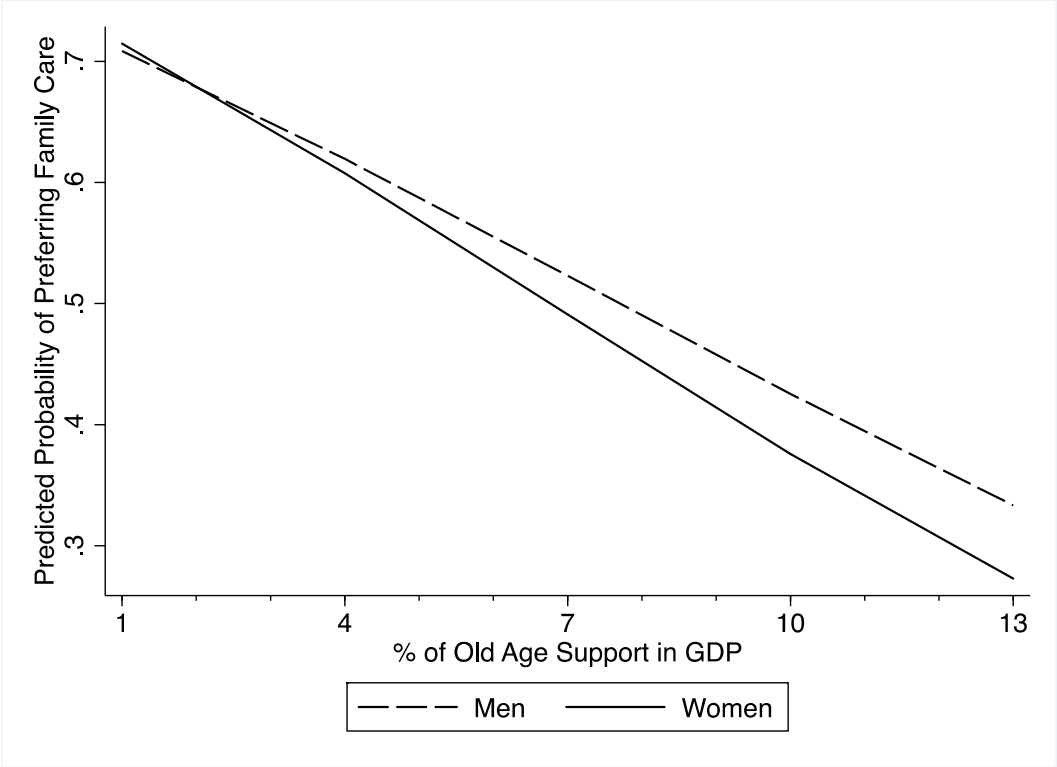


Figure 2.3. Interactive Effect between National Expenditure on Old Age Support and Gender

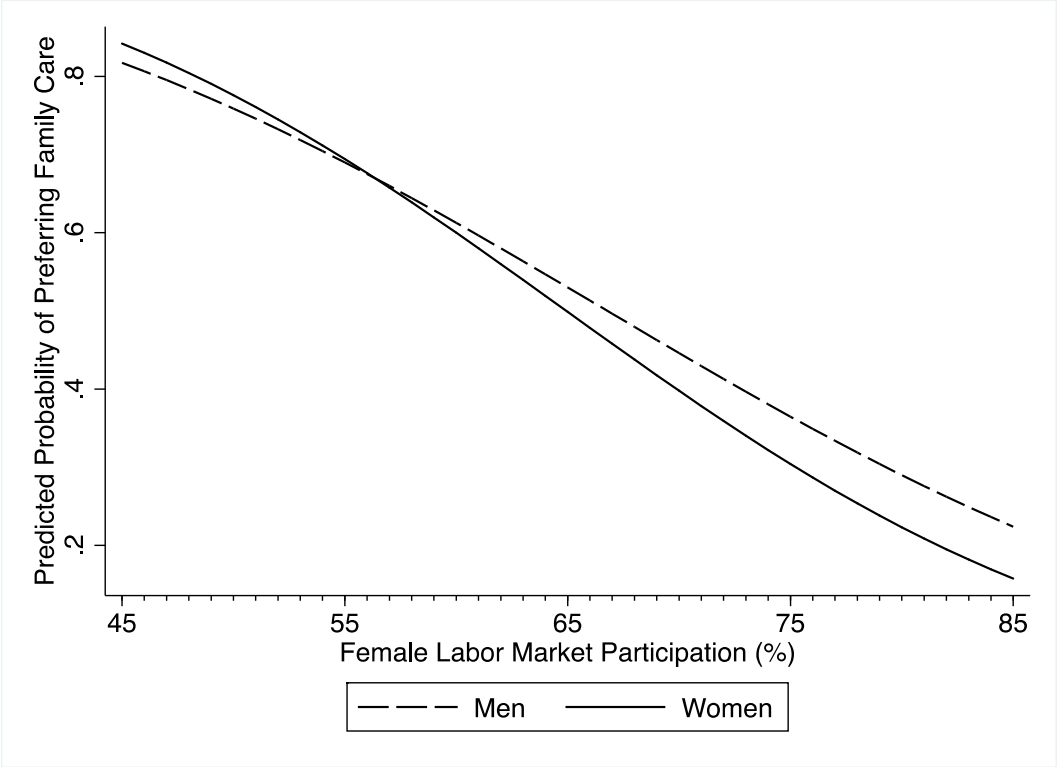


Figure 2.4. Interactive Effect between Female Labor Force Participation and Gender

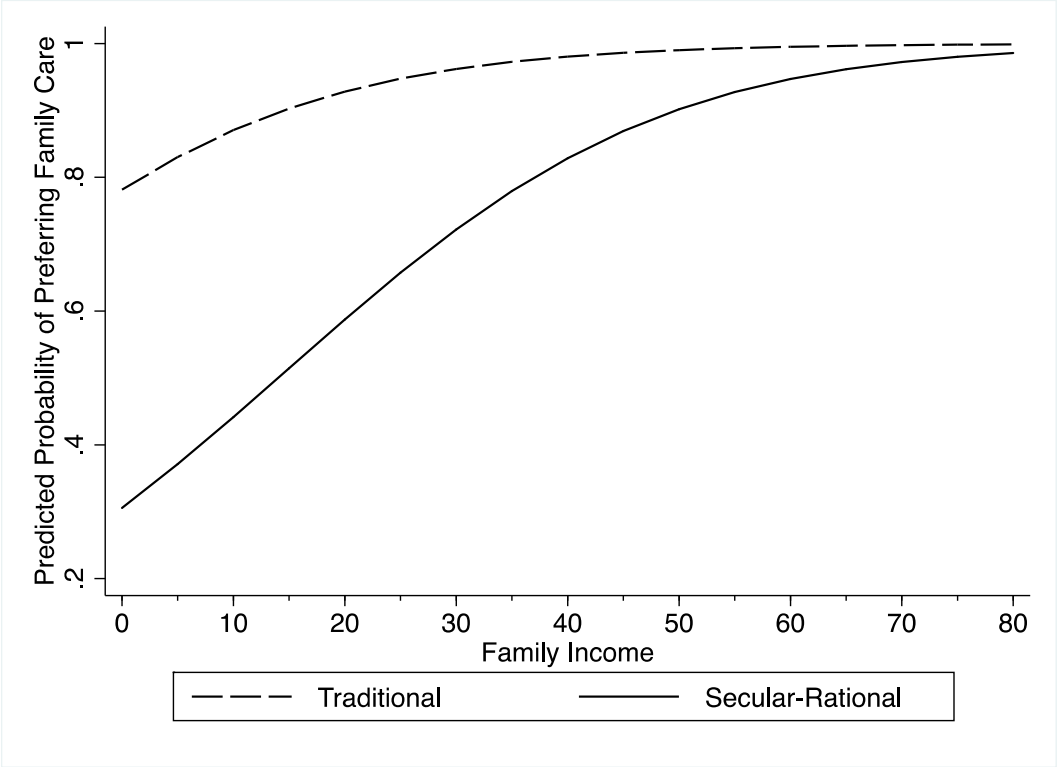


Figure 2.5. Interactive Effect between Family Income and Cultural Values at the Country-level

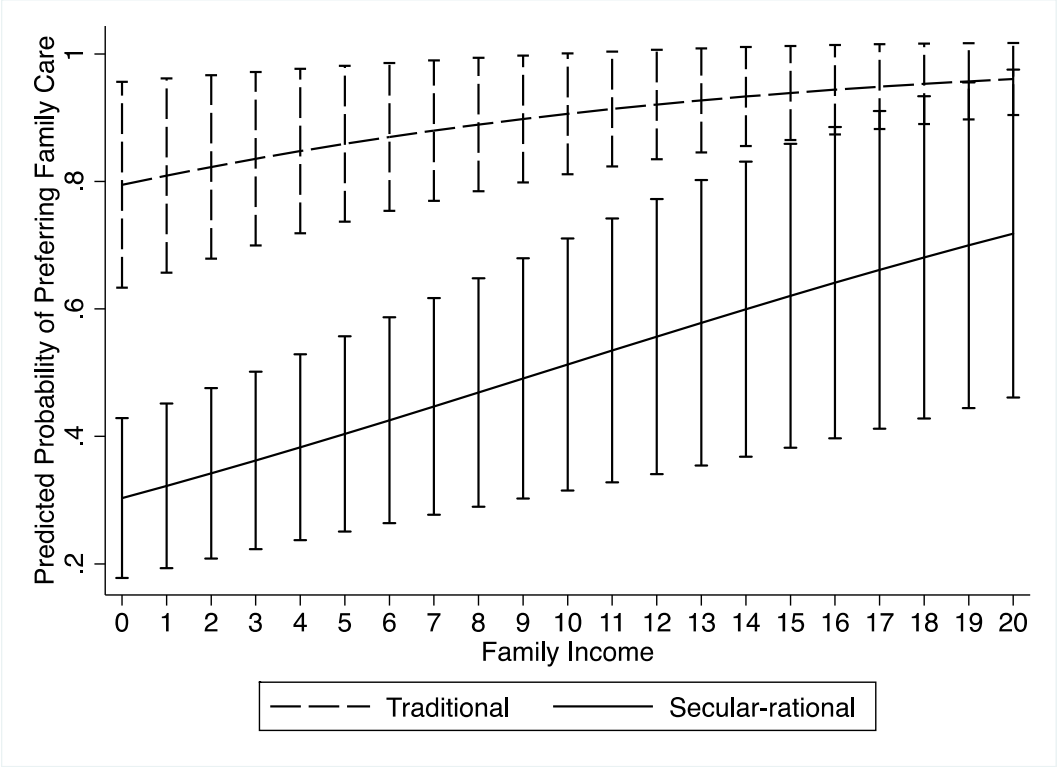
Note: Since respondents' family income was originally recorded in respective countries' currency in ISSP 2012, family income was recoded as the proportion of national median family income in respective countries in the analysis.

Appendix 2.A. Items Characterizing Traditional vs. Secular-Rational Values in World Values Surveys

God is very important in respondent' life.
It is more important for a child to learn obedience and religious faith than independence and determination.
Abortion is never justifiable.
Respondent has strong sense of national pride.
Respondent favors more respect for authority.
Secular-rational values emphasize the opposite.

Note: Adapted from Inglehart and Baker (2000).

Appendix 2.B. Predicted Probabilities of Preferring Family Care with Standard Errors by the Interactive Effect between Family Income and Secular-Rational Values



Chapter 3: STUDY TWO—Intergenerational Relationships between Aging Parents and Adult Children in China: Patrial-traditions Prevail

INTRODUCTION

Intergenerational relationships between parents and adult children have many facets. Two prominent theoretical approaches, the intergenerational solidarity framework and the intergenerational ambivalence perspective, capture the multi-dimensionality of parent-children relationships. The intergenerational solidarity framework proposes six positive dimensions: 1) association, 2) affection, 3) consensus, 4) functions, 5) familial norms, and 6) structures (Bengston and Roberts 1991). On the other hand, the intergenerational ambivalence perspective attempts to capture both positiveness and negativeness in parent-adult-child relationships. Like many other human relationships, intergenerational relationships are saturated with contradictions in terms of psychological feelings between parents and adult children, which eventually leads to ambivalence (Connidis and McMullin 2002; Luescher and Pillemer 1998).

Based on these two theoretical approaches, scholars have discovered a variety of types of intergeneational relationships across cultures and societies. Among those typology studies, only a handful of them have examined the relationships in the context of Chinese culture. Three typology studies of intergenerational relationship have used Mainland Chinese samples (Guo, Chi, and Silverstein 2012; Nauck 2014; Yang, Lowenstein, Jackson, and Yong 2013), in addition to one study conducted in Taiwan (Yi and Lin 2009). The study by Yang and colleagues (2013) includes a measure of intergenerational conflict, but look at only one parent-child dyad in each family. Nauck's study (2014) only examines affectual solidarity and conflict in intergenerational

relationships. Guo and colleagues (2012) incorporates intergenerational ambivalence into the overall typology construction in addition to intergenerational solidarity elements. However, the scope of its sample—including only rural older parents from one municipal region in China—limits its generalizability to the general Chinese population; and no measure of the attitudinal aspect of filial piety is included in their analysis and the discussion of its impact on Chinese intergenerational relationships is lacking.

This study fills the gap in the literature of intergenerational relationship patterns in China. This study extends Guo and colleagues' (2012) study on the structure of intergenerational relationships in rural China by using national data, China Longitudinal Aging Social Survey 2012 (CLASS). I also extend the study by including measures of filial piety to examine how parent-adult child relationships in China can also be influenced by parents' beliefs about the relationship. I use latent class analysis (LCA) to construct the typology of intergenerational relationships. This technique has been widely used to the typology construction of intergenerational relationships (e.g., Dykstra and Fokkema 2011; Silverstein, Gans, Lowenstein, Giarrusso, Bengston 2010; van Gaalen and Dykstra 2006; Yi and Lin 2009).

This study has two parts. First, I adopt a multi-dimensional perspective that considers both two theoretical approaches to construct a typology of intergenerational relationships in China. Second, I examine how parents' and children's characteristics can explain the diversity in intergenerational relationship types both between and within parents (families).

THEORETICAL BACKGROUND ON MULTIDEMENTIONALIT OF INTERGENERATIONAL RELATIONSHIPS

Last three decades have seen a growing literature on conceptualizing the intergenerational relationship between parents and adult children. One of the earliest typologies of intergenerational relationships was based on the intergenerational solidarity framework, in which the intergenerational relationship has six interconnected dimensions (Bengston and Roberts 1991). Soon after the solidarity framework gained its popularity among family scholars, critical examinations of this model started to emerge and eventually we see the development the intergenerational ambivalence perspective that challenges the normativity about intergenerational relationships implied in the solidarity framework (Connidis and McMullin 2002). This perspective emphasizes the simultaneous experience of positive and negative relationship quality and contradictions between roles and behavioral expectations (Luescher and Pillemer 1998).

Intergenerational Solidarity

The intergenerational solidarity framework identifies six components measuring intergenerational cohesion, associational solidarity, affectual solidarity, consensual solidarity, functional solidarity, normative solidarity, and structural solidarity (Bengston and Roberts 1991). Associational solidarity is often measured by the frequency and patterns of interactions with family members. Affectual solidarity refers to the positive sentiment about family members and the reciprocity of such sentiments among them. Consensual solidarity shows to what degree family members agree on values, attitudes, and beliefs. Functional solidarity is about the degree of supports and exchanges of resources between generations. Normative solidarity refers to the strength of commitment to familial norms. Structural solidarity is measured by the relationship structure, such as the household composition and the geographic proximity of family members. Those

dimensions are often interconnected. For example, high affectual solidarity could lead to more frequent contacts between parents and children (Bengston and Roberts 1991). Normative solidarity would motivate more frequent contacts as well as exchanges of resources (Rossi and Rossi 1990). Geographic proximity would facilitate face-to-face contacts, which in turn reduces the cost of and encourage more exchanges of resources.

The solidarity framework was later modified to become the 'family solidarity–conflict' model, which incorporates relationship conflict and considers the possible negative effects of too much solidarity (Silverstein, Chen, and Heller 1996). According to Bengston and others, these two dimensions of solidarity and conflict do not represent a single continuum, from high solidarity to high conflict. Rather, intergenerational solidarity can exhibit both high solidarity and high conflict, or low solidarity and low conflict, depending on family dynamics and circumstances (Bengtson et al. 2002). The revised "solidary-conflict" model, supporting the basic assumption of the multi-dimensionality of intergenerational relationships, better capture family interactions, which always involve harmony and conflict (Bengston et al. 2005).

Intergenerational Ambivalence

Luescher and Pillemer (1998) first propose the definition of intergenerational ambivalence. Their definition has two dimensions: 1) contradictions at the level of social structure, such as roles defined by a series of behavioral expectations that are contradictory, and 2) psychological contradictions with regards to cognitions, emotions, or motivations, i.e., feeling torn by both positive and negative or simultaneously experiencing solidarity and conflict in a relationship. Intergenerational ambivalence is a brokering concept between the solidarity framework, which overemphasizes the

normativity in family relations, and the problematization of family relations (Connidis and McMullin 2002). Based on the psychological dimension, scholars often operationalize intergenerational ambivalence by two approaches. One is to ask respondents directly about whether they have felt torn or have mixed feelings toward their parents or children (e.g. Pillemer et al. 2007). The other one is to ask them to identify the positive aspects of a relationship and the negative ones separately; and then to use a mathematic algorithm to create an ambivalence score (e.g. Kiecolt, Blieszner, and Salva 2012).

FILIAL PIETY AND SON PREFERENCE: THE GENDERED NORMATIVE SOLIDARITY

Filial piety, as part of Confucian ethics, has regulated Chinese intergenerational relationships for thousands of year (Whyte 2003). It requires the absolute obligation from children to respect and cater to the needs of elders, especially parents. This cultural concept and norms are comparable with the normative solidarity in the intergenerational solidarity framework. What differentiates filial piety from the normative solidarity is the emphasis on patrilineality, patrilocality, and the authority of parents, especially the fathers, as well sons and daughters-in-law's primary responsibility of parental care (Ikels 2004; Zhan and Montgomery 2003). Therefore, the patrilineal and patrilocal undertone associated with filial piety likely differentiates parents' perceptions about their relationships with sons and daughters. Son preference, a belief that sons are better than daughters to continue the family name and to fulfill filial piety, could affect parents' evaluations of their relationships with children.

The traditional cultural beliefs favor sons and co-residence with married sons (Yasuda, Iwai, Yi, and Xie 2012). However, recent studies have found that daughters are as good as son (Bian, Logan, and Bian 1998; Whyte 2003) or better at supporting and caring for parents (Cong and Silverstein 2012; Xie and Zhu 2009) and parents are more satisfied with the care provided by daughters than sons (or daughters-in-law) (Zeng et al. 2016). The practices of gendered filial piety are weakening in China. However, the beliefs might persist, especially in rural China. The lack of adequate public support for rural older parents, less strict implementation of one-child policy, and "marrying-out" daughters would motivate aging parents in rural China to expect and to rely on sons and/or daughters-in-law to provide supports. As a result, some ambivalent sentiment might arise if older parents with son preference have no son, and have to rely on daughters or other family members to fulfill filial obligations.

THE STRUCTURE OF INTERGENERATIONAL RELATIONSHIPS

Empirical studies of the structure of intergenerational relationships have revealed diverse typologies of relationships, depending on the dimensions of the relationship under investigation. Types of relationships are identified based on the prevalence of each aspect of solidarity and/or intergenerational conflict. The six-component typology of intergenerational solidarity is among early attempts to capture the multidimensionality of intergenerational relationships (Bengston and Roberts 1991) and understand various patterns of intergenerational relationships across cultures (Dykstra and Fokkema 2011 in Europe; Park, Phua, McNally, and Sun 2005 in South Korea; Silverstein and Bengston 1997 in the U.S.; Yi and Lin 2009 in Taiwan). Many studies that have examined a wider range of relational dimensions have created a complex picture of intergenerational

relationships in the nature of solidarity and ambivalence (Ferring, Michels, Boll and Filipp 2009; Nauck 2004; Steinback 2008; Silverstein, Gans, Lowenstein, Giarrusso, and Bengston 2010; van Gaalen and Dykstra 2006; van Gaalen, Dykstra, and Komter 2010). Although the numbers of relationship types vary by studies, the general rules of identifying the types are similar. Relationship types might include 1) harmonious/amicable relationships that are high in all aspects of solidarity under investigation and low in conflict; 2) civil/detached relationships that are low in solidarity and low in conflict; 3) discordant relationships that are low in solidarity and high in conflict; 4) ambivalent relationships that are high in solidarity and high in conflict. Depending on the numbers of indicators of solidarity, conflict, and ambivalence introduced in modeling and the dominance of one aspect, scholars often specify the nature of solidarity and ambivalence in the typology. For example, van Gaalen and colleagues (2011) classify three types of ambivalent relationship types, differentiated by the level of functional solidarity (help exchange) and relationship quality. Guo and colleagues (2012) identify two types of discordant relationships varied by structural solidarity (geographical proximity).

Three studies examining Chinese intergenerational relationships show that aspects of intergenerational solidarity related to filial piety are prominent (Guo et al. 2012; Yang et al. 2013; Yi and Lin 2009). Associational solidarity measured by face-to-face or phone contacts, and functional solidarity measured by intergenerational instrumental help and or monetary exchange are strong in most relationships. Findings from the Chinese sample in Nauck's cross-national study (2014) reveal that, compared to other Asian and European countries, parent-adult child relationship in China is rather inexpressive according to

adult children, which is low on both affectual solidarity and conflict. However, intergenerational ambivalence is rarely found in these studies. Only a fraction (2.5%) of intergenerational relationship is ambivalent in Nauck's study.

Predicting the Structure of Intergenerational Relationships

Several sets of factors predict various intergenerational relation patterns, including sociodemographic characteristics of parents and children, and their socioeconomic status and familial beliefs.

Sociodemographic factors. The effect of age of parents and/or children is significant across studies. Older parents are more likely to receive supports from children than the younger ones (Dykstra and Fokkema 2011; Park et al. 2005). Younger children are more likely to have an ambivalent relationship with parents than older children (Ferring et al. 2009) and they are more likely to have a reciprocal relationship with parents than middle-aged and elderly children (Park et al. 2005; van Gaalen et al. 2011). Older children and parents are less likely to have an emotionally close relationship with parents and children respectively (Guo et al. 2012; Silverstein and Bengston 1997; Yi and Lin 2009).

Different gender combinations between generations lead to different intergenerational relationship types. The mother-daughter dyad enjoys the closest relationship —high in almost all types of solidarity and low in conflict/ambivalent (Ferring et al. 2009; Steinback 2008). Men are more likely to have a distant relationship in terms of emotional closeness and/or geographic distance with their children or parents than women do. However, a distant relationship for men sometimes is still high in functional solidarity in terms of giving and /or receiving supports from the other

generation (Guo et al. 2012; Silverstein and Bengston 1997; van Gaalen and and Dykstra 2006; Yang et al. 2013).

Marriage is an integrative force of intergenerational relationship. Both parents' and children's marriage increase the likelihood of a cohesive intergenerational relationship (Chan 2008; Silverstein and Bengston 1997; Silverstein et al. 2010; van Gaalen and Dykstra 2006), and married parents are more likely to give instrumental support to children, especially the married children, than those single (divorced, separated or widowed) parents (Dykstra and Fokkema 2011).

Children's lower economic status imposes strain on intergenerational relationships (Guo et al. 2012; Park et al. 2005; Silverstein and Bengston 1997; Yi and Lin 2009). Parents with higher education are more likely to have more an autonomous relationship with children, which is low in most aspects of solidarity (Dykstra and Fokkema 2011; Park et al. 2005), and better-educated children tend to have a cohesive relationship with their parents (Yang et al. 2013).

A few of studies examine the influence of parents' health on the relationship type. Silverstein and colleagues' study (2010) find that parents with functional health issues are more likely to have a detached or disharmonious relationship with their children, perhaps because parents' fragility brings strains into the relationship. Guo and colleagues' study (2012) of rural Chinese families find that only children's functional health, not the parents', has a negative impact for parents to have a cohesive intergenerational relationship.

The number of children/siblings is the predictor that is widely used to control for intra-family influences. The effect of the number of children/siblings is consistent across

countries. A higher number of siblings usually result in a less cohesive relationship with each individual child/parents (Chan 2008; Dykstra and Fokkema 2011; Guo et al. 2012; Yang et al. 2013; Yi and Lin 2009).

Familial beliefs. Stronger familial beliefs motivate adult children in East Asian societies to provide more supports to their parents and encourage co-residence between parents and adult children (Liu 2012; Lin and Yi 2011, 2013; Yang and Li 2009). Traditional and obligatory relationships with high geographic proximity between parents and children, high frequency of support from children, and strong endorsement of children's responsibility of caring for parents, are commonly found in countries with strong familial beliefs (Dykstra and Fokkema 2011; Park et al. 2005; Yang et al. 2013; Yi and Lin 2009), particularly among elderly parents. Meanwhile, there is no clear association between familial beliefs and intergenerational relationship patterns in countries without prevalent and strong familial beliefs (Silverstein et al. 2010).

RESEARCH QUESTIONS

To address the limitations of previous studies, I used national data in China (CLASS 2012) that include information about multiple children in the same family, as well as parents' filial piety beliefs in the explanatory model of the intergenerational relationship type.

This study is a replication and extension of Guo et al.'s 2012 study, and address two research questions. The first question is, what are the types of intergenerational relationships in China? To answer this question, I included a wide range of relational indicators that measure solidarity and relationship strain in Chinese intergenerational relationships. The second question is, how do sociodemographic characteristics of parents

and children, as well as parents' familial beliefs influence the patterns of intergenerational relationships discovered in the first part of the analysis. I predict that parent's and children's age, gender, economic condition/income, as well as parent's health and filial piety beliefs will have significant impacts on the intergenerational relationship type.

METHODS

Data

I used data from the China Longitudinal Aging Social Survey (CLASS) in this study. This survey provides national data[11] on Chinese older parents' family relations. The 2012 pilot survey is part of a longitudinal research project conducted by China People's University to study people aged 60 years and older in Mainland China. The survey used the method of multi-stage stratified random sampling. It had a 91.22% response rate in 2012. The analytic sample has 985 respondents aged 60 years or older with living adult children. They reported on 2,462 parent-child relationships. Among respondents 485 are male and 498 are female.

Measures

Eight categorical indicators at the child-level were used to inform latent class memberships. Seven variables measure intergenerational solidarity, and one measures relationship strain, which is an aggregated variable that combines intergenerational conflict and ambivalence.

[11] Respondents in the 2012 pilot survey were from 17 out of 29 provinces, autonomous regions, and municipalities in China. No information about its national representatives for the pilot survey is available on the website (http://cnsda.ruc.edu.cn/index.php?r=projects/view&id=88857963) (only in Chinese).

Seven indicators were used to measure four dimensions (structural, functional, associational, and affectual solidarities) between parents and each child.

Structural solidarity. Structural solidarity was measured by intergenerational co-residence: 1=living together, 0=not living together.

Associational solidarity. Associational solidarity was measured by the frequencies of face-to-face contacts and of contacts by phone in the past 12 months. They were constructed as two dummy variables: monthly face-to face contact and contact by phone with 1= yes and 0=no.

Functional solidarity. Four dummy variables measured functional solidarity. Intergenerational monetary support was measured by two variables: providing monetary support from children (1=yes, 0=no), receiving monetary support to children (1=yes, 0=no). Intergenerational housework help (instrumental support) was originally measured by the frequencies that respondents had received/given housework help from/to each child during the last year. I dichotomized the two variables as dummy variables: providing monthly instrumental help to children (1=yes, 0=no), and receiving monthly instrumental help from children (1=yes, 0=no).

Emotional closeness. Emotional closeness that measures affectual solidarity was assessed by three questions: "how (emotionally) close do you feel toward this child?"; "How much do you feel that this child would be willing to listen when you want to talk about your worries and problems?"; and "Overall, how well do you and this child get along?" For each question, the score ranges from 0 to 2 (0=not at all, 1=somewhat, 2=very). An overall emotional closeness score is the sum of scores of three questions, ranging from 0 to 6. The higher the score is, the closer the relationship is between parent

and the child. The Cronbach's alpha of this measure for each child ranges from 0.75 to 0.86. Given the highly positive skew in this measure (the mean score for each child is higher than 5), I dichotomized this variable: a score of 6 is 1 (very close) and a score lower than 6 is 0 (somewhat close or not close) after recoding.

Relationship strain. It was measured by parents' evaluations of intergenerational conflict and ambivalence. Ambivalence is often measured by a mathematical formula based on positive and negative emotions in intergenerational relationships (e.g. Hogerbrugge and Komter 2012; Kiecolt, et al. 2011). In CLASS 2012, parent's ambivalent feeling with children was assessed directly by the question, "Do you often have a complicated feeling toward this child". The score ranges from 0 to 3 (0=never, 1=occasionally, 2=sometimes, 3=often). Intergenerational conflict was assessed by four questions: "How often do you feel that you have a tense relationship with this child?" "How often do you think this child makes too many demands on you for help and support?"; "How often do you feel this child is critical of you or what you do?"; and "How often do you feel this child does not care about you enough?". The result from exploratory factor analysis shows that the ambivalence question is loaded with the intergenerational conflict questions. It might imply that, the emphasis on the intergenerational order and harmony in Chinese filial piety traditions still influences Chinese older parents today—that any non-normative feeling about the relationship with adult children is problematic. Empirical evidence of negative impacts of intergenerational ambivalence on parents and/or children's wellbeing also implies the negativity of ambivalence in intergenerational relationships (see Kiecolt et al. 2012). Therefore, an aggregated variable was constructed to measure the relationship strain. An overall score

of the relationship strain is the sum of scores of four questions, ranging from 0 to 15. The higher the score, the more negatively parents perceived about their relationship with their children. The values of Cronbach's alpha range from 0.73 to 0.89 for each individual child. Like emotional closeness, the relationship strain measure was negatively skewed (about 60% of parents reported they never had any negative moment with their adult children). So I dichotomized this variable as 0=never and 1=occasionally/sometimes/often.

Parent's characteristics. Parents' characteristics include age, gender, marital status, education, family income, working status, self-reported health, and familial beliefs. Age was measured in years. Gender and marital status were coded as dummy variables, with female=1 and married/cohabiting=1. Education was coded as 0=illiterate, 1=elementary school, 2=middle school, 3=high school or vocational school, 4=specialized college or higher. Income was measured by natural log of the total family income in 2011. Working status was coded as a dummy variable with 1=working (including farm work), and 0=not working. Self-reported health was measured by parents' report on their current physical health, coded as 1=not healthy at all, 2=not healthy, 3=normal, 4=healthy, 5=very healthy. Their familial beliefs were measured by their responses to three specific filial piety norms. Parents were asked to rate their agreement on the following statements: "Adult children should provide monetary support for aging parent"; "Adult children should live with their parents when they are older (to take care of them)"; and "Sons are the better support (than daughters) for aging parents." All three variables were coded as 1=agree and 0=do not agree.

Children's characteristics. Children's characteristics include age, gender, marital status, education, residential registration, birth order, single child status, economic status, and parental status. The children's characteristics were measured individually for each child. Age was measured in year. Gender and marital status were coded as dummy variables, with female=1 and married/cohabiting=1. I combined children's gender and marital status and created three new dummy variables, married daughter, unmarried son, and unmarried daughter, with married son as the reference category. Education was coded as 0=illiterate, 1=elementary school, 2=middle school, 3=high school or vocational school, 4=specialized college or higher. Children's residential registration was coded as 1=urban and 0=rural. Birth order was coded as 1=oldest, and 0=other. If parents reported the intergenerational relationship information with only one child, the only child status for the child was coded as 1, otherwise 0. Economic status was measured by parents' report of each child's financial conditions: 1=has many economical difficulties, 2=has some economic difficulties, 3=sufficient, 4=affluent, 5=very affluent. Children's parental status was measured by parents' report on whether the adult child has their own children (1=yes, 0=no).

Analytic Strategy

Latent class analysis (LCA) was used to construct the typology of parent-child relationships in this study. LCA detects unobserved latent classes that account for the associations among observed variables (Clogg 1995). It is common to use dummy variables in developing typologies for intergenerational relationships. LCA fits a statistical model that describes the distribution of the data, and based on this model, researchers are able to assess probabilities that cases are members of latent classes. The

latent classes are discrete and need not be ordered along a continuum. All variables included in LCA are dichotomized (see Table 2). The input for LCA is cross-classification table of the scores for each variable in the analysis, and using all available response categories would produce unacceptably sparse data. Although dichotomization reduces information in variables, it ensures the number of cells in the data matrix is manageable. In this study, the classes represent the patterns for the solidarity and relationship strain measures based on their probabilities generated in LCA. Nine indictors are used to construct the typology. They are based on all available variables related to intergenerational solidarity and ambivanlence/conflict in the China Longitudinal Aging Social Survey (CLASS). The typology would capture the four out of six of aspects in the intergenerational solidary framework and intergenerational conflict measured by relationship strain. I do not include any indicators to measure normative and consensual solidarity due to the unavailability of relevant variables in CLASS 2012. Variables measuring normative solidarity about the endorsment of familial norms are only available at the parent level. The survey did not ask about any question about whether older parents and their children would agree in familial beliefs and values, which the consensual solidarity refers to in the intergenerational solidarity framework.

I use STATA v.15 to perform LCA. In this study, LCA starts with a one-class model, which assumes no association among observed variables. More classes are added to later models to find the "best" model. The selection of the "best" model is based on a series of likelihood ratio test (G^2 test) and two goodness-of-fit statistics, the Bayesian Informal Criterion (BIC, Raftery 1986) and Akaike Information Criterion (AIC). The G^2 test is to test which latent class model better fits by using chi-square tests of comparing

each model's log likelihood. If the test is significant, the model with smaller log likelihood has the better fit. In addition, the smaller the BIC and the AIC, the better the model fits the data.

In the second part of the analysis, I conduct a series of two-level logistic regression analyses to examine the associations between parents' and children's sociodemographic characteristics (see Table 1) and the latent types of intergenerational relationships. I use STATA 15 to perform the multi-level analysis. For each two-level model, the dependent variable is one latent intergenerational relationship type in comparison with the other three types. Level-1 independent variables include children's sociodemographic characteristics and Level-2 independent variables include parents'. The multilevel models are random-intercept models. As suggested by Guo et al. (2012), a random-intercept two-level model allows parent-specific intercepts to vary from family to family. Thus, unmeasured variance at the family level is accounted for.

RESULTS

Descriptive Statistics

Table 1 shows the descriptive statistics of variables measuring parents' and children's characteristics. Parent's average age was 67.68 years old; 80% of parents were married or cohabiting with a partner. On average, their education level was between elementary school and middle school (mean=1.79); their annual personal was 21,545.22 yuan (approximately $3,300 in 2011); their self-reported health was normal (mean=3.21). More than a quarter of parents (28.93%) were working (including farm work). Parents had strong beliefs about children's filial responsibilities: 90.50% of them believed children should provide financial support to parents, and 61.12% believed children

should live with aging parents. A substantial number of parents believed that sons are better than daughters to take care of aging parents (27% of all parents). Children's average age was 41.53 years old. Majority of the children were married (87.95%). Among all children, 45.15% were married son, 42.80% were married daughters, 6.98% were unmarried sons, and 5.07% were unmarried daughters. Children had higher average level of education than parents (mean=2.59, between middle school and high school). Based on parent's reports, children average economic status was more than sufficient but less than affluent (mean=3.28). More than 40% of children were urban residents. Little less than 40% of them were the oldest child of the family (38.90%); and about 8% were the only child of the family. Most of them had a child of their own (90.73%).

Table 2 presents the distribution of indicators used to create the typology of intergenerational relationships. According to parent's reports, about one fifth of them lived with adult children. Close to half of them had a monthly face-to-face contact with children (48.97%); more than 40% had a monthly phone contact with children (43.34%). Parents were less likely to provide than to receive monetary or instrumental support. Less of one third of parents (30.21%) sent monetary support to children while about 80% would receive monetary support from children (79.34%). Less than a quarter of parents (23.47%) provided monthly instrumental support to children, while more than 40% of them (42.27%) receive such support from children. About 60% of parents (59.27%) reported that they were emotionally close with their children, while about 40% of them (40.33%) had relationship strain with children.

Typologies of Intergenerational Relationships

Table 3 summarizes the goodness-of-fit statistics of four latent class models. STATA 15 renders results for one- to four-class models. The model cannot converge in STATA for a five-class model. AIC and BIC statistics successively decreased with each additional latent class added, indicating a better fit. The likelihood ratio test confirmed the four-class model was the best fit ($\chi^2(10)=145.12$, $p<0.001$).

Table 4 provides information on the intergenerational relationship types. As shown at the top of Table 4, 23 percent of the relationships between the older parents and their children were *discordant*, 24 percent were *detached*, 29 percent were *intimate-at-at-a-distance*, and 23 percent were *tight-knit*. These percentages were the cumulative probabilities of a relationship belonging to the respective type of all parent-adult child relationships, as reported by older parents. The coefficients in the columns of types 1 to 4 indicate the probability that a single intergenerational relationship was characterized by specific dimensions of solidarity/relationship strain, under the condition that the relationship was of that type. For example, in the discordant relationship there is a one percent probability that a child was living with an older parent, and an 83 percent probability that a child had face-to-face contact with an older parent at least once a month.

The first type, *discordant*, features the highest[12] probability of having relationship strain with children (69%), the lowest probability of being emotionally close with them (8%), and low probabilities of providing instrumental support to children (3%) or

[12] Many studies do not specify cut-off points for low and high probabilities, which seem largely depending on the LCA results and their typology schema. One exception is the study by Silverstein and colleagues (2010). Their cut-off point is 40%. In the present study, the cutoff point for relatively high probability is 50%.

receiving instrumental support from children (12%). It has high probabilities of face-to-face (83%) or phone contact (74%) with children at least once a month.

The second type, labeled as *detached*, is low on relationship strain and most solidarity dimensions, and only high on monthly face-to-face contact (83%) and receiving monetary support from children (84%).

The third type, intimate-at-a-distance, has the highest probability of being emotionally close with children (69%) and relatively low relationship strain (30%). It is low on both types of contact: 26% for face-to-face and 20% for phone contact, and the probability for living together is zero and not significant. This type of relationship also had the highest probabilities of intergenerational monetary exchange (38% for providing and 88% for receiving monetary support), and the second highest probability of receiving instrumental support (71%).

The forth type, *tight-knit*, has high probabilities for all indicators of solidarity except for phone contacts, combined with a non-significant probability of relationship strain. It has the highest probability of intergenerational co-residence, and the highest probabilities of intergenerational instrumental exchange (79% for providing and 75% for receiving). It also has the second highest probability of being emotionally close with adult children (58%), only smaller than that in the intimate-at-a-distance type.

In sum, four intergenerational relationship types in China were identified. The first one is *discordant*: frequent face-to-face and phone contacts, rare intergenerational instrumental support exchange, emotionally detached, and high relationship strain. The second one is *detached*: frequent face-to-face contact, rare intergenerational instrumental support exchange, and low relationship strain. The third one is intimate-at-a-distance:

infrequent contacts, frequent receiving instrumental help, emotionally close and low relationship strain. The fourth one is *tight-knit*: intergenerational co-residence, frequent intergenerational monetary and instrumental help exchange, and emotionally close. Note that several probabilities were not statistically significant, so regardless of their actual values they were not used to define the relationship type.

Predictors of Intergenerational Relationship Typologies

Table 5 summarizes the multilevel logistic mixed models to predict the type of intergenerational relationship based Chinese older parents' reports on the characteristics of their own and their children.

Regarding older parents' socioeconomic status, more educated older parents were more likely to be in a detached relationship and were less likely to be in a tight-knit relationship. Richer older parents were less likely to be in a discordant relationship or a tight-knit relationship, and more likely to be in an intimate-at-a-distance one. Working older parents were more likely to have a discordant relationship with their adult children and less likely to in a tight-knit relationship.

Older parents who believed that adult children should live with aging parents were less likely to be in an intimate-at-distance relationship, and much more likely to have a tight-knit relationship with their children. Older parents who believed that sons are the better support (than daughters) for aging parents were more likely to have a discordant relationship with their children and less likely to be in an intimate-at-distance relationship with them. In addition, married older parents were less likely to have a tight-knit relationship with their adult children than the unmarried.

Children's gender and marital status is significant to predict all four types of relationships. Parents with unmarried sons were less likely to a discordant or an intimate-at-distance relationship with them than those with married sons, and they were more likely to have a detached relationship than those with married sons. However, a son's marital status does not influence whether or not older parents had a tight-knit relationship with sons, since old parents' likelihood to have a tight-knit relationship with unmarried son is not different from married son.

Compared to those with married sons, older parents with married daughters were more likely to have a discordant, a detached, and an intimate-at-distance relationship with their daughters, but less likely to have a tight-knit relationship with them. It appears that older parents with married daughters were less likely to have a cohesive relationship with their daughters than those with married sons. Also compared to those with married sons, older parents with unmarried daughters were more likely to have a detached relationship, but less likely to be in an intimate-at-a-distance relationship with them.

Parents with older children and less educated children were more likely to have a discordant relationship. Those with younger children and more educated children were more likely to have a tight-knit relationship with their children. Parents with children with higher economic status were more likely to have an intimate-at-a-distance relationship, but less likely to have a tight-knit relationship with children. Older parents whose adult children had children were less likely to have a discordant relationship with them and were more likely to have an intimate-at-a-distance one. Having only one adult child increased the likelihood for older parents to have a tight-knit relationship with this

single child; however, it did not affect the likelihood for them to have other three types of relationships.

To better understand the effect of son preference for elder care on the type of intergenerational relationships, an interaction between child's gender and marital status and son preference was introduced in the models predicting the discordant and the intimate-at-a-distance relationships[13], as shown in Model 2 and Model 5 respectively. The interactive effects were significant for older parents with married daughters in both models in comparison with those with married sons. Older parents with the son preference were more likely to have a discordant or an intimate-at-a-distance relationship with married daughters than with married sons. The interactive effect was significant for those with unmarried sons in Model 2. Older parents with the son preference were less likely to be in a discordant relationship with unmarried son than with married son. For the discordant relationship type illustrated in Figure 1, for older parents who did *not* believe that sons are the better support (than daughters), they had a discordant relationship with sons (married and unmarried) as much likely as they did with married daughters. They were less likely to have one with unmarried daughters. For those who were believers, they were more likely to have a discordant relationship with married daughters but less likely to have one with unmarried sons than with married sons. No difference existed between married son and unmarried daughters. For the intimate-at-distance relationship illustrated in Figure 2, compared to those with married sons, older parents *without* the son preference were less likely to have an intimate-at-distance

[13] The effects of son preference were not significant in predicting the detached and the tight-knit types. Additional analysis with the interaction terms did not render significant results. Therefore, the interaction terms were not included.

relationship with unmarried sons and unmarried daughters, but they were more likely to have one with married daughters. For those with the son preference, older parents were more likely to have an intimate-at-a-distance relationship with married daughters than with married son. They were as likely to have this type of relationships with unmarried sons and unmarried daughters as with married sons. Regardless of older parents' belief, their likelihood of having an intimate-at-distance relationship with married daughters was higher than with married sons.

DISCUSSION

This study examined the underlying structure of intergenerational relationships between older parents and their adult children in China. Latent class analysis (LCA) on a wide range of indictors of intergenerational solidarity and relationship strain between older parents and children revealed four relationship types: discordant, detached, intimate-at-a-distance, and tight-knit, which embodies mostly the intergenerational solidarity framework. However, I was not able to detect any ambivalence in the relationships. No relationship type in this study was both high in positive (solidarity) and negative (relationship strain) perceptions about the intergenerational relationship.

I replicated and extended the study by Guo and colleagues (2012). I identified four types of intergenerational relationships with national data, while Guo and colleagues find five types in a rural sample in China. Both studies find a tight-knit type of intergenerational relationships, which are high in four solidarity aspects and low in relationship strain. We both find that monetary support is mostly coming from adult children to older parents and is prevalent across all relationship types. The proportion of discordant relationships in the present study is lower (23%) compared to 32% in Guo and

colleagues' study. A plausible explanation is the greater economic disadvantage of rural older parents that might impose more strains on their relationships with adult children than those in the general population. A reciprocal relationship type, where children are giving money in exchange for parents' instrumental support (Guo et al. 2012), is not found in the present study. Instrumental support from parents to adult children, which is most likely to be older parents providing care work for grandchildren in exchange of monetary support from their migrant adult children, is unique and much more common in rural China than in the general population.

Tight-knit relationships, the most cohesive relationship type found in this study, are characterized by high probabilities of intergenerational co-residence, receiving monetary support, instrumental support exchange, and emotional closeness. High probabilities of co-residence and instrumental support exchange distinguish this type of relationships from other three types in this study. Married older parents were more likely to have this type of relationship with children.

The most prevalent type is the intimate-at-a-distance type; 29% of respondents had this type of relationships with their adult children. The probabilities for older parents who had this type of relationships were low to have contacts either face-to-face, by phone and or to live with children. However, the physical distance did not stop them from having an affectionate relationship with their children. This type of relationships has the highest probability of older parents reporting they were emotionally close to their children. Comparing the tight-knit and intimate-at-distance types with those of detached and discordant types, it seems that emotional closeness is an important condition for older parents to receive instrumental support from their adult children.

The detached type is high in probabilities of face-to-face contacts and receiving monetary support from children. However, older parents who had this type of relationships did not have an emotionally close relationship with their children[14]. Visiting parents on a regular basis and giving them money are obligatory for adult children to fulfill their filial piety in China. However, children's performing these duties does not necessarily entail a cohesive relationship but a detached one between parent and children in China, when other aspects of functional solidarity and affective solidarity are low (also see Yi and Lin 2009). Meanwhile, the low probability of having relationship strain might correspond to insignificant probabilities of being emotional close and having monthly contacts by phone.

The discordant type is featured by a high probability of having relationship strain and a low probability of being emotional close with adult children, though it is high in probabilities of monthly contacts either face-to-face or by phone. Older parents with this type of relationships were much likely to experience relationship strain.

Across all four types, the probability of older parents receiving monetary support from adult children is consistently high. Given a high percentage reported by older parents overall (73.4%), it is not a surprise. A high probability of receiving monetary support from children is also found in Guo and colleagues' study of older parents (2012) in rural China.

None of the relationship types shows intergenerational ambivalence. Neither do two previous typology studies that incorporate the intergenerational conflict detect ambivalence that is high in both emotional closeness and conflict (Guo et al. 2012; Yang

[14] The probability of being emotionally close to children is not significant.

et al. 2013). Only one study (Nauck 2014) finds a fraction of parent-adult-child relationships were ambivalent that is high in both affective solidarity and conflict. In this study, the relationships that are high in relationship strain are most likely to be low in emotional closeness. In addition, the ambivalence measure in CLASS 2012 loading with other variables measuring intergenerational conflict would imply the similarity between ambivalence and conflict in older parents' perceptions about the relationship. Unlike their western counterparts, Chinese parents' ambivalent feelings about relationships with children might be perceived as a warning sign for a bad relationship.

In this study, I also examined the associations between characteristics of parents and children and derived types of relationships. Among the predictors measuring parents' characteristics, the most consistent significant predictor was parent's socioeconomic status. Their filial obligation beliefs were associated with two of the four relationship types. Older parents' demographic characteristics, such as age, gender, marital status, and health status, have little to do with the three out of four types of relationships they had with children. Among children's characteristics, gender and marital status are the most prominent factors to predict the relationship types, along with their age, socioeconomic status, only-child status and parental status.

The strong associations between children's gender and marital status and the relationship types demonstrate that patrilineal and patrilocal traditions are still prevalent in China. Older parents were much less likely to have a tight-knit relationship and were more much likely to have a discordant relationship with married daughters than married sons. The patrilineal and patrilocal traditions that emphasize sons' duty to continue the family legacy and to take care of aging parents in close proximity appeared to distance

parents, especially for those with the son preference for elder care, from having a both physically and emotionally close relationship with married daughters but not with unmarried daughters. Meanwhile, older parents' relationships with unmarried daughters were similar to what they had with unmarried son in comparison to those with married son, except for the discordant relationship that varies by older parents' son preference[15]. Nevertheless, older parents, regardless of their son preference, were more likely to maintain an emotionally close relationship with married daughters and received instrumental help from them at a distance than married sons, as presented in the intimate-at-a-distance relationship type. On the other hand, the marriage effect on older parents' relationship with sons is diverse. While marriage increased the likelihood that married sons had a less cohesive but emotionally charged relationship (the discordant and the intimate-at-distance type) with parents, marriage had no impact on sons' ability to maintain a tight-knit one and greatly decreased the likelihood they had a detached relationship with parents.

Older parents and their children's socioeconomic status were also greatly associated with the relationship type. Both older parents and children with higher economic status enjoyed a relationship that was emotionally close yet physically distant from each other (higher probability in an intimate-at-a-distance relationship and lower probability in a discordant). More educated children were more likely to have a cohesive relationship with parents (higher probability in a tight-knit relationship and lower

[15] Older parents with son preference were less likely to have a discordant relationship with unmarried daughters than married son, while the probability they had one with unmarried son was similar to what they had with married son. Older parents without son preference were as likely to have a discordant relationship with unmarried daughters as they had with married son, while the probability they had one with unmarried son were lower than they had with married son.

probability in a discordant relationship), but parents' higher level of education led to less cohesive relationships (higher probability in a detached relationship and lower probability in a tight-knit relationship). Parents and children's low economic status did not impose stress on the relationship, in contrast to what was suggested by previous studies (Guo et al. 2012; Park et al. 2005; Silverstein and Bengston 1997; Yi and Lin 2009). Instead, both parents and children's lower economic status led to a cohesive relationship, i.e., the tight-knit relationship found in this study. Economic disadvantage might motivate parents and children to live in the same household where they can pool all available resources together and become emotionally close. Highly educated parents, on the other hand, could be more resourceful to live independently from their children. More educated children would be more able to and/or more willing to be both physically and emotionally close with their parents because of their higher level of education.

LIMITATIONS AND FURTHER RESEARCH

First, the observations analyzed in latent class analysis in this study are correlated because they were siblings of same parents. The more appropriate method is to use multilevel LCA to control for non-independence of observations. However, no procedure is available in STATA 15 to perform multilevel LCA. I attempted to perform the multi-level LCA in Mplus, but the model could not converge. Ignoring the nested structure of the data, especially with larger intraclass correlation coefficients (ICC) that indicate the variance at the higher-level, would lead to a poor model fit (underestimated BIC) and less accurate classification of individuals (Kaplan and Keller 2011). Given three large ICCs[16] (larger than 0.7), the relationship types identified in this study might be affected by

[16] Four classes are identified in LCA, so it is only possible to specify three independent ICCs.

ignoring the two-level structure of the data, in which multiple children's information is nested within one parent for most parents.

Second, the list of variables used in LCA to construct the typology is not comprehensive according to the integenerational solidarity framework. Indictors for normative solidarity are only available at the parent level in the 2012 China Longitudinal Aging Social Survey No question in the survey asked about parent-child agreement in familial beliefs. In addition, five variables measuring intergenerational conflict and ambivalence were not included in LCA individually to create the typology. Instead, they were aggregated into one measure of relationship strain to correspond to the measure of emotional closeness. Past typology studies have used multiple indicators of intergenerational conflict and ambivalence to find patterns of intergenerational relationships with a focus only on ambivalence (e.g., Silverstein et al. 2010; van Gaalen et al. 2010). However, few theoretical development is done to explore the multi-dimensionality of conflict and ambivalence. Future research could further examine the negative yet integral aspect of intergenerational relationships to complement the integenerational solidarity framework and to create a more comphrehensive profile of intergenerational relationships.

Second, only the information from older parents was used to construct the intergenerational relationship typology in this study. Previous studies that were able to examine the same dyad from two generations' perspectives have found discrepancies in the derived types between parents and children (Giarrusso, Feng and Bengston 2004; Park et al. 2005). Given the rapid social and cultural transformations in China in the last

few decades, generational discrepancies are expected. Future studies are needed to test the potential generational differences and possible predictors of such differences.

Third, older parents' urban/rural residential status was not controlled in the analyses because the variable was not available in the survey. There has been a great division in China between urban and rural areas in socioeconomic development, pension system, and family structure related to old age experiences. Rural residents lag behind urban residents in family income (Xie and Zhou 2014) and educational attainment (Zhang, Li, and Xue 2015). The formal pension system covers much less rural workers (mostly farmers) than it does on urban workers (Wang 2006). The coverage of the new implemented rural old pension system is limited, and the money rural elders can receive could barely cover their living expenses (Shen and Williamson 2010). Therefore, the effects of socioeconomic status on the intergenerational relationship type are likely to be confounded by older parents' residential status. Also, the effect of only-child status might be affected by respondents' urban/rural residential status, since the one-child policy was more strictly implemented in cities than in the countryside. Future studies should further explore the potential urban/rural variations in how people maintain their relationships with the older/younger generation in family.

CONCLUSION

Despite these limitations, this study is able to extend Guo and colleagues' study (2012) on rural family relationships to a more generalizable examination of parent-adult child relationships in China. The overall pattern of intergenerational relationships in China is rather traditional. Older parents' relationships with their children were largely

affected by their children's gender and marital status, as patrilineal and patrilocal traditions dictate.

Specifically, the findings of the multilevel regression analysis pinpoint that gendered Chinese familial beliefs, "raising son is for the purpose of being looked after in old age" and "a married daughter is spilled water" are still salient among contemporary Chinese families. Traditional older parents with the son preference for elder care, were much less likely to have a discordant or an intimate-at-a-distance relationship, especially when they had sons to realize their beliefs, while they were not more likely than non-traditional ones to have a tight-knit or detached relationship with their children. In addition, the son preference acted more subtly through the effects of child's gender and marital status on the relationship type. Parents were less likely to have a cohesive parent-child relationship with married daughters than with married son. Patriarchal and patrilineal traditions have alienated Chinese married daughters from their families of origin for centuries (Whyte 2003). This study adds to the evidence that marriage continues to create a barrier for daughters to be close to their parents nowadays. And married daughters' experience is very likely to be impacted by parents' son preference and depends on whether they were the only child of their family of origin. Further analysis on of the tight-knit type (see Appendix) shows that married daughters were least likely than unmarried daughters, unmarried sons, and married sons to have this type of relationships when they had siblings, while no difference among unmarried daughters, unmarried sons, married daughters and married sons in the likelihood for older parents to have this type of relationship if the child did not have siblings. One child policy might have motivated parents to be as much involved with daughters as long as they do not

have sons (Fong 2002) or other siblings. However, older parents' relationship with their daughters was seriously affected once daughters got married. China has loosened its One-child policy and replaced it with a Two-child policy (2015). More families will have more than one child. Future research on Chinese family and its gender dynamics can explore whether and how daughters' relationships with parents might change when one family has more than one child and whether the parent-daughter relationships would vary by the daughter's marriage and her siblings' gender.

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Table 3.1. Characteristics of Parents and Their Children

	Mean/%	S.D.	Range	*N*
Parent's Characteristics				
Age	67.68	6.36	60−93	*985*
Female	50.61%		0−1	*985*
Married/cohabiting	80.00%		0−1	*985*
Education[a]	1.79	1.32	0−4	*985*
Personal income (*Yuan*)	21,545.22	19427.85	0-160,000	*887*
Working	28.93%		0−1	*985*
Self-reported health[c]	3.21	1.00	1−5	*985*
Filial beliefs: Children should				
Provide financial support to parents	90.50%		0−1	*980*
Live with parents	61.12%		0−1	*969*
Son preference for elder care	27.03%		0−1	*950*
Children's Characteristics				
Age	41.53	7.91	18−80	*2494*
Marital status and gender				
Married son	45.15%		0−1	*2507*
Married daughter	42.80%		0−1	*2507*
Unmarried son	6.98%		0−1	*2507*
Unmarried daughter	5.07%		0−1	*2507*
Education[a]	2.59	1.18	0−4	*2513*
Economic Status[b]	3.28	0.78	1−5	*2517*
Registered urban resident	41.35%		0−1	*2513*
Oldest child	38.90%		0−1	*2522*
Single child	7.93%		0−1	*2522*
Have own child	90.73%		0−1	*2493*

[a]: 0=no education, 1=elementary school, 2=middle school, 3=high school or vocational school, 4=specialized college or higher.
[b]: Parents' appraisal,1=has many economic difficulties, 2=has some economic difficulties, 3=sufficient, 4=affluent, 5=very affluent.
[c]:1=not healthy at all, 2= not healthy, 3=normal, 4=healthy, 5=very healthy.

Table 3.2. Distribution of Indicators Measuring Intergenerational Relationships Reported by Parents (N = 2,522)

Indicators	%
Living with adult children	20.22
Monthly face-to-face contact	48.97
Monthly contact by phone	43.34
Providing monetary support to children	30.21
Receiving monetary support from children	79.34
Providing monthly instrumental support to children	23.47
Receiving monthly instrumental support from children	42.27
Emotional close	59.27
Relationship strain	40.33

Table 3.3. Model Fit for Optimal Number of Classes in the Latent Class Analysis of Intergenerational Relationships (N=2,522)

No. of classes	LL	*df*	AIC	BIC	G^2
1	-14070.30	*9*	28158.61	28211.10	
2	-13124.56	*19*	26287.12	26397.94	945.74***
3	-12865.79	*29*	25789.58	25958.73	258.77***
4	-12720.67	*39*	25519.34	25746.82	145.12***
5	Not converge				

Note: LL = Log likelihood; AIC = Akaike's information criterion; BIC = Bayesian information criterion; G2 = Likelihood Ratio Test; *** p <0.001.

Table 3.4. Latent Class Probabilities for Four-Class Model of Intergenerational Relationships in China (N= 2,462)

	Type 1 Discordant	Type 2 Detached	Type 3 Intimate-at-a-distance	Type 4 Tight-knit
Latent class probability	0.23	0.24	0.29	0.23
Living together	0.01***	0.03***	0.00	0.83***
Face-to-face contact at least once a month	0.83***	0.83***	0.26***	0.07***
Phone contact at least once a month	0.74***	0.50	0.20***	0.35***
Providing monetary support to children	0.18***	0.30***	0.38***	0.33***
Receiving monetary support from children	0.69***	0.84***	0.88***	0.72***
Providing monthly instrumental support to children	0.03***	0.00*	0.16***	0.79***
Receiving monthly instrumental support from children	0.12***	0.07***	0.71***	0.75***
Emotional closeness	0.08***	0.99	0.69***	0.58**
Relational strain	0.69***	0.14***	0.30***	0.52

Note: 1) The number of parent-children relationships analyzed was 2,462. 60 cases were not assigned to any type because their probabilities to be identified as either type are lower than 50%.

2) Latent class probabilities greater than 0.5 are considered relatively high.

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.

Table 3.5. Multilevel Logistic Regression Analyses of Predicting Four Latent Classes of Intergenerational Relationships in China (N=2,462)

	Discordant		Detached	Intimate at a distance		Tight-knit
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	Coef. (S.E.)	Coef. (S.E.)	Coef. (S.E.)	Coef. (S.E.)	Coef. (S.E.)	Coef. (S.E.)
Fixed Effects						
Parent's Characteristics						
Age	0.00 (0.03)	0.00 (0.03)	0.02 (0.03)	-0.02 (0.03)	-0.02 (0.03)	-0.01 (0.02)
Woman	-0.27 (0.31)	-0.29 (0.31)	0.12 (0.29)	0.30 (0.30)	0.29 (0.30)	-0.26 (0.15)
Married/cohabiting	-0.45 (0.37)	-0.45 (0.37)	0.12 (0.35)	0.55 (0.37)	0.55 (0.37)	-0.39 (0.18) *
Education	0.25 (0.14)	0.25 (0.14)	0.29 (0.13) *	-0.35 (0.14) **	-0.36 (0.14) *	-0.09 (0.07)
Personal income	-0.21 (0.10) *	-0.21 (0.10) *	-0.06 (0.10)	0.44 (0.12) ***	0.44 (0.13) ***	-0.11 (0.05) *
Working	0.75 (0.34) *	0.75 (0.34) *	0.57 (0.33)	-0.94 (0.35) **	-0.94 (0.35) **	-0.22 (0.17)
Self-reported health[c]	-0.13 (0.15)	-0.13 (0.15)	0.03 (0.14)	0.23 (0.14)	0.23 (0.15)	-0.12 (0.07)
Filial beliefs: Children should						
Provide financial support	-0.71 (0.22)	-0.71 (0.52)	0.04 (0.49)	0.55 (0.50)	0.55 (0.50)	-0.03 (0.27)
Live with parents	-0.40 (0.21)	-0.39 (0.31)	-0.55 (0.29)	-0.77 (0.30) *	-0.77 (0.31) *	1.20 (0.17) ***
Son preference for elder care	0.83 (0.33) *	0.46 (0.39)	-0.02 (0.32)	-0.85 (0.34) *	-1.30 (0.40) **	-0.03 (0.16)
Children's Characteristics						
Age	0.06 (0.02) *	0.07 (0.02) **	0.01 (0.02)	0.01 (0.02)	0.01 (0.02)	-0.06 (0.02) **
Gender × marital status (ref = married son)						
Unmarried son	-1.11 (0.49) *	-0.70 (0.56)	1.27 (0.20) ***	-1.88 (0.63) **	-2.16 (0.71) **	0.44 (0.26)
Married daughter	0.52 (0.20) **	0.22 (0.24)	1.14 (0.44) *	0.68 (0.19) ***	0.44 (0.21) *	-1.72 (0.18) ***
Unmarried daughter	-0.88 (0.57)	-1.46 (0.71) *	1.46 (0.49) **	-1.82 (0.58) **	-2.06 (0.65) **	0.31 (0.29)
Education	-0.50 (0.13) ***	-0.47 (0.13) **	0.00 (0.13)	0.20 (0.13)	0.22 (0.13)	0.23 (0.08) **
Economic Status	-0.23 (0.16)	-0.23 (0.16)	0.14 (0.15)	0.47 (0.16) **	0.48 (0.16) **	-0.27 (0.10) **
Urban *Huko*	-0.23 (0.31)	-0.24 (0.31)	-0.25 (0.30)	0.09 (0.32)	0.10 (0.32)	0.20 (0.18)
Oldest child	0.00 (0.21)	0.00 (0.21)	-0.15 (0.20)	-0.01 (0.20)	0.00 (0.20)	0.23 (0.16)
Only child	-0.49 (0.53)	-0.54 (0.54)	-0.82 (0.49)	-0.87 (0.51)	-0.86 (0.51)	0.84 (0.25) ***
Have own child(ren)	-1.16 (0.40) **	-1.25 (0.40) **	-0.18 (0.37)	1.27 (0.45) **	1.25 (0.46) **	0.12 (0.24)
Gender × marital status × son preference (ref = married son × son preference)						
Unmarried son × son preference		-1.26 (0.94) *			1.09 (1.51)	
Married daughter × son preference		0.97 (0.41) *			0.92 (0.42) *	
Unmarried daughter × son preference		1.60 (1.24)			0.98 (1.41)	
Random intercept	9.38 (1.89)	9.66 (1.96)	8.64 (1.67)	9.98 (1.85)	10.14 (1.89)	0.42 (0.22)

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$.

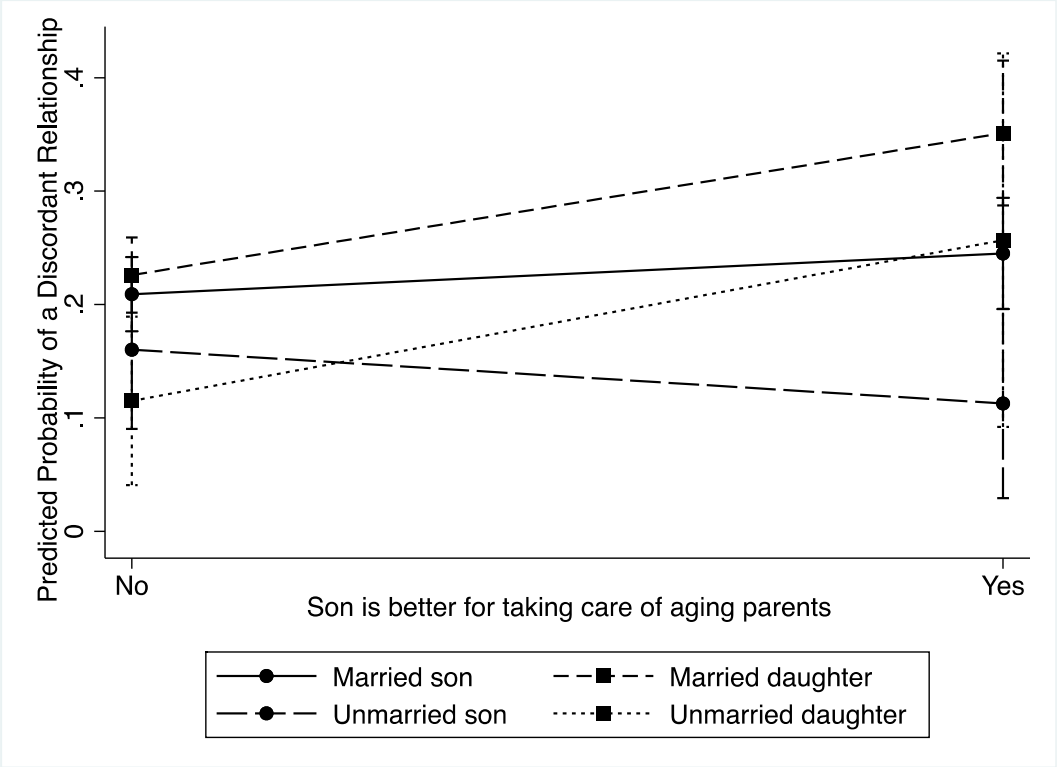


Figure 3.1. Interactive Effect between Children's Gender and Marital Status and Elders' Son Preference on Elder's Probability of Having a Discordant Relationship with a Child

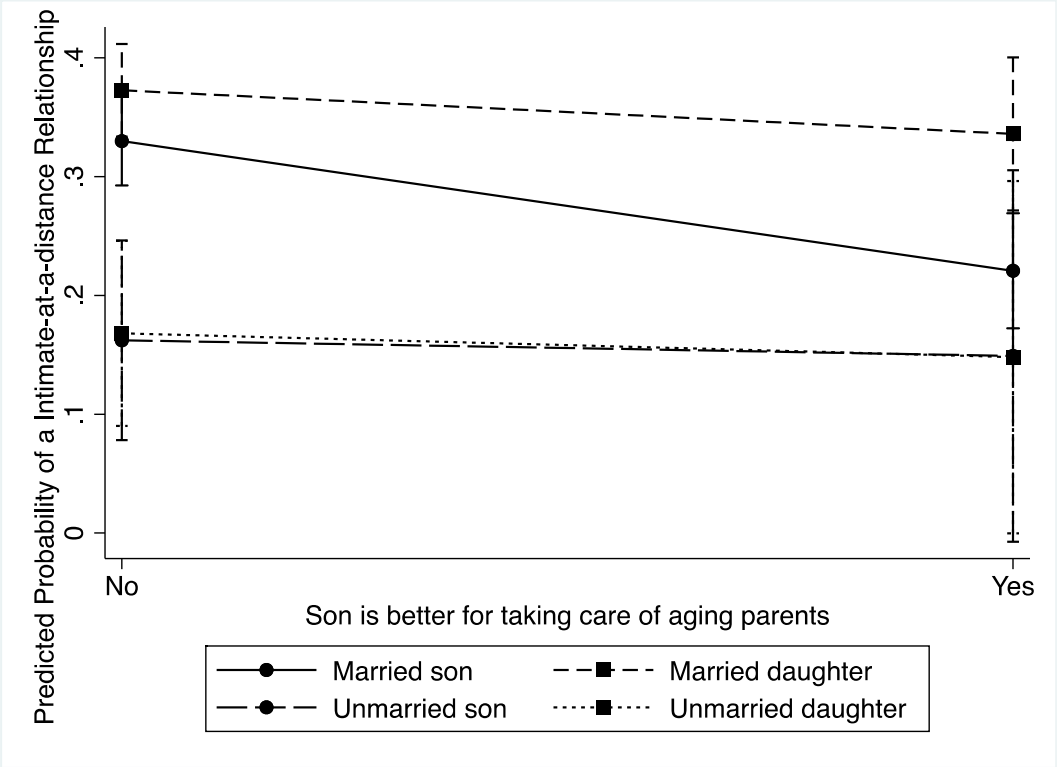
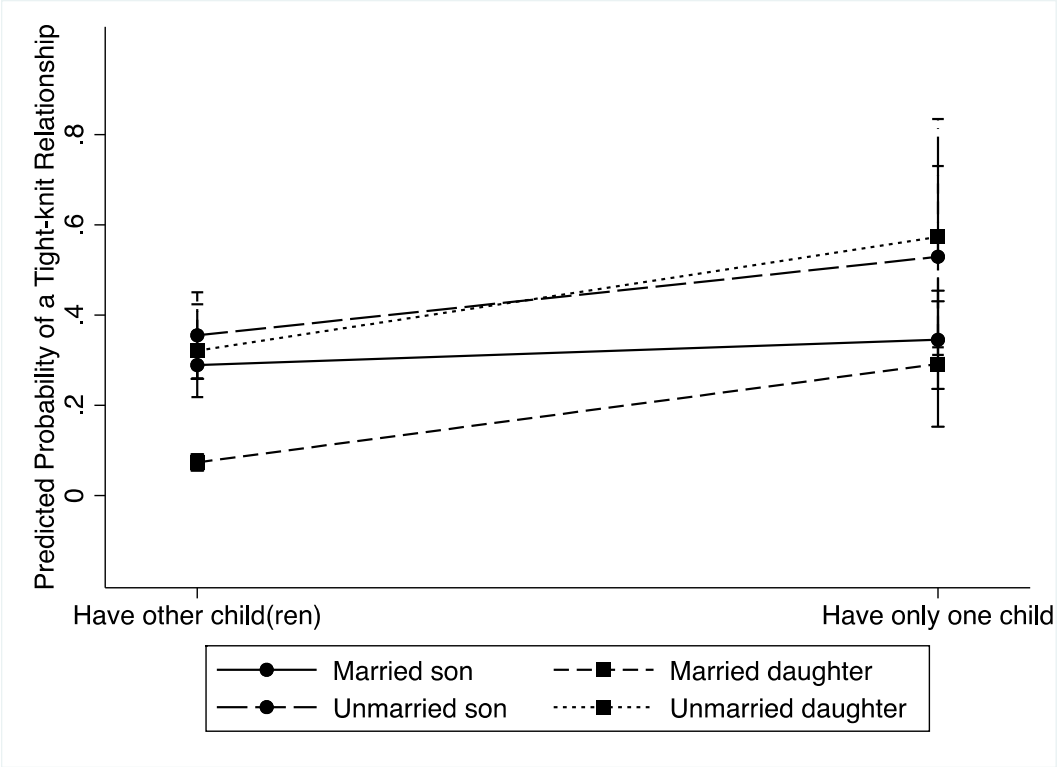


Figure 3.2. Interactive Effect between Children's Gender and Marital Status and Elders' Son Preference on Elder's Probability of Having an Intimate-at-Distance Relationship with a Child

Appendix 3.A. Interactive Effect between Children's Gender and Marital Status and Only-child Status on Elder Parents' Probability of Having a Tight-knit Relationship with a Child



CHAPTER 4: STUDY THREE—Is Marriage Also a Greedy Institution in China?: Comparative Study of the Effects of Marriage on Socializing with Friends, Neighbors and Relatives in China and the United States

INTRODUCTION

Researchers have long studied how marriage as an institution influences community life. It changes not only individuals personally who involved in the relationship, but also transforms couples' social relationships. Since the early 20th century, theorists like Burgess, Parsons (cf. Campbell and Lee 1992; Sarkisian and Gerstel 2016) and Giddens (1992), all have suggested an inward turn of marriage in the United States: wives and husbands were expected to rely primarily on each other for a variety of needs and the nuclear family "must stand on its own". Meanwhile, other scholars argue that marriage introduces individuals to engage in a larger family and community network (Fisher and Oliker 1983; Kalmijn 2012; Moore 1990; Rossi 2001; Slate 1963). Empirical studies have shown that marriage is greedy (Coser and Coser 1974), and it is for both women and men (Gillespie et al. 2014; Johnson and Leslie 1982; Kalmijin 2003, 2012; Moore 1990; Sarkisian and Gerstel 2016). The most recent study by Sarkisian and Gerstel (2016) using national representative data shows that, married men and women in the United States have less close ties with their parents, siblings, neighbors and friends than the never married or the previously married. Singles are more likely to frequently stay in touch and exchange helps with parents, siblings, neighbors, and friends than the married. While other structural factors, such as personal socio-economic status, parenthood status, and family members' needs, are also attributed to

individuals' ties with different people in their social network. In other words, the greediness of marriage is pervasive in the U.S.

However, there is little research to test the "greedy marriage" proposition in China. Only one study conducted in rural China investigates how the social support network of unmarried older rural men (aged 28 or older) was different from married rural men at the similar age (Li, Li, Wei, and Jiang 2010). The authors find that the social support network of married rural men was larger and more integrated than that of unmarried older rural men. However, the generalizability of this study is limited since the study only investigates rural Chinese men from one province in Mainland China.

The universal marriage and the age preference associated with marriage in China (Xie 2013) might be among the reasons behind the lack of interest in differences between the married and the unmarried. Therefore, the marriage effect could be confounded by age in China. Those who are never married are often younger, and those who are single and were previously married are older and more likely to be unmarried due to widowhood. Divorced people and younger widowers/ees are unlikely to stay unmarried, given a high rate of remarriage in China (Xu and Xiao 2014). However, demographic and cultural changes in the last few decades have transformed marriage as an institution in China. Singlehood for the younger generation might last longer than before, as more and more Chinese delay marriage (Mu and Xie 2014), the numbers of divorce is on the rise, and some of them might have a very low prospect to find a spouse (mostly rural men with low socioeconomic status) (Li et al. 2010), The rising rate of singlehood (Wang 2014) and the permanent singlehood for some could impose new challenges on single Chinese

and raise new questions on whether and how marriage stratifies the social life and supports in China beyond family.

In addition, individualism and individualistic hedonism is more accepted in China since the economic reform in the 1970s and 1980s (Kang 2012; Stockman 2000; Xu, Xie, Liu, Xia, Liu 2007). What marriage entails in a traditional collectivist Chinese family norms and the contemporary privatized and individualist marriage ideals are in an apparent conflict. Many married young women and men are facing how to maintain a life that balances traditional family demands, such as filial piety, along with nuclear family responsibilities, and personal fulfillment as independent individuals. Therefore, it is meaningful to study the differences between the married and the unmarried in China today. Studying the effects of marriage on non-family and family social relationships in China, and comparing these marriage effects to those in the United States—a well-studied society with regard to the marriage effect on individual life—would contribute to the literature of social network, as well as that of cross-cultural family studies.

The main research question in this study was, whether the greediness of the marriage is a cross-cultural phenomenon regardless of social norms and individual practices associated with marriage, or, it is a cultural-sensitive social phenomenon. In order to answer this question, I performed statistical tests on how marriage influences socializing with friends, neighbors and relatives in China and the United States by using the Chinese General Social Survey 2011-2013 and the General Social Survey (U.S.) 2004-2016, respectively. The study first tested the "greedy marriage" proposition in the Chinese context—whether being married isolates Chinese women and men from socializing with friends, neighbors and relatives, as well in the American context. Based

on findings from each country, I next tested whether this phenomenon in China was different from or similar to what was observed in the United States. The second part of this study sought possible structural explanations. I examined how the marriage effect differed by gender, which was acknowledged by Sarkisian and Gerstel in their thorough research (2012 and 2016) in the U.S. but was not explicitly tested. I also looked into other structural factors related to life course, household structure and socio-economic status in addition to the marriage effect found/not found in the first part.

MARRIAGE AS AN INTEGRATIVE OR ISOLATING INSTITUTION

Theoretical Perspectives

There are two major theoretical perspectives to understand the marriage effect on individual social ties—social integrative and isolating. Social integrative perspective posits that marriage introduces individuals into a larger social network brought by the spouse and increases their interactions with kin and local communities, while the isolation perspective suggests that the contemporary American marriage that stresses the interdependence between the spouses actually discourages any relationship outside of the marriage.

According to the social integrative perspective, marriage is a strong force of social integration, especially regarding the social ties with kin and local community (Sarkisian and Gerstel 2012). Starting with Durkheim, theorists see marriage as encouraging and fostering attachment and investment in various social ties. For example, according to Durkheim, marriage provides protection from causes of suicide by tying individual more closely to others and communities (cf. Campbell and Lee 1992; Sarkisian and Gerstel 2016). Marriage can also be an institutional solution to the problem of

socially withdrawal caused by involving in a romantic relationship—to re-engage the couple and to draw them back to the community through marital rituals, such as weddings (Slate 1989). Marriage benefits on social ties are likely due to the increased "social embeddedness" (Rossi 2001)—the opportunities and resources for building and strengthening relationships, particularly for those with kin and neighbors (Fisher and Oliker 1983; Moore 1990).

On the other hand, other scholars argue that contemporary marriage in the United States and individualist European countries competes with and even undermines other relationships (Sarkisian and Gerstel 2016; Kalmjin 2003). The contemporary American marriage as an interdependent companionship between the spouses aiming to fulfill individual emotional needs and personal growth (Cherlin 2009), is a socially isolated relationship that focuses on the needs and responsibilities exclusively for persons involved in the relationship (Giddens 1990; McPherson, Smith-Lovin, and Brashears 2006). American marriages become individualized and married couples are presumptively less concerned about cultivating social ties beyond the nuclear family because a married couple is supposed to be able to "make it" on their own. For example, the spouse is now expected to perform functions of friends (Kalmjin 2003, 2012; Sarkisian and Gerstel 2012), which prompts the married to rely on their spouses more instead of friends for certain supports. Therefore, the married are lack of motivations to build and strengthen other relationships.

Marriage is a gendered social institution. Its impact—integrating or isolating—on the relationships outside the marriage is arguably different for women and men. Marriage is often believed as an integrative force that enhances men's informal social ties

particularly with extended families and local communities, because it pulls men into more domestic concerns, such as kin maintenance and caregiving, which single men rarely do or are less expected to care about (Gerstel and Gallagher 2001; Nock 2005). It does not mean that married women are less socially integrated than married men. Meanwhile, compared to men, women are more integrated socially with family members, friends and neighbors in general, regardless of their marital status in the United States (McPherson, Smith-Lovin, and Brashears 2006; Putnam 2000).

On the other hand, some scholars have suggested that marriage actually "entraps" women in the relationship. Women experience the isolating effect of marriage more than men, in term of their lower labor market participation and additional household and caregiving responsibilities than unmarried women. The concept of "greedy marriage" (Coser and Coser 1974) describes this isolating effect for married women—they have little time for people besides their husbands and children. Similarly, other scholars argue that marriage can also isolate men from social life outside of the conjugal relationship (Townsend 2002). The gendered division of labor at home might put husbands under greater financial pressure, and force them to spend more hours on work than single men.

Marriage Effects on Friendship, Relationships with Neighbors and Relatives

In the United States, the research on the relationship between marriage and social ties with friends and/or neighbors appears infrequently, and the conclusions on the marriage effect are often mixed due to the different sampling designs and measures used in those studies. Nevertheless, most research suggests that singles have more friends on average (Gillespie, Lever, Frederick, and Royce 2015; Moore 1990; Johnson and Leslie 1982), are more likely to socialize with friends (Fisher 1982; Sarkisian and Gerstel 2016),

and exchange help (Leibler and Sandefur 2002) than the married. Cross-sectional and longitudinal studies in Europe also find a same isolating effect of marriage on friendship (Kalmijin 2003, 2012; Rozer, Mollenhorst; and Voker 2015). Although marriage effects are examined separately for women and men in some of these studies, they do not find gender differences—both married women and men's friendship network become smaller, and their contacts with friends are less frequent than those who are not married (Gillespie et al. 2014; Johnson and Leslie 1982; Kalmijin 2003, 2012; Moore 1990; Sarkisian and Gerstel 2016).

Research in the United States regarding how marriage affects the relationship with neighbors is scarcer. Campbell and Lee's study (1992) conducted in urban neighborhoods of Nashville find that the married had a larger network within the neighborhood, but the contact was as frequent and intense as the unmarried. The authors suggest that marriage effects are likely to be confounded with parenthood, especially for women. Sarkisian and Gerstel's recent study (2016) with GSS data shows a negative marriage effect on the relationship with neighbors, in term of frequencies of contacts and support exchange.

Research on the social ties with relatives is much more common around world, especially with parents. Bucx and colleagues (2008) find that in Netherlands, married and cohabiting young adults were less likely than single young adults to have weekly contacts with parents. The isolating effect of marriage is also found in the U.S., where Sarkisian and Gerstel (2008, 2016) consistently find that married people are less likely to contact their parents than singles. Using the most recent data from East Asian countries (Japan, South Korea, China, and Taiwan), Tsai and Yang (2017) find that the marital status of

adult children has no influence on their contacts with parents. Yahirum and Hamplova (2014) attribute the country difference to varying family systems. Married adult children have contacts with mothers less often in countries with a weak family system, with low intergenerational exchanges for example (i.e. Netherlands, France and Czech), whereas the relationship between adult children's marriage and contacts with mother was positive in countries with a strong family system (i.e. Spain, Poland and Ireland). As for the kinship in general, Moore (1990) and Johnson and Leslie (1992) find that married people named more kin in their social network than those who were single in the U.S. In Taiwan (Tsai 2006), married people contacted the closest kin more often than the unmarried.

Research on marriage and non-family relationships is rarely pursued in China. The most similar empirical study with regard to marital status and social network in China is by Li and colleagues (2010), which examines the relationship between marriage and the social support network of rural males in one province. This study asks how the social supports for rural males from kin, neighbors, and friends differ by marital status, and finds that unmarried men had smaller social support networks than married men. They were more likely to rely on social support from neighbors than married men, but are less likely to rely on friends' social support than married men. The authors conclude that one of the most important functions of marriage is to maintain and reinforce social networks in China, at least for rural men. Being an older bachelor (28 years or older), which is often considered socially unacceptable, would further isolate those rural men from socializing and/or receiving support from their local communities.

Although there is no empirical research testing the two theoretical perspectives on marriage effects on friendship and neighbor relationship, both theoretical perspectives

have empirical grounds to understand these effects in China. The next section discusses the transformation of marriage and the family in Mainland China, and how Chinese marriage has become more similar to, yet is still very different from what this social institution is in the U.S.

MARRIAGE AND THE FAMILY IN MAINLAND CHINA

Although marriage is one of the most important social institutions across cultures and societies, how people act in the conjugal relationship vary, especially when we study these two societies—China as a representative of the collectivist culture and the United States as the exemplar of the individualist culture. In this section, I briefly review the history of Chinese family and marriage and the current Chinese family structure, and how gender has persistently stratified people's family life in Mainland China.

For a long time, family life in China was organized based on the Confucian doctrines that emphasized the cultural ideal of a large, extended family household, with several generations living under one roof. Among all hierarchies assumed in the traditional Chinese family, husband-wife ties were secondary to the relationship between generations (Zuo 2003). Marriage functioned to continue the husband's family lineage rather than to please the individuals involved (also see Pimentel 2000; Toro-Moron and Sprecher 2003; Stockman 2000; Whyte 2003). Marriage was never considered as a social relationship independent of other family relationships in old China, which is often assumed in studies of modern western families. This family tradition has been challenged since the 20th century, when marriages in China started to evolve and become more individualized under the interventions of government (Stacey 1983; Zuo 2004), and later

influence of market economy and western ideals of individualism (David 2014; Stockman 2000).

However, modern marriage in China is by no definition the Chinese version of the western "structurally isolated nuclear family" (Stockman 2000), because of its connection with the extended family. Married people's primary family responsibilities might have shifted to focus on their spouse and children. However, intergenerational exchange is common between married couples and their parents and parents-in-law. The older generation takes over as much of child care and domestic work as they are able to, with the expectation that the young couple will take care of them as they become more dependent (Parish and Farrer 2000; Xu and Xia 2014), especially for those are living together with adult children or close by. The older generation's welfare is still among the major concerns of married couples. For never married adult children, it is very common to live with parents before they get married (Bian and Logan 2001; Zhang 2004), and more likely for never married children to receive support than to provide support to their parents (Li and Yi 2011; Guo and Silverstein 2012).

As Chinese census and various survey data show (National Bureau of Statistics 2005; Ma, Shi, Li, Wang, and Tang 2011; Wang 2014; Xu and Xia 2014; Xu et al. 2014), nuclear family—a married couple with or without children—is the dominant form of family structure (over 60% of family households) in urban China, as well in the less developed rural China. At the same time, stem families[17] in China are also common in both cities and the countryside (15%-30. The prevalence of stem families in the general

[17] A stem family consists of a nuclear family and one spouse's family of origin. It can be a two-generation household, including the couple and one spouse's parents, a three-generational household, including a child, parents, and grandparents, or a four-generation household, including a child, parents, grandparents, and great grandparents.

Chinese population indicates that married couple households in China bear more than matrimonial ties and responsibilities.

History and current evidence show us that marriage has never been an isolating social institution in China, but introduces married people into a larger family network and involve them in more kinship work, particularly with parents and/or parents-in-law on a more regular basis than the unmarried (Bian and Logan 2001). Marriage creates connections between two families instead of two individuals (Goodwin 1999). Therefore, disengagement from kin network is impossible for married couples in China. Compared to married people in the U.S., a Chinese marriage with additional kin work could distract married people more from relationships formed outside of their family, and could be greedier.

Gender in Marriage and Families

Gender is very strong force that has stratified people's family life in China. The social status of Chinese women has long been considered as secondary to men either at home or in the public. The patriarchal and patrilineal traditions of Confucius doctrines required married women to leave their family origin to take care of their husband's family as their primary responsibility. As a result, married women were separated from public space, because the only appropriate place for them was at home with family (Jin and Whitson 2014; Stacy 1989; Xie 2013). After decades of a series of social and economic reforms, Chinese women' social status has improved. However, their public and family life is largely restricted due to traditional gender norms (Ji et al. 2017; Yoon 2015; Xie 2013). Marriage and motherhood engage Chinese women more in domestic

affairs. As a result, their social life could also be impacted and becomes more domesticated and local.

While married women's roles are further restricted to their domestic responsibilities, men's role as the breadwinner is heightened after getting married, and is often extended to his family of origin. Married sons are under greater pressure than unmarried ones to provide for their aging parents, and sometimes parents-in-law, which might force them spend more time on work. Marriage could disengage them from activities that are not economically productive, such as socializing with people not from work. While they are expected to engage more within kin network, they might not have time to interact with friends or neighbors.

STRUCTURAL EXPLANATIONS

Two structural factors might help to explain the effects of marriage on socializing with friends and neighbors, according empirical studies in the U.S. and Europe (e.g. Sarkisian and Gerstel 2016): 1) life course and household structure, and 2) socio-economic status (SES). The life course perspective suggests that the effects of marriage depend on life course differences associated with marriage. The SES factor indicates that the marriage effect—whether it integrates or isolated married individuals from non-marital relationship—are result of different resources associated with marital status.

Life Course and Household Structure

The change from singlehood to marriage is an important life course transition, and it is also often associated with other life course factors, such as age and parenthood. These life course factors could confound the possible difference in social ties between those singles and those married (e.g. Sarkisian and Gerstel 2016). Older people might

have fewer social contacts but invest more in a few contacts that are supportive and emotionally close in the U.S. (Antonucci and Akiyama 1987; Carstensen 1991), as well as in China (Fung, Stoeber, Yeung, and Lang 2008). Empirical evidence regarding the relationship between aging and social contacts with friends and neighbors shows a mixed aging effect in the United States. Unlike family relationships, e.g., those with spouses and parents, relationships with friends and neighbors are less stable, and may transform or end with changes caused by different life stages (Antonucci and Akiyama 1987). Some scholars find that the decline of friend ties is linear as people age, independent of marriage and gender (Fisher and Oliker 1983; Gillespie et al. 2015; Kalmijn 2003).

Because the married are more likely to have children than singles are, parenthood might have impact on social life that account for what initially appear to be the effects of marriage (e.g. Yahirun and Hamplova 2014). Childcare, especially minor children, would force parents to cut back on other relationships and activities. However, empirical studies show that parenthood has mixed effects on parents' social contacts with friends, neighbors, and relatives. Friendship often suffers from parenthood in terms of the numbers of friends people socialize on a regular basis (Gillespie et al. 2015; Moore 1990) and frequencies of contacts (Bost, Cox, Burchinal and Payne 2002; Sarkisian and Gerstel 2016), as well as received supports (Kalmijn 2003 and 2012), especially when children are younger. Parenthood has a positive effect on the relationship with neighbors in some studies. In a Swiss nationally representative sample, Kalmijn (2003) finds that parenthood enhances the relationship with neighbors in terms of the number of neighbors people socialize with on a regular basis and received support, regardless of children's

age. Intensified neighborhood relationships for parents are also found in the U.S., independent of marital status (Moore 1990).

Some find that parenthood reduces the contact with parents (Lawton, Silverstein and Bengston 1994; Rossi and Rossi 1990; Waite and Harrison 1992), and some finds that parenthood, especially with younger children, increases the contact with parents (Bucx et al. 2008). Studies in China and Taiwan having children find no impact on the contact with parents or relatives (Tsai 2006; Tsai and Yang 2017).

Some studies find that gender differences are prominent during this life stage. In contrast to the idea that parenthood is more restrictive of wives' personal network than husbands' due to the gendered division of household labor (Coser and Coser 1974; Munch, McPherson, and Smith-Lovin 1997), some studies find that parenthood has a more negative effect on fathers' friendship than mothers' (Bost et al. 2002; Kalmijn 2003). Given the mixed effects of parenthood on different social ties, parenthood could account for some variations in socializing with friends, neighbors and relatives, if not all.

Country differences in the household structure should also be taken into consideration. As Xu and Xiao (2014) point out, individuals in China often begin and end life in an extended family, while Americans might spend most of their lives in a nuclear family. Chinese parents with younger children are more likely than American parents to live with their own parents or parents-in-law for childcare assistance (Logan, Bian and Bian 1998; Bian and Logan 2001). Over half of Chinese elderly ages 65 or older are living only with adult children (Xu et al. 2014), while over 80% American elderly at the same age range are living with their spouse or living alone (Administration on Aging 2014). In China, a child would born in a family where grandparents are present for the

care, and elder people would be living with and taken care closely by their own children before passing away, which is unlikely the case in the United States. Living with extended family members besides the nuclear family would take up more time and energy to form and maintain other relationships. Therefore, the different household structures between the two countries associated with marriage as well as other life course characteristics may also help to explain whether and how the effects of marriage vary by cultural context.

Socioeconomic Status

Research in the United States suggests that higher income and education are associated with more connections with friends, neighbors, and relatives (Campbell and Lee 1992; Moore 1992; Sarkisian and Gerstel 2016). Children's income has no impact on their contacts with parents and higher educated children tend to contact their parents more often in China (Tsai and Yang 2017), and higher education increases people's contacts with closest relatives in Taiwan (Tsai 2006).

In sum, empirical evidence with regard to life course, household structure and SES suggests that those structural factors related to life course and SES would explain the effects of marriage on people's socializing with friends, neighbors and relatives.

RESEARCH QUESTIONS AND HYPOTHESES

This study addresses the following research questions and tests the hypotheses:

1. What are the differences in socializing with friends, neighbors and relatives between married and unmarried individuals in China and in the U.S.?

   I hypothesize that the married in both countries are less connected to friends and neighbors than the previously married or the never married and the reduction is

larger in China than in the United States; the married in China are more connected to relatives than the previously married or the never married, while the married in the U.S. are less connected to relatives than the previously married or the never married.

2. Does the effects of marriage on socializing with friends, neighbors, and relatives vary by gender, and if so how are gender differences conditioned by country? I hypothesize that marriage has a greater negative effect on women's socializing with friends than men's in both countries and the gender difference would be larger in China than in the U.S.; marriage has a greater positive effect on women's socializing with neighbors and relatives in both countries and the gender difference would be larger in China than in the U.S.
3. Do the structural factors related life course, household structure and SES explain the effects of marriage? I hypothesize that the differences in socializing between the married and the unmarried in both countries will be explained, in part, by differences in these structural factors.

METHODS

Data

I used two datasets to examine how marriage impacts socializing with friends, neighbors and relatives. The Chinese data is from three cross-sectional waves of the Chinese General Social Survey (2011, 2012, and 2013) and the U.S. data is from the General Social Survey (2004, 2006, 2008, 2010, 2012, 2014 and 2016).

CGSS 2011-2013 has a three-stage random stratified design sample. One hundred counties or districts and five major metropolitan cities (Beijing, Shanghai, Tianjin,

Guangzhou and Shenzhen) in China were sampled for each wave. Adults aged 18 and older were face-to-face interviewed in 480 rural villages/urban neighborhood communities in 31 provinces, autonomous regions, and municipalities in China (excluding Hong Kong, Macau and Taiwan). The response rates are 72.56% in 2011, 71.5% in 2012, and 72.17% in 2013. The Chinese sample size is 23,664 in this study.

The GSS data sampled English-speaking U.S. adults aged 18 and older using stratified multistage area probability sampling to the block level; quotas were based on gender, age, and employment status at the block level. The dependent variables are based on questions about socializing with friends and neighbors that were asked of a randomly selected subset of the total sample at each wave. The response rates were 70.4% (2004), 71.2% (2006), 70.4% (2008), 70.3% (2010), 71.4% (2012), 69.2% (2014), and 61.3% (2016). Since a random sample of respondents was selected to answer the socializing questions each year, the final U.S. sample in this study only includes those who were selected to answer the questions between 2004-2016. The analytic sample for the U.S. sample comprised 7,010 respondents.

Dependent Variables

The measures of socializing with friends and neighbors in China were based on respondents' answers to two 7-point-scale questions in CGSS 2011-2013: 1) how often do you socialize with your neighbors?; and 2) how often do you socialize with your friends, with 1 indicating never socialize, and 7 indicating socializing almost everyday. Frequencies of socializing with relatives was measured in a five-point likert scale, with 1 indicating never socialize with relatives, and 5 indicating socializing with relatives everyday.

In the GSS, respondents reported how often they 1) spend a social evening with someone who lives in their neighborhood, 2) spend a social evening with friends live outside their neighborhood, and 3) spend a social evening with relatives. The dependent variables of socializing with friends and neighbors for the US samples were measured the same in the Chinese sample: 1 indicates the respondent never spends a social evening with neighbors or friends, and 7 indicates the respondent spends a social evening with neighbors or friends almost everyday. The higher the value of the response, the more often the respondent spent a social evening with neighbors or friends. Socializing with relatives was measured by a 5-point likert scale in CGSS and by a 7-point likert scale in GSS[18], so this dependent variable in the two samples was recoded into a five-category variable one to several times a month, 4= several times a week, and 5= almost everyday.

Independent Variables

Marital status. Marital status in the Chinese sample and the U.S. sample was measured as two dummy variable, never married and previously married (including divorced, separated, and widowed) with married as the reference category.

Life course and household structure. The life course characteristics and household structure include age, co-residence with children with different ages (parenthood), and co-residence with parents or parents-in-law. In both samples, parenthood was measured by three dummy variables with co-residence with no child as the reference category. The

[18] The variable was original coded in CGSS as 1=never (11.49%), 2=several times a year or less (61.76%), 3=several times a month (20.81%), 4=several times a week (5.33%), 5=everyday (0.57%). It was original coded in GSS as 1=never (4.31%), 2=once a year (6.50%), 3=several times a year (17.12%), 4=once a month (15.81%), 5=several times a month (18.67%), 6=several times a week (25.24%), 7=almost daily (12.35%). For the new variable in the U.S. sample I combined the categories “once a year” and “several times a year” into a new category “at least once a year”, and the categories “once a month” and “several times a month” into a new category “at least once a month”.

three dummy variables were co-residence with children aged 5 years or younger (1=yes, 0=no), co-residence with children aged between 6 and 12 years old (1=yes, 0=no), and co-residence with children aged between 13 and 17 years old (1=yes, 0=no).

In the Chinese sample, co-residence with parents and/or parents-in-law was measured as whether respondent was living with parents and/or parents-in-law. In the U.S. sample, it is measured as whether there were two or three generations living in the same household (excluding those grandparent-grandchildren only households). The co-residence variable was coded as 1 if the respondent was: 1) in a two-generation household, one of the following members of the household: the household head, the spouse of the household head, and child/child-in-law of the household head; 2) in a three-generation household, the grandchild of the household head whose child(ren) is also living in the same household; or 3) the respondent was the household head living with children and parents. Otherwise, the variable was coded as 0. All co-residence variables were dummy variables indicating whether the respondent lives with younger children or parents and/or parents-in-law.

Socioeconomic status. Family income and education were used to measure respondent's socioeconomic status. Since family income was measured in local currency in the two surveys, the respondent's family income was recoded as the ratio of respondent's family income to the median family income in the respective country[19]. Education was represented by three dummy variables with bachelor degree or higher as

[19] More than 40% of respondents' individual income in the American sample is missing. Individual income per capita that was used in Sarkisian and Gerstel's (2016) study was the product of the division of family income by the household size. The household size is controlled in this study.

the reference group. The three dummy variables were less than high school (1=yes, 0=no), high school (1=yes, 0=no), and associate degree/junior college (1=yes, 0=no).

Control Variables

Control variables were urban/rural residence, work status, household size, and self-reported health. For the Chinese sample, urban residence (coded as 1) refers to respondents whose interviews took place in the central or peripheral areas of a city, and rural residence (coded as 0) refers to those whose interview took place in the linking area between a city and a rural county center, in a rural county center, or in a rural village. For the American sample, urban residence (coded as 1) refers to respondents who were living within a Standard Metropolitan Statistical Area, defined by the U.S. Census Bureau (U.S. Census Bureau 2010), or a small city with a population between 10,000 and 49,999. Rural residence, in an area with a population less than 10,000, was coded as 0.

Work status was measured as a dummy variable in both samples indicating whether the respondent was working at the time of the survey. In the Chinese sample, working respondents had a paid non-farming job or were working at farm at the time of the survey. In the U.S. sample, working respondents had a full-time or a part-time job in the previous week before the survey. In both samples, health was a dummy variable indicating good or excellent self-reported health (coded as 1) as opposed to fair or poor self-reported health (coded as 0). The household size refers to the number of individuals living in the household in both samples, including the respondent. This variable was also to control for the family income in both countries.

ANALYTIC STRATEGY

The Chinese and the U.S. samples were analyzed separately in this study. In the Chinese sample, I first conducted bivariate analyses to compare the married to the unmarried on socializing with friends, neighbors and relatives. The second part of the analysis started with a multivariate regression model (OLS regression[20] for socializing with friends and neighbors and ordinal logistic regression for socializing with relatives) for the total sample for each country to examine whether life course, household structure and SES explain the differences by marital status. I analyzed the gender variation in marriage effects by incorporating interaction terms between gender and two dummy variables of marital status in a second multivariate regression model for each country. I tested whether the effects of marriage differed by country, based on the results of the multivariate models with interaction terms. I used the technique introduced by Paternoster and colleagues (1998) to test the effect size differences for regression analysis that yields maximum likelihood estimates. The formula for this statistical test is to calculate the z-score:

$$z = \frac{b_1 - b_2}{\sqrt{SE_{b_1}^2 + SE_{b_1}^2}}$$

The null hypothesis of this test is $b_1 = b_2$. If the z-score is significant, we can conclude that the effect b_1 is statistically different from b_2. Otherwise the two effects are similar.

The descriptive statistics for the U.S. sample used weights adjusting for over-sampling, nonresponse, and attrition (Sarkisian and Gerstel 2016). There is no weight available for the Chinese sample.

RESULTS

[20] OLS regressions were used for easier interpretations of results and illustrations of interactive effects.

Table 1 and Table 2 give means (or proportions) and standard errors of model variables of the Chinese sample and the U.S. sample by gender. Chinese women socialized with friends and neighbors less frequently than Chinese men. American women socialized less frequently with neighbors than American men, and they were different from American men in socializing with relatives ($F_{(1,7009)}$ =13.06, p = 0.003). Gender differences were not significant for Chinese socializing with relatives, and for Americans socializing with friends. Being married was more common in China than in the U.S. (79.23% vs. 52.71%). Women in both countries were more likely to be previously married and less likely to be never married than men. Women were more likely to be married in China while no gender difference was found in the U.S.

Tables 3-5 show the results of regression analyses of socializing with different groups of people. The first two rows of coefficients in the three tables show marriage effects without any control on socializing with friends, neighbors and relatives. The next two rows provide comparisons by marital status using the full models. By comparing the two sets of coefficients, we can determine whether life course, household structure, and SES explain the relationship between marital status and socializing with various groups of people. Without controls for other model variables, marital status had impacts on all types of social interactions in China and had impacts on socializing with friends and neighbors in the U.S. Marital status has different effects on the frequencies of social interactions in the two countries.

In Table 3, the bivariate analysis shows that the married from both countries socialized less frequently with their friends than their never married counterparts did. Compared to married people, previously married Chinese socialized less often with their

friends than the married, whereas previously married Americans socialized more with friends. Marriage effects on socializing with friends became insignificant in the Chinese sample after introducing other model variables. Marriage effects remained significant for the U.S. sample. Both previously married and never married Americans socialized more frequently with friends than married Americans.

To answer the first research question, whether the marriage effect differ by country, z-tests on the regression coefficients of marital status (previously married vs. married and never married vs. married) between the Chinese and the U.S. samples were performed (Paternoster et al. 1998). Although marriage effects were not significant for Chinese, the country differences were significant. While marriage isolated Americans from their friends, it had no impact on Chinese people's social interaction with friends.

To answer the second research question—whether the marriage effect vary by gender, Model II added interactions between marital status and gender. Neither interaction term was significant in the Chinese sample. The interaction between never married and gender was significant among Americans. Compared to the married, the frequencies of socializing with friends were greater for never married men than for never married women in the U.S.[21] Z-tests on the regression coefficients of the interaction terms show that U.S. and China differed. Figure 1 illustrates the socializing with friends between marital status and gender in China and the U.S.

Structural factors fully accounted for the effect of marriage on socializing with friends in China. Age had a significantly negative effect: older people socialized with

[21] The coefficient for the difference between married men and never married men is 0.68, $p < 0.001$. The coefficient for the difference between married women and never married women is 0.43 [=0.68+ (-0.25)], where -0.25 is the coefficient of the interaction between never married and female and also significant at the level of 0.01.

friends less often. Having children aged 5 years or younger and living with parents/parents-in-law was related to less frequent socializing with friends among Chinese. Higher family income significantly increased Chinese people's time with friends. Chinese with less than high school education socialized less frequently with friends than those with bachelor degree or higher.

In contrast, the structural factors did not modify marriage effects in the U.S., and marriage effects remained significant in Model II for the U.S. sample. Similar effects of structural factors are found in the U.S. sample. Older age and having children aged 5 years or younger significantly reduced the frequencies of socializing with friends in the U.S. American with higher socioeconomic status—higher family income and higher level of education—socialized more frequently with friends. However, unlike Chinese, those Americans living with parents/parents-in-law socialized more frequently with friends.

Table 4 presents the bivariate and the full models of socializing with neighbors by country. Never married Chinese socialized less frequently with neighbors than married ones. The effect of being previously married was not significant in China. Both never married and previously married Americans socialized with neighbors more frequently than married ones did. Structural factors did not modify marriage effects in either country. Without the interaction terms (Model I), marriage effects were significant for both countries, yet the directions of the effects were opposite. Being married increased Chinese people's social interactions with neighbors, but it reduced Americans' time with neighbors. Significant z-scores indicate that marriage effects are different between the two countries.

Coefficients of previously married and never married in Model II with interaction terms between marital status and gender remained significant for both countries. Marriage increased Chinese men's time socializing with their neighbors, while it reduced American men's. The interaction of being never married and gender was significant in the Chinese sample. The difference between married and never married Chinese women's social time with neighbors was significantly larger than that between married men and never married Chinese men[22], as illustrated in Figure 2. Being married was more beneficial for women to integrate into their neighborhood than it was for men in China when compared to the never married. None of the interaction terms was significant in the U.S. sample. It suggests that marriage reduced married men and women's social time with neighbors in the U.S. at a similar rate. The results of z-tests of the regression coefficients of the interaction terms show the gender variation in marriage effects was not different between China and the U.S. Figure 2 illustrates the interaction effects in the two countries.

Inclusion of structural factors did not change marriage effects on socializing with neighbors in both countries—marriage effects remained significant in Model I. Marriage promoted interactions with neighbors regardless of people's social structural status in both countries. However, the effects of structural factors differed by country. Age had no effect in China but negatively impacted Americans' social time with neighbors. While having children aged 5 or younger at home increased frequencies of socializing with neighbors in China, it reduced Americans' time with neighbors. Socioeconomic status

[22] The coefficient for the difference between never married Chinese men and married Chinese men is -0.31, $p < 0.001$, and the coefficient for women is -0.66 [=-0.35+(-0.31)], where -0.35 is also significant at the level of 0.01.

had opposite effects on socializing with neighbors in the two countries: higher family income and education decreased Chinese people's time socializing with neighbors, and higher family income and education increased this type of social interactions in the U.S. having a 6-12 year old at home increased people's social time with neighbors in both countries.

Table 5 presents the results of ordinal logistic regression models for socializing with relatives in China and in the U.S. The bivariate analysis shows that marital status had a significant effect on socializing with relatives in both countries. Compared to the married, previously married Chinese socialized with relatives less frequently with relatives, whereas never married Americans did so more frequently.

Model I with structural factors and control variables show that never married Chinese socialized less frequently with relatives than married Chinese, while there was no difference between the previously married and the married in China and no marriage effect was significant in the U.S. sample. Despite of insignificant coefficients, marriage effects in the two countries were different from each other.

In Model II with the interaction terms, the effect of being previously married became significant in the Chinese sample. Compared to married Chinese men, the previously married and the never married men socialized less frequently with relatives. Meanwhile, marriage had some impact only on U.S. women's social time with relatives. The interaction between previously married and gender was significant only in the U.S. It means that the effect of being previously married was different between women and men. Compared to the previously married, marriage decreased American women's frequencies

of socializing with relative but marriage had no impact on American men's. Z-tests did not find any country difference in terms of gender variation in marriage effects.

No marriage effect was significant in the U.S sample in both Model I and Model II. Structural factors explained why marriage increased people's social interaction with relatives in the U.S. Similar to the other two types of social interactions, some structural factors had opposite effects on socializing with relatives in the two countries, except for age. Having children aged 5 years old or younger decreased Chinese people but increased Americans' social time with relatives. Compared to those with a bachelor degree or higher in China, high school graduates socialized less but those with an associate degree socialized more frequently with relatives. In the U.S., those with a bachelor degree or higher socialized less frequently with relatives than those with less education. Age was negatively related to socializing with relatives in both countries.

DISCUSSION

Ample evidence shows that in the United States that marriage isolates women and men from people outside of their nuclear family (e.g. Coser and Coser 1974; McPherson, Smith-Lovin and Brashears 2006; Putman 2000; Sarkisian and Gerstel 2012 and 2016). The relationship with the spouse has been placed at the very center of people's social networks in the Western societies. Is marriage a greedy institution in a culture where marital relationships are not necessarily at the center of married people's family life? Is it different from what has been observed in the Western societies? Using recent nationally representative data from China and the U.S., this study found that marriage is not a greedy institution in China as it is in the U.S., and the (un)greediness in both countries can be explained by a series of structural factors.

Being married enhances some social interactions in China. Married Chinese socialized with neighbors more frequently with neighbors than unmarried Chinese, and they socialized more frequently with relatives than the never married. No marriage effect was found for socializing with friends in China. The intensified social interaction with relatives after getting married reflects the prevailing influence of the collectivist culture—marriage integrates people into a larger family network, which supports the social integrative perspective particularly about the enhanced kin network after marriage. Meanwhile, the results from the U.S. sample partially support the greedy institution proposition and are consistent with some of Sarkisian and Gerstel's previous findings (2016): marriage diminishes some social involvements. In the U.S., the married socialized less frequently with friends and neighbors than the unmarried. But marriage had no impact on Americans' socializing with relatives.

I also found that the two countries were different in marriage effects on all three social interactions. Marriage had no impact on socializing with friends in China, while being married in the U.S. reduced socializing with friends. Married Chinese socialized more frequently with neighbors than the never married, but married Americans socialized less frequently with their neighbors than single Americans. Being married increased socializing with relatives in China while marriage had no impact in the U.S. The lack of a significant marriage effect on friendship in China and the significant country difference might be due to the different cultural definition of friendship (Goodwin 1999). Friends are usually considered as at the periphery of social networks in collectivist cultures. Friendship may develop slowly but last for lifetime. Friendships with a higher level of interpersonal commitment could explain why marriage has no effect on socializing with

friends in China. On the contrary, in individualist cultures friendships are less "institutionalized". They may be more plentiful and less committed. Therefore, a life event such as getting married would be detrimental to friendships formed prior to marriage in the U.S. Also, the ideal that spouses should be soul mates, which might diminish and even replace the roles of friends in a married individual's life. Here, the country difference of marriage effects on social time with friendships could be the consequences of cultural variations in interpretations and practices of friendships between China and the U.S.

Married Chinese people socialize more frequently with their neighbors than those unmarried in this study. This result is consistent with the social integrative perspective and some empirical studies in the U.S. (Campell and Lee 1992; Moore 1990). Married people in China were more "socially embedded" in the neighborhood than their unmarried counterparts. Socializing with neighbors might seem as family-centered behavior compatible with a more "stable" marital life. Neighbors might perceive married people more trustworthy than unmarried people, which facilitate more interactions among them. In addition, neighbors in a close proximity could exchange both instrumental and emotional support. However, literature on collectivist/individualist cultures provides little theoretical explanation for the country difference on socializing with neighbors.

Collectivist culture's emphasis on the extended family could explain why marriage was positively related to socializing with relatives in China. Marriage neither increased nor decreased socializing with relatives in the U.S. in this study. This finding is not consistent with Sarkisian and Gerstel's finding (2016) of the negative relationships between marriage and interactions with parents and siblings using the data from the

National Survey of Families and Households (NSFH). Inclusion of other extended family members in the GSS data might explain the discrepancy between the two studies.

My second research question asked whether and how gender plays a part in understanding the marriage effect on people's social interactions in both countries. Gender variations of marriage effects did exist for some social interactions in both countries. In China, marriage increased women's social time with neighbors more than it did for men, and marriage increased men's social time with relatives but had no impact on women's time with relatives. In the U.S. marriage diminished men's social time with friends more than women's. While marriage decreased men's socializing with neighbors, it had no influence on women's social time with neighbors. Marriage did not impact Americans' socializing with relatives in the total population. However, further analysis shows that marriage did decrease women's social time with relatives compared to the previously married, while it had no impact on men's.

Given the cultural and historical profile and contemporary facts about the greater emphasis on married women's family responsibilities in China, I expected that the gender gaps would be larger for Chinese people than for Americans. However, the results of z-tests did not support my hypothesis. Gender difference in the marriage effect was more prominent in the U.S., at least for socializing with friends (no country difference was found for the other two interactions). Marriage is a greedier institution for men's friendship than women's in the U.S. The role transition for men, from being single to being someone's spouse, poses a larger toll on men's social time with friends than for it does for women. As Nock argues (1998), in the U.S., marriage motivates men to develop a new sense of responsibility for others, especially for members in their nuclear families,

which might discourage them from maintaining more personal relationships, such as friendship, as they would if they are single. Also, compared to married women, married men would also be under greater financial pressure that forces them to spend more hours on work than single men, so the time squeeze is likely to reduce their social time with friends (Towsend 2002). This gendered phenomenon in the U.S. was not observed in China, where neither women nor men's time with friends was affected by their marital status. Although marriage affected men and women's time with neighbors differently in China—the difference between married women and never married women's was significantly larger than that among men, this interactive effect in the Chinese sample was not different from the U.S. sample. Marriage had an impact on men's social time with relatives but not on women's in China, while it affected women's but not men's time with relatives in the U.S. However, the interactive effect was not significantly different between the two countries.

The cultural emphasis on married women's roles in social support and caregiving could explain the gender difference of socializing with neighbors in China. Maintaining a close relationship with neighbors can lead to a more efficient social support system nearby. The lack of a significant effect in the U.S. is puzzling since similar gender role expectations are also salient among Americans. One plausible explanation is how the question was asked in GSS, where it asked about the frequencies of spending a social evening with neighbors. It is not uncommon for both married men and women to stay at home with the family instead of socializing with neighbors in evenings if not necessary.

Marriage is particularly important for men to integrate into their kinship in China, which is consistent with Li and colleagues' findings in rural China (2011). It supports the

integrationists' argument about the benefits of marriage on the social network. In addition to the reason that marriage introduces men into a larger kin network brought and maintained by wife, married Chinese men's increased social time with relatives could be also attributed to the cultural tradition that married men are supposed to take on greater family responsibilities. The changed status in the extended family may lead to more face time with relatives. The finding that married American women socialized less frequently with relatives than those previously married supports the isolating perspective. Previously married American women may have to rely on relatives more for support and consolation because of the life change, which could also explain why there was no difference between the married and the never married women in the U.S.

My third research question was whether and how structural factors might help explain the marriage effect. The results from the Chinese sample show that structural explanations could fully account for the marriage effect on socializing with friends. The link between marital status and socializing with friends disappeared once structural factors were introduced in the full model. When the married, never married, and previous married in China have the same demographics, are at the same point in their life course and living in a same pattern of household, and have equal resources, married people have no more or less connection to friends. In other words, marriage is not essential to understand how often people socialize with friends in China. Gender, urban/rural residence, age, living with minor children and parents, as well as socioeconomic status play much larger roles in predicting socializing with friends.

Unlike the friendship, the link between marriage and social time with neighbors was not changed by structural factors in China. Regardless of social demographic

characteristics, life course stage, household structure, and socioeconomic status, marriage brings people closer to their neighbors in China, an integrative effect.

The structural factors modified marriage effects on socializing with relatives in China. As it turned out in the full model with interaction terms between gender and marital status, marriage was still a strong integrative force for Chinese men to get involved in kinship regardless of socio-demographic background.

The limited influence of structural factors on marriage effects in China suggests that, marriage in itself determines Chinese people's involvement in their local and kinship social networks. Marriage is considered as the milestone on the passage into adulthood, as important as finishing education and establishing a career. As argued by Li and colleagues (2011), the negative social connotation particularly associated with later singlehood (after mid-twenties for women and mid-thirties for men) and divorce might disengage people with those who are judgmental about their singlehood. Unmarried people might or be forced to distance themselves from people, especially relatives, to avoid unpleasant conversations about marriage.

The negative associations between marriage and socializing with friends and neighbors were also unchanged in the U.S. sample after controlling for structural factors. Marriage isolates people from informal non-familial interactions. In contrast, singles in the U.S. would be more willing or have to rely on those non-familial relationships to obtain resources that could substitute the benefits of marriage. The link between marriage and socializing with relatives was unchanged only for men in the U.S. after controlling for structural factors. Marriage neither integrates nor isolates men from socializing with

relatives. However, marriage reduced women's involvement with relatives when comparing married women to previously married women.

Living with parents or parents-in-law, a pivotal factor differentiating Chinese families and American families in this study, was among other structural factors, such as co-residence with minor children and education, to have distinctive effects on social life in the two countries. Living with parents or parents-in-law discouraged Chinese people from socializing with friends; this living arrangement encouraged more socializing with friends among Americans. These results support my hypothesis that marriage's greediness in China is due to its association with higher involvement with the older generation after marriage. Marriage is not greedy in China, but the intergenerational relationship appears to be, at least for friendship. The same living arrangement that is rare in the U.S., which would not have an impact on people's social life as I expected, however, turned out to encourage people to socialize more with their friends regardless of marital status. The positive effect of living with parents or parents-in-law was also found in the analysis of socializing with relatives in the U.S, which suggests that living with parents or parents-in-law could channel people to interact more with relatives. No such effect in China suggests that, in a collectivist culture involvement with relatives as an ascribed family duty, does not have to be motivated by the closeness with other family members.

LIMITATIONS

The major limitation of this study is that two independent datasets were used to investigate country differences, which is not ideal for cross-cultural comparative research. First, I arbitrarily assigned China as the collectivist society and the U.S. as the

individualist society. I was not able to use direct and comparable measures of cultural orientation of respondents in both samples, and to test to what extent the collectivist/individualist cultures modified the marriage effect on three types of social interactions in the two countries. Moreover, the current research design could not differentiate between cultural from structural effects. The structural differences between the two countries are notable. Compared to China, the availability of health and family care services in the U.S. helps married couples stand on their own with little assistance from people from their informal social network. The limited public provision of such services in China could force couples to rely more on their informal social network, such as the extended family and neighbors. Future research could utilize multi-national data to distinguish the cultural and structural influences by using measures of cultural beliefs and macro socio-economic development among different countries.

Second, despite the similarity between CGSS and GSS in survey question designs, the wordings of some questions differed slightly. For all three types of social interactions, the questions are referring to socials at evenings in GSS, and the timing of the socials is not specified in CGSS. Friends in GSS are restricted to those who were not living in the same neighborhood as the respondent, but no such restriction in CGSS.

Third, the word "relatives" differs in China and the U.S. In this study, relatives may refer to different groups of people in China and in the U.S. Relatives in the U.S. usually include every extended family member, including parents and siblings. However, relatives in China do not include members from the stem family, such as parents, parents-in-law and grandparents, and they only refer to those outside their stem family. This conceptual difference in defining "relatives" might also explain why Chinese was much

less likely to socialize with “relatives” monthly than Americans in this study (26.53% vs. 73.70%). Instead of using general terms, the survey questions about family network in China and the U.S. could specify family members. Given the diversity of families in the U.S., such accommodation is necessary to address the measurement issue of cultural translations of meanings.

Fourth, in order to obtain comparable sample sizes from the two countries, I used data from the CGSS data from 2011 to 2013 and GSS data from 2004 to 2016. Given the rapid social and economic transition in China, marriage and family patterns change in China between 2011 and 2013 as much as they do within the time span of 12 years in the U.S. The unequal economic and social development over time in the two countries would lead to unobserved variance in measurement and analysis. Longitudinal cross-national studies would be necessary in future research to track how marriage effects might vary or continue to transforms social networks around the world over time.

SUGGESTIONS FOR FUTURE RESEARCH

I want to address and suggest for future research: first, this study had no measures of the proximity of friends and relatives. Past studies find that the distance between relatives (parents) is a strong predictor of intergenerational contacts (Bian and Logan 2001; Bucx et al. 2008; Tsai and Yang 2017). Future research should include the proximity to test whether it accounts for some of the differences among the never married, the married and the previously married.

Second, co-residence with parents or parents-in-law is negatively associated with socializing with friends in China, which suggests that it is not marriage but the intergeneartional relationship is greedy in this collectivist society. Future research can

further explore how this culture-influenced relationship take into effect, and the roles of marriage and gender to understand the greediness of intergenerational relationships in China.

Third, self-selection into marriage could also explain the difference in social life between the married and the unmarried. It is possible that in both China and the U.S. those who have strong ties are more likely to marry because they are well connected in their social network to find future mates, while those who are lack of ties also have fewer opportunities to meet potential mates. Future research should utilize longitudinal data to distinguish the effect of self-selection into marriage from the effect of marriage itself.

Lastly, only one aspect of social ties—the frequency of socializing—was examined in this study. Future research should also investigate more tangible aspects, such as instrumental and financial exchanges, and intangible aspects, such as satisfaction with social ties, as well as perceived sense of community and engagement. Research on the subjective aspects of social ties, such as perceived sense of community and engagement in one's neighborhood, in a cross-cultural context would contribute greatly to our understanding of collectivist and individualist cultures.

CONCLUSION

Culture influences people's social relationships through the institution of marriage. More individualized American marriage appears to be greedier than Chinese marriage if not for all relationships. It isolates married people in the U.S. from socializing with friends, neighbors and relatives. At the same time, marriage is mostly beneficial to informal social interactions in China as shown in this study. As a result, married Chinese people become more socially integrated.

This study adds to evidence that marriage might be particularly detrimental to maintaining non-familial relationships in individualist societies (e.g. Bucx et al. 2008; Kalmijin 2003, 2012; Rozer, Mollenhorst; and Voker 2015; Sarkisian and Gerstel 2016). In individualist societies, couples are expected to stand by their own and rely on each other practically and emotionally. The isolationist ideals about marriage would lead to isolated marriages. In contrast, marriage serves a rather positive function among Chinese with regard to social interactions in their private life. Not only does it lead to more involvement with relatives as the collectivist cultural doctrines teach, married Chinese people are more engaged in their own neighborhood. In China, married people are expected to be independent, but at the same time they should be accessible to their extended family, as well as their nuclear family. It is not surprising to see that married people in China socialize more with relatives than the unmarried. It is also reasonable that marriage has no impact on socializing with friends, because more committed friendships influenced by the collectivist culture are unlikely to be interrupted by any major life event (Goodwin 1999). In a culture that emphasizes the interconnectedness of individuals and communal relationships (Triandis and Gelfand 1998), relationships with neighbors are more likely to be enhanced rather than weakened after getting married.

Furthermore, structural differences between China and the U.S. could also explain the marriage effect differences found in this study. Results show that structural factors modify marriage effects in China but not in the U.S., and they affect the three types of social interactions differently in the two countries. Both suggest that culture takes effect through structural factors, such as intergenerational living arrangement, and it interacts with structural factors to shape informal social life.

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Table 4.1. Descriptive Statistics for CGSS

	Total (N=23,664)			Women (N=11,754)		Men (N=11,910)		
	Range	M or %	(S.E.)	M or %	(S.E.)	M or %	(S.E.)	
Socializing with friends	1−7	4.05	(1.89)	3.96	(0.02)	4.14	(0.02)	***
Socializing with neighbors	1−7	4.37	(2.19)	4.51	(0.02)	4.22	(0.02)	***
Socializing with relatives	1−5							
Never (=1)		0.12		0.13		0.11		
One to several time a year		0.62		0.61		0.63		
One to several time a month		0.21		0.21		0.21		
Several times a week		0.05		0.05		0.05		
Almost everyday (=5)		0.01		0.01		0.01		
Marital status								
Married	0−1	0.81		0.80		0.82		***
Previously married	0−1	0.11		0.14		0.08		***
Never married	0−1	0.08		0.06		0.10		***
Women	0--1	0.50						
Age	18−102	49.03	(15.77)	48.44	(0.15)	49.60	(0.14)	***
Co-residence with children								
0-5 years old	0−1	0.17		0.18		0.16		***
6-12 years old	0−1	0.20		0.21		0.19		***
13-17 years old	0−1	0.15		0.17		0.14		***
Co-residence with parents or parents-in-law	0−1	0.18		0.16		0.19		***
Family income[a]	0−142.86	1.41	(2.20)	1.36	(0.02)	1.46	(0.02)	***
Education								
Less than high school	0−1	0.69		0.73		0.66		***
High school	0−1	0.14		0.12		0.17		***
Associate degree	0−1	0.11		0.10		0.11		***
Bachelor degree or higher	0−1	0.06		0.05		0.06		***
Urban	0−1	0.53		0.53		0.52		
Paid work	0−1	0.62		0.53		0.71		***
Household size	1−12	2.99	(1.39)	2.96	(0.01)	3.02	(0.01)	***
Good health	0−1	0.58		0.55		0.62		***

Note: Ms, %s, and *N*s are not weighted.

[a]: Ratio of respondent's family income to the median family income in China.

*$p < .05$. **$p < .01$. ***$p < .001$.

Table 4.2. Descriptive Statistics for GSS

	Total (N=7,010)			Women (N=3,811)		Men (N=3,199)		
	Range	M or %	(S.E.)	M or %	(S.E.)	M or %	(S.E.)	
Socializing with friends	1−7	4.08	(0.02)	4.08	(0.03)	4.08	(0.03)	
Socializing with neighbors	1−7	3.33	(0.03)	3.20	(0.04)	3.47	(0.04)	***
Socializing with relatives	1−5							**
Never (=1)		0.03		0.03		0.04		
One to several times a year		0.23		0.21		0.25		
One to several times a month		0.36		0.36		0.35		
Several times a week		0.25		0.26		0.24		
Almost everyday (=5)		0.13		0.14		0.12		
Married	0−1	0.54		0.52		0.56		**
Previously married	0−1	0.20		0.24		0.15		***
Never married	0−1	0.26		0.24		0.29		***
Women	0−1	0.53						
Age	18−89	45.50	(0.23)	45.50	(0.31)	45.50	(0.34)	
Co-residence with children								
0-5 years old	0−1	0.14		0.16		0.12		***
6-12 years old	0−1	0.16		0.19		0.13		***
13-17 years old	0−1	0.15		0.16		0.14		*
Co-residence with parents or parents-in-law	0−1	0.11		0.10		0.13		**
Family income[a]	0.04−10.36	1.36	(0.02)	1.27	(0.02)	1.46	(0.02)	***
Education								
Less than high school	0−1	0.12		0.12		0.13		
High school	0−1	0.50		0.51		0.49		
Associate degree	0−1	0.09		0.09		0.08		
Bachelor degree or higher	0−1	0.29		0.28		0.30		
Paid work	0−1	0.65		0.59		0.73		***
Urban	0−1	0.85		0.85		0.86		
Household size	1−12	2.82	(0.02)	2.82	(0.03)	2.82	(0.03)	
Good health	0−1	0.74		0.74		0.74		

Note: Ms and %s are for weighted *N*s; unweighted *N*s are shown.

[a]: Ratio of respondent's family income to the median family income in the U.S.

Table 4.3. Unweighted Ordinary Least Square Regression Models for Socializing with Friends

	China (N=23,651)						U.S. (N=7,009)					
	Bivariate		Model I		Model II		Bivariate		Model I		Model II	
	Coef.	(S.E.)	Coef.	(S.E.)	Coef.	(S.E.)	Coef.	(S.E.)	Coef.	(S.E.)	Coef.	(S.E.)
Marriage only												
Previously married	-0.40	(0.04) ***					0.11	(0.04) *				
Never married	0.65	(0.04) ***					0.92	(0.05) ***				
Full model												
Previously married			0.00	(0.04)	-0.01	(0.07)			0.36	(0.05) *** §§§	0.35	(0.07) *** §§
Never married			-0.02	(0.06)	-0.17	(0.03)			0.55	(0.05) *** §§§	0.68	(0.07) *** §§§
Female			-0.16	(0.02) ***	-0.11	(0.03) ***			0.03	(0.04) §§§	0.10	(0.05) §§§
Previously married × Female					0.03	(0.08)					-0.01	(0.09)
Never married × Female					0.13	(0.09)					-0.25	(0.09) ** §§
Age			-0.28	(0.02) ***	-0.28	(0.02) ***			-0.35	(0.02) *** §§	-0.35	(0.02) *** §§
Co-residence with children												
0-5 years old			-0.15	(0.04) ***	-0.18	(0.04) ***			-0.24	(0.07) ***	-0.23	(0.07) ***
6-12 years old			-0.02	(0.04)	-0.03	(0.04)			-0.10	(0.06)	-0.11	(0.06)
13-17 years old			-0.07	(0.04)	-0.07	(0.04)			-0.06	(0.06)	-0.04	(0.06)
Co-residence with parents or parents-in-law			-0.11	(0.04) **	-0.12	(0.05) *			0.20	(0.08) * §§§	0.19	(0.08) ** §§§
Family income			0.03	(0.01) ***	0.03	(0.01) ***			0.14	(0.02) *** §§§	0.13	(0.02) *** §§§
Education (ref = bachelor or higher)												
Less than high school			-0.27	(0.06) ***	-0.27	(0.06) ***			-0.54	(0.07) *** §§	-0.54	(0.07) *** §§
High school			-0.08	(0.06)	-0.08	(0.06)			-0.13	(0.04) **	-0.13	(0.04) **
Associate degree			0.06	(0.06)	0.06	(0.06)			0.00	(0.07)	0.00	(0.07)
Urban			-0.08	(0.03) **	-0.08	(0.03) **			0.14	(0.05) ** §§§	0.14	(0.05) ** §§§
Paid work			-0.03	(0.03)	-0.03	(0.03)			0.00	(0.07)	0.00	(0.04)
Household size			0.01	(0.01)	0.02	(0.01)			-0.05	(0.02) * §	-0.05	(0.02) * §
Good health			0.36	(0.03) ***	0.36	(0.03) ***			-0.02	(0.04) §§§	-0.02	(0.04) §§§
Full model adjusted R-square				0.06		0.06				0.14		0.14

*$p < .05$. **$p < .01$. ***$p < .001$ (significant coefficient within country).

§$p < .05$. §§$p < .01$. §§§$p < .001$ (significant coefficient between countries).

Table 4.4. Unweighted Ordinary Least Square Regression Models for Socializing with Neighbors

	China (N=23,651)									U.S. (N=7,003)								
	Bivariate			Model I			Model II			Bivariate			Model I			Model II		
	Coef.	(S.E.)		Coef.	(S.E.)		Coef.	(S.E.)		Coef.	(S.E.)		Coef.	(S.E.)		Coef.	(S.E.)	
Marriage only																		
Previously married	0.02	(0.05)								0.20	(0.06)	**						
Never married	-1.00	(0.05)	***							0.50	(0.06)	***						
Full model																		
Previously married				-0.09	(0.05)		-0.16	(0.07)	*				0.22	(0.07)	* §§	0.20	(0.10)	* §§
Never married				-0.43	(0.06)	***	-0.31	(0.07)	***				0.39	(0.07)	*** §§§	0.43	(0.10)	*** §§§
Female				0.24	(0.03)	***	0.26	(0.03)	***				-0.26	(0.05)	*** §§§	-0.25	(0.07)	*** §§§
Previously married × Female							0.13	(0.09)								0.03	(0.12)	
Never married × Female							-0.35	(0.10)	**							-0.09	(0.12)	
Age				0.04	(0.02)	*	0.04	(0.02)	*				-0.15	(0.03)	*** §§§	-0.15	(0.03)	*** §§§
Co-residence with children																		
0-5 years old				0.17	(0.04)	***	0.16	(0.04)	***				-0.18	(0.09)	* §§§	-0.18	(0.09)	* §§§
6-12 years old				0.09	(0.04)	*	0.09	(0.04)	*				0.19	(0.08)	*	0.20	(0.08)	*
13-17 years old				0.04	(0.04)		0.04	(0.04)					-0.04	(0.08)		-0.03	(0.08)	
Co-residence with parents or parents-in-law				-0.02	(0.05)		-0.02	(0.05)					0.14	(0.11)		-0.14	(0.11)	
Family income				-0.04	(0.01)	***	-0.04	(0.01)	***				0.08	(0.02)	** §§§	0.07	(0.02)	*** §§§
Education																		
Less than high school				0.86	(0.07)	***	0.85	(0.07)	***				-0.10	(0.09)	§§§	-0.10	(0.09)	§§§
High school				0.59	(0.07)	***	0.58	(0.07)	***				-0.12	(0.06)	* §§§	-0.12	(0.06)	* §§§
Associate degree				0.20	(0.07)	**	0.20	(0.07)	**				-0.11	(0.09)	§§	-0.11	(0.09)	§§
Urban				-1.10	(0.03)	***	-1.10	(0.03)	***				-0.36	(0.07)	*** §§§	-0.36	(0.07)	*** §§§
Paid work				-0.15	(0.03)	***	-0.17	(0.03)	***				-0.33	(0.05)	*** §§	-0.33	(0.05)	*** §§
Household size				-0.01	(0.01)		0.01	(0.02)					-0.10	(0.03)	** §§	-0.09	(0.03)	** §§
Good health				0.31	(0.03)	***	0.31	(0.03)	***				0.02	(0.05)	§§§	0.02	(0.05)	§§§
Full model adjusted R-square					0.13			0.13						0.03			0.03	

*$p < .05$. **$p < .01$. ***$p < .001$ (significant coefficient within country).

§$p < .05$. §§$p < .01$. §§§$p < .001$ (significant coefficient between countries).

Table 4.5. Unweighted Ordinal Logistic Regression Models for Socializing with Relatives

	China (N=23,648)								U.S. (N=7,009)							
	Bivariate			Model I			Model II		Bivariate			Model I			Model II	
	Coef.	(S.E.)		Coef.	(S.E.)		Coef.	(S.E.)	Coef.	(S.E.)		Coef.	(S.E.)		Coef.	(S.E.)
Marriage only																
Previously married	-0.39	(0.04)	***						0.03	(0.05)						
Never married	0.08	(0.05)							0.25	(0.05)	***					
Full model																
Previously married				-0.09	(0.05)		-0.17	(0.07) *				0.09	(0.06)	§	-0.12	(0.09)
Never married				-0.58	(0.06)	***	-0.63	(0.07) ***				-0.03	(0.07)	§§§	-0.10	(0.09) §§§
Female				-0.04	(0.03)		-0.06	(0.03) *				0.29	(0.04) ***	§§§	0.17	(0.06) ** §§§
Previously married × Female							0.13	(0.09)							0.35	(0.11) **
Never married × Female							0.11	(0.10)							0.12	(0.11)
Age				-0.20	(0.02)	***	-0.20	(0.02) ***				-0.16	(0.02) ***		-0.17	(0.03) ***
Co-residence with children																
0-5 years old				-0.11	(0.04)	**	-0.11	(0.04) **				0.25	(0.08) **	§§§	0.24	(0.08) ** §§§
6-12 years old				-0.06	(0.04)		-0.05	(0.04)				-0.04	(0.08)		-0.04	(0.08)
13-17 years old				-0.06	(0.04)		-0.06	(0.04)				0.09	(0.08)	§§	0.08	(0.08)
Co-residence with parents or parents-in-law				-0.03	(0.05)		-0.03	(0.05)				0.74	(0.10) ***	§§§	0.74	(0.10) *** §§§
Family income				0.06	(0.01)	***	0.06	(0.01) ***				0.03	(0.02)	§	0.04	(0.02)
Education																
Less than high school				-0.25	(0.06)	***	-0.25	(0.06) ***				0.37	(0.08) ***	§§§	0.36	(0.08) *** §§§
High school				0.08	(0.07)		0.08	(0.07)				0.29	(0.05) ***	§	0.30	(0.05) *** §
Associate degree				0.21	(0.07)	**	0.21	(0.07) **				0.25	(0.08) **		0.25	(0.08) **
Urban				0.37	(0.03)	***	0.40	(0.03) ***				-0.25	(0.06) ***	§§§	-0.25	(0.06) *** §§§
Paid work				-0.01	(0.03)	**	-0.01	(0.03) **				0.04	(0.05)		0.04	(0.05)
Household size				0.00	(0.01)		0.00	(0.01)				-0.02	(0.03)		-0.02	(0.03)
Good health				0.31	(0.03)	***	0.31	(0.03) ***				0.04	(0.05)	§§§	0.03	(0.05) §§§
Full model pseudo R-square				0.03			0.03					0.02			0.02	

*$p < .05$. **$p < .01$. ***$p < .001$ (significant coefficient within country).

§$p < .05$. §§$p < .01$. §§§$p < .001$ (significant coefficient between countries).

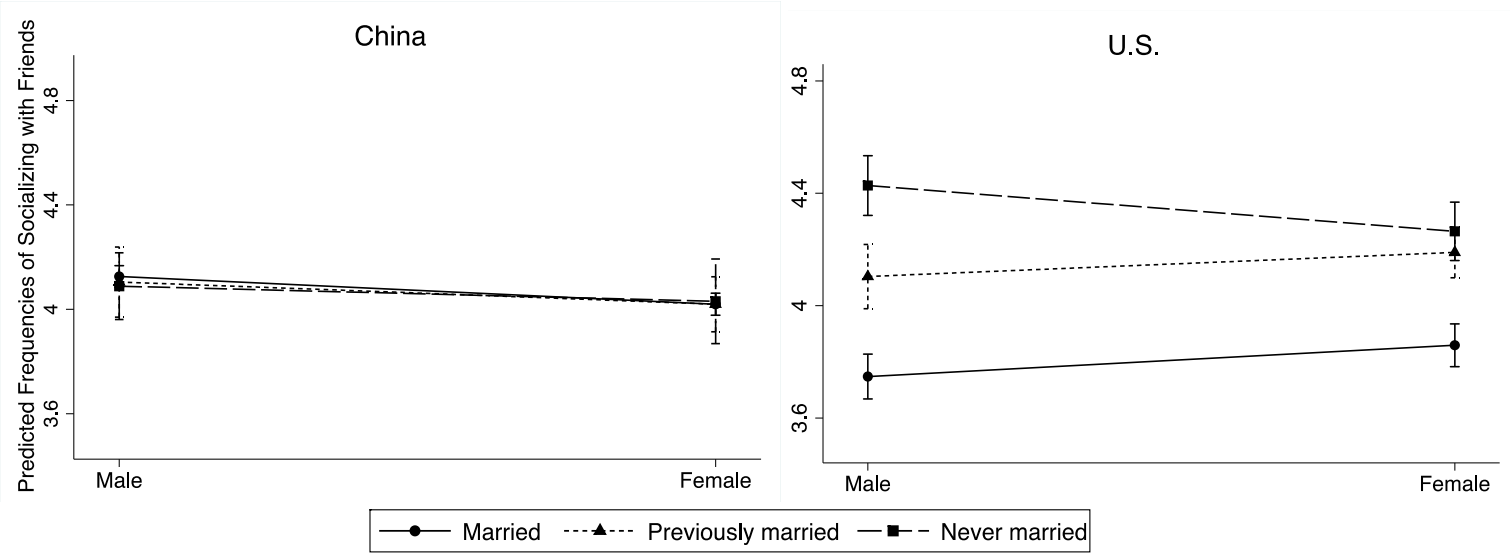

Figure 4.1. Interactive Effects of Marital Status and Gender on Socializing with Friends

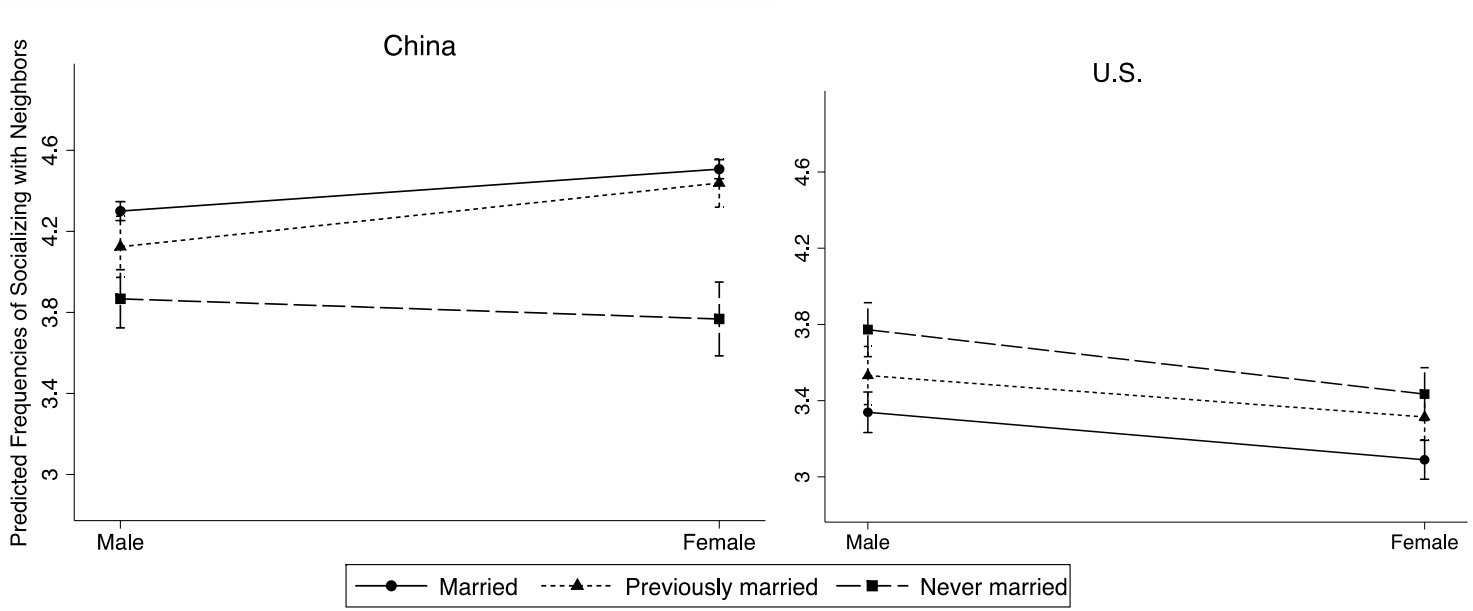

Figure 4.2. Interactive Effects of Marital Status and Gender on Socializing with Neighbors

CHAPTER 5: CONCLUSION

In this dissertation, I study three aspects of family and marriage relationships , and how individualist/collectivist familial beliefs and social characteristics differentiate people's experiences around the world. First, I examine how 17 OECD countries differ culturally in older adults' preference for family elder care. In the second study, I select China as a representative of the collectivist culture, and look into how the collectivist culture and older parents' filial beliefs shape the intergenerational relationship type in China. Lastly, I compare an individualist society, the U.S., and China, a collectivist society to test the marriage effect on informal social relationships across cultures. Specifically, I test whether marriage also isolates people from their informal social relationships in China as observed in the U.S.

Emphasis on the commitment to and the interdependence in in-groups is a crucial dimension to identify whether a society is collectivist or individualist (Triandis 1995). The influence of the norm of in-group loyalty and interdependence is found in all three studies. In the first study, older adults from more traditional countries, where family traditions and parent-child ties are highly valued, were more likely to prefer family members as the primary provider of instrumental elder care, than those from more secular-rational countries. The assumed interdependence between family members in the collectivist (traditional) culture likely gives the assurance to older adults that they would be taken care of by their family. Older adults' preference for family care could be motivated by their country's cultural tradition of strong intergenerational relationships. On the contrary, in an individualist (secular-rational) society where family interdependence is not the norm, such motivation could be weaker.

Findings from the second study show that the patrilocal and patrilineal cultural traditions that are prevalent in collectivist societies are entrenched in the intergenerational relationship in China nowadays. Family interdependence between generations depends on the child's gender and marital status in this collectivist society, which is also a feature of many collectivist societies (Goodwin 1999). Older Chinese parents were less likely to have a tight-knit relationship with their married daughters than with married sons, which features intergenerational co-residence, frequent instrumental support exchanges, emotional closeness, and low relationship strain. The likelihood for older parents to have such relationship with a married daughter was even lower if she was not the only child of the family. Older parents, especially for those had the son preference for parental care, were more likely to have a discordant relationship with their married daughters than with married son, where intergenerational co-residence was rare but relationship strain was high and emotional closeness was low. Older parents in China have a more interdependent relationship with married son, who are expected to have the ultimate duty to take care of aging parents and preserve the family name and legacy in the collectivist culture.

In the third study, marriage has opposite effects on people's informal social life in the individualist and the collectivist society. The proposition of "marriage is greedy institution" found in the individualist U.S. does not apply to the collectivist China. Marriage not only integrates people into their extended family but also into their neighborhood in China. Meanwhile, no marriage effect is found for socializing with friend in China. In contrast, marriage isolates people from any non-conjugal informal relationship in the U.S. In individualist societies a person is expected to look after their

own interest and their immediate family (Hofstede 2011). As a result, married Americans spent less time with anyone who is not in their own nuclear family, including friends, neighbors, and relatives. In a collectivist society, marriage is to connect the extended families of husband and wife and to integrate the couple to a larger family social network. A married person is not only responsible for their own nuclear family, but also the extended family of their own and their spouse (Stockman 2000). Therefore, married Chinese would spend more time with relatives than their unmarried counterparts. I find that the integration also occurs in the local community. Strong loyalty to the neighborhood relationship is often found in collectivist societies (Goodwin 1999). While no literature on whether such loyalty would be enhanced by marriage, additional family responsibilities would motivate married Chinese to rely more on neighbors for supports, and also spend more social time with neighbors than the unmarried. The lack of the marriage effect on socializing with friends in China could also be explained by the individualist/collectivist differences in terms of the loyalty to in-groups. The friendship in collectivist cultures tends to be committed and long-lasting, while the friendship in individualist cultures is less attached (Goodwin 1999). As such, friendships are unlikely to be disrupted by marriage in a collectivist society than in an individualist society. However, friendship is negatively affected by people's co-residence with parents/parents-in-law in China. Such effect is positive in the U.S. Chinese who were living with parents/parents-in-law socialized less frequently with friends than those who were not living with parents/parents-in-law. This finding suggests that marriage might not be greedy in China, but a extended family is. A geographcially close intergenerational

relationship would cost Chinese people's social ties with other informal non-familial social relationships, as marriage dose in the individualist U.S.

The findings of the three studies also suggest that diverse family and marriage experiences across countries and groups are also shaped by the interaction between culture and individual's social characteristics. Influences of a dominant culture can be weakened or reinforced by individuals' social circumstances. Results of the first study show that individual's economic status modified the cultural influence. Older adults from countries with more secular-rational values were less likely to prefer family elder care only when the older adult has a moderate economic status with a family income similar to the national median. However, ultra-rich older adults (with a family income 16 times more than the country median) from more secular-rational countries were as likely to prefer family elder care as those from more traditional countries. Older adults with an exceptional amount of wealth have more trust in the family to take care of them than any one or group outside of the family, regardless of the country's cultural orientation. The second study shows that older Chinese parents with higher SES tend to have an independent relationship with their adults children, whereas lower SES is linked to an interdependent relationship. In this case, people keep the collectivist traditions that value family interdependence is likely due to the survival necessity instead of the intention of upholding the traditions. Together, although cultural beliefs explain various perceptions and human behavior in families and beyond, people's social characteristics should also been considered in cross-cultural studies, in order to apprehend the complexities of human experiences.

In sum, the three studies present new evidence on how marriage and family experiences differ due to the individualist/collectivist cultural influences, and under what conditions the cultural influences are weakened or reinforced.

LIMITATIONS

I discussed the limitations at the end of each study. Followings are two limitations pertaining specifically to comparative research.

First, in all three studies, a country is assumed to have one dominant culture. Such assumption is problematic especially when studying countries with large culturally diverse populations, such as the U.S. In the first study, some common context-independent individual social-demographic factors are controlled, such as age, gender, marital status, and living arrangement. No cultural variable at the individual level is included, and any potential variation due to different ethnic and immigration backgrounds is not considered in the current analytical model. One potential issue with including culturally significant variables about ethnicity and/or immigration status in comparative research is that these variables are often context dependent. For example, identifying ethnic majority respondents in the ethnically homogeneous Japan might give little information about how the preference would be different by the ethnic status. However, the ethnicity variable is crucial to understand the American society. One limitation of the third study is that race/ethnicity is not controlled in the U.S. sample. A likely interaction between race/ethnicity and the marriage effect is intentionally left out in the final analysis due to the research design in the third study. In the same vein, a culturally significant factor, the urban/rural residential status in China, was not fully incorporated in the models in the third study. I chose to omit a three-way interactive effect among

urban/rural residential status, gender and marital status. This interactive effect is meaningful in China; however, such interaction would not bear a similar analytical significance in the U.S.

The second limitation is related to measuring the individualist/collectivist cultures related to familial beliefs. In the first study, the measure of secular-rational/traditional values is not fully aligned with the individualism/collectivism framework, despite the fact that both are concerned with familial beliefs. The notion of family in the World Values Survey seems to be different from that in the Individualism/collectivism framework, although the similarities are also notable about the child obedience to parents and parent-child interdependence. The items in World Values Survey related to the secular-rational/traditional value might imply that the family would only refer to the nuclear family. However, one of key differences between individualist and collectivist cultures is that individualists are concerned about their immediate nuclear family rather than the extended family, whereas collectivists' idea of family could include members from the extended family (Hofstede 2001). Moreover, countries that are secular-rational according to the World Values Survey (WVS) are considered as collectivist countries, such as Japan and Korea; countries that are traditional in WVS are considered as individualist countries, such as the U.S. The results show that the secular-rational/traditional value is associated with the preference for family elder care among the 17 OECD countries. It indicates that, in addition to familial beliefs, other cultural dimensions like religiosity and nationalism might be also important to predict the care preference among older adults[23]. In the third study, I was not able to use direct and comparable measures of collectivist/individualist

[23] Mair and colleagues (2015) find that middle-aged and older adults from 12 European countries who were going to church are more likely to prefer family-based elder care.

values to test to what extent the individualist/collectivist culture influences how marriage impacts three types of informal social interactions in the two countries.

FUTURE RESEARCH

First, future research should explore more interactions between culture and individual social characteristics. Researchers could create new units of analysis of comparison based on individual characteristics, e.g., gender and age groups. They are complementary to the conventional unit of analysis—country. Comparing subgroups between countries could shed lights on specific mechanisms of how culture takes effect or does not take effect according to individuals' status within social groups.

Second, future comparative research needs more multi-national surveys like ISSP and the World Values Survey that have culturally heterogeneous countries around the world in their samples. Many multi-national surveys in Europe that cover a variety of topics and include variables that are useful for comparative research in many disciplines. There are some cross-national surveys like in Latin America (e.g., AmericaBarometer) and East Asia (e.g., East Asian Social Survey). They are all importance research resources, but it is difficult to incorporate one with another due to the incomparability of designs and measures. While it would be costly to collect data for all-encompassing surveys and repeat the collection over the years, surveys with special topics and focusing on specific groups in the population across different cultures and geographic regions would expand the scale of the comparative research.

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