

Mixed Partisan Households and Electoral Participation in the United States

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Abstract

Research suggests that partisans are increasingly avoiding members of the other party—in their choice of neighborhood, social network, even their spouse. But little is known about partisan intermingling in the United States, since surveys rarely shed light on groups. Leveraging a national database of voter registration records, we analyze mixed-partisan households in the U.S. Three in ten married couples have mismatched party affiliations. We first evaluate the rate of sorting, as well as the relationship between inter-party marriage and gender, age, and geography. Then, we test whether mixed-partisan couples participate less actively in politics. We find that voter turnout is strongly correlated with the party of one’s spouse. A partisan who is married to a co-partisan is far more likely to vote. The effect is especially pronounced in closed primaries, suggesting an effect of cohabitation, not just low-participation voters sorting into mixed-party marriages.

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1 Introduction

More than fifty years ago, Almond and Verba (1963) argued that effective democracy requires *limited partisanship*, whereby citizens can align themselves with parties but still respect the opposition and accept the decisions of the electorate. They write, “Where partisan impulses are so negative and hostile as to require suppression (or expression only in limited and intimate circles), then the effective conditions necessary for an open and moderate partisanship are not present” (pp 85-86). Almond and Verba’s concern about the intensity of partisan impulses seems especially germane today in light of sharp divisions between Democrats and Republicans.

Concerned that intense partisan feelings can strain a democracy, scholars have recently resurrected Almond and Verba’s research agenda to investigate whether partisan identity is seeping into personal relationships and into non-political behaviors. Do everyday Democrats and Republicans dislike one another (Iyengar, Sood and Lelkes 2012; Iyengar and Westwood 2015)? Do they avoid dating, marrying, and hiring one another on the basis of partisanship (Iyengar, Sood and Lelkes 2012; Huber and Malhotra 2016)? Do they allow partisan issues to affect their professional judgments (Hersh and Goldenberg 2016)? Do they want to avoid living near each other (Bishop 2009; Nall and Mummolo 2016)?

The interpretation of the evidence for partisan spillover effects into everyday life is a matter of some debate. On the one hand, partisans increasingly express a desire to live amongst co-partisans (Center 2014; Bishop 2009). On the other hand, they rarely actually prioritize political identity when choosing where to live (Nall and Mummolo 2016). On the one hand, partisans increasingly state they would be disappointed if their offspring married someone outside their political party (Iyengar, Sood and Lelkes 2012; Center 2014). On the other hand, according to a recent Pew study, more than 90% of Americans would not be bothered by this, and in a recent study of a dating website, Huber and Malhotra (2016) find small effects of partisan sorting, especially when compared to the magnitude of sorting on other factors like race. On the one hand, voters who hold consistent liberal or conservative

attitudes say that most of their friends share their political views. On the other hand, that is not true for the 80% of Americans who do not have consistent ideological beliefs.

The interpretation of evidence for partisanship seeping into everyday life seems to differ when the focus is on effects and when it is on rates. Partisan identity may induce a range of behaviors, but perhaps only among a small sliver of the public. After all, the U.S. is a country in which partisan divisions are sharp but 6 out of 10 Americans do not discuss politics with any regularity. To understand the degree to which partisanship is seeping into social relations, it is thus important to focus both on behavioral effects that can be induced among the most intense partisans and also on behavior that characterizes the broader public. If the 10% of the public most engaged in politics has such strong partisan feelings that partisanship affects all aspects of their social relations, then this is concerning in light of the value of limited partisanship to democratic health. At the same time, if partisan identity is peripheral to social relationships for the vast majority of the public, this too is worthy of attention.

The present research investigation is focused on rates of partisan intermarriage in the United States. Complementing recent research on assortative mating and partisan preferences in romantic partners (Alford et al. 2011; Iyengar, Sood and Lelkes 2012), we analyze a national database of households of registered voters to describe a.) the rate at which partisans in the United States are intermarried (and how to interpret that rate), b.) the demographic and geographic correlates of partisan intermarriage, and c.) the relationship between partisan intermarriage and electoral participation.

Our aim in this investigation is to bring to light several important facets of the American public. Doing so allows us to help answer theoretical questions about the nature and consequences of partisanship, social networks, and mass political behavior. By leveraging millions of voter registration records, we are able to make discoveries that would not be possible when using traditional survey techniques. Rather than investigating a random sample or convenience sample of individuals, we study a population of households, for which we have

records of all registrants within the household. By studying population data, we are able to paint a highly detailed portrait of the population of interest, such as by studying partisan intermarriage among particular age groups or in particular neighborhoods. By studying government records, we are able to measure electoral participation without concern about survey misreporting.

2 Theoretical Expectations

Our empirical investigation has three components. First, we observe the rate of partisan intermarriage and evaluate the rate by comparing it to hypothetical rates of no partisan sorting, universal partisan sorting, and actual racial sorting. Second, we study how partisan intermarriage varies on three dimensions: gender, age, and location. Third, we study the relationship between partisan intermarriage and electoral participation. We ask whether voters in mixed partisan households are less likely to vote or more likely to vote than similar voters in single-party households. And we assess how voting patterns sheds light on competing theories of behavior.

Sorting. Once we derive estimates of the rate of partisan sorting, the first question we answer is whether the observed rate is higher or lower than what might be expected. What is the appropriate baseline expectation? For one, we can compare to marital sorting on race. In a 2012 analysis, the Pew Research Center estimated that 8% of married couples were racially or ethnically intermarried.¹ If 92% of couples marry within their racial/ethnic group, conventional wisdom would suggest a considerably lower rate of same-party marriage than same-race marriage. For many Americans, party affiliation is likely to be a less salient characteristic in mate selection than race. On the other hand, in recent research on partisan affect, Iyengar and Westwood (2015) argue that “the level of partisan animus in the American public exceeds racial hostility,” which suggests that perhaps partisan sorting might be on

¹Pew research Center, “The Rise of Intermarriage,” February 16, 2012. <http://www.pewsocialtrends.org/2012/02/16/the-rise-of-intermarriage/>.

par with racial sorting in contemporary U.S. marriages.

Like race, party is wrapped up with other characteristics that individuals use in their selection of mates. If one's mating pool is restricted to individuals who are roughly the same age, in the same geographic vicinity, in the same socio-economic stratum, perhaps in the same religion, there might be a low rate of inter-party marriage simply because the available pool of mates is incidentally politically homogenous. Thus, in addition to comparing inter-party marriages with inter-racial marriages, we also evaluate the rate of inter-party marriages by looking within an individual's pool of potential mates who share an age and a geographic area. We compare the observed rate of inter-party marriage to the rate of inter-party marriage that would exist if individuals chose randomly from their age-geography pool of potential partners.

Location, Gender, Age. Gender, age, and geography each bear strong and well-studied relationships to partisan identity. Observing how these relationships operate within marriages is important because average effects often can mask heterogeneous effects that have critical implications for understanding political behavior. For instance, many scholars have studied, in detail, how partisan voters are situated geographically (e.g. Gelman (2008); Gimpel and Schuknecht (2009); Hersh and Nall (2016)). Suppose we see a number of districts in which half the votes go to Democrats and half go to Republicans. Our interpretation of those districts would be quite different if the houses were split evenly between Democrats and Republicans versus if the voters *within those houses* were split evenly. But prior studies of partisan geography, which focus either on aggregate units like precincts or else on individuals, pass over this essential social unit in which citizens are situated.

In studying geography, what do we expect to find? As Chen and Rodden (2013) emphasize, Democrats tend to be more clustered together than Republicans. Accordingly, we suspect that mixed-partisan households are least prevalent in highly Democratic urban cores and are most prevalent in areas of mixed partisanship. But outside of the few homogenous partisan areas, we have no a priori expectation about the strength of the relationship. It

could be that the level of partisan marriage tracks closely with the partisanship of a geography or hardly at all with it.

Gender. There is a well-known gender divide in American politics: men are more likely to be Republican than women. In 2016, 42% of women versus 53% of men voted for President Trump. A sharp gender gap is also present when partisan identification, rather than party voting, is the target of study (Gillion, Ladd and Meredith 2015). We suspect that the gender gap exists even conditional on household partisanship. In mixed partisan heterosexual married households, we assume the male partner is more likely to be Republican and the female partner is more likely to be Democratic. We expect this to be true even in households in which one partner is an independent. That is, we expect that $Pr(I_M|D_F) > Pr(I_F|D_M)$, where I represents independents, D represents Democrats, and subscripts denote gender. Of course, a gender gap could theoretically exist in the electorate but not exist conditional on household partisanship. This could occur if very few partisans intermarry or if marriage rates are conditional on gender and partisanship.

Age. A feature of political party identification in the United States is that younger voters are more likely to identify as independents than older voters. In the 1968 National Election Study survey, 42% of respondents under age 35 identified as independent compared to only 17% of respondents 65 years and older (a 25 percentage point difference). Forty years later (when the cohort of younger voters became the cohort of older voters), 51% of NES respondents under 35 were independent compared to 30% of respondents over 65 (a 21 percentage point difference). While a full decomposition of the age, period, and cohort effects is outside the scope of this analysis, the cross-sectional time series data does suggest that multiple mechanisms may be at play. Looking at a single, current snapshot of married households, what do we expect to find? We expect that among younger households, there will be many more unaffiliated registrants, and this is likely to result in a smaller share of Democratic-only and Republican-only households than among older voters. Again, the relationship between age and partisan independence need not hold within household, but as

with gender, our base expectation is that it will.

Turnout. Controlling for individual age, race, gender, party, and state, will turnout among mixed-party couples be higher or lower than same-party couples? One reasonable hypothesis is that a person who is less interested in politics (and less likely to vote) might just go along with the party identification of their spouse (Stoker and Jennings 1995). Partisan mixed-marriage could be correlated with higher levels of political engagement because it signals a desire to identify in a particular way even if it means a conflict with one's spouse. In other words, in mixed-partisan marriages, politics is important enough that individuals do not go along to get along. If it's that important, perhaps the individuals are more engaged in politics than the average citizen.

However, there are two rationales for thinking that mixed-partisanship might have a depressing effect on turnout. First, participation is correlated with partisan intensity (Ansolabehere and Hersh 2012), and intense partisans are probably less likely to be in mixed-partisan households to begin with (Alford et al. 2011). Second, partisans may react to being at odds with their spouse by withdrawing from political participation. Voters may want to avoid political debates that surround election participation or they may employ a logic that they would cancel out their spouses vote and that this makes voting a waste of time. In our analysis below, different forms of voting (general elections, open primaries, closed primaries) help us, in a limited way, to evaluate alternative mechanisms. They do so by allowing us to compare scenarios where one partner in a mixed marriage is ineligible to participate with scenarios where both partners are eligible to participate.

2.1 A Note on Descriptive Research

Descriptive research and causal research are both important parts of the scientific process. Determining whether, how, and in what circumstances a phenomenon occurs can help explain why the phenomenon occurs. Similarly, if one has a theory about why a phenomenon occurs, it can help explain whether and how it occurs. Descriptive hypotheses and causal hy-

potheses go hand-in-hand. And yet, quantitative political science research has grown almost unaccustomed to descriptive research.

There is a reason for this. In the first generation of the mass survey, scholars made important scientific progress by describing basic rates and kinds of behaviors of the public. Appropriately, this research was followed by scholarship looking beyond the descriptive questions and utilizing randomization and natural experiments to answer ‘why’ questions. The causal research benefited from - indeed, depended on - a strong foundation of descriptive evidence.

Today, new data sources permit us to discover a rich new set of empirical phenomena. These datasets allow us to perceive the state of the world in a much higher resolution than a small survey allows. Naturally, the first step in the scientific process is to discover and carefully document key phenomena of interest. Once we have a firm handle on these discoveries, it is then possible to dig in deeper to causal questions.

In the present study, we aim to describe a phenomenon - the attributes and behaviors of mixed partisan households - that would be very hard to see in other sources of data. We ask questions like: How many mixed-partisan couples are there? What are their demographic characteristics? Where, geographically, are they concentrated? Do they vote less than same-party couples? Answering these questions allows us to weigh in on important theoretical questions pertaining to the nature of partisanship, social networks, and voting.

But to readers who are narrowly interested in causal hypotheses, it may be frustrating that we cannot, for example, follow up our discovery of severely diminished turnout rates in mixed-partisan marriages with a test of causal processes. For two Republicans of the same age, gender, race, and state, why is the one married to a Democrat ten percentage points less likely to vote than the one married to a fellow Republican? We do not know. We suspect, of course, that it is some combination of less politically active people marrying outside their party as well as a direct effect of cohabitation. Without a clean causal explanation for the evidence we describe, the evidence itself is nevertheless useful. It lays an important

foundation for future work. Our purpose here is to get the facts straight. Doing so - and doing so carefully - is a fundamentally important part of the scientific process.

3 Data and Methods

Our data come from Catalist, a data firm that manages a national database of voting-aged people, with a particular focus on registered voters and political/civic data. Catalist's data includes regularly-updated voter registration records from every state. On account of Catalist's comprehensive voter data, numerous scholars have recently employed Catalist for studies of political participation in the U.S. (e.g. Hersh (2015); Fraga (2016); Hersh and Nall (2016); Rogers and Masahiko (2014)). For this study, the complete dataset of voter registration records provides a key asset. All registered voters are identified with a residential address. By observing multiple registrants at the same address, we can study household attributes and behaviors in ways that would be difficult with standard survey techniques, as surveys are not typically administered to complete households.

In order to leverage the detailed information about households that is contained in voter registration data, we must define a set of married couples. In our main analysis, we focus on pairs of individuals who:

1. are composed of one male and one female,
2. are registered to vote at the same address,
3. share a surname,
4. are within fifteen years of age from one another (to avoid counting mother-son and father-daughter pairs as couples),
5. are the oldest such pair registered in the household (to avoid counting siblings who are registered in their parents' home as married).²

²The analysis excludes households with more than ten registered voters. These households are likely to be apartment buildings or dormitories misclassified in the voter registration records as single household units.

The overwhelming majority of heterosexual married couples in the United States share a common surname (Goldin and Shim 2004). According to a 2015 analysis by the New York Times, over 80% of married women have taken their husbands' names. Obviously, married women who keep their maiden names are not a random subset of married women. Older women are slightly more likely to take their husband's name (86% of women first married before 1970 changed their name compared to 78% of women married in the 2010s). Wealthier and more urban women are less likely to change their name. And there are religious/cultural differences. According to the New York Times analysis of its published wedding announcements, for instance, two-thirds of Catholic women took their husbands names compared to one-third of Jewish women.³

To assess bias in our analysis presented from our definition of marriage, we run our entire analysis through thirty-two variations of the marriage definition. These variants relax our set of restrictions. We allow for couples to have different surnames. We allow for same-sex pairs. We allow for pairs who are more than fifteen years apart. Rather than restricting to the oldest couple in a household, we choose random pairs from households. We do not restrict to households with fewer than ten people. These variants are allowed one at a time and in concert, totalling 2^5 variants.

As we relax restrictions from those in our main analysis, we are both more likely to count non-married people as married (e.g. two twenty-something male roommates with different last names would be counted as married if we relax the opposite-sex and same-surname restrictions) and also count less "traditional" couples as married. The effect of this is that with fewer restrictions, the married couples as a whole appear less Republican. We will show how variations in definitions affect our results. While the overall composition of married couples changes with these restrictions (in the Democratic direction), the overall

³See Claire Cain Miller and Derik Willis, "Maiden Names on the Rise Again, TheUpshot, New York Times, 27 June 2015, http://www.nytimes.com/2015/06/28/upshot/maiden-names-on-the-rise-again.html?_r=0

patterns *within* the subset of married couples are not particularly sensitive to the different definitions.

An unrelated source of bias inherent in our analysis stems from the fact that we focus only on pairs if both partners are registered to vote (and thus have a recorded party affiliation). It is possible that one's decision to register to vote may be affected by whether he or she is married to a co-partisan. If true, this might cause us to underestimate the number of mixed partisan households. This source of bias has an obvious analog in the survey setting. As is well-known, due to misreporting and selection bias, survey samples can dramatically over-represent the political engagement of the public. In both the case of government records and surveys, such threats to inference imply that interpreting the data requires appropriate caution.

For the married couples in our analysis, we utilize a series of public records to test our hypotheses. First, we utilize party registration records. In 31 U.S. states, most registered voters are listed with a political party affiliation (typically Democratic or Republican) or else are independent. Here, we count independents and minor party registrants together, under the label of 'other.' The states that collect party registration records are quite representative of all U.S. states (Hersh and Nall 2016). Furthermore, as Hersh and Nall (2016) note, party registration is very highly correlated with party identification. In the 2008 CCES, which was matched to voter records, 95% of registered Democrats self-identified as Democratic and 96% of registered Republicans self-identified as Republican.

Note that party registration states do vary in whether they allow independents to vote in primaries. Whether a state opens or closes its primaries to independents affects the rate at which individuals register with a party. We deal with this problem in several ways. First, we have tested whether our results, particularly our turnout results, differ in open and closed primary states. We show the comparison below. Second, in many states, the state publicly records whether individuals voted in Democratic or Republican primaries. Thus, in many states that allow independents to vote in primaries, we can measure in which party's primary

Table 1: Party Composition of Married Households

Male	Female			Total
	Democratic	Independent	Republican	
Democratic	25%	4	3	32
Independent	6	15	5	26
Republican	6	5	30	41
Total	37	24	38	100

Note: Observations: 18,274,446 married couples in party registration states.

they voted. This permits us to alternatively define partisanship based on a combination of party affiliation and the primary voting patterns of independents. This alternative definition does not affect our results. Third, on account of sufficient data, we can examine patterns within states and employ fixed effects. Our results are robust within states.

For each individual, we utilize public records of their gender and age. In a small number of cases where age or gender are missing in the public record, Catalist substitutes commercial predictions of these attributes. Individual race also comes from a combination of public and inferred race where public records are unavailable. Catalist situates each voter in their Census block group and precinct. Precinct returns enable us to assess the partisan balance of the neighborhoods in which couples live. Finally, we utilize public records of electoral participation in primary and general elections, which are also available from voter registration records.

4 Results

Of 105,935,400 registered voters in party registration states, 36,548,892 (35%) meet our main criteria for married couples. Our main analysis focuses on these 18,274,446 male-female couples.

Table 1 shows an initial view of these registered voters. Several observations can be made. First, the largest internal cells in this table are on the diagonal. Of all married households, 25% contain two Democratic partners, 30% contain two Republican partners, and

15% contain two independent partners. All together, 70% of registrants share an affiliation and 30% do not. Of the mixed households, a third are Democratic-Republican, a third are Democratic-independent, and a third are Republican-independent.

In the appendix Table A1, we show the rate of different pairings according to the thirty-two alternate definitions of marriage. For instance, if we include different-surname and different-sex couples in our analysis (row 6 of the table), 66% of the couples share an affiliation, compared to 70% in the main analysis. Eleven percent are D-R (rather than 9% here). In fact, across all thirty-two variants of the marriage definition, the percent in D-R relationships never fluctuates by more than a percentage point or two.

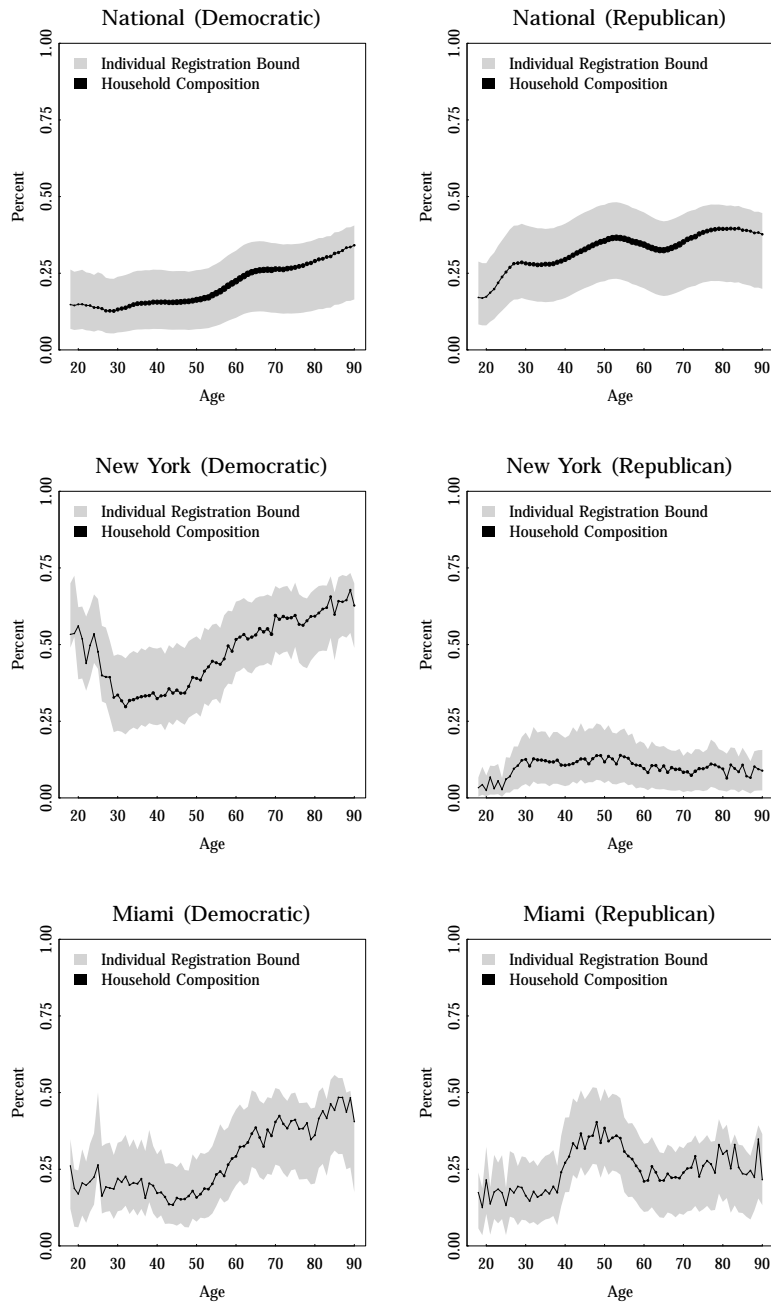
4.1 Sorting

Are we thus seeing a lot of partisan intermarriage or a little of it? The answer to this question depends, of course, on one's prior beliefs. On the one hand, it is clear that most married couples are married to co-partisans. On the other hand, partisan intermarriage is quite common. Three out of ten households are mismatched pairs and one out of ten households contains a Democrat married to a Republican. Intermarriage is not the dominant household composition, but it is not particularly rare either.

To gain further traction on whether the observed rate of partisan intermarriage is higher or lower than expected, consider the following exercise. Suppose that we define for each person a pool of potential partners. These partners are the same age and live in the same city. We first ask: what percentage of these potential partners are Democrats or Republicans? For instance, suppose that among married, registered individuals who are 32 years old living in Chicago, 70% are Democrats. If Democrats only married other Democrats, then 70% of the married couples would also be Democrats. If Democrats married randomly across partisan groups within their age-geography cohort, then in expectation 49% of married couples ($.7 \times .7$) would be Democratic-only couples.

In Figure 1, we generate bounds for each age group. The upper bound represents the

Figure 1: Random Pairing vs. Perfect Sorting vs. Reality



Note. Black lines indicate percent of married couples who are both Democrats or both Republicans among their age and geographic cohort. The upper bound represents the share that would be same-party if partisans always married each other. The lower bound represents the share of same-party if marriage was random with respect to partisanship.

Table 2: Racial Sorting and Party Sorting Compared, Southern States

Same Surname?	Male/Female	Percent in Party Combinations					
		DD	OO	RR	DO	RO	DR
Yes	Yes	25	12	34	9	9	11
No	Yes	25	13	28	12	10	12
No	No	26	13	26	13	10	12

Same Surname?	Male/Female	Percent in Racial Combinations									
		WW	BB	HH	OO	WB	WH	WO	BH	BO	HO
Yes	Yes	78	11	4	1	1	3	1	0	0	0
No	Yes	72	12	6	1	2	4	1	1	0	0
No	No	69	14	6	1	3	4	1	1	0	0

Note: Analysis restricted to three states with both racial registration and self-identified party affiliation (FL, LA, NC). The racial combinations include Whites (W), Blacks (B), Hispanics (H), and others (O). In all three versions of the marriage definition shown here, married couples are restricted to pairs who are within fifteen years of age. In households with 2-10 registered voters, the oldest eligible pair are observed.

share of married couples that would be Democratic-only or Republican-only if all registrants only married people who shared their party affiliation. The lower bound represents the share that would be Democratic-only or Republican-only if marriages were random with respect to partisanship. In the first row of plots, we show the national average (and do not account for the geographic location of potential pairs). Then, as illustrations, we show two cities, New York and Miami, where we restrict the pool of potential pairs to individuals who are the same age and also living in that city.

Consider the results in Figure 1 in comparison to Table 1. For example, according to the table, 30% of married couples are Republican-only. Observe the lower bound in the upper-right plot in Figure 1. If partners were choosing each other from the pool of people their age, and if they did not consider party at all, we would see about 20% of married couples in the country being Republican only, just by chance. On the other hand, looking at the upper-bound, if everyone married someone who shared their party affiliation, about 40% of couples would be Republican-only.

The results suggest both that there are more same-party marriages than if couples did

not sort by party at all and also that there are many fewer same-party marriages than if partisans married only other partisans. Obviously, individuals are selecting mates based on more factors than age and location, and many of those factors are likely to be correlated with partisanship. Thus, in claiming that there is more sorting into same-party relationships than expected by chance, we do not mean to imply that couples are explicitly selecting on partisanship. But the combination of partisanship and attributes correlated with partisanship clearly generate more same-party marriages than if people were merely marrying randomly within their age-geography pool.

Perhaps a more intuitive way to anchor one's interpretation of the rate of partisan intermarriage is to compare this with racial intermarriage. To do so, we focus on the three southern states where voters are registered by party and where voters are also listed in the public record with their racial identity (See Hersh (2015), Ch 6.). In Table 2, we observe racial and partisan intermarriage in these states, showing results for three variants on our definition of marriage. In the second row, we allow for couples who have different surnames. In the third row, we also allow same-sex couples.

With marriage defined as in the first row, 71% of couples are in same-party marriages. In comparison, 93% of compared are in same-race marriages. This registration-based estimate of same-race marriages is quite close to the 92% cited above from a 2012 Pew study. Compared to the 11% who are in Democratic-Republican households, only 4% are in White-Black, White-Hispanic, or Black-Hispanic households. While there are many more inter-party couples than inter-race couples, part of the reason why these numbers are different is because the racial composition is more predominantly of one category (white) than the party composition is of any one category. Nevertheless, in the southern states that collect race and party, mixed-party couples are three times more common than mixed-race couples.

Table 3: Party Affiliation, Conditional on Spouse’s Party Affiliation

Male	Female			Total
	Democratic	Independent	Republican	
Democratic	77%	12	11	100
	67	16	9	
Independent	24	57	19	100
	17	61	13	
Republican	14	13	73	100
	16	22	79	
Total	100	100	100	

Note: Observations: 18,274,446 married couples in party registration states. First row represents row percentages (female conditional on male). Second row represents column percentages (male conditional on female).

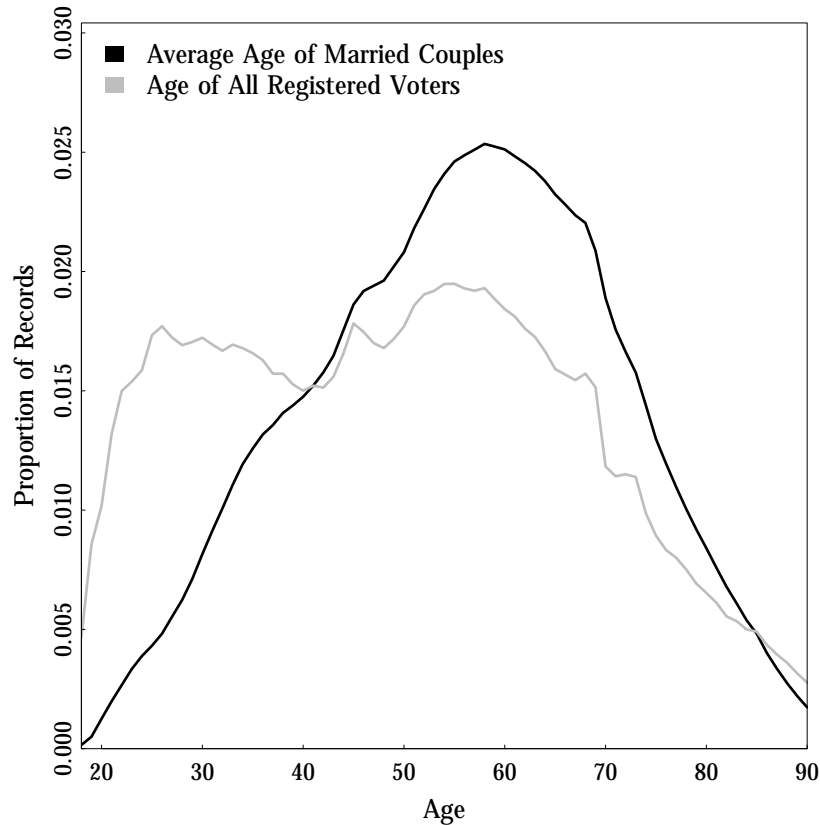
4.2 Gender, Age, Geography

Gender. Table 1 sheds light on how the partisan gender gap operates within households. Just as there is a partisan gender gap among individuals, there is a partisan gender gap among married couples. Looking at the marginal percentages, there is a five percentage point difference in men and women registered as Democratic (37% for women, 32% for men). There are also twice as many Democratic-Republican households in which the husband is the Republican than in which the wife is the Republican.

Table 3 shows this imbalance more clearly as it offers conditional percentages. Among Democratic women, 67% of husbands are Democratic, but among Democratic men, 77% of wives are Democratic. Among Republican men, 73% of wives are Republican, but among Republican women, 78% of husbands are Republican. In other words, couples are more likely to share a party affiliation in households where the wife is a Republican or where the husband is a Democrat.

Age. Next, we turn to the relationship between household partisanship and age. But before plotting the distribution of partisan types by age, we first show, in Figure 2, a density plot of the average age of married couples. As the plot emphasizes, in comparison to all registered voters, our sample of married voters are older and more concentrated in ages 40-

Figure 2: Age Distribution of Married Couples

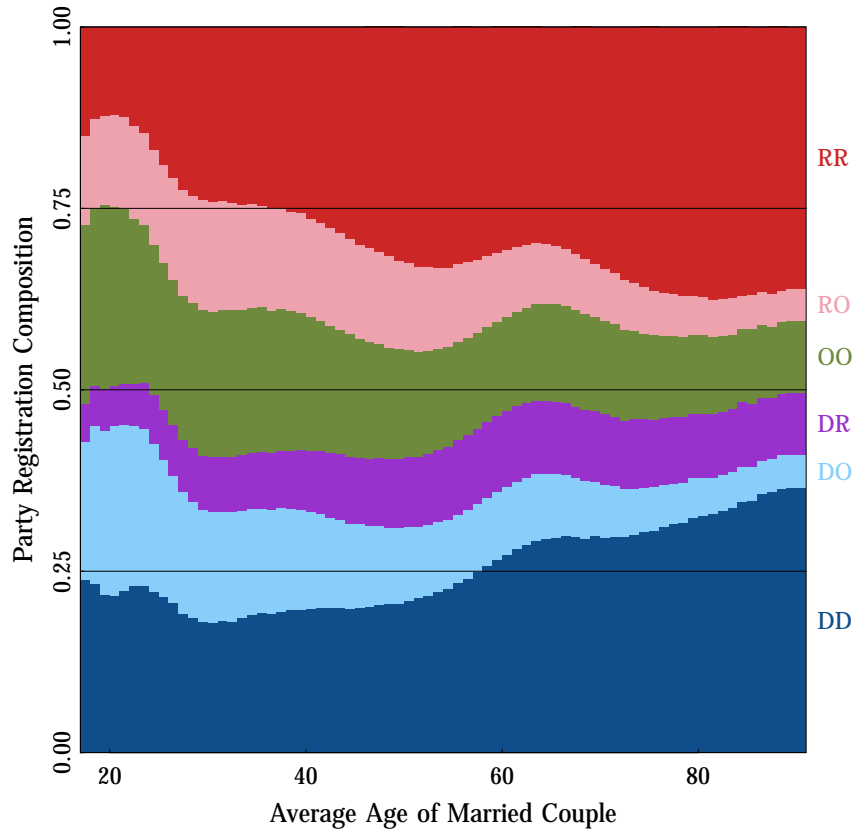


70. Thus, when observing party types by age, it is useful to remember that a small share of married couples are in their twenties compared to all registrants.

Figure 3 shows the six household types by age. There is a dramatic difference in the distribution of household types between the youngest cohort and the oldest one. Among married couples under 30, fewer than half (40%) are Democratic-Democratic or Republican-Republican. Among couples over 80, almost 71% are in D-D or R-R pairs.

Young voters not only have the lowest incidence of D-D and R-R households, they also have the lowest incidence of D-R households. As is visible, the purple area that represents Democrats married to Republicans almost doubles in width from twenty-somethings to octogenarians. Indeed, the R-R, D-D, and D-R lines are larger for older voters while the R-O,

Figure 3: Household Party Composition, by Age

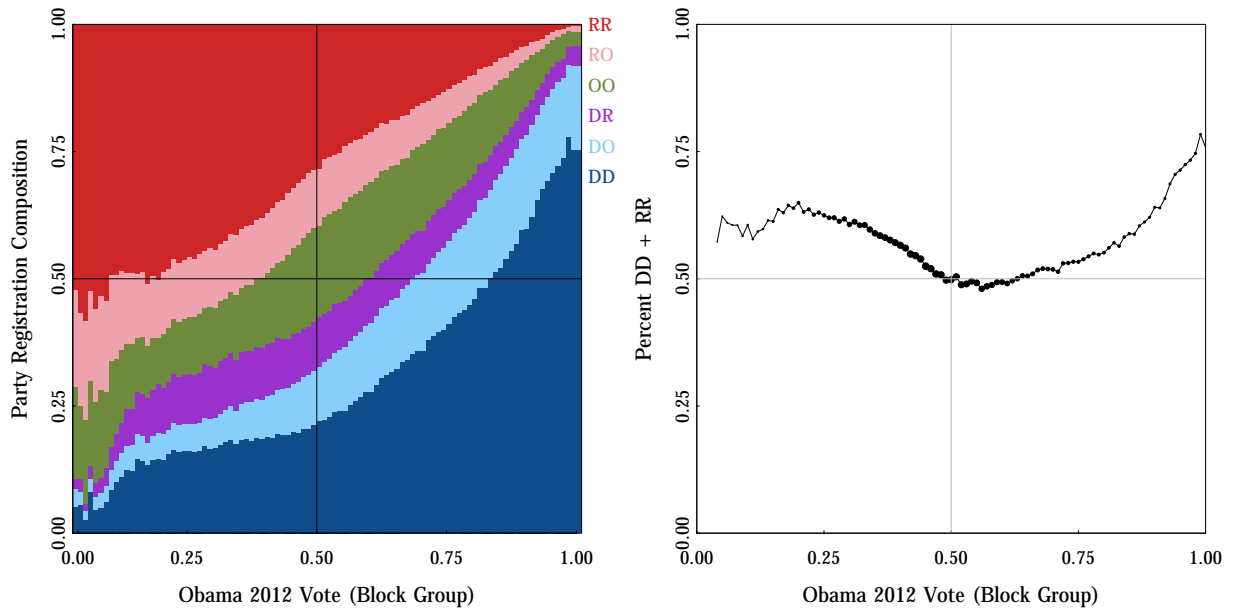


D-O, and O-O lines diminish.

To be sure, multiple mechanisms can lead to the pattern visible in Figure 3. One is simply a cohort difference between younger and older generations. It could be that the current younger generation is now and will always be both more independent and Democratic leaning than the current older generations. Ghitza and Gelman (2014) show persistence in partisan leanings based on how the parties were performing during one's younger years. For example, the pro-Democratic bump visible in Figure 3 for registrants around age 65 may be driven by political events from their teens and twenties, such as the Kennedy presidency and the Watergate scandal.

A second plausible mechanism is that, in every generation, younger voters identify as

Figure 4: Household Party Composition, by Neighborhood



independent at higher rates than older voters. Young voters might still be figuring out their partisan identity. Or, younger independents may be closet partisans who just prefer to think of themselves as independents. Either way, in an aging story, the young couples containing political independents in Figure 3 will eventually identify as partisans, just like the current generation of older voters.

A third mechanism is a direct effect of cohabitation. A truly independent voter married to a partisan may be influenced by the partisan to join their team. While this surely can happen, it is worth noting that the green line in Figure 3, which represents couples who are both independent, diminishes over the age span in a similar fashion as the D-O and R-O couples. One might think if spouses are influencing each other, they might also influence each other to become independent. But the trend is away from independent registration.

Geography. Our final exploration before examining voter turnout focuses on the relationship between household partisanship and neighborhood partisan composition. We situate

each married couple in their Census block group, which we will think of as a neighborhood. Relying on Catalist’s link between block group and voting precinct, we are able to provide the block-group-level Presidential vote share for 2012. The x-axes in Figure 4 show the Obama percentage of the two-party vote.

There are two important features of Figure 4. First, the neighborhoods that are most divided between Democratic and Republican supporters have the highest number of mixed-partisan households, but the relationship is fairly modest. In a neighborhood where 66% of votes went to Obama, 9% of households are D-R. In a neighborhood where 33% of votes went to Obama, 10% of households are D-R. The right-side plot in Figure 4 illustrates the u-shaped relationship between the percent of households that are D-D and R-R and the percent of voters in the neighborhood supporting the Democratic candidate for president.

The second important feature of Figure 4 is the difference between the overwhelmingly Republican neighborhoods and the overwhelmingly Democratic ones. In neighborhoods that are overwhelmingly Democratic (e.g. 90%+ Democratic), 68% of households are D-D households. But in neighborhoods that are overwhelmingly Republican (90%+ Republican), only 55% are R-R. This phenomenon reinforces the point made by Chen and Rodden (2013) about partisan geography. Most of the overwhelmingly Democratic neighborhoods are homogenous African-American neighborhoods. Among African-Americans, support for Democrats in general and President Obama in particular is close to unanimous. The neighborhoods that vote overwhelmingly Republican, however, are more ideologically diverse. Even in these neighborhoods, there are significant number of registrants who are independents or who are married to independents.

4.3 Voter Turnout

Having established the basic relationship between gender, age, geography and mixed-partisanship, we now turn to our more detailed analysis of voter turnout. We examine voter turnout in the 2012 and 2014 general elections as well as in the primary elections in those

Table 4: Turnout by Individual Party Registration

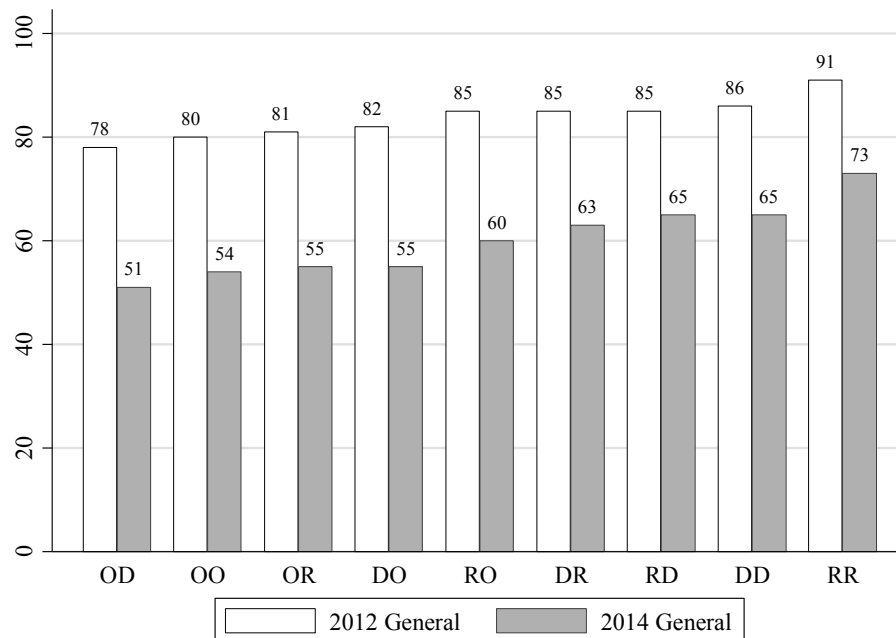
Party	Year: 2012			Year: 2014		
	Primary	General	Observations	Primary	General	Observations
D	28%	86	11,785,696	17	63	12,425,770
O	14	80	8,050,364	11	53	8,866,896
R	41	89	13,537,864	31	70	14,361,526

Note: Observations include all individuals in married couples.

years. We ask whether being married to someone of another party is associated with an increase or decrease in one’s participation in elections. Different theories predict different outcomes for this analysis, as discussed above.

In Table 4, we show individual voter turnout among registrants in the sample of married couples. In all elections we analyze, turnout is highest among Republicans and lowest among independents/others (represented by ‘O’ in the table). Democrats are in the middle. In the

Figure 5: Individual Turnout by Household Type, General Elections 2012 and 2014



Note: The x-axis defines household type. The first letter represents the group being measured whereas the second letter represents the spouse. For instance, ‘OD’ represents independents married to Democrats, whereas ‘DO’ represents Democrats married to independents.

2012 Presidential election year, when the Democratic president won reelection, the turnout gap between Democrats and Republicans was only three percentage points. In 2014, when Republicans did better, the turnout gap is seven percentage points.

In Figure 5, we measure turnout conditional on household type. For Democrats, Republicans, and independents, we measure their turnout in the 2012 and 2014 general elections within each possible type of household. For the sake of simplicity of presentation, we leave out the primaries here, but the rank order of turnout by household type is the same for primaries as for general elections.

In the general elections, independents have the lowest turnout, no matter the party of their spouse. Turnout among Democrats and Republicans varies, in some cases substantially, by the party of their spouse. For Republicans married to independents, 60% voted in the 2014 general election. For Republicans married to Republicans, 73% voted.

To see the relationship between partisanship, household type, and turnout more clearly, we model election turnout using hierarchical logistic regression. For each election type (2012 primary, 2012 general, 2014 primary, 2014 general), we model each individual i 's turnout as a function of his or her state of residence (indexed on j), race and gender combination (k), age (l), and household type (m):

$$\Pr(y_i = 1) = \text{logit}^{-1} \left(\alpha^0 + \alpha_{j[i]}^{state} + \alpha_{k[i]}^{race,gender} + \alpha_{l[i]}^{age} + \alpha_{m[i]}^{type} \right)$$

The terms after the intercept (α_0) are varying intercepts, where each batch of terms is drawn from a normal distribution with mean zero and an estimated variance, drawn from

the data:

$$\begin{aligned}\alpha^{state} &\sim \text{Normal}(0, \sigma_{state}^2) \\ \alpha^{race,gender} &\sim \text{Normal}(0, \sigma_{race,gender}^2) \\ \alpha^{age} &\sim \text{Normal}(0, \sigma_{age}^2) \\ \alpha^{type} &\sim \text{Normal}(0, \sigma_{type}^2)\end{aligned}$$

Each registered voter is in one of nine household types, (DD, DO, DR, OD, OO, OR, RD, RO, RR), where the first letter signifies the registrant’s party and the second letter signifies the party of the spouse. For each year of age, 18-90, and for each state, the relevant terms in the model act similarly to “fixed effects” in a standard logistic regression model. The model also includes the combination of gender-race pairs: white female, white male, black female, black male, latino female, latino male, other/unknown female, other/unknown male.

In Appendix Table A2, we plot the logit regression coefficients for household type, race and gender, and state. In Appendix Figure A2, we plot the coefficients on individual year of age. Here, we show tabular and graphical views of the key relationship between household type and turnout.

First, in Table 5, we show the marginal effect on turnout for Democrats and Republicans when, based on all other variables in the model, turnout is expected to be at 50%. For example, the first number in the table, -0.13, has the following interpretation: For Democratic registrants who, based on their state, age, gender, and race, were 50% likely to vote in a 2012 primary, they were 13 percentage points less likely to vote if their spouse was an independent than if their spouse was a Democrat.

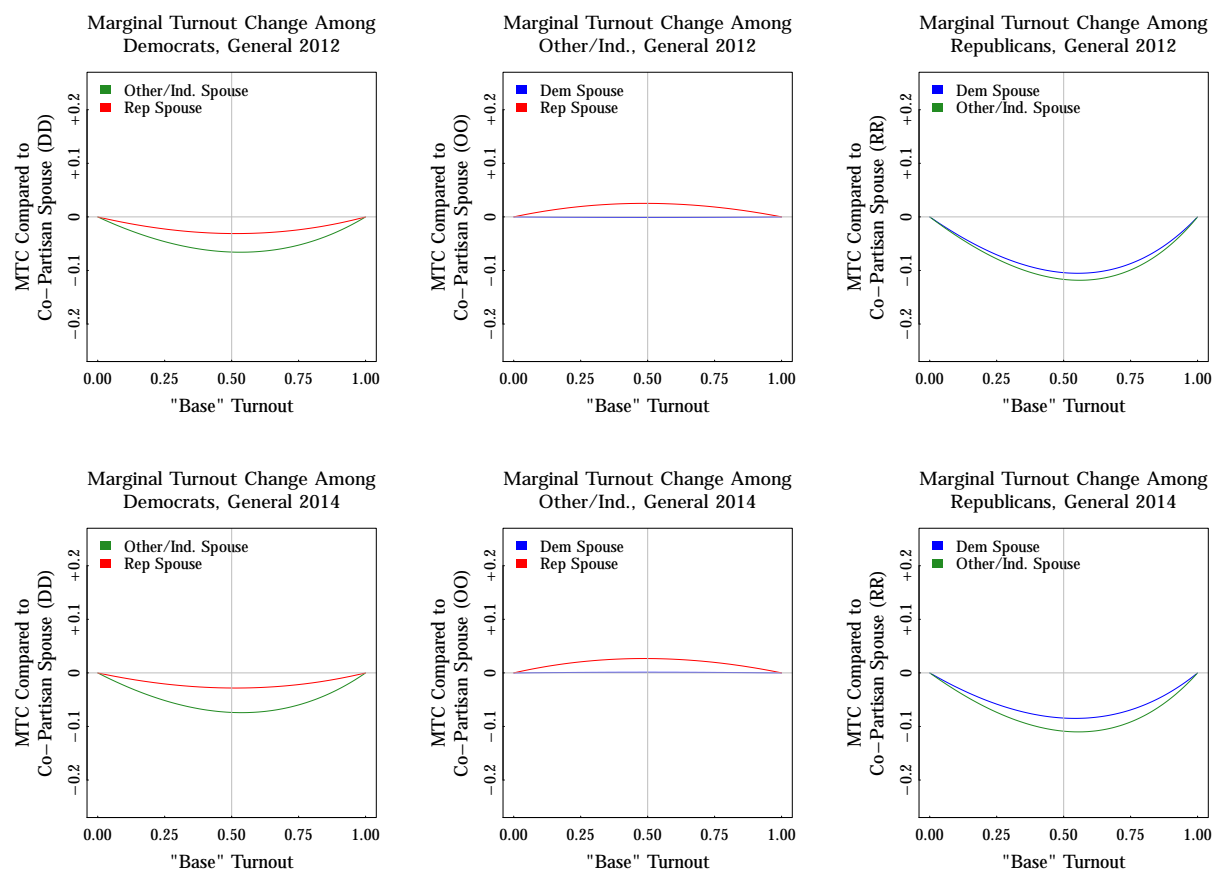
When we re-run the turnout analysis for all thirty-two definitions of marriage, the effect sizes are always the same or larger in magnitude than in our main definition of marriage. For example, when we include same-sex couples and couples who have different surnames (but keep all the other marriage conditions the same), the Democrat married to a Republican

Table 5: Turnout Differences by Household Type, Open vs. Closed Primary States

Effect of this type → ...compared to this type →	DO	DR	RO	RD
	DD		RR	
<i>2012 Prim.</i>				
All	-0.13	-0.04	-0.17	-0.12
Open	-0.08	-0.03	-0.12	-0.10
Closed	-0.17	-0.05	-0.18	-0.12
<i>2012 Gen.</i>				
All	-0.07	-0.03	-0.12	-0.10
Open	-0.06	-0.03	-0.11	-0.10
Closed	-0.07	-0.03	-0.12	-0.10
<i>2014 Prim.</i>				
All	-0.14	-0.06	-0.15	-0.08
Open	-0.08	-0.04	-0.13	-0.08
Closed	-0.18	-0.07	-0.17	-0.08
<i>2014 Gen.</i>				
All	-0.07	-0.03	-0.11	-0.08
Open	-0.06	-0.03	-0.10	-0.08
Closed	-0.08	-0.03	-0.11	-0.09

Note: Table show marginal turnout change at maximum part of logit curve. When turnout is expected to be 50% based on all other variables, the coefficients here represent the independent effect of household type. Open primary states in our sample are: AK, AZ, CA, ID, LA, MA, NC, NE, NH, OK, RI, SD, UT, WV in midterm years, and CA, ID, MA, NC, OK, RI, SD, UT, WV for presidential primaries. Closed primary states are: CO, CT, DE, DC, FL, IA, KS, KY, ME, MD, NV, NJ, NM, NY, OR, PA, WY in midterm years, and AK, AZ, CO, CT, DE, DC, FL, HI, IA, KS, KY, LA, ME, MD, NE, NV, NH, NJ, NM, NY, OR, PA, WA, WY for presidential primaries.

Figure 6: Estimated Turnout Effects of Mixed-Partisan Marriage, 2012 and 2014 General Elections



is seven percentage points less likely to vote in the 2012 primary compared the Democrat married to a Democrat, three points larger than the -0.04 estimate in the table here.

The table shows the marginal effects for all states, and then separately for open and closed primary states. In both general elections, the results for open and closed primary states are similar. This is important because a different pool of registrants may choose to register as independents in an open or closed state (but see McGhee et al. (2014)). Open and closed systems do produce different results in primaries. In closed states, independents are ineligible to participate in primaries. In those states, partisans married to independents are considerably less likely to vote in primaries than partisans married to co-partisans.

Figure 7: Estimated Turnout Effects of Mixed-Partisan Marriage, 2012 and 2014 Primary Elections

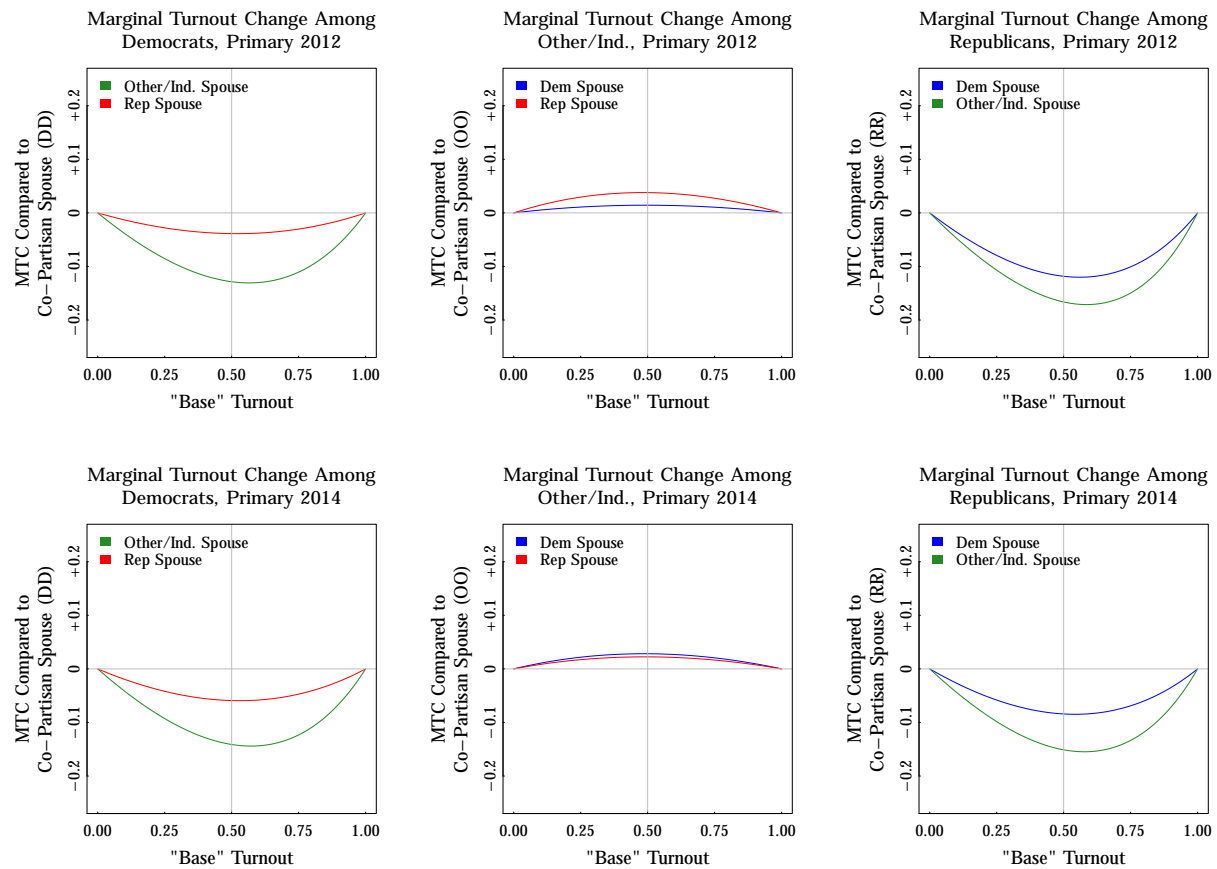


Figure 6 and Figure 7 present the results graphically. Rather than just showing the effect in the scenario where turnout is otherwise expected to be 50%, the figures show the effect at each level of base turnout. Where the x-axis is 0.5, the estimated level is the same as shown in Table 5. In evaluating the results over the range of the x-axis, consider the turnout level of partisans and independents in each election, as reported in Table 4. In the presidential election, turnout among registrants (particularly among Democrats and Republicans) is well above 50%. In the midterm election, average turnout is close to 50%, and in the primaries, average turnout is lower.

There are two key takeaway points from the figures: (1) Controlling for age, state, race,

and gender, the party affiliation of one's spouse can have quite large effects on turnout; and (2) the effects vary considerably by the party of the voter and the party of their spouse. This heterogeneity in effect is surprising. For the registered Democrat, being married to a Democrat increases turnout by as much as six percentage points in the general elections and as much as 18 percentage points in the primary elections compared to being married to an independent. The depressing effect for a Democrat married to a Republican is smaller (by a third to a half) than being married to an independent.

For registered Republicans, the results are different. First, the effect sizes are about twice as large as they are for Democrats. For example, in the 2012 election, a Democrat married to an independent was up to 6 percentage points less likely to vote than a Democrat married to a Democrat, but a Republican married to an independent was up to 12 percentage points less likely to vote than a Republican married to another Republican. Second, while the Democratic voter exhibits a smaller depressing effect on general election turnout when married to an independent than married to a Republican, the Republican voter exhibits a same effect for having an independent or Democratic spouse.

For independent voters, the results are different still. In general elections, independents are wet blankets. They bring down the turnout level of their spouse but do not have differentiated turnout depending on their spouse. As seen in the middle panels of Figure 6, independents married to partisans only have slightly higher turnout than independents married to independents. Note that the middle panels of Figure 7 should be interpreted with caution, as independent voters are not eligible to vote in primaries in some states. However, the estimates for independents are similar in primaries and in generals, as seen in the comparison between Figure 6 and Figure 7.

Conventional wisdom in political science says that most independent voters are closet partisans. Many who identify and register as independent behave as partisans. In our analysis, however, we see that independents not only are different from partisans, but when they are married to partisans, the partisans vote less. The difference in partisan turnout

rates in generals (and especially in primaries) depending on the affiliation of their spouse, is remarkable. Even after controlling for important correlates of turnout like race, state, and age, the partisanship of one's spouse has a dramatic effect on turnout.

The especially large effects in primaries compared to generals is, in a limited way, suggestive of causal mechanisms at play. As stated above, a depressing turnout effect might be attributable to lower-participation voters marrying across parties at higher rates (i.e. homophily) and/or may be attributable to co-habitation. The strong effect in primaries - especially in closed primary states - seems likely attributable to the latter. When a partisan has a spouse who is ineligible to vote in a primary because he/she is registered independent, the partisan is much less likely to vote in the primary. This negative effect is *much larger* than for general elections in which both members of the couple are eligible. While the data do not shed much light on causal mechanisms, the evidence suggests to us that there may be a direct effect of cohabitating with an independent on a partisan's participation in primary elections. Sorting may explain the general election effect, but it seems insufficient to explain the *additional* turnout effect in primary elections. That additional effect may plausibly be attributed to cohabitation.

5 Discussion

Students of political behavior have developed a rich set of findings about how individuals participate in politics. But individuals are commonly situated in households, in networks, in communities. Since representative surveys are almost always designed to study individuals, political scientists have built up little knowledge about the behavior of small groups.

Here, we take an important step forward in learning about the political behavior of the essential small group in a society: married couples. First, we have learned about the basic rate of party intermarriage in the United States. Seven in ten married couples share a party affiliation, three in ten do not. Of those that do not, two-thirds are partisans married to

independents, and one third are partisans married to someone of the other political party. As we show in Figure 1, the rate of partisan intermarriage reflects a moderate amount of sorting by individuals who are choosing partners of the same age and geography.

Second, well-known relationships between partisanship and gender, partisanship and age, and partisanship and geography operate similarly within households as they operate between individuals. Women are not only more likely to be Democratic than men, but among married couples who differ in their partisanship, the female partner is twice as likely as the male partner to be the Democrat. Older voters are not only more likely than younger voters to identify as a partisan, but married couples age 80 are 66% more likely to be in a D-D or R-R marriage as compared to married couples age 30.

Across different neighborhoods, between 50% and 75% of married households are composed of two Democrats or two Republicans, and these households are least common in neighborhoods that split their votes evenly between Democratic and Republican candidates. This has an important implication for our understanding of partisan geography. When we envision a “battleground” neighborhood in which numbers of Democrats and Republicans are roughly equal, we might instinctively think of neighbors disagreeing with neighbors. Importantly, in these neighborhoods we witness the highest rate of married people disagreeing with their own partners. This is likely to lead to a more tempered political climate in America’s political battlegrounds than what one otherwise might expect.

Finally, we have shown that the party of one’s spouse bears a powerful relationship to voter participation. Partisans who are married to out-partisans, and especially partisans who are married to independents, exhibit sharply lower rates of turnout than partisans married to co-partisans. The effect is especially pronounced in primary elections. Evidence from prior research suggests this is partially the result of individuals who are less engaged in politics being more willing to marry out-partisans. It is likely partially the result of mixed-partisan relationships having the effect of depressing turnout. The cohabitation effect seems especially plausible in driving down turnout among partisans in primary elections. Regardless of the

precise mechanism, after controlling for individual attributes like age, race, and gender, the party affiliation of one's spouse bears a strong independent relationship on one's propensity to vote.

One important way in which this study can be extended in the future is in combining survey research with government records. In recent years, common political science surveys like the NES and CCES have linked respondents to validated vote turnout data. On account of the importance of family networks to individual behaviors and attitudes, large surveys in the future should utilize voter registration records and commercial data to compose representative samples of households and to link representative samples of individuals to contextual information about their household. Doing so would usefully build knowledge on this important but understudied area of scholarly research.

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6 Appendix

Figure A1: Age Differences between Married Pairs

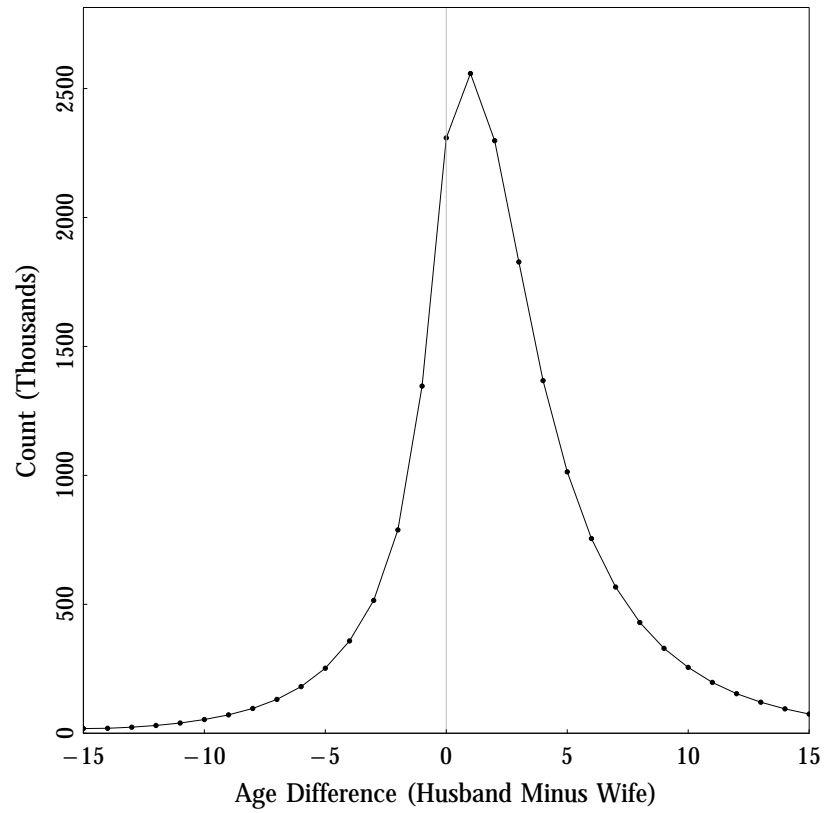


Table A1: Percent in Each Household Type, Alternate Definitions of Marriage

Same Surname?	Restrictions				Num. Households	Percent in Combination					
	HH Size ≤ 10	Male/Female	Age w/in 15 yrs.	Oldest or Random?		DD	OO	RR	DO	RO	DR
Yes	Yes	Yes	Yes	Oldest	18,275,001	25	15	31	10	9	10
No	Yes	Yes	Yes	Oldest	23,387,150	26	15	26	13	10	11
Yes	No	Yes	Yes	Oldest	18,276,005	25	15	31	10	9	10
No	No	Yes	Yes	Oldest	23,415,393	26	15	26	13	10	11
Yes	Yes	No	Yes	Oldest	19,611,954	25	15	30	11	9	10
No	Yes	No	Yes	Oldest	26,480,899	27	15	24	14	10	11
Yes	No	No	Yes	Oldest	19,612,989	25	15	30	11	9	10
No	No	No	Yes	Oldest	26,511,503	27	15	24	14	10	11
Yes	Yes	Yes	No	Oldest	20,410,653	25	14	29	11	9	11
No	Yes	Yes	No	Oldest	26,412,178	26	14	24	14	10	11
Yes	No	Yes	No	Oldest	20,411,658	25	14	29	11	9	11
No	No	Yes	No	Oldest	26,440,472	26	14	24	14	10	11
Yes	Yes	No	No	Oldest	23,186,027	26	15	27	12	9	11
No	Yes	No	No	Oldest	31,326,757	27	14	22	15	11	11
Yes	No	No	No	Oldest	23,187,062	26	15	27	12	9	11
No	No	No	No	Oldest	31,357,361	27	14	22	15	11	11
Yes	Yes	Yes	Yes	Random	18,275,001	25	15	30	10	9	10
No	Yes	Yes	Yes	Random	23,387,150	26	15	25	13	10	11
Yes	No	Yes	Yes	Random	18,276,005	25	15	30	10	9	10
No	No	Yes	Yes	Random	23,415,393	26	15	25	13	10	11
Yes	Yes	No	Yes	Random	19,611,954	25	15	29	11	9	11
No	Yes	No	Yes	Random	26,480,899	26	15	23	15	10	11
Yes	No	No	Yes	Random	19,612,989	25	15	29	11	9	11
No	No	No	Yes	Random	26,511,503	26	15	23	15	10	11
Yes	Yes	Yes	No	Random	20,410,653	25	15	28	12	9	11
No	Yes	Yes	No	Random	26,412,178	25	15	23	15	10	12
No	No	Yes	No	Random	26,440,472	25	15	23	15	10	12
Yes	Yes	No	No	Random	23,186,027	25	15	26	13	9	12
Yes	No	Yes	No	Random	20,411,658	25	15	28	12	9	11
No	Yes	No	No	Random	31,326,757	26	15	21	16	10	12
Yes	No	No	No	Random	23,187,062	25	15	26	13	9	12
No	No	No	No	Random	31,357,361	26	15	21	16	10	12

Table A2: Regression Table

Ind Vars.	Turnout 2012		Turnout 2014	
	Primary	General	Primary	General
(Intercept)	-1.76	0.96	-2.22	-0.26
DD	0.30	0.19	0.53	0.19
DO	-0.23	-0.07	-0.05	-0.11
DR	0.14	0.07	0.29	0.08
OD	-0.65	-0.32	-0.58	-0.30
OO	-0.71	-0.32	-0.70	-0.31
OR	-0.56	-0.22	-0.61	-0.20
RD	0.49	0.10	0.36	0.14
RO	0.28	0.05	0.07	0.04
RR	0.97	0.52	0.70	0.48
White Female	0.28	0.35	0.25	0.39
White Male	0.29	0.25	0.27	0.44
Black Female	0.38	0.48	0.40	0.35
Black Male	0.11	0.05	0.20	0.08
Latino Female	-0.27	-0.09	-0.36	-0.30
Latino Male	-0.31	-0.35	-0.40	-0.34
Oth/Unk. Female	-0.21	-0.31	-0.16	-0.31
Oth/Unk. Male	-0.26	-0.37	-0.19	-0.29
AK	0.88	-0.30	2.35	0.60
AZ	0.50	-0.11	0.96	-0.22
CA	0.81	0.18	1.00	-0.14
CO	-0.29	0.56	0.55	0.79
CT	-0.59	0.00	-1.15	0.20
DC	-0.09	-0.84	0.65	-0.66
DE	-0.46	-0.21	-0.74	-0.58
FL	0.38	-0.19	0.13	-0.06
IA	-1.05	0.30	-0.25	0.33
ID	0.29	1.80	0.97	0.24
KS	0.07	-0.24	0.50	0.11
KY	-0.64	-0.87	0.81	-0.22
LA	-0.59	-0.10	-11.88	0.53
MA	0.43	0.43	0.57	0.35
MD	-0.31	-0.05	0.40	-0.09
ME	-0.46	-0.02	-0.06	0.67
NC	1.17	0.13	0.30	-0.03
NE	0.23	-0.06	1.01	-0.09
NH	1.37	0.21	0.48	0.18
NJ	-0.90	-0.37	-0.78	-0.61
NM	-0.05	-0.18	0.15	-0.14
NV	-0.44	0.31	0.27	-0.37
NY	-1.98	-0.62	-1.05	-0.66
OK	0.34	-0.33	0.52	-0.54
OR	0.77	0.43	1.16	0.63
PA	-0.20	-0.15	0.00	-0.38
RI	-0.06	-0.21	1.14	0.17
SD	-0.55	-0.25	0.26	-0.11
UT	0.06	0.34	-0.18	-0.41
WV	0.61	-0.72	0.50	-0.47
WY	0.78	1.13	1.69	1.00

Figure A2: Regression Results: Varying Intercepts on Individual Years of Age

