Changes in Pan-Ethnicity and Racial Boundaries in the United States based on Interracial Marriage Patterns, 1980-2018

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I use a newly developed counterfactual marriage model to estimate changes in racial and ethnic exogamy for newly formed marriages based on 1980 Census and 2014-2018 American Community Survey data. I pay particular attention to the degree of pan-ethnicity between Hispanic and Asian national origin groups, measured by the degree of ethnic exogamy. I find that ethnic exogamy is much more common among Asian than Hispanic ethnic groups. While Asian ethnic exogamy has increased over time, Hispanic ethnic exogamy has been stable over time. In the later time period Hispanic ethnic exogamy is less common than exogamy between Hispanics and non-Hispanic Whites. I also find that controlling for birthplace and language endogamy has important implications for the measurement of ethnic exogamy generally, but more strongly for Asians than for Hispanics. Finally, I also find a perpetuation of a strong black/non-black divide in intermarriage.

Introduction

Race scholars working in the American context have frequently raised the question of whether Hispanic and Asian ethnic groups are developing pan-ethnic identities that either replace or are layered upon more particular identities tied to national origins (Lopez and Espiritu 1990; Okamoto 2003). Measuring the extent of pan-ethnicity in the US gives us a better understanding of the dynamism of racial boundaries and the future political and cultural constellations likely to be produced by these shifting racial boundaries (Wimmer 2008). Because the propensity to cross racial or ethnic lines in marriage is thought to be a strong indicator of the strength of racial boundaries (Gordon 1964; Qian and Lichter 2007), researchers have frequently used intermarriage patterns to address the question of pan-ethnicity empirically.

Previous work using intermarriage as an indicator of pan-ethnicity has found some evidence of pan-ethnicity among Asian and Hispanic ethnic groups (Rosenfeld 2001; Qian et al. 2001; Qian and Cobas 2004; Fu 2007), although there is some debate regarding the strength of such pan-ethnicity among Hispanics, in particular. However, this work has been hampered by methodological difficulties. First, most studies of intermarriage do not account for the substantial geographic variation in how racial and ethnic groups are distributed across the US (Harris and Ono 2005). If groups are not evenly distributed, then the lack of intermarriage between them may simply reflect lack of exposure. This problem may be particularly acute for pan-ethnicity due to differences in settlement patterns among different national-origin groups. For example, Cuban Americans are heavily concentrated in Florida while Mexican Americans are heavily concentrated in the southwestern US. Adjustments can be made for this geographic mismatch but often lead to complex models and/or limitations when using the common method of log-linear models. For example, Rosenfeld (2001) limits analysis to a few metropolitan areas, while Fu (2007) controls for Census division.

Second, two other forces may significantly alter pan-ethnic tendencies that need to be accounted for in any model. First, immigrants who marry in the US may prefer to marry other

immigrants from the same country of origin. This birthplace endogamy will reduce the tendency to marry across ethnic lines among Hispanics and Asians. However it should not be conflated with ethnic endogamy more broadly. Second, individuals may prefer to marry individuals who speak the same primary language. Language endogamy has a complex relationship to pan-ethnicity. For Hispanics, language endogamy would be expected to increase the strength of pan-ethnicity because all of these groups share the use of a single language. For Asians, on the other hand, language endogamy, would be expected to reduce the strength of pan-ethnicity because different national-origin groups do not share a common language. Regardless, it is important to distinguish language endogamy from pan-ethnicity more broadly defined and understand how much language endogamy affects our estimates of pan-ethnicity.

In this paper, I employ a newly developed technique for estimating patterns of assortative mating, detailed below, that is able to more systematically address these issues than prior techniques. I utilize this method to examine patterns of interracial marriage with a focus on pan-ethnic intermarriage using data from the 1980 Census and the American Community Survey (ACS) from 2014-2018. Specifically, I examine the strength of boundaries between Hispanic and Asian ethnic groups relative to the boundaries between racial groups and how the strength of these boundaries has changed over time. Furthermore, I show how estimates of the strength of these boundaries are affected by controls for birthplace and language endogamy.

I choose these two time periods because the data for these time periods allow me to isolate marriages that have been formed recently. Since 2008, the ACS has included a question on the year of the current marriage for individuals who are married. Timing of marriage was also included for first marriages in the 1980 Census, but was removed from the 1990 and 2000 Censuses as well as the ACS prior to 2008. The early time period of 1980 marks an important historical point in US race relations, slightly more than a decade after the post-1968 increase in migration from Asia and Latin America. The contemporary period allows me to examine these racial boundaries roughly a generation later.

Data and Methods

The technique I use here is a counterfactual marriage model. For each existing union, I re-sample alternate partners from the same geographical area. For each union, I thus have a choice set of one real union as well as a set of counterfactual unions that did not occur. I use a conditional logit model to estimate how characteristics of a given union actually predict the real union. This method has been used previously by a handful of scholars for other purposes (Jepsen and Jepsen 2002; Qian and Lichter 2018; Qian et al. 2018). It is ideally suited for the research question here because it implicitly controls for different geographical distributions by sampling only from a local marriage market and allows for the easy incorporation of other control variables such as birthplace and language endogamy.

For both time periods, the data consist of all couples married in the past five years as well as all currently single individuals who have been in the US for at least five years. I also exclude immigrants who were married prior to their arrival in the US. From these data, I re-sample 25 alternate partners for either the husband or wife (randomly chosen) of each existing marriage. Alternate partners are drawn from both currently single individuals and partners in other marriages. These alternate partners are drawn from individuals living in the same state as the focal spouse thus avoiding most of the problems associated with geographic dissimilarity of racial and ethnic groups.

The model estimates the log-odds that a given match is the real match as a function of part-

Table 1. Cross-tabulation of husband's race (row) by wife's race (column) among couples married in the last five years, Census 1980

	Wh	Bl	In	Ch	Ja	Ko	Fi	Vi	As	Me	Cu	Pu
White	237570	281	973	191	292	92	248	11	44	2113	265	422
Black	1047	23887	60	11	17	9	20	1	5	120	12	101
Indigenous	1041	15	943	5	14	1	16	0	2	62	1	11
Chinese	146	3	4	610	47	5	12	1	0	2	1	5
Japanese	215	2	18	44	349	11	16	0	0	13	1	1
Korean	23	1	1	1	6	70	2	0	0	2	0	0
Filipino	165	6	14	7	8	1	353	0	0	22	2	8
Vietnamese	2	0	0	0	0	0	0	11	0	0	0	0
Asian Indian	102	2	2	0	1	0	3	0	104	4	1	3
Mexican	2647	37	78	6	22	1	31	1	2	9295	22	70
Cuban	292	12	1	0	1	0	2	0	0	17	520	49
Puerto Rican	621	90	11	9	6	0	9	0	1	102	38	2048

ner characteristics. In all models, I control for age and educational differences between spouses. I address age differences by including the linear age difference between spouses and its square. I address educational differences by using the common "educational crossing" model as well as dummy variables for female educational hypergamy and hypogamy. The educational crossing parameters are dummy variables that indicate whether a given union would cross an educational boundary when comparing the education of partners. I use three parameters measuring the boundaries between those with less than high school/high school or more, high school or less/some college or more, and some college or less/four year college degree or more.

To address interracial and interethnic marriage, I first code respondents into ethnoracial categories. For the non-Hispanic and non-Asian populations, I use the categories of White, Black, and Indigenous. The Indigenous category includes both American Indian and Pacific Islander groups. For the Hispanic and Asian groups, I use the most common national-origin groups from the hispanicity and race questions, respectively, that are identifiable in both datasets. For Asians, I identify respondents as Chinese, Japanese, Korean, Filipino, Vietnamese, or Asian Indian. For Hispanics, I identify respondents as Mexican, Cuban, and Puerto Rican because these are the only three specific national origin categories available in the Census 1980 data. All respondents who do not fall into any of these categories, including multiracial respondents, are dropped from the analysis. In total I have 288,377 and 486,271 actual marriages in Census 1980 and the ACS 2014-18 data, respectively. Tables 1 and 2 show the cross-tabulation of race of spouses for these marriages.

To model patterns of interracial and interethnic marriage, I first create dummy variables indicating specific racially exogamous unions using large pan-ethnic groupings (e.g. Black/White, Asian/White, Black/Hispanic). I then include separate dummy variables for marriages where both partners belong to different Asian or Hispanic ethnic groups (e.g. Chinese/Japanese, Mexican/Cuban). The latter terms measure the strength of ethnic exogamy within the large pan-ethnic Asian and Hispanic groups. Additionally, because of prior work suggesting that Asian Indians do not fit well within existing American racial classifications (Morning 2001), I include separate parameters measuring intermarriage between Asian Indians and all other groups.

To model birthplace and language endogamy, I include two separate dummies that measure whether the partners were born in the same country or speak the same language at home, respec-

Table 2. Cross-tabulation of husband's race (row) by wife's race (column) among couples married in the last five years, ACS 2014-18

	Wh	Bl	In	Ch	Ja	Ko	Fi	Vi	As	Me	Cu	Pu
White	333925	3149	1733	1956	511	1004	1536	623	623	11317	1152	2770
Black	8612	31480	198	49	32	52	132	34	51	1297	103	921
Indigenous	1613	62	3663	4	8	1	18	6	5	257	7	29
Chinese	745	20	6	2902	54	146	82	150	15	78	5	18
Japanese	230	8	6	82	195	27	34	14	5	32	1	6
Korean	428	13	3	99	17	890	35	29	5	35	1	2
Filipino	816	34	17	94	29	26	1363	57	7	176	8	31
Vietnamese	333	7	0	111	8	22	42	1148	4	55	2	1
Asian Indian	688	20	4	48	6	8	15	15	1870	53	5	16
Mexican	11838	460	368	125	44	53	299	88	30	39563	105	432
Cuban	1211	59	9	11	2	5	19	7	4	163	1293	139
Puerto Rican	3343	391	43	40	7	12	64	10	23	533	137	2851

tively. Because I want to see how these parameters affect my ethnic exogamy terms, I estimate models with and without these terms.

Preliminary Results

Figure 1 shows how estimates of Asian and Hispanic ethnic exogamy change as a result of controlling for birthplace and language endogamy for both time periods. The estimates of ethnic exogamy show the odds of marrying a fellow Asian/Hispanic of a different ethnic group (e.g. Chinese and Japanese) rather than an Asian/Hispanic person of the same ethnic group (e.g. both Chinese). I control for birthplace and language endogamy separately as well as a model in which both variables are included.

The effects of the controls on ethnic exogamy are somewhat similar for both time periods, but differ substantially for Asians and Hispanics. For Asians, controlling for birthplace and language endogamy substantially increases the likelihood of ethnic exogamy. In the 1980 data, language endogamy seems to have a bigger effect than birthplace endogamy, but in the later ACS data, both forms of endogamy substantially increase the likelihood of ethnic exogamy. In the ACS data, the overall reduction in the ethnic exogamy term is much more substantial. When controlling for both forms of endogamy, the odds of ethnic exogamy among Asians are about 80% of what we would expect for two partners who are ethnically endogamous, suggesting relatively minor barriers to ethnic exogamy among Asians.

For Hispanics, the change in the ethnic exogamy parameter is much smaller once controls are added for birthplace and language endogamy. Controlling for birthplace endogamy consistently increases the likelihood of ethnic exogamy, but the results are more complicated for language endogamy, as expected. In the 1980 data, controlling for language endogamy in addition to birthplace endogamy decreases the likelihood of ethnic exogamy relative to a model with only birthplace endogamy. This same pattern is not observed in the more recent ACS data, although language endogamy has a negligible impact on ethnic exogamy once birthplace endogamy is controlled. Overall, the likelihood of ethnic exogamy is lower for Hispanics than Asians across all

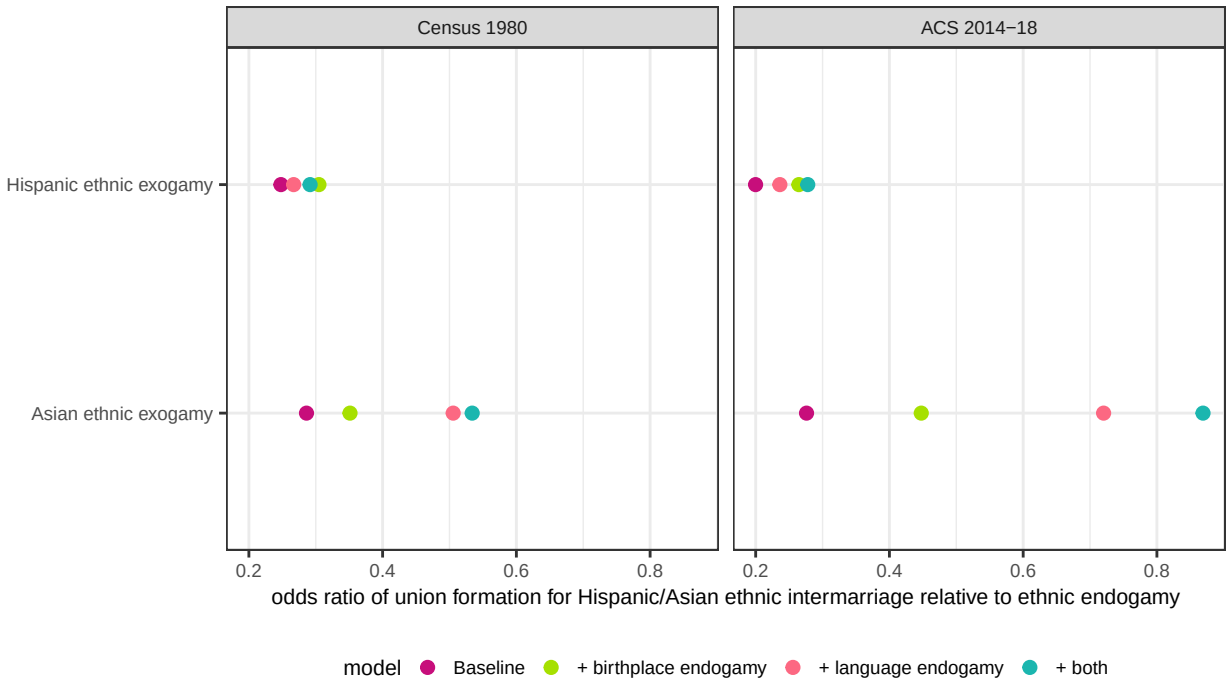

Figure 1. Strength of Hispanic/Asian ethnic exogamy based on different model specifications and time periods. Baseline model controls for age and educational differences between spouses.

models. In both the Census 1980 and ACS data, the most complex models indicate that the odds of ethnic exogamy among Hispanics are a little less than 30% of what we would expect for two partners who are ethnically endogamous.

In Figure 2, I examine the strength of these ethnic exogamy terms in relation to the broader racial exogamy terms from models that control for birthplace and language endogamy. The figure shows the estimate for each parameter at both time points as well as an arrow indicating whether exogamy for a given case has increased or decreased across the time periods. Movement to the right indicates that exogamy has become more common over the time period, while movement to the left indicates that exogamy has become less common over the time period.

The only cases where exogamy has become less common involve either the Indigenous or Asian Indian categories. Every case of exogamy involving the Indigenous category became less common, with the exception of Black/Indigenous exogamy. These notable declines in Indigenous exogamy may be a data artifact driven by the change to a check all that apply option to the race question in 2000. Research has shown that membership in the American Indian and Pacific Islander categories are highly fluid, particularly in combination with another race (Liebler et al. 2017). By excluding individuals who identified with more than one race, the Indigenous population identified in the ACS data may more strongly identify with their Indigenous background than the same group in 1980, with a corresponding reduction in exogamy.

Exogamy also become rarer for every combination involving an Asian Indian. This finding suggests a strengthening boundary between Asian Indians and other racial groups over time. The lowest boundary was between Asians and Asian Indians, but this also became rarer over time and was much stronger than the Asian exogamy term itself, suggesting that Asian pan-ethnicity does not tend to include Asian Indians.

Interestingly, the largest decline in exogamy was between the Indigenous and Asian Indian

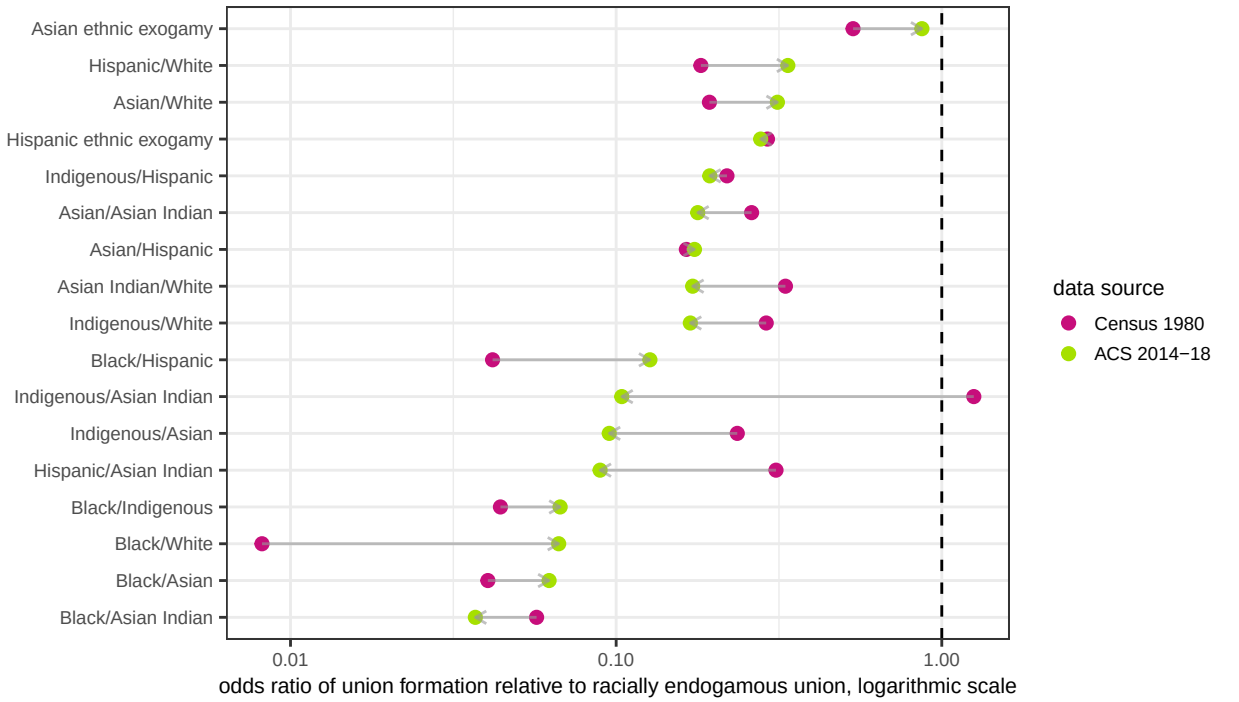

Figure 2. Strength of racial exogamy across two different time periods. Results are based on large racial groupings with additional parameters for Asian and Hispanic ethnic exogamy. Asian Indians are included as a separate group. All results are based on models that account for age and educational differences between spouses as well as birthplace and language endogamy. Each category is ordered based on the value in the ACS 2014-18 data.

groups. In fact, the model estimated that Indigenous/Asian Indian exogamy was more likely than endogamous unions in the 1980 data. Because both groups are very small in the 1980 data, this unusual finding may simply reflect statistical noise. It may also reflect respondent errors in reporting due to the use of the term "Indian" for both groups on the race question. This uncertainty may have declined over time with increasing familiarity. The ACS data suggested an odds of exogamy for the Indigenous/Asian Indian pairing that was similar in magnitude to that for the Indigenous/Asian pairing.

The largest increase in exogamy between the two time periods is that between Blacks and Whites. Black/White exogamy was by far the rarest form of exogamy in 1980. Despite the increasing likelihood of White/Black exogamy in the later data, all cases of exogamy involving a Black partner remain the least likely among all forms of exogamy. These results indicate the perpetuation of a strong Black/non-Black divide in intermarriage (Yancey 2003; Fu 2007).

Turning to the ethnic exogamy terms, we see different results for Asians and Hispanics. For Asians, ethnic exogamy was common in both time periods relative to racial exogamy. Over the two time periods, ethnic exogamy has become even more likely for Asians. Thus, the results here demonstrate evidence of growing pan-ethnicity among Asians in terms of who marries who. This finding comes with the caveat that this pan-ethnicity does not include Asian Indians, who remain distinct as a group that does not fit neatly into common racial categories used in the US.

The ethnic exogamy term for Hispanics, on the other hand, was effectively unchanged between the two time periods and suggests much stronger barriers to ethnic exogamy among Hispanics than among Asians. Although Hispanic ethnic exogamy was more likely than most forms of racial exogamy is is importantly less likely than Hispanic/White exogamy in the ACS data. Thus,

members of a given Hispanic national origin group are more likely to marry non-Hispanic whites than members of a different Hispanic national origin group. This finding seriously complicates any narrative of pan-ethnicity among Hispanics.

Further Work

In preparation for the conference, I intend to extend this work in two ways. First, I will conduct several sensitivity analyses including changing the geographical measure of the marriage market (currently states) and employing different techniques to account for multiracial respondents. I will also explore models for the ACS data that incorporate more Hispanic groups with large sample sizes. Namely, these groups will be Colombians, Dominicans, Guatemalans, and Salvadorians.

Second, I will explore models that allow for fully unconstrained parameters between all ethnoracial groups. These models are difficult to fit computationally because they require between 66 and 120 distinct parameters, depending on the number of racial and ethnic groups. I can use the results of these parameters to investigate particular boundaries that may not fit the overall pattern of ethnic exogamy.

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