Beyond Education, Age, and Race: Assortative Mating by Place

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Abstract

Many studies have found that assortative mating in different social dimensions, such as age, education, race, and religion. No one, however, explores the importance of assortative mating by place. The present study uses 2013 Panel Study of Income Dynamics (PSID) data to explore the pattern of assortative mating by place. We use the “gains to marriage” model to include unmarried people in the models. In addition, we use a series of logistic models to examine the impacts of other dimensions of matching (i.e., age, race, education) and socioeconomic and demographic variables on assortative mating by place. The finding indicates that there is a clear pattern of homogeneous matching by Census regions and divisions. The results also suggest that the larger the distance between regions is, the smaller the possibilities of matching will be. Furthermore, Homogeneous matching by place cannot be explained by other dimensions of matching, but wife’s parental education may affect the chance of homogeneous matching by place. All these findings point out that “place” plays an important role in the process of matching, and its impact is independent of other social dimensions of matching.

1. INTRODUCTION

Assortative mating's importance in the fields of sociology, demography, and economics is related to social stratification and inequality. Previous studies have examined different dimensions of assortative mating, such as education, age, race/ethnicity, religion, assets, etc. Some research has deeply examined the relationship between assortative mating and earning inequality (Schwartz, 2010a). The dimensions discussed in these studies, however, are focusing on "social distance" (Johnson et al., 2000). But is "actual distance" an important factor for matching? In other words, most studies suggest that geographic location may have little impact on matching. If true, it implies that the probability of two persons, both living in New York, getting married is identical to the chances of a couple from New York and Utah marrying. It is hard to believe, however, that when people are looking for a potential partner, they ignore proximity in the sense of actual distance. In sum, the present study uses national survey data to explore the pattern of assortative mating by place. In addition, we examine whether the impact of homogeneous matching in place can be explained by other dimensions of homogeneous matching. The below is the structure of this study. Section 2 is the literature review for assortative mating by place. In section 3, we describe the main issue of context in the present study. The fourth section covers our analytic data, variables, and strategies. Section 5 presents the findings of the present study. Sections 6 and 7 are the limitations, conclusions, and implication.

2. LITERATURE REVIEW

Assortative Mating

Assortative mating has become an important issue in the field of sociology, demography, economics, and other social sciences. Previous studies have explored assortative mating by education (Han, 2010; Schwartz, 2010b; Schwartz & Mare, 2012; Shafer & Qian, 2010; Smits & Park, 2009; Torche, 2010), age (Mu & Xie, 2014), parental wealth (Charles et al., 2013; Fremeaux, 2014), and race/ethnicity and religion (Logan et al., 2008).[1] Also, Scholars have examined the relationship between assortative mating and social inequality (Breen & Anderson, 2012; Breen & Salazar, 2011; Monaghan, 2015; Schwartz, 2010b), and even the relationship between assortative mating and number of children in a family (Tsou et al., 2011).

But what is the mechanism behind assortative mating? Schwartz (2010b) proposed two main perspectives: *specialization and trading* and *cultural status*. The former is derived from Becker's marriage model (Becker, 1974). Becker considered that marriage is the result of a rational consideration between a couple who hope to

[1] In the present study, assortative mating stands for different pairs of matching in education, age, race/ethnicity, and other social categories. Homogeneous matching is specific to the couple or spouses are in the same group of a social category. In other words, in the present study, assortative mating has a broader meaning but includes homogeneous matching.

maximize their benefits. According to this model, husbands are expected to be the breadwinner of the family since they have greater human capital and thus can earn higher wages in the labor market. On the other hand, wives, who generally have less human capital at the time of matching, are expected to be responsible for housework. In other words, in this perspective, husbands exchange their earnings for their wives' housework and vice versa. This division of labor maximizes the benefits of a couple. Therefore, to minimize the loss of opportunity costs between the spouses, an ideal matching is a husband with the highest education and a wife, who is mainly responsible for housework, with the lowest education, i.e., "heterogeneous matching". Nevertheless, with the expansion of higher education in recent decades, more and more females have a chance to pursue higher education, which in turn raises not only these females' human capital (e.g., earnings), but also the cost of heterogeneous matching.[2] Therefore, heterogeneous matching gradually becomes unworkable in this gender-equalized society.

On the other hand, *Cultural matching* has become more popular in the current society. According to this perspective, the spouses match according to a shared

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[2] According to statistics derived from National Center of Educational Statistics, the percentage of female Americans age 25 and who earned bachelor's degree or more was 8.2% in 1970 and 32.7% in 2015. At the same time, the percentage of male was 14.1% and 32.3% (https://nces.ed.gov/programs/digest/d15/tables/dt15_104.10.asp?current=yes). Also, according to historic data from the Census Bureau, the median income of females in 1970 and 2015 was $12,190 and $23,769, respectively. At the same time, the median income of males in 1970 and 2015 was $36,346 and $37,138 (https://www.census.gov/data/tables/time-series/demo/income-poverty/historical-income-people.html, all the incomes are adjusted to 2015 prices).

“habitus”—ideas, tastes, lifestyles, and customs (Schwartz, 2010a). With the earnings of male and female are equalizing, the division of labor between the spouses is but one consideration in matching. “Whether partners share common ideas and habitus” is more important in making the decision of matching, i.e., “homogeneous matching.” In fact, many studies already found the trend of “homogeneous matching” in education, age, parental assets, and religion in the different societies (Charles et al., 2013; Fremeaux, 2014; Han, 2010; Logan et al., 2008; Monaghan, 2015; Schwartz, 2010a, 2010b; Schwartz & Mare, 2012; Smits & Park, 2009; Shafer & Qian, 2010; Torche, 2010）. For instance, Schwartz (2010a) found a trend toward educational homogamy in married and cohabiting unions in the United States. Smits and Park (2009) also found the trend of educational homogamy in ten East Asian societies, especially among those with advanced education levels and those with the lowest education. In addition to education homogamy, Charles et al. (2013) suggest that, after controlling for spouses’ education, a high correlation between spouses’ parental assets remains. Mu and Xie (2014), however, found that age homogamy in marriage has been declining since the 1990s in China, which suggests economic considerations still play a significant role in matching.

Assortative Mating by Place

Nevertheless, the discussion above has focused on the impact of “social distance” on matching, such as age, education, race/ethnicity, etc. There is no study that examines the impact of “actual distance” (e.g., assortative mating by place) on matching. If we can find a pattern of matching in different social groups, then this phenomenon should also appear among the people who have lived in the same place for a long time. In other words, we believe that place should also be a significant factor in matching because where people have lived for a long time influences how people think, how they behave, and what dialects they speak. According to cultural matching, all these can affect the probability of matching between persons from different places. That is to say, our residence can shape our habitus, which in turn further helps us match with another who has remained in the same place for a long time. For instance, a male and a female living in New York are more likely to interact with common topics, such as food or day-to-day living. They even speak the slangs that are only known by New Yorkers. All these will increase their possibility of matching, and thus shape assortative mating by place, but such an important issue has not yet been explored. In other words, the “proximity” between the male and the female will affect their chances of matching. In here, “proximity” has two meanings. One refers to actual distance and the other cultural distance. The proximity of actual distance will affect the chances of matching between two persons since the proximity of actual distance stands for the difference of habitus, or cultural distance, which should work when people are choosing their partner.

3. THE PRESENT STUDY

The present study uses quantitative data methods to addresses two research questions. First, does assortative mating by place occur in the United States? Second, do other dimensions of homogeneous matching explain homogeneous matching in place? The first part helps us to know whether "place" really has an impact on matching, and the second part lets us understand whether "place" is an independent factor in matching.

4. METHODS

Data

The analytic data we use in the present study is the 2013 Panel Study of Income Dynamics (PSID), a nationally and longitudinally representative survey data. The PSID began to be collected in 1968 with a sample of approximately 4,800 U.S. households. The Survey Research Center at the University of Michigan conducts the survey. A feature of the PSID is it over-sampled disadvantaged households (mostly black households) in 1968, i.e., Survey of Economic Opportunity (SEO) sample. In addition, the PSID included a sample of immigrant household in 1997 and 1999. PSID interviewed the sampled families and members of the selected households per year before 1997. After 1997, the sampled households and its members were interviewed biannually.[3] The information included in the PSID data is substantial, including marriage history and fertility, health, earnings, income, etc. The most important reason we adopted the PSID data is it includes the state in which the spouses grew up, the key variable in the present study.

To avoid the intervention of remarriage, we only focused on first-married and single households. For first-married households (the head (e.g., husband) lives with a "wife"), we first selected on heads of the household aged 40 and below in 2013 (n = 4,116). Then, we selected households in which neither the head nor the wife were ever married or only married once at the time of interviewing (n = 1,519).[4] Meanwhile, we only kept cases that listed states in which the spouses grew up (n = 1,364). In other words, we excluded the households either one of the spouses grew up in foreign countries or one of them didn't provide the information on where he/she grew up. For single households, we adopt the head aged 40 and below, who has not lived with a "wife." Note that the head in single households could be either male or female. In addition, the marital status of all these single households is never married.[5]

[3] For more detailed background and information on PSID, please see PSID website: https://psidonline.isr.umich.edu/default.aspx.

[4] In PSID's definition, "wife" includes the cohabiter who lived with head over 12 months. Thus, some heads may have "wife," but the marital status is coded as "never married." In the present study, we identified these cases as "married."

[5] Of course, the head in divorced or widowed households could be regarded as the part of "single households" as well. However, since these heads' matching preference would be affected by former marriage or cohabitation, we decide not to include these households in our analysis.

The final sample sizes of first-married, single male and single female households are 1364, 775, and 1,007.

Key Dependent Variable

The dependent variable in the present study is the state in which the head of household and wife grew up. We chose the state the person grew up in because it most affects his or her habitus or mating preference. For the convenience of analysis, we recode 50 states and D.C. into regions and divisions by the definition of Census Bureau.[6] There are four regions (Northeast, Midwest, South, and West) and nine divisions (New England, Middle Atlantic, East North Central, West North Central, South Atlantic, East South Central, West South Central, Mountain, and Pacific). In other words, we adopt two different scales of "place". This could also help us examine whether the pattern of assortative mating by place will vary under different scales of place.

Independent Variables

To examine whether homogeneous matching in place can be explained by other dimensions of homogeneous matching, we use a series of logistic models. In these models, we include three other dimensions of homogeneous matching: age (the difference between the head's and the wife's age), education (the difference between

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[6] For more details about the definition of Census regions and divisions, please see https://www.census.gov/geo/reference/gtc/gtc_census_divreg.html.

the spouses' education level), and race (whether the spouses belong to the same racial group). In addition, we include spouses' family backgrounds as control variables, e.g., the head's and the wife's parental education level (both father and mother) and sample origin (Survey Research Center (SRC), SEO, and the immigrant sample). Appendix A includes the detailed information of the variables described above.

"Gain to Marriage" Model

To explore the pattern of assortative mating, many studies adopted log-linear model as their analytic strategy (Han, 2010; Monaghan, 2015; Schwartz, 2010a, 2010b; Schwartz & Mare, 2012; Smits & Park, 2009; Torche, 2010). A log-linear model is appropriate for analyses in assortative mating since it is a parsimonious model that analyzes table-like patterns. For instance, when analyzing assortative mating by education, we can divide husbands' and wives' education into five categories. Then, we use only one log-linear model to clarify the pattern of assortative mating in this crosstable.

Nevertheless, there are some disadvantages to using log-linear models. First, if some cells in the table have zero counts, it would bias the estimation. Powers and Xie (2008) suggest an alternative way is to replace zero value with 0.1. Moreover, since the assumption behind the log-linear model is based on a cross table, the analysis of log-linear model cannot consider the values that are not on the table. In other words, when using the log-linear model to analyze the pattern of assortative mating, we can only focus on those who are married since we only have the information of rows (for instance, husband's education) and columns (wife's education). Schoen (1988) and Choo and Siow (2006a) pointed out, however, that the numbers of available single males and females in a society also have an impact on matching because the size of these single person groups affects decision-making for matching. Suppose there are 50 single females and 100 single males with advanced education in a society, 50 single males have to match females at other education levels. If the number of single females is doubled, then the pattern of assortative mating by education within this group will be changed. Under a log-linear model, we cannot include the effect of the size of single males and females into our analysis.

Alternatively, Schoen proposed a "*force of attraction*" model, and Choo and Siow proposed a "*gains to marriage*" model to consider these available single males and females (so-called "potential partners") in their models. In the present study, we adopt the "*gains to marriage*" model as our analytic strategy since this model additionally considered spillover effects in the process of matching between different social categories compared to "force of attraction" model.[7] The formula of the "gains to marriage" model is as follows:

[7] For more details about the discussion of spillover effects, see Choo & Siow (2006b).

$$\ln\left[\frac{\mu_{ij}}{\sqrt{\mu_{i0}\mu_{0j}}}\right] = ln\left[\frac{\mu_{ij}}{\sqrt{(m_i - \sum_k \mu_{ik})(f_j - \sum_l \mu_{jl})}}\right] = \pi_{ij}$$

where μ_{ij} is the count of the cells for the region (or division) *i* in which the husband grew up and the region (or division) *j* in which the wife grew up. μ_{i0} and μ_{0j} are the counts of single males and females who grew up in the region (or division) *i* and *j*, respectively (Choo & Siow, 2006a). By using the “gains to marriage” model, we can observe what type of matching will have higher probabilities of being matched, after considering the available number of single males and females in the same social group or category. When the probability of matching in a certain matching is higher, which means that this matching will receive more benefits (gains) than others. This is the reason that the model called “gains to marriage.” For instance, if the highest gains are observed in the matching of the husband and the wife who grew up in New England, this not only suggests that a male and a female both are from New England region have the highest probability to get married among other matchings, but they will also receive more benefits from their matching than other spouses. Since there are still some cells with zero counts in our cross tables, we replace zero with one in those zero-count cells.

Logistic Models for Homogeneous matching in Place

In the second part of our analysis, we only focus on married households (n = 1,364). We use a series of logistic models to examine homogeneous matching in place could be explained by other dimensions of homogeneous matching, i.e., education, age, and race. In each model, we include the husband's and the wife's parental education and sample origins as control variables since Uecker and Stokes (2008) found that family backgrounds have an impact on marriage decision as well. The dependent variable in these models is whether the spouses grew up in the same region (or division) or not (1 = yes; 0 = no). Furthermore, we divide the overall sample into different regions to see whether the result will be different across different regions. Since the PSID data adopts complex sample survey design, we include the information of strata and clusters in our models (i.e., we use syntax *svy* series in Stata 14 to execute our analysis). Also, we impute missing values of the independent variables in these models by the multiple imputation methods. we produce five imputed datasets for the analysis in this part.

5. RESULTS

"Gains to Marriage" Model

Table 1 displays the weighted frequency of each region and division in four groups: married males (husbands), married females (wives), single males, and single females. In these four groups, the region with the highest proportion of each group is South region (30.3% for husbands, 32.0% for wives, 32.8% for both single males and single females). In Census divisions, the divisions with the highest proportion are East North Central division for husbands (16.4%), single males (17.0%), single females (18.8%) and Pacific division for wives (17.4%). The difference between the distribution of Census region and division justifies conducting separate models for these two different scales of place.

Tables 2 and 3 present the distributions of assortative mating by regions and divisions, respectively. Within these two tables, it is obvious that the cells in the diagonal, i.e., homogeneous matching in place, are higher than other cells, which suggests that there is a pattern of assortative mating by place, no matter the scale of "place." The highest proportion in Tables 2 and 3 are the pair of "South-South" (25.0%) and "Pacific-Pacific" (13.3%). The percentage of homogeneous-matched households are 81.6% and 76.4% in Table 2 and 3, respectively.

We respectively plot the results of the gains to marriage models for regions and divisions in Figure 1 and 2. The darker cells stand for a higher "gains" to marriage. Like Tables 2 and 3, there is a clear pattern of homogeneous matching in these two figures. All the values in diagonal are larger than one, except the matchings of "New England-New England" (0.682), "South Atlantic-South Atlantic" (0.857), and "East North Central- East North Central" (0.991) (in Figure 2). The highest values in Census regions and divisions are in "West-West" (1.423) and "West North

Central-West North Central” (1.450). Meanwhile, all the cells that are not on a diagonal are less than 0.3. Within these cells, the highest value in regions and divisions are “North Central-South” (0.132) and “East North Central-East South Central” (0.180). Another interesting finding here is that the “gains” is gradually declined when the actual distance between two regions increases. In Table 2, the smallest gains are in “Northeast-West” (0.033) and “West-Northeast” (0.015), which are the two regions with the longest distance separating them. Since there are some cells with zero counts in Table 3, we cannot observe the impact of actual distance clearly in divisions.

Table 1. Descriptive Statistics of Census Regions and Divisions by Gender and Marital Status

Census Region	Married Males (Husbands)	%	S.E.	Single Males	%	S.E.
	Northeast	0.201	0.014	Northeast	0.227	0.023
	Midwest	0.257	0.013	Midwest	0.243	0.019
	South	0.303	0.015	South	0.328	0.029
	West	0.239	0.014	West	0.202	0.035
	Married Females (Wives)			**Single Females**		
	Northeast	0.187	0.013	Northeast	0.222	0.035
	Midwest	0.249	0.013	Midwest	0.254	0.026
	South	0.320	0.015	South	0.328	0.024
	West	0.245	0.014	West	0.196	0.025
Census Division	**Married Males (Husbands)**	**%**	**S.E.**	**Single Males**	**%**	**S.E.**
	New England	0.042	0.007	New England	0.072	0.015
	Middle Atlantic	0.159	0.013	Middle Atlantic	0.154	0.029
	East North Central	0.164	0.011	East North Central	0.170	0.031
	West North Central	0.093	0.009	West North Central	0.073	0.027
	South Atlantic	0.136	0.011	South Atlantic	0.164	0.029
	East South Central	0.056	0.007	East South Central	0.049	0.014
	West South Central	0.111	0.011	West South Central	0.115	0.028
	Mountain	0.081	0.009	Mountain	0.058	0.016
	Pacific	0.158	0.012	Pacific	0.143	0.032
	Married Females (Wives)			**Single Females**		
	New England	0.030	0.006	New England	0.045	0.015
	Middle Atlantic	0.157	0.013	Middle Atlantic	0.177	0.036
	East North Central	0.157	0.011	East North Central	0.188	0.030
	West North Central	0.092	0.008	West North Central	0.066	0.018
	South Atlantic	0.140	0.012	South Atlantic	0.175	0.026
	East South Central	0.078	0.009	East South Central	0.065	0.016
	West South Central	0.102	0.010	West South Central	0.089	0.027
	Mountain	0.070	0.008	Mountain	0.042	0.012
	Pacific	0.174	0.012	Pacific	0.153	0.024

Note: Data is from the 2013 PSID. The estimates and its standard errors are estimated by Rao-Wu bootstrap method.

Table 2. The Distribution of Husband's and Wife's Census Region

Husband's/Wife's Census Region	Northeast	Midwest	South	West	Total
Northeast	**0.164**	0.010	0.011	0.002	0.187
Midwest	0.009	**0.202**	0.021	0.017	0.249
South	0.023	0.026	**0.250**	0.020	0.320
West	0.005	0.019	0.021	**0.199**	0.245
Total	0.201	0.257	0.303	0.239	1.000

Note: Data is from 2013 PSID.

Table 3. The Distribution of Husband's and Wife's Census Division

Husband's/Wife's Census Division	New England	Middle Atlantic	East North Central	West North Central	South Atlantic	East South Central	West South Central	Mountain	Pacific	Total
New England	**0.028**	0.001	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.030
Middle Atlantic	0.006	**0.129**	0.006	0.004	0.008	0.001	0.000	0.001	0.001	0.157
East North Central	0.003	0.003	**0.125**	0.003	0.009	0.002	0.002	0.005	0.004	0.157
West North Central	0.000	0.003	0.002	**0.071**	0.002	0.000	0.005	0.007	0.001	0.092
South Atlantic	0.001	0.015	0.005	0.002	**0.103**	0.003	0.004	0.004	0.005	0.140
East South Central	0.000	0.004	0.013	0.002	0.003	**0.046**	0.006	0.002	0.002	0.078
West South Central	0.002	0.001	0.001	0.002	0.003	0.001	**0.083**	0.004	0.003	0.102
Mountain	0.000	0.000	0.003	0.005	0.002	0.003	0.002	**0.046**	0.009	0.070
Pacific	0.003	0.002	0.007	0.004	0.006	0.000	0.008	0.011	**0.133**	0.174
Total	0.042	0.159	0.164	0.093	0.136	0.056	0.111	0.081	0.158	1.000

Note: Data is from the 2013 PSID.

Figure 1. The Gains to Marriage by Census Region (weighted)

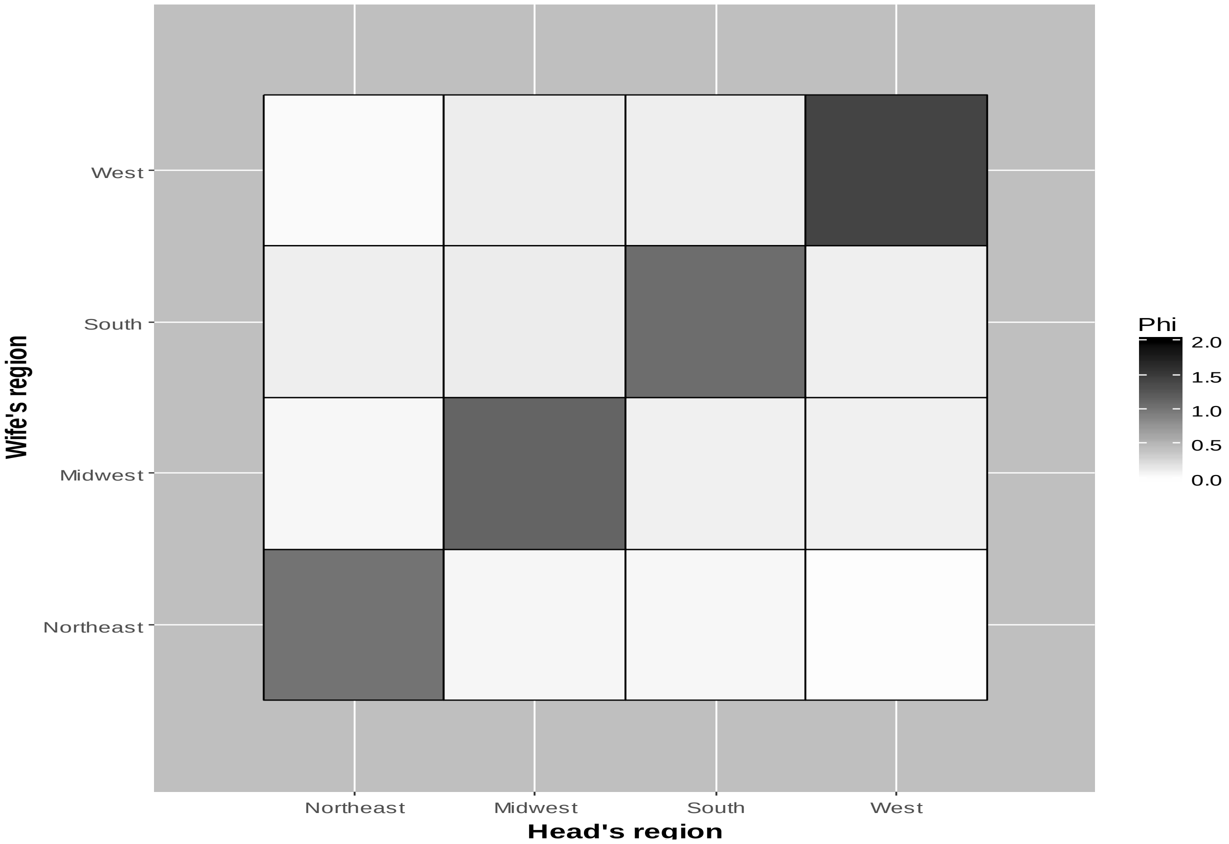
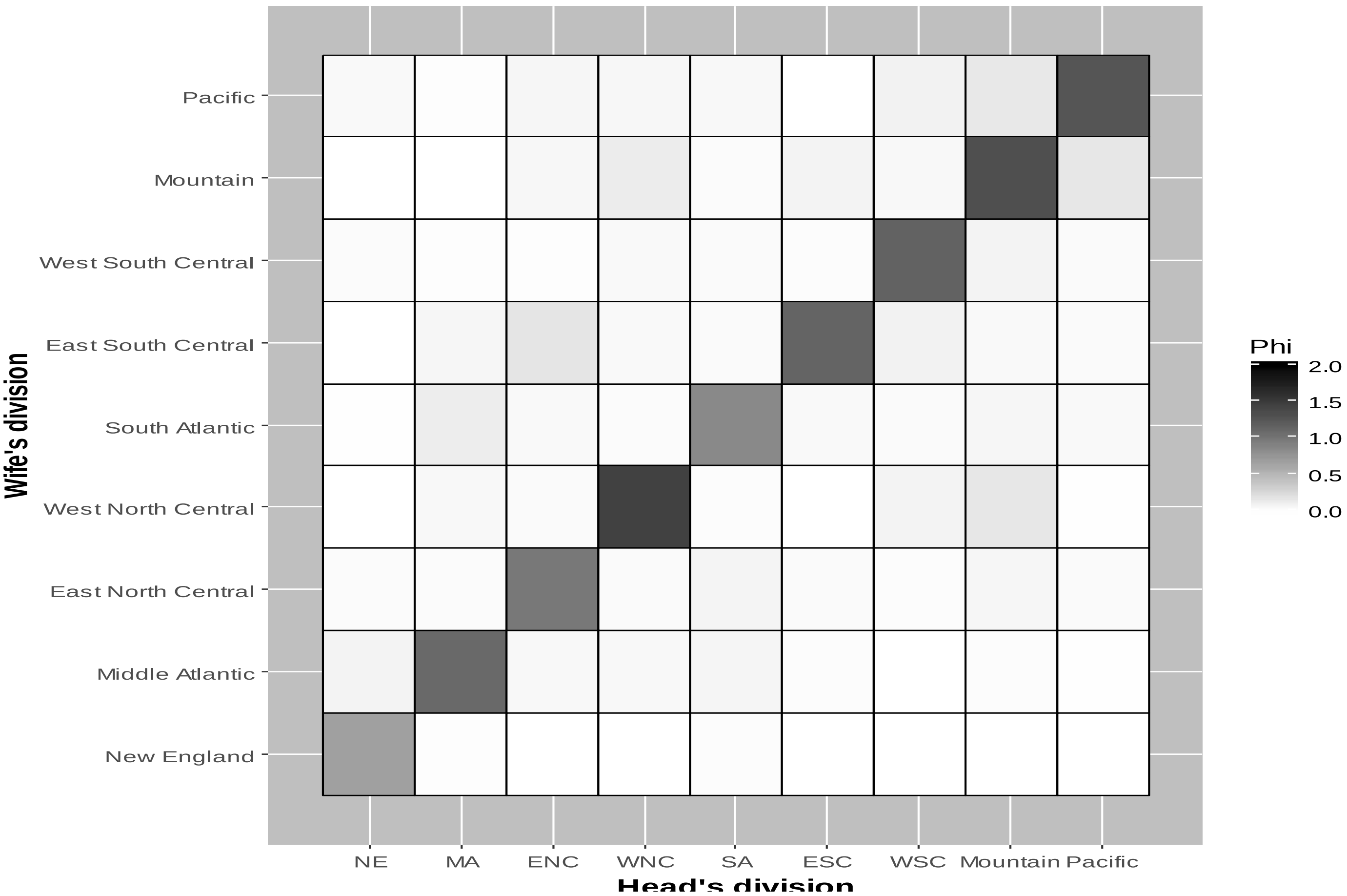


Figure 2. The Gains to Marriage by Census Division (weighted)



Logistic Models for Homogeneous Matching in Place

Table 4 displays descriptive statistics for all the variables in our logistic models. For the spouses grew up in Northeast region, 73.2% of their partner grew up in the same region. The numbers in other three regions are 66.3% (Midwest), 67.2% (West), and 70.2% (South). On other dimensions of homogeneous matching, the average difference between the husband's and wife's age is 1.099; the average difference between their highest education is -0.226. This suggests that, on average, wife's highest education is slightly higher than husband's. 83.9% of these spouses are in the same group. The average marriage year is 2005. The highest proportions of parental education level are in "high school completion" group (for both father and mother). 86.6% of the heads are from the SRC sample, only 4.3% and 9.1% are from the SEO and immigrant sample, respectively.

Table 5 contains four models for homogeneous matching in regions (Model 1 & 2) and divisions (Model 3 & 4). In Models 1 and 3, we find that, before including other dimensions of homogeneous matching, the highest education of wife's father has a negative impact on homogeneous matching. When the education of wife's father is higher, the probability of homogeneous matching within the region declines. For instance, in Model 1, compared to "Less than high school", the probability of homogeneous matching within the region in "Bachelor's degree" and "Advanced degree" are lower by 58.5% (0.585 = 1-exp(-0.880)) and 60.5% (0.605 = 1-exp(-

0.930)) lower, respectively. On the other hand, if the education level of wife’s mother belongs to “High school completion”, the probability of homogeneous matching within the region is 106% higher than that in “Less than high school”. These effects exist after controlling other dimensions of homogeneous matching and marriage year. But there is no significant effect of the head’s parental education.

In Model 2 and 4, we additionally include three other dimensions of homogeneous matching (age, race, and education) and marriage year (centralized). The results show that none of these four variables has a significant impact on homogeneous matching in place, regardless of region or division. On the three dimensions of homogeneous matching, age and education have negative but insignificant effects. Meanwhile, the homogeneous matching in race has a positive effect, but it is insignificant as well.

Table 4. Descriptive Statistics for Logistic Models (n = 1,364)

Variables	Mean	S.E.	Variables	Mean	S.E.
Census Region of Head			**Census Region of Wife**		
Northeast	0.201	0.014	Northeast	0.187	0.013
Midwest	0.257	0.013	Midwest	0.249	0.013
South	0.303	0.015	South	0.320	0.015
West	0.239	0.014	West	0.245	0.014
Census Division of Head			**Census Division of Wife**		
New England	0.042	0.007	New England	0.030	0.006
Middle Atlantic	0.159	0.013	Middle Atlantic	0.157	0.013
East North Central	0.164	0.011	East North Central	0.157	0.011
West North Central	0.093	0.009	West North Central	0.092	0.008
South Atlantic	0.136	0.011	South Atlantic	0.140	0.012
East South Central	0.056	0.007	East South Central	0.078	0.009
West South Central	0.111	0.011	West South Central	0.102	0.010
Mountain	0.081	0.009	Mountain	0.070	0.008
Pacific	0.158	0.012	Pacific	0.174	0.012
The spouses grew up in the same region	0.816	0.013			
The spouses grew up in the same division	0.764	0.014			
The spouses grew up in Northeast region (n = 221)	0.732	0.033			
The spouses grew up in Midwest region (n = 452)	0.663	0.028			
The spouses grew up in South region (n = 593)	0.672	0.027			
The spouses grew up in West region (n = 312)	0.702	0.029			
Head's Age	32.196	0.166	**Wife's Age**	31.097	0.179
Age Difference between the spouses	1.099	0.100			
Head's Race			**Race of Wife**		
Non-Hispanic white	0.761	0.014	Non-Hispanic white	0.755	0.014
Hispanic white	0.087	0.010	Hispanic white	0.071	0.009
African American	0.089	0.008	African American	0.064	0.007
Asian	0.009	0.003	Asian	0.014	0.004
Other or multi-race	0.053	0.008	Other or multi-race	0.096	0.010
The spouses in the same race group	0.839	0.012			

Head's Highest Education			**Wife's Highest Education**		
Less than high school	0.063	0.008	Less than high school	0.049	0.007
High school completion	0.500	0.017	High school completion	0.426	0.016
Some college or associate's degree	0.103	0.010	Some college or associate's degree	0.110	0.010
Bachelor's degree	0.286	0.015	Bachelor's degree	0.321	0.016
Advanced degree	0.048	0.008	Advanced degree	0.094	0.010
Highest Education Difference between the spouses	-0.226	0.035			
Marriage Year	2005.959	0.176			
Highest Education of Head's Father			**Highest Education of Wife's Father**		
Less than high school	0.108	0.011	Less than high school	0.120	0.013
High school completion	0.442	0.018	High school completion	0.421	0.017
Some college or associate's degree	0.141	0.012	Some college or associate's degree	0.153	0.013
Bachelor's degree	0.190	0.014	Bachelor's degree	0.182	0.013
Advanced degree	0.118	0.011	Advanced degree	0.124	0.011
Highest Education of Head's Mother			**Highest Education of Wife's Mother**		
Less than high school	0.090	0.011	Less than high school	0.101	0.012
High school completion	0.456	0.018	High school completion	0.408	0.017
Some college or associate's degree	0.152	0.013	Some college or associate's degree	0.213	0.014
Bachelor's degree	0.210	0.014	Bachelor's degree	0.185	0.013
Advanced degree	0.091	0.010	Advanced degree	0.093	0.010
Sample Origins					
SRC sample	0.866	0.010			
SEO sample	0.043	0.004			
Immigrant sample	0.091	0.009			

Note: Data is from the 2013 PSID. The estimates and its standard errors are estimated by aggregating the five imputed sub-datasets.

Table 5. Logistic Models for Assortative Mating by Region and Division (n = 1,364)

	Spouses grew up in the same region or not						Spouses grew up in the same division or not					
	Model 1			Model 2			Model			Model 4		
Independent variables	Coef.	S.E.	Sig.	Coef.	S.E.	Sig.	Coef.	S.E.	Sig.	Coef.	S.E.	Sig.
Age difference between spouses	-	-		-0.026	0.033		-	-		-0.027	0.029	
Education difference between spouses	-	-		-0.062	0.110		-	-		-0.041	0.094	
Spouses in the same race group or not	-	-		0.157	0.258		-	-		0.188	0.229	
Marriage year (centered)	-	-		0.000	0.019		-	-		-0.009	0.017	
Highest Education of Head's Father												
(Ref. = Less than high school)												
High school completion	-0.003	0.384		0.027	0.383		-0.205	0.454		-0.174	0.451	
Some college or associate's degree	0.006	0.439		0.050	0.439		-0.201	0.475		-0.158	0.474	
Bachelor's degree	-0.273	0.426		-0.250	0.426		-0.334	0.472		-0.309	0.467	
Advanced degree	-0.544	0.462		-0.515	0.462		-0.749	0.510		-0.729	0.508	
Highest Education of Head's Mother												
(Ref. = Less than high school)												
High school completion	0.197	0.413		0.190	0.411		0.197	0.400		0.178	0.396	
Some college or associate's degree	0.306	0.448		0.318	0.458		0.291	0.434		0.294	0.439	
Bachelor's degree	0.539	0.471		0.558	0.472		0.538	0.432		0.545	0.431	
Advanced degree	-0.010	0.481		-0.003	0.488		-0.116	0.458		-0.111	0.459	
Highest Education of Wife's Father												
(Ref. = Less than high school)												
High school completion	-0.311	0.353		-0.318	0.353		-0.596	0.354		-0.596	0.354	
Some college or associate's degree	-0.760	0.410		-0.770	0.410		-0.966	0.393	*	-0.977	0.393	*
Bachelor's degree	-0.880	0.416	*	-0.894	0.418	*	-0.942	0.422	*	-0.955	0.425	*
Advanced degree	-0.930	0.434	*	-0.948	0.433	*	-1.052	0.436	*	-1.073	0.437	*
Highest Education of Wife's Mother												
(Ref. = Less than high school)												

High school completion	0.727	0.356 *	0.738	0.357 *	0.928	0.336 **	0.950	0.337 **
Some college or associate's degree	0.337	0.406	0.338	0.411	0.488	0.371	0.506	0.375
Bachelor's degree	0.154	0.395	0.135	0.403	0.215	0.380	0.220	0.386
Advanced degree	-0.155	0.434	-0.193	0.445	-0.088	0.409	-0.095	0.419
Sample Origins								
(Ref. = SRC sample)								
SEO sample	0.306	0.279	0.321	0.281	0.358	0.254	0.379	0.253
Immigrant sample	-0.212	0.386	-0.167	0.385	-0.334	0.323	-0.275	0.323
Constant	1.615	0.461 ***	1.482	0.566 **	1.515	0.464 **	1.472	0.549 **

* p<.05; ** p<.01; *** p<.001. Note: Data is from the 2013 PSID. The estimates are estimated by aggregating the five imputed sub-datasets.

Homogeneous Matching in Different Regions

In further, we divided the sample into four regional subgroups—Northwest, Midwest, South, and East—and did the identical analysis for these subgroups. We do not present the table here. Overall, the pattern is similar to the models in Table 5, but there are still some differences. First, in the Midwest subgroups, after controlling all other variables, when the spouses belong to the same race group, the probability of homogeneous matching within Midwest region is 121.2% higher than in the situation where spouses are not in the same race group. Meanwhile, two other dimensions of homogeneous matching and marriage year have no significant impact on homogeneous matching in place in these four subgroups.

On the parental education of the spouses, we find that "Some college or associate's degree" and "Bachelor's degree" in the education of the wife's father have negative effects on homogeneous matching in "Northeast" and "South" regions. Another finding is that, although not all are significant, the higher the education level of wife's father, the lower the probability the spouses are homogeneous in place. In "South" region, if the education of wife's mother is in "High school completion" and "Bachelor's degree", there is a higher chance that the wife will find her partner who is grown up in South region as well. In addition, sample origins have some effects in "Midwest" and "South" regions. In Midwest, compared to the "SRC sample", the probability of homogeneous mating within the same region for the "Immigrant sample” is lower. In South region, the probability for “SEO sample” is higher than “SRC sample”.

6. LIMITATIONS

Before jumping to conclusions and implication, there are some limitations in the present study. The first limitation is the sample size. In the “gains to marriage” model, the cross tables we analyzed still have cells with zero counts. Although we replaced zero with one, a better situation would be to enlarge the sample size so that we can have real number in those cells. This will make our estimations more accurate. In addition, if we have a large enough sample size, we can divide our sample by age or education. This can help us to understand whether the pattern of assortative mating by place will different by different cohorts or education levels. Another limitation is that we only controlled three dimensions of homogeneous matching in our logistic models. If we could include the variables about parental wealth or income, we can explore the impact of homogeneous matching in parental wealth or income on homogeneous matching in place.

7. CONCLUSIONS & IMPLICATION

Overall, we find several interesting and meaningful results in the present study. First, there is a clear pattern of assortative mating by Census regions and divisions. An individual will more be likely to mate with the one who also grew up in the same region or division. In addition, it seems like when the distance between two regions increases, the chances that people grew up in these two regions will mate become smaller. This suggests that "actual distance" indeed plays an important role in matching in the United States. One possible explanation of it is "cultural matching" theory. In other words, the individuals grew up in the same region will tend to share a common habitus, which makes them more likely to be attracted to each other. But along with gradually enlarged distance, the attraction will decrease and so does the probability of matching.

Second, the pattern of homogeneous matching in place cannot be explained by other dimensions of homogenous matching. Interestingly, we find that wife's parental education affects whether the spouses grew up in the same region or not: the higher the education of a wife's father, the lower the probability the wife is married to the one in the same region, but the impact of the education of wife's mother is in the opposite way. These results have two meanings. One is that the significant impact of place on matching is independent of other dimensions of assortative mating. The other one is that there is a relationship between homogeneous matching in place and wives' family backgrounds, which suggests that homogeneous matching in place will be associated with social stratification within a society. Future studies should further explore this issue.

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Appendix A. The Description of Variables

Variables	Description
Head's and wife's Census regions	Where head/wife grew up in Census region: 1 = Northeast; 2 = Midwest; 3 = South; 4 = West, Alaska, and Hawaii; Missing = Foreign country, DK, and NA.
Head's and wife's Census divisions	Where head grew up in Census division: 1 = New England; 2 = Middle Atlantic; 3 = East North Central; 4 = West North Central; 5 = South Atlantic; 6 = East South Central; 7 = West South Central; 8 = Mountain; 9 = Pacific. Missing: DK, NA, refused, and U.S. territory or foreign country.
Marital status of the head	Marital status of head: 1 = Married or permanently cohabiting (over 12 months); 0 = Single, never legally married and no wife.
Number of marriage of head and wife	Missing = NA, DK, or No marriage history was collected for this individual between 1985 and 2013.
Marriage year	The year of first or only marriage began. Missing = NA, DK, or no marriage history was collected for this individual between 1985 and 2013, never married, number of marriages not ascertained and no first marriage identified between 1985 and 2003. (Imputed)
Head's and wife's age	Head's and wife's age in 2013.
Head's and wife's race	1 = Non-Hispanic Whites (if head or wife only responded white in race and is not Spanish, Hispanic or Latino); 2 = Hispanic Whites (if head or wife only responded white in race and Spanish, Hispanic, or Latino); 3 = African American (if head or wife only responded African American in race); 4 = Asian (if head or wife only responded Asian in race); 5 = Other (if head or wife only responded "Native Hawaiian" or "Pacific Islander" or "Other" in race. In addition, if head or wife responded more than one race, we also coded it as "Other." (Imputed)
Head's and wife's highest education	1 = Less than high school; 2 = High school completion; 3 = Some college or associate's degree; 4 = Bachelor's degree; 5 = Advanced degree. (Imputed)
Head's and wife's parental highest education	For both father and mother: 1 = Less than high school; 2 = High school completion; 3 = Some college or associate's degree; 4 = Bachelor's degree; 5 = Advanced degree. (Imputed)
Sample origins	1 = SRO sample; 2 = SEO sample; 3 = Immigrant sample. SRO and SEO samples are the family members and their offspring in the selected households interviewed in 1968. The immigrant sample is the family members and their offspring in the selected households interviewed in 1997 and 1999.