

Political Homophily in Social Relationships: Evidence from Online Dating Behavior

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Abstract

Do people form relationships based upon political similarity? Past work has shown that social relationships are more politically similar than expected by chance, but the reason for this concordance is unclear. Is it because people prefer politically similar others or is it attributable to confounding factors such as convergence, social structures, and sorting on non-political characteristics? Addressing this question is challenging because we typically do not observe partners prior to relationship formation. Consequently, we leverage the domain of online dating. We first conducted a nationwide experiment in which we randomized political characteristics in dating profiles. Second, we analyzed behavioral data from a national online dating community. We find that people evaluate potential dating partners more favorably and are more likely to reach out to them when they have similar political characteristics. The magnitude of the effect is comparable to that of educational homophily and half as large as racial homophily.

KEYWORDS: homophily; assortative mating; sorting; partisanship; ideology

Supplementary material for this article is available in the appendix in the online edition. Replication files are available in the JOP Data Archive on Dataverse (<http://thedata.harvard.edu/dvn/dv/jop>). This research was approved by the IRBs at Stanford University (IRB-24611 and IRB-19678) and Yale University (#1007007097).

Scholars argue that partisan loyalties extend beyond issue positions and disagreements over policy, bleeding into social interactions. For instance, survey evidence indicates that individuals do not want to be friends with, or have their children marry, members of the opposing party (Iyengar et al. 2012). It is unclear, however, whether these survey responses predict people's behaviors outside of such a research setting. At the same time, there is longstanding evidence that social relationships, including marriages, are more politically homogenous than one would predict by chance (e.g., Martin et al. 1986; Alford et al. 2011). But such research does not definitively tell us whether this pattern reflects political choice homophily—a preference for those who are politically similar—or is instead a side effect of attitude convergence, constrained partner markets, or partner choice on the basis of other factors that are correlated with shared political orientations. Disentangling choice homophily from these alternative mechanisms is important because it suggests that ameliorating partisan divisions may be difficult if self-segregation is intentional rather than incidental.

We present novel data that allow us to directly measure revealed preferences for politically similar relationship partners in the domain of online dating. In two different studies, we observe political preferences and beliefs *before* people evaluate and choose from a known set of potential partners. These data therefore allow us to estimate how shared political characteristics predict with whom a person would like to form a relationship, a direct measure of political homophily. Both studies allow us to preclude post-choice convergence or restrictions on available partners as explanations for observed political similarity. Each study provides different leverage to assess the importance of sorting on other non-political characteristics.

Our first study is an experiment embedded in a general population survey in which we randomly manipulate the political characteristics of online dating profiles presented to participants. We test whether participants' assessments of the profiles are predicted by the

concordance of their own views with those shown in the profile. We find that participants consistently evaluate profiles more positively (e.g., had greater interest in dating the individual presented) when the target's profile shared their political ideology. Shared levels of political interest also improve evaluations for some outcomes, but the effects are much weaker. Because we independently manipulate the political and nonpolitical characteristics of the profiles, these experimental results isolate the causal effects of shared political predispositions, providing direct evidence of choice-based homophily.

Our second study uses a large, novel dataset from a diverse, national online dating community to understand which factors predict when individuals communicate with other potential dating partners. This behavioral measure of social discernment is important because it provides evidence not just of stated preference for political similarity, but also evidence that individuals act on those preferences in real social interactions when they are not being monitored. We examine the effects of three types of political characteristics—political identity, issue positions, and political engagement. After accounting for the range of available online partners on the site, we find that men are more likely to message a woman if they share these key political traits with her, and women are similarly more likely to respond to a man's message if they share these traits with him. For example, online pairings in which men send a message and women reply are about 8 to 10% more similar on ideology and partisanship and about 11% more similar in levels of political interest than all potential pairings, effects which are similar in size to educational homophily and about half that of racial homophily. We conduct additional analysis of these data to show that this pattern does not appear to arise simply due to sorting on non-political characteristics.

Overall, our work shows that individuals seek politically similar relationship partners and that this political sorting takes place even at the earliest stages of relationship formation and in an

environment in which individuals can choose from among many different relationship partners using diverse criteria. We therefore provide behavioral evidence that establishes the external validity of survey data showing a preference for politically similar social partners. Additionally, compared to previous research we more persuasively show that political homophily is a source of political homogeneity in romantic relationships by providing evidence that excludes alternative explanations for this observed similarity.

The political sorting in romantic relationships that we document likely reduces political disagreement within the household, which risks creating political enclaves and may in turn increase polarization and decrease political tolerance (Mutz 2002). We also show that people select relationship partners on the basis of shared levels of political engagement, rather than solely based on ideological predispositions, thereby raising the possibility that the country may become increasingly stratified between those who have the resources and motivation to engage with the political system and those who do not. Thus, as with increasing homophily along class and educational divisions, political homophily may exacerbate differences in the distribution of political resources that are associated with the ability to affect public policy. If engaged people are more likely to associate with one another, then it could help explain how such social inequality, when it affects policy outcomes, can sustain political inequality (Verba et al. 1995).

The Dimensions of Political Homophily

How and why does politics affect the social relationships that individuals form? Theoretically, a preference for politically similar partners may reflect a general tendency to prefer similarity for any given personal characteristic (McPherson et al. 2001). Political homophily, by this view, may simply be a particular manifestation of a preference for similar others. Of course, political attitudes and orientations are often deeply held, and so a particular preference for politically similar relationship partners may arise because choosing a dissimilar partner may invite

future relationship conflict (Gerber et al. 2012) or predict differences about other core values (Graham et al. 2009) that may be implicated in childrearing or other salient choices. We therefore distinguish theoretically between three different types of political choice homophily—identity homophily, issue homophily, and engagement homophily—that may generate different patterns of social sorting.

First, individuals may sort on political *identities*, such as identification with a political party (e.g., Democrat) or with an ideological disposition (e.g., conservative). These identities appear to form early in life and persist throughout time, leading many scholars to argue that they are more akin to group identities than simple summaries of political opinions (Campbell et al. 1960). Thus, in light of social and group identity theories, we expect political homophily to take place along these lines, just as it does for social identities for which sorting is ubiquitous (e.g., ethnicity).

Second, people may sort according to political *issue positions*, such as their stances on economic, social, and foreign policy issues. While these attitudes can also be stable over time, they are distinct from party and ideological identification in several ways. For instance, policy issues evolve, moving in and out of the national agenda, which requires citizens to develop new beliefs (Carmines and Stimson 1989). Sometimes social groups cleave along policy lines (e.g., pro-life vs. pro-choice activists), but unlike party identification, most issues do not define social groups. Additionally, individuals' policy views often appear malleable and subservient to political identities (Levendusky 2009). Thus, despite the fact that issues may signal other group and value commitments, particularly on social issues, we expect political homophily for issue positions to be weaker than it is for political identities.

Finally, people may sort based on *political engagement*. Independent of whether they agree with another person about politics, they may prefer someone who shares their (lack of)

engagement with political debates and issues. Those who are civically engaged may view those who are not as failing the duties of citizenship (Theiss-Morse and Hibbing 2005), which may be akin to violating a core value. This may in turn cause those who are not engaged with politics to shun the engaged so as to avoid their social disapprobation. Such a pattern may be exacerbated if those who dislike politics view it as conflictual, partisan, corrupt, and uncivil (Hibbing and Theiss-Morse 2002).

Prior Research

We study online dating behavior to test these hypotheses about how shared political orientations affect partner preferences. In addition to providing novel behavioral data for understanding how people seek relationship partners, online dating has become an increasingly important means by which Americans search for romantic partners (displacing traditional institutions such as school and family), and is a precursor to marriage (Rosenfeld and Thomas 2012). Nonetheless, it is important to note that with online dating data we observe only the initial periods of relationship formation, which are likely akin to the search for nonromantic social partners but may not reflect the entire process by which individuals choose marital partners. Additionally, the population of any online dating community is not fully representative of all Americans on the relationship market. As such, extrapolating our results to other dating sites or populations requires additional assumptions, which we discuss later.

Our research builds on work that examines how political homophily shapes which social relationships form. The most developed literature is about assortative mating, but we also draw from work that examines behavior in online dating forums and in speed dating events. Our literature review reveals that while prior research establishes clear evidence that married partners are often quite similar politically, we know less about *why* this sorting arises. As we discuss below, prior work offers conflicting evidence about the importance of political characteristics on

partner choice. Nor is it clear which political characteristics are most important in shaping social sorting. These questions are particularly ripe because existing analysis cannot distinguish individuals choosing political similar partners from other sources of observed political similarity.

The most extensive body of research on the role of politics in partner choice is the literature on assortative mating. This work also draws on studies of the intergenerational transmission of political views (e.g., Jennings, Stoker, and Bowers 2009; Alford, Funk, and Hibbing 2005) and, from social psychology, work showing that individuals generally rate as more desirable individuals who are similar to them along a range of dimensions (e.g., Byrne 1961; see also Berscheid and Reis 1998 for a review on the correlates of perceived attractiveness). Numerous studies show that married couples are more alike on many dimensions than one would expect by chance (e.g., Martin et al. 1986). The question, however, is if this political congruence arises due to choice or is instead induced (McPherson and Smith-Lovin 1987). That is, do people really seek out politically similar partners, or does this similarity arise for different reasons?

Choice homophily refers to a preference to associate with a similar other along a given dimension. Induced homophily, by contrast, arises as an indirect consequence of other factors. Three main causes of induced homophily are: (1) convergence, or the tendency of social partners to become more similar after meeting, either through persuasion or sharing the same environment; (2) social structures (e.g., residential segregation) constraining the types of people to whom one is exposed (i.e., might date); (3) choice homophily along dimensions other than politics such as racial or religious identity that are correlated with shared political views.

The most compelling evidence to date about the role of political choice homophily in marriages comes from Alford et al. (2011).¹ Drawing on a survey from a sample of twins and their

¹ A larger set of studies about political homophily in romantic and dating relationships is summarized

relatives, Alford et al. show that married partners are similar for a variety of political measures. To explore whether convergence explains this pattern, they document that this similarity is at most only modestly larger for couples who have been married for longer periods. They argue that this demonstrates that if convergence arises it must occur early in a marriage, although such a pattern could also be due to a cohort effect; that is, if partners in more recent marriages are more similar at the beginning of their relationship than partners who were married in earlier periods (see also Jennings and Stoker 2001, who find increasing partner correlations for partisanship over time).² To understand whether this concordance is explained by shared backgrounds (searching on other correlated factors or constrained partner markets), Alford et al. show that spousal political similarity is also found within salient social groups (defined separately by shared religion, education, church attendance, or party voting). This analysis rules out choice homophily on other dimensions as causing the similarity in formed relationships only if those partitionings fully account for partner choice and *all* sources of shared political views. Similarly, it precludes limits on available partners only if those subgroups account for all restrictions on partners that are correlated with politics.

Alford et al. recognize these limitations of their analysis and argue that measuring attitudes before individuals interact would more definitively rule out the possibility of convergence. Thus,

below. We focus on Alford et al. here because it is closest to our own work and makes the greatest progress in isolating choice homophily.

² Alford et al. also draw from a panel dataset in Australia where they observe one member of a future marriage prior to marriage and show that that people who become married experience only modestly larger changes in their views than those whose partnership status does not change. Those data do not include measures of the views of *both* members of the future couple.

they state that “the ideal research design” for studying assortative mating based on attitudes is a longitudinal sample of individuals “before they met; however, this would require the ability to foresee the future” (370). As we explain below, this paper implements the research design that Alford et al. foresee as the next innovation in the analysis of political homophily. Similarly, to understand the effect of social structure on observed homophily, one would need to account for the views of the range of potential future partners (e.g., as in Snyder’s 1964 study of members of sophomore classes from 13 rural Pennsylvania high schools, many of whom ended up marrying one another later in life, although that study does not contain any measures of political attitudes). Finally, to rule out political homophily as arising due to choosing on other dimensions correlated with shared political views in observational analysis would require either experimental manipulation of political characteristics or obtaining a rich set of non-political characteristics to assess whether, after accounting for choice along those dimensions, political similarity still predicts partner choice. Our study has these features.

In light of these arguments, Table S1 in the Supporting Information [SI] summarizes prior work examining the role of politics in assortative mating (marriage), speed dating, and online dating in the United States. For each of the 14 previous studies, we tabulate whether it (a) accounts for multiple dimensions of political views, (b) measures both partners’ preferences before a relationship is formed, (c) accounts for potential partners and their views, (d) includes measures of a wide variety of other factors that might explain partner choice and political views, and (e) includes any experimental manipulation. As the table shows, no prior study of the role of politics in partner choice does more than three of these things; our study does all five. This is important because studies that do not provide a rich set of political measures (a) cannot be used to assess the importance of different dimensions of politics on partner choice. Examining partner preferences only after relationships have formed (b) means that researchers need to make additional

assumptions to distinguish convergence from homophily. Similarly, it is also difficult to rule out the effect of constrained partner markets without accounting for the diversity of those potential partners (c), and distinguishing political homophily from sorting on other dimensions is very difficult without accounting for a broad range of partner characteristics that could also explain partner choice (d) or an explicit experimental manipulation (e). Thus, at least four design elements (a, b, c and either d or e) are crucial for more persuasively identifying political choice homophily as a source of political similarity in formed relationships, something even the most promising work on assortative mating in marriage (e.g., Alford et al. 2011) does not do.

In addition to research on assortative mating, there are also developing and related literatures focusing on speed dating and online dating. These approaches provide researchers with possible tools for understanding how different factors affect partner choice, including accounting for the range of available partners and measuring (potential) partner characteristics prior to partner interactions. In an early study by Carlson (1979), 96 undergraduates each rated one opposite sex “computer dating profile” composed of 20 issue items and 2 measures of political interest. Each profile was either entirely matched on political issues items and entirely unmatched on non-political issue items or entirely unmatched on political issues and entirely matched on non-political issues. Those profiles that were politically aligned were evaluated more positively, but the profiles did not include any other content (e.g., demographics) that might affect partner choice. There are two papers that examine the effect of shared political orientations on partner preference using small speed dating events.³ Tidwell, Eastwick, and Finkel (2012) find that shared ideology (their only measure of political preference) does not significantly increase romantically liking of a

³ One concern with using the speed dating environment to understand relationship formation is that people may use different factors to choose partners in more common dating environments.

speed dating partner, but their analysis is bivariate and does not control for all other partner characteristics. Similarly, Luo and Zhang (2009) find that shared ideology does not explain partner choice in a speed dating forum, but their analysis is also bivariate in nature. Unfortunately, given the prior implementation of dating and speed dating experiments (the three studies listed B1-B3 in Table S1), we know relatively little about how a broad range of political factors affect partner choice and whether it is politics *per se*, or correlated factors, that affect evaluations of partners.

Turning to analysis using online dating behavior (the three studies listed C1-C3 in Table S1), two papers by Klofstad et al. (2012, 2013) examine how people present themselves politically in online dating forums.⁴ They do not examine actual partner communication or other measures of dating behavior, but instead focus on a sample of public profiles collected from a national dating site. These profiles include a single measure of political preference (ideology). Klofstad et al. (2012) find that people claim to be moderate at a rate that exceeds that found in other surveys, perhaps because expressing a moderate preference may maximize one's appeal to a broad range of partners. Those who do express a political preference are more civically engaged, but they conclude that "individuals do not appear to initially select potential dates along political lines" (100). They also find that few other characteristics are correlated with expressing a preference for one ideological extreme over the other. Building on these findings, Klofstad et al. (2013) conclude that there is little evidence for political homophily in choosing relationship partners and that

⁴ A related but distinct literature considers abstract partner preferences outside of the online dating setting (but not actual dating or partner preference behavior). See, for example, Doosje, Rojahn, and Fischer (1999). Kofoed (2008) conducts a convenience survey of 168 undergraduates and finds that 55% of participants had dated someone who did not share their political beliefs and that 18% of respondents indicated they would not date someone with different political beliefs.

political similarity in marriages likely indicates either that dating is different than searching for a spouse or that political concordance in marriages arises due to sorting on dimensions correlated with political views.

In terms of observed partner communication behavior in online dating forums, while there are a number of papers focusing on topics such as preferred partner race (e.g., Robnett and Feliciano 2011), we are aware of only a single paper that assesses the role of shared political orientations. Hitsch, Hortacsu, and Ariely (2010) examine the behavior of 6,485 participants in an online dating forum who lived in Boston or San Diego. In a multivariate model that includes a single measure of political preferences (ideology) they examine communication conditional on browsing (viewing) an online profile (that is, they examine communication after accounting for initial searching/screening). They find that both men and women who are liberal (conservative) are less likely to contact someone who is conservative (liberal). While their study has three of the five design elements included in our study (See Table S1, Row C3), they have a geographically limited sample and cannot account for the role of politics in initial partner search. Additionally, they do not consider a broader range of measures of political characteristics, include only a limited set of covariates that are likely correlated with political views (e.g., the many reasons people are seeking dating partners or more detailed measures of religious identity), and do not have access to the rich data on personal views that might be correlated with political characteristics that we present below.

Overview of Studies

We conducted two studies: (1) an experiment in which we randomly manipulated the political characteristics of online dating profiles presented to participants; and (2) an analysis of communication behavior in a large, national online dating community. The two studies have non-overlapping strengths and weaknesses for identifying choice-based political homophily. The first

study maximizes internal validity via controlled manipulation of the information shown to participants. Thus, political characteristics are uncorrelated with other profile features, making it easier to generate unbiased estimates of the effect of political factors on partner preference. However, these subjects are making choices in a survey environment, so one might be concerned that the same behavior might not manifest outside of the experimental context, which is a problem of external validity. The second study maximizes external validity because it examines people's actual choices made when they are not being monitored in a research setting and also allows us to explore more of the potential dimensions of political homophily. However, because we do not fully control the choice environment, we need to make additional assumptions to interpret our effects as causal, which is a problem of internal validity. Because both studies yield similar results, we reduce concerns that these results are a methodological artifact of either approach.

Study One: A National Experiment

Procedures: We recruited approximately 1,000 subjects aged 18-35 and interested in dating members of the opposite sex from a nationwide sample provided by Survey Sampling International (SSI) to participate in a study about online dating.⁵ Subjects were compensated by SSI for their participation in the experiment, which did not involve deception and took place over the Internet. The study took about fifteen minutes to complete. After we obtained informed consent, subjects took a short survey about their personal characteristics and prior online dating behavior. (The complete text of the survey is presented in the SI and tabulations of subject demographics appear in Table S3.) Next, they were asked to evaluate 10 randomly constructed opposite-sex dating profiles. We describe how those profiles were constructed and the evaluations

⁵ This experiment is a replication of a smaller study conducted in a university laboratory using a student population. Results in that context were similar.

gathered in greater detail below. Finally, subjects were asked a series of questions about the factors they considered important in selecting dating partners and why they thought the study was being conducted.⁶ Our final analysis dataset consists of 979 individuals who evaluated 10 profiles each (a total of 9,790 observations) and excludes respondents who did not provide their year of birth or failed to answer a question about their political orientations.

The profiles were presented in a standard template similar to those found on many popular online dating sites. We used elements of the most popular online dating websites in our design, enhancing the realism of the experimental stimuli. A sample profile appears in SI Figure S1, and the complete list of information included in the profile is presented in Table S2, where we also show which characteristics were randomly manipulated. These independent random manipulations included a person's picture, textual description, user ID, age, height, religion, educational attainment, and political orientation. We can therefore assess whether shared politics matters in explaining partner preference when other non-political dimensions are available on which to choose. The photographs, user IDs, and profile text were harvested from public dating profiles. Textual descriptions were edited for length and to remove inconsistencies with the other manipulations.

Participants were shown a profile and asked to evaluate it by answering six questions in closed response format about (1) their interest in contacting the person, (2) their interest in responding to a message from the person, (3) whether or not they could get along with the person in the long term, (4) their assessment of the person's values, (5) the person's attractiveness, and

⁶ 12 subjects use the word "politics" or its variants in describing why we conducted the study. Excluding these respondents does not alter our results (See SI for details).

(6) their interest in being friends with the person.⁷ These questions tap multiple dimensions of evaluations, from simple measures of physical attractiveness to interest in dating and beliefs about long term compatibility and shared values. Full question wordings and response options are presented in the SI.

Method of Analysis: Our primary theoretical interest is in the effect of the manipulation of the political description in the profile on evaluations of the person portrayed in the profile. Politics was randomly assigned with equal probability to: none (i.e., the field for political affiliation was left blank), “Not interested in politics,” “Conservative,” “Moderate,” and “Liberal.” This manipulation allows us to assess political sorting along two dimensions. First, we can ascertain whether or not participants evaluate more favorably individuals who share their political ideology than those who do not. Second, we can assess whether or not participants react more favorably to individuals who have similar levels of political interest.

Because this is an experiment and both politics and other features of the profiles were randomly assigned, our analysis of these data is straightforward. In particular, for each outcome measure Y we estimate participant i 's evaluation of profile j using this equation:

$$(1) Y_{ij} = \alpha_i + \beta_1 * Match\ Ideology_{ij} + \beta_2 * Match\ Not\ Interested\ in\ Politics_{ij} + \beta_3 * No\ politics\ in\ profile_j + \beta_4 * Not\ Interested\ in\ politics\ in\ profile_j + \beta_5 * Liberal\ in\ profile_j + \beta_6 * Conservative\ in\ profile_j + Z * Other\ Characteristics + \gamma * Picture_j + \eta * Profile\ Text_j + \varepsilon_{ij}.$$

Of primary interest is the effect of shared political ideology and shared levels of political interest. “Match Ideology” is coded “1” if the participant’s self-reported ideology (Liberal, Conservative, or Moderate) matches the ideology shown in the profile, and “0” otherwise. “Match

⁷ When a respondent did not provide a response for a given item, the missing value was replaced with that person’s average response for that item across all of the profiles they were shown.

Not Interested in Politics” is coded “1” if the respondent reports “hardly at all” or “only now and then” for how often s/he follows politics and the profile states “Not interested in politics.” Our theoretical prediction is that β_1 and β_2 will be greater than 0.

In addition to these political variables, we also account for the non-political characteristics included in the profiles. We include indicators for each individual photograph and the textual profile descriptions, as well as for each of the age and height options. For age we include a measure of absolute difference in age between the respondent and the profile. For education and religion, where we do not have clear *ex ante* predictions about evaluations of different characteristics, we include each possible pairing of respondent and profile characteristics (for example, for education one variable indicates that the respondent has a graduate degree and the person in the profile has a high school degree, while for religion one variable represents that the respondent is Jewish and the person in the profile is Catholic). We estimate equation (1) using OLS regression with fixed effects for the individual respondent (α_i) and cluster standard errors at the respondent level to account for correlated responses by each respondent. We present abridged results (estimated using Stata 12.1 for Windows) in Table 1, only displaying the coefficients of substantive interest. The full regression models can be found in Table S4. All dependent variables are scaled to range from 0 to 1, with 1 the most positive outcome and 0 the most negative one.

Results: In column (1), we estimate the effect of the experimental manipulations on interest in initiating contact, a key outcome in Study 2. We find that shared ideology increases assessments of interest in initiating contact by about .014 units ($p=.05$, two-tailed tests throughout) on a 5-point scale that ranges from 0 to 1 and a shared lack of interest in politics improves evaluations by .019 units ($p=.13$). Within respondent, by comparison, the average standard deviation of interest in dating is about .23 units (see the bottom row of Table 1), so substantively these manipulations affect average evaluations by about 6% and 8% of the within-person standard

deviation, respectively. In short, shared ideology affects how much participants stated they would like to contact the people in the profiles we presented to them, and the effect of shared interest is marginally insignificant.

Results in column (2), where the outcome measure is stated willingness to respond to a message, are similarly strong for shared ideology, but are smaller and far from statistically significant for shared lack of interest in politics. In columns (3) and (4) we present two measures of deeper evaluations of compatibility: interest in a long-term relationship and assessments of shared values, respectively. For both outcomes, the effect of shared ideology is larger than for the column (1) contact outcome. Shared ideology increases interest in long-term dating by 11% ($p < .01$) of the within-respondent standard deviation of that measure and 13% ($p < .01$) for the assessment of shared values. The effect of shared lack of interest is close to zero for long-term dating and modestly positive but insignificant for shared values (7.8% of the within-person standard deviation, $p = .23$).

We asked two additional questions about participants' evaluations of the people shown in the profiles. The first was about whether or not the person was attractive (column 5). Neither measure of shared orientation has statistically significant effects on that outcome. The second general question was about whether the profile displayed someone the participant would like to be friends with (column 6), a measure of non-romantic social sorting. Shared ideology increases desire for friendship by 13% relative to the average standard deviation by respondent ($p < .01$), but shared lack of interest has small and insignificant effects. This pattern is most similar to assessments of shared values.

We explore the robustness of this finding in additional analyses reported in the SI (see Table S5). These robustness checks include (1) employing listwise deletion for missing values, (2) excluding moderate profiles, which may be perceived as more attractive than non-aligned profiles,

(3) comparing the effect of shared ideology between men and women, (4) using a more flexible coding of ideological matching, and (5) considering whether the effect of shared ideology varies by political interest. These robustness checks do not provide any evidence that lead us to call into question our original reported findings. Overall, the results of this experiment provide strong causal evidence that shared ideology affects social evaluations in the online dating context. Shared interest may have an effect for some outcome measures, but the effects are less definitive. People appear to prefer ideologically similar others when evaluating potential dating partners.

Study Two: An Observational Study of Behavioral Data

The Online Dating Site: The data for Study 2 come from a major, national online dating site, which we refer to as “the site” (due to our agreement with the site, we cannot reveal its name). Users interact with the site using an Internet web browser, and can also choose to be notified about activities on the site by email. Details of how the site operated at the time of the study appear in the SI and are summarized here. When a user first joins the site, he or she constructs a public profile, which can include a photograph and a free-form textual description. As part of their profile, users can list a series of attributes that they are looking for in their potential dating partners: sexual orientation, relationship status, age, location, and what the other user is looking for in a relationship (e.g., casual dating).

After reporting this public information, the user then has the option of answering other questions about his or her personality, interests, and opinions about relationships. These items are referred to as “match questions,” distinct from the profile questions that are part of setting up an account. These questions, which include both items submitted by users and the operators of the site, are eclectic. Users also report how important each question they answer is to them in partner choice. Answers to these questions are not made public unless the user specifically requests that this occur, which we are told is rare. As we describe in greater detail below, our new political

questions were included in this list of non-profile questions (A complete list of profile and available match questions appears in the SI).

Once a user has completed a profile, he or she can search for others based on the profile characteristics mentioned above. Users can also filter based on whether their potential match has a photo as well as recent account activity. The site also presents suggested matches to respondents based on what they state they are looking for in their profile. Finally, the site creates a “match score” based on the match questions answered by the user and all potential partners, taking into account the user’s stated importance of each of the questions and the other users’ responses (including questions for which the participant chooses not to make their answer public).⁸ Unlike fixed algorithms for suggesting potential partners used by most other online dating sites, the site’s algorithm allows users to assign greater weight to those factors they believe are important in partner choice, including politics. For this reason, any role of shared politics in shaping the match score is a function of a user’s own explicit preferences for shared political views. In other words, the fact that users may use political characteristics to shape their partner search is the choice homophily we are attempting to identify.

Our analysis here focuses on the acts of sending a message and responding to it, which is a means by which individuals can converse with one another and, if desired, arrange interactions outside of the online dating environment (e.g., private email communications or dates). A user can send a message to someone selected from a list of potential partner profile(s), and lists are generated using the different ways that users can search for potential dating partners outlined above. As such, initial messaging reflects both sorting and an affirmative decision to contact some

⁸ The site would not provide us with these weights or the proprietary algorithm for calculating the match score.

subset of those partners identified through the initial search process.

Sample and Dataset Overview: We obtained a list of all users who were registered on the site between October 1, 2010 and December 15, 2010. We began by removing from this list users whose site membership was revoked for inappropriate behavior, who withdrew from the site before the end of the sample period, or who resided outside the 50 U.S. States or the District of Columbia. Additionally, for reasons of analytic tractability, we restricted our analysis to heterosexual men and women age 18 to 64 who reported being single and seeking opposite sex partners.⁹ Finally, to eliminate inactive users and low-quality profiles, we removed all men who were never replied to and all women who never replied to a message. These restrictions yield 142,964 men and 119,754 women.

The final dataset for our analysis is a set of dyads, in which for a given geographic area, we form all possible pairwise comparisons between each man and each woman.¹⁰ Geographic areas are identified by 2-digit zip codes (e.g., 60, which includes all zip codes from 60000 to 60999), which is the lowest level of geographic reporting provided to us by the site and which is chosen so that users could readily meet in person if they wanted to. This yields a dataset of 367,047,169 dyads, which we use for our analysis.

Outcome Measurement: We examine three outcomes in our analysis. The first outcome is

⁹ We remove the few users younger than 18 to comply with human subjects requirements. The number of users over 64 is very small. We exclude those already in a relationship because some of these users may not be seeking relationship partners. Our focus on heterosexual partner search is driven by the relatively small number of users seeking same-sex partners in certain geographic areas.

¹⁰ For example, if there were two men, X1 and X2, and two women, Y1 and Y2, in a geographic area, we would create 4 dyads: X1Y1, X1Y2, X2Y1, and X2Y2.

a man sending a message to a woman in a shared geographic area. While both men and women send messages, men initiate 88% of on-line conversations, and so we begin by exploring men's initial efforts to reach out to women. In the complete dataset, men send messages to 0.565% of their potential dyadic partners. Selected demographics for this sample appear in SI Table S5.

The second outcome we analyze is each woman's messaging behavior in response to a man having sent her a message. Here, we begin by taking all cases where a man sent a woman a message in the same geographic area and retain cases where there is variation in the woman's responding behavior and whether each man's messages yield responses. This yields a dataset of 2,073,902 dyads composed of 142,622 unique men and 119,569 women in which women respond to 24.09% of the messages sent to them.

Finally, our third outcome of focus is the joint occurrence of a man messaging a woman and a woman replying. Insofar as bilateral communication is required to develop a social relationship, this analysis allows us to assess the cumulative effect of a man's initial messaging and a woman's replying behavior on the formation of potentially enduring relationships. This analysis uses the same dataset as in the analysis of men's initial messaging behavior. The third measure differs from the second in that our analysis is not restricted to cases where men initiate communication but it still accounts for the fact that bilateral communication is required to develop a further relationship. In 0.136% of all dyads both parties send messages.

Independent Variables: The site, in cooperation with us, fielded seven new political questions. We describe our cooperation with the site in greater detail in the SI. These seven questions tap the three overarching types of political characteristics introduced above: (1) political identity; (2) issue positions; and (3) political engagement. The question wordings are presented in the SI. In addition to partisanship and liberal-conservative ideology (two traditionally studied identities in research on political behavior) we also asked about users' media choices, which might

indicate political orientation in a less-explicit manner. We also asked users about their positions on specific issues, one economic and one social/cultural. Finally, we asked two questions designed to tap users' political engagement—how important politics is to them personally and the level of participation they expect of other citizens.

Our goal is to analyze how well responses to these political questions predict sorting on the site. As with any other match question, users had the option to decline answering each of these new questions. We sought to use standard question wording from existing surveys (e.g., the American National Election Study and the General Social Survey) where possible, but negotiations with the site and technical concerns affected the final questions that were fielded.

In addition to these seven new questions, we also used site participants' responses to a range of other questions included in the non-anonymous profile to account for user preferences and characteristics. The public profile variables include age, height, education, race, what one is looking for in a dating partner, tobacco/alcohol/drug use, whether one has/wants kids, length of short textual description, and religion. As with Study 1, we adopt a flexible modeling specification by creating indicator variables for each pairwise combination of responses to each item included in the model (e.g., for religion, one indicator variable is "man Christian, woman Catholic"). Note that many of these public questions may be correlated with politics (e.g., religion).

Results: We examine the level of political and non-political sorting in online dating markets. To do so, we compare dyads in which parties communicate to the entire set of dyads in each geographic area (that is, compared to random selection among geographically close online partners, the available set of online partners). We focus on three outcomes: men's initial messaging behavior, women's replying behavior (conditional on having been sent a message), and the joint probability a man sends a woman a message and she replies. We do so separately for five non-political characteristics on which individuals may seek to match (height, age, race, religion,

and education), and the three categories of political questions mentioned above. The non-political characteristics provide a baseline with which to calibrate the effects of political predispositions.

In Table 2, we compare similarity in the population of eligible dyads to those in which our outcome of interest occurs. So, for example, the first row of Table 2 begins by displaying the proportion of all dyads in which men and women are in the same height quintile. By this calculation, 23.4% of all dyads match on this measure of height. This baseline matching rate is attributable to the underlying distribution of the characteristic (in this case height) in the geographically segmented partner market. It is how much homophily we would observe if individuals simply randomly chose to contact someone in their geographic area.

Thus, because we compare observed similarity to what we would expect given restricted partner markets, we can rule out the possibility that homophily arises simply due to a similar set of potential partners. Among those cases in which a man sends a message, however, height is matched 24.7% of the time, a proportional increase in height homogeneity of about 1.3 percentage points or 5.5% $[(24.7-23.4)/23.4]$. (Not surprisingly, given the large number of observations in our dataset, most differences between dyads that message and those that do not, for each messaging outcome, are statistically significant at $p < .001$. For this reason, we instead highlight cases where results are not statistically significant at conventional levels.) The second group of numbers is for the universe of dyads included in the woman's replying analysis (i.e., cases where a man first messaged a woman). Here, 24.7% of all dyads match on height, a number that increases to 25.7% among cases where women reply, a proportional increase of about 4%. In other words, women are reinforcing the initial sorting based on height performed by men.¹¹ Finally, the rightmost set of

¹¹ Whether or not one expects women to reinforce men's initial sorting depends on one's hypotheses about men's strategic behavior. For these reasons, it is useful to think of three potential patterns in this analysis:

numbers is the same dataset as used for the analysis of men sending messages, but here the outcome is joint messaging behavior. We find that the cumulative rate of shared height is even larger: relative to all dyads shared height increases by 2.3 points (9.8%) in cases where both parties send a message.

As this table makes clear, matching on height is not an anomalous case. Focusing on the remaining non-political items, age differences (i.e., users not in the same 5-year bin) are reduced in joint messaging cases by over a half, shared race increases by 16.6%, shared religion by 50.0%, and shared education by 10.6%.

By comparison, the political items vary considerably in their discernment. At the low end, shared beliefs about the role of religion in shaping policy (0.6% proportional *decrease* for both parties messaging, which is the only case in which dyads where messaging takes place are less similar than those in which it does not), the duty to vote (1.3 points, 2.1%), and media preferences (1.6 points, 3.8%) are modestly associated with joint messaging. By contrast, common ideology (3.9 points, 7.7%), partisanship (4.0 points, 9.5%), levels of political interest (3.0 points, 10.7%), and ideas about how to balance the budget (5.6 points, 10.8%) are substantially more frequent in dyads where both parties communicate. The small effects of social issues in determining sorting may be due to the fact that our survey question did not deal with specific “hot button” issues such as same-sex marriage. These larger effects are on par with the effects of shared educational attainment and about half the size of the effect of shared race, and concord with our theoretical expectations that political identities and engagement should be especially strong predictors of

(1) women reinforcing the initial sorting created by men; (2) women undoing men’s sorting; or (3) null effects in which women are not contributing to sorting above and beyond what men have already done, either because men anticipate women’s preferences or because women do not consider these factors at all.

political homophily. We note that the effect of shared interest is larger and more robust here than in Study 1.

Several patterns in these results are important to highlight. First, of the 21 differences in proportions for the political items shown in Table 2, 19 are positive and statistically significant, indicating increased homogeneity relative to all dyads. Second, as with the non-political items, women appear to reinforce the initial increase in political homogeneity generated by men's messaging behavior (women also appear to select on shared views about the role of religion in shaping policy, whereas men do not). This provides direct evidence that women's choices are important in shaping the observed levels of homogeneity. (Additionally, it shows that political sorting likely does not arise solely due to the site's matching algorithm because women are deciding which messages to reply to only among the set of men who have contacted them.) Third, there are large baseline differences in match rates across items, which reflect the range of available online partners. At one extreme, 89.7% of geographically constructed dyads match on beliefs about the role of religion in setting policy, but only 28.2% match on levels of political interest.

One potential concern with this analysis is that communication behavior in the online dating environment may not reflect more serious decisions about forming enduring social relationships. We take two different approaches to address this concern (complete results appear in SI Table S7). First, we replicate our results among users more likely to be seeking serious relationships: those seeking long-term dating relationships and also wanting to have children. Among these more "serious" subsamples, results are similar to those reported above. Second, we replicate our earlier analysis, but require more extensive communication to take place (5 messages being sent) before coding an outcome as having occurred. Despite the fact that these data are sparse (in only 0.026% of cases do both parties send at least 5 messages), for the 7 political items, we find 16 proportional increases in match rates (14 statistically significant at $p < .05$).

Overall, these data provide clear evidence that when political views are measured before relationships are formed and after accounting for baseline sorting expected given available online partners, there is increased political homogeneity in the subset of online dyads in which men message, women respond to an initial message, and both parties send a message. Confirming our earlier experimental finding, these data show that after accounting for available online partners and preferences as measured prior to relationship formation, individuals outside of the laboratory setting choose relationship partners in a way that increases political homogeneity.

Multivariate Analysis: Although these observational data do not allow us the same control as the experimental setting, we can nonetheless undertake additional analysis to assess whether the observed homogeneity in online dating communication reveals political homophily—a choice to select similar others—or is instead induced by sorting on other characteristics (one form of induced homophily as described above). We do so by testing whether shared political orientation predicts communication behavior even after accounting for other factors that users might use to select partners. We note that the set of conditioning variables we had access to was extensive compared to prior research.

Due to space constraints, we present the full details of model specifications and complete regression results in the SI and summarize our findings for the occurrence of joint messaging (the clearest evidence of bilateral social interest) here. The OLS model specification is similar to what we use for our analysis of Study 1. For computational reasons the data are a subset of the observations used in the Table 2 analysis. Briefly, to account for baseline differences across individuals in their desirability as partners, choosiness in communication, and care in crafting messages, we measure the rates at which individuals send and receive messages, and reply to or have their messages replied to. To account for non-political sorting we measure concordance for each dyad on the all of the traits from the publically available profile information discussed earlier

(e.g., age, race, education, religion).

Figure 1 summarizes results of our analyses for models with the political items entered as blocks (e.g., all the indicators for potential partner combinations of ideology, complete regression results are in SI Table S8). We present differences in predicted probabilities of messaging for cases in which individuals match on each trait vs. when they are out of alignment (e.g., man conservative, woman conservative vs. man conservative, woman liberal). The figure reveals that even after accounting for the range of available partners, average user behavior, and sorting on the non-political profile characteristics, dyads in which both parties communicate are more similar. For example, the baseline rate of communication in this dataset is about 0.4%. When both the man and woman were conservative—rather than the woman being liberal—this rate is predicted to increase by 0.22 points, an increase of more than 50% relative to the baseline. This effect is similar in size to the rate at which White men communicate with White rather than Black women (.18 points), and about 4/5 the size of the rate at which Christian men communicate with Christian rather than atheist/agnostic women (.26 points) (see Figure S2). (As a reminder, all of these estimates are from models that account for the available online partners in a geographic area.)

Sorting is similar but less precisely estimated for shared party orientation, and is not statistically significant for shared media preferences. For the political issues, shared views about church state separation predict messaging, but the effects of shared spending preferences are not consistently statistically significant. Finally, shared views about the importance of politics (.26 points for agreement that politics is very important and .17 points for shared lack of interest) have effects about as large as of shared ideology and are statistically significant (the effects of shared views about the duty to vote are smaller, with an average estimate of about .06 points, but still statistically significant). Overall, the general pattern that emerges is that sorting is strongest based on ideology, partisanship, and political interest; it is weaker based on media choice, social and

fiscal policy positions, and attitudes about whether voting is a civic duty. This is in accord with our theoretical expectation that political identities will be the most powerful predictors of political homophily, while sorting along policy positions will be less pronounced. In the SI we use these models to assess the relative importance of homophily in explaining observed sorting in social relationships. Figure S4 shows that models accounting for political homophily predict increased political sorting relative both (1) to random communication in this constrained partner market and (2) a baseline non-political sorting model (i.e., a model that accounts only for the control variables in the regression).

We also consider the robustness of the Figure 1 results to including all of the political items simultaneously along with measures of concordance on 40 additional match questions (see the SI for a complete list). These 40 questions were provided to us by the site because they were answered by many users and were predictive of messaging. Some of these additional match questions include salient political referents (e.g., views about abortion), so finding evidence of political homophily after accounting for those views is a difficult test. Nonetheless, as SI Figure S3 shows, we continue to find that ideological similarity and shared views about the importance of politics explain which relationships form, reducing the possibility that our earlier findings are due to induced sorting on other characteristics. Overall, the most striking finding from Study 2 is that these behavioral data yield patterns very similar to those from Study 1 about the role of shared ideology; individuals seek politically similar dating partners. Unlike Study 1, we also find evidence that shared views about the importance of politics more consistently explain partner communication.

Discussion and Conclusion

The analysis presented here provides strong evidence of purposive political sorting in the formation of social relationships. We find that individuals seek out relationship partners who share

their political identities and degree of engagement with politics, and that this preference for political homophily can be distinguished from three forms of induced homophily: post-choice convergence, restricted partner markets, and sorting on non-political factors. No prior work can simultaneously rule out these three alternative explanations for the observed correlation of political orientations among already-formed social relationships. Our experimental study revealed that people react more positively to ideologically congruent profiles and perhaps also to those that exhibit similar levels of political interest. The observational study of behavioral data demonstrated that the dyads in which men message women, women respond, and both men and women communicate, are all more politically similar than would be expected by chance. Political choice homophily is substantively large, rivaling the sizes of racial and educational homophily.

These findings have important implications for major research areas in political science. In particular, it appears as if in the contemporary period political orientations directly affect the social relationships people seek to form, which results in increased political homogeneity in formed relationships. This has the potential to amplify polarization through the creation of homogenous social networks and households. Further, political homophily is not simply confined to political identities and issue positions but also extends to engagement with politics itself.

Future research should examine how these findings generalize to social interactions outside of the online dating context. On the one hand, because more information about potential social partners is available during in-person interactions, our findings may represent lower bounds on political homophily in other contexts. On the other hand, people may eschew politics in other forums, making it difficult to sort on that basis. Our work, however, identifies the key problems of research design that would be necessary to isolate political choice homophily in other contexts. Further, for those who wish to understand the effect of information transmission in social networks, we provide evidence of purposive selection in the formation of these social

relationships. This means subsequent analysis of information effects must account for this systematic variation in which types of political views different individuals are exposed to. Additionally, it suggests an important question for ongoing work is about what factors cause individuals to look beyond political differences when forming relationships. Finally, this research project yielded valuable lessons for scholars who seek to work with firms that generate valuable online data (for a discussion, see SI Section 5).

Do political predispositions influence how people select their social relationships? With two novel datasets we have addressed this important question. People do seem to construct their social lives around politics, and such sorting appears substantively consequential in explaining which relationships form. We also find that political homophily is more than the result of restricted partner markets or selecting on other demographic and social characteristics, explanations previous work cannot easily and definitively reject. Of continuing importance, this provides direct evidence of social sorting along political lines and may also drive future polarization through the increased homogenization of political beliefs within households and social networks.

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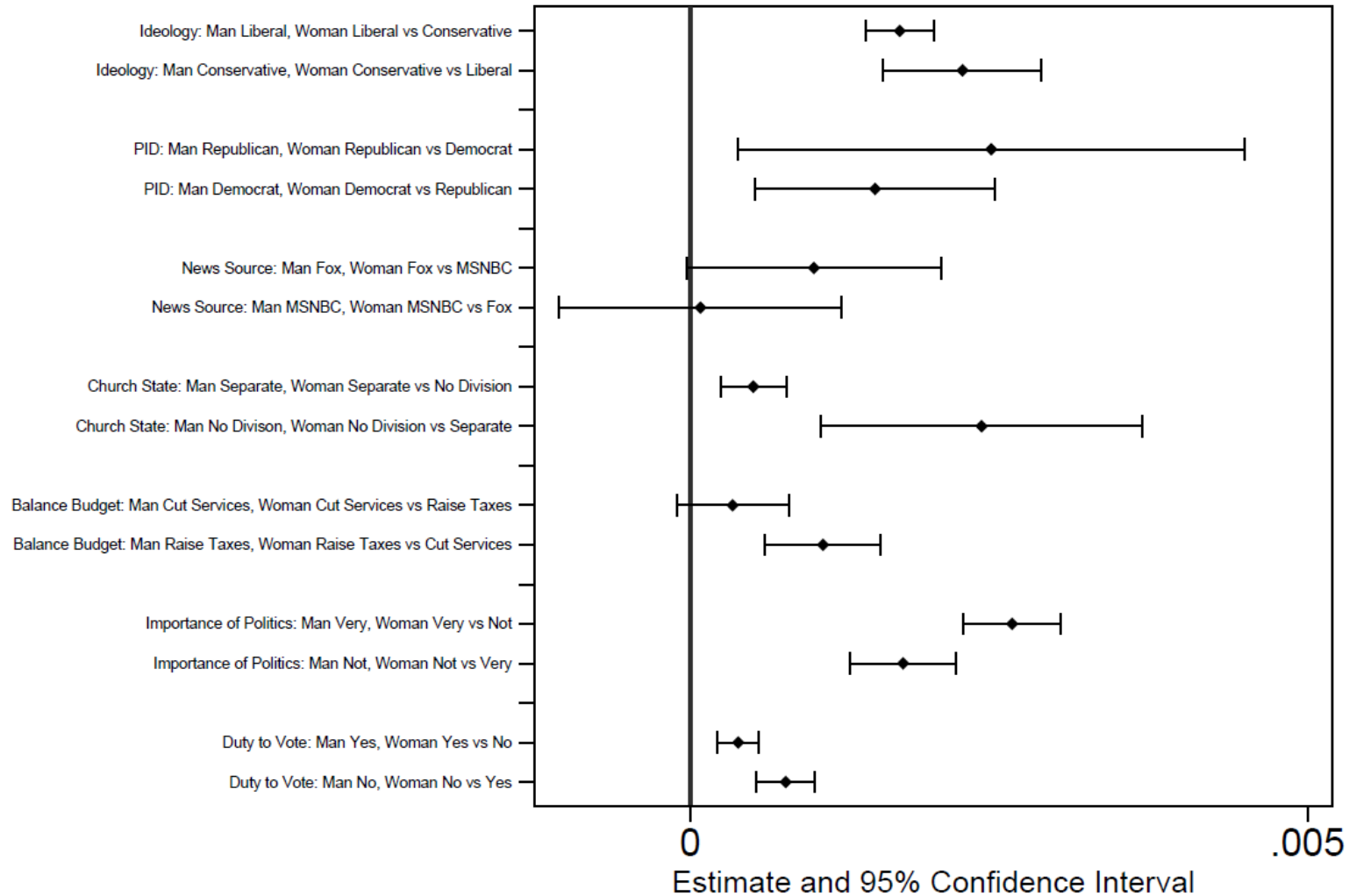
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Figure 1: Effect of Political Characteristics on Joint Messaging Behavior
 Estimates from models with individual sets of political items



Note: Mean of DV in this sample is .0039. See SI Table S8 for model specification and full regression results.

Table 1: Effect of Shared Political Orientations on Profile Evaluations, Study 1

	(1)	(2)	(3)	(4)	(5)	(6)
	Interest in dating (0-1)	Would you respond to person? (0-1)	Interest in LT Dating (0-1)	Do they share your values? (0- 1)	Attractiveness (0-1)	Would you like to be friends? (0-1)
Ideology matches	0.014 [0.007]+	0.014 [0.007]+	0.025 [0.007]**	0.024 [0.007]**	0.003 [0.007]	0.029 [0.007]**
Match not interested in Politics (Explicit not interested in profile)	0.019 [0.012]	0.008 [0.013]	-0.009 [0.012]	0.015 [0.012]	0.015 [0.012]	0.009 [0.013]
Observations	9790	9790	9790	9790	9790	9790
Number of respondents (Fixed effects)	979	979	979	979	979	979
R-squared	0.141	0.126	0.100	0.081	0.195	0.099
Avg. SD of DV within respondent	0.229	0.228	0.222	0.192	0.231	0.222

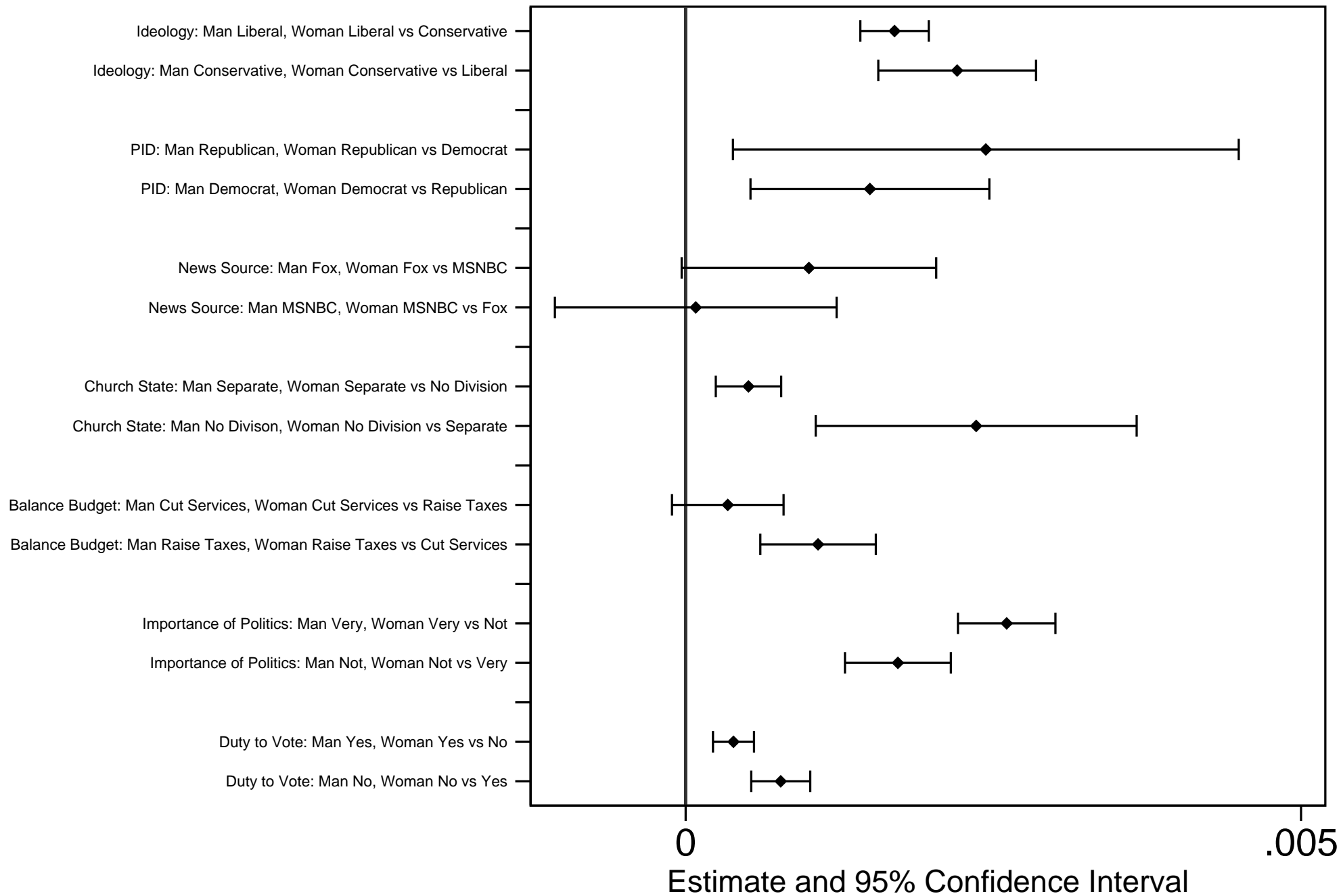
OLS Coefficients with standard errors clustered at respondent level in brackets. + significant at 10%; * significant at 5%; ** significant at 1%, two-tailed tests. See Table S4 for complete model results.

Table 2: Observed Homogeneity for Selected Characteristics (Study 2), for all potential dyads and those in which communication occurs

Characteristic	Men's Sending Behavior, at least 1 message					Women's Replying Behavior, at least 1 message					Joint Communication Behavior, at least 1 message each				
	Proportion Matching					Proportion Matching					Proportion Matching				
	Among All Dyads	If Man Sends First Message	Percentage Point Difference	p-value of difference in means	Proportional Increase in Match Rate	Among All Dyads Where Man Sent First Message	If Woman Replies	Percentage Point Difference	p-value of difference in means	Proportional Increase in Match Rate	Among All Dyads	If Man Sends Message and Woman Replies	Percentage Point Difference	p-value of difference in means	Proportional Increase in Match Rate
Match Height Quintile	23.4%	24.7%	1.3%	<.001	5.5%	24.7%	25.7%	1.0%	<.001	4.0%	23.4%	25.7%	2.3%	<.001	9.8%
Match Age (5 year bins, beginning with 18-22)	20.6%	38.4%	17.9%	<.001	87.0%	38.4%	41.5%	3.1%	<.001	8.0%	20.6%	41.5%	20.9%	<.001	101.9%
Match Race	54.7%	59.5%	4.7%	<.001	8.7%	59.5%	63.8%	4.3%	<.001	7.3%	54.7%	63.8%	9.1%	<.001	16.6%
Match Religion	21.4%	29.6%	8.2%	<.001	38.6%	29.6%	32.0%	2.4%	<.001	8.2%	21.4%	32.0%	10.7%	<.001	50.0%
Match Education	43.2%	46.6%	3.4%	<.001	7.9%	46.6%	47.7%	1.2%	<.001	2.5%	43.2%	47.7%	4.6%	<.001	10.6%
Match Ideology	50.6%	52.6%	1.9%	<.001	3.8%	52.6%	54.5%	2.0%	<.001	3.7%	50.6%	54.5%	3.9%	<.001	7.7%
Match Partisanship	42.1%	44.1%	2.1%	<.001	4.9%	44.1%	46.1%	2.0%	<.001	4.5%	42.1%	46.1%	4.0%	<.001	9.5%
Match Media Preferences	42.4%	43.4%	1.0%	<.001	2.5%	43.4%	44.0%	0.6%	0.055	1.4%	42.4%	44.0%	1.6%	<.001	3.8%
Match Role of Church	89.7%	88.4%	-1.3%	<.001	-1.4%	88.4%	89.2%	0.8%	<.001	0.9%	89.7%	89.2%	-0.5%	<.001	-0.6%
Match How Balance Budget	51.5%	55.5%	3.9%	<.001	7.7%	55.5%	57.1%	1.6%	<.001	2.9%	51.5%	57.1%	5.6%	<.001	10.8%
Match Political Interest	28.2%	30.1%	1.9%	<.001	6.9%	30.1%	31.2%	1.1%	<.001	3.6%	28.2%	31.2%	3.0%	<.001	10.7%
Match Duty to Vote	60.3%	61.4%	1.0%	<.001	1.7%	61.4%	61.6%	0.2%	0.088	0.4%	60.3%	61.6%	1.3%	<.001	2.1%
Dyads			367,047,169					2,073,902					367,047,169		
Men			142,964					142,622					142,964		
Women			119,754					119,569					119,754		
Outcome rate			0.565%					24.091%					0.136%		

Note: Cell entries in each block (e.g., Men's Sending Behavior) are first the proportion of dyads that match for a given row variable (e.g., both heights in the same quintile, see SI for complete coding), second the proportion matching for the subset of dyads in which the outcome of interest occurs (e.g., the man sends the woman a message), third the percentage point increase in matching from the first to the second (Column 2-Column 1), fourth the p-value of the hypothesis test that the two proportions are equal, and fifth the proportional increase in matching from the first to the second ((Column 2-Column 1)/Column 1). All statistics exclude individuals who did not provide a response (there are no missing cases for age or height).

Figure 1: Effect of Political Characteristics on Joint Messaging Behavior
 Estimates from models with individual sets of political items



Note: Mean of DV in this sample is .0039. See SI Table S8 for model specification and full regression results.

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Match not interested in Politics (Explicit not interested in profile)	0.019 [0.012]	0.008 [0.013]	-0.009 [0.012]	0.015 [0.012]	0.015 [0.012]	0.009 [0.013]
Observations	9790	9790	9790	9790	9790	9790
Number of respondents (Fixed effects)	979	979	979	979	979	979
R-squared	0.141	0.126	0.100	0.081	0.195	0.099
Avg. SD of DV within respondent	0.229	0.228	0.222	0.192	0.231	0.222

OLS Coefficients with standard errors clustered at respondent level in brackets. + significant at 10%; * significant at 5%; ** significant at 1%, two-tailed tests. See Table S4 for complete model results.

Table 2: Observed Homogeneity for Selected Characteristics (Study 2), for all potential dyads and those in which communication occurs

Characteristic	Men's Sending Behavior, at least 1 message					Women's Replying Behavior, at least 1 message					Joint Communication Behavior, at least 1 message each				
	Proportion Matching					Proportion Matching					Proportion Matching				
	Among All Dyads	If Man Sends First Message	Percentage Point Difference	p-value of difference in means	Proportional Increase in Match Rate	Among All Dyads Where Man Sent First Message	If Woman Replies	Percentage Point Difference	p-value of difference in means	Proportional Increase in Match Rate	Among All Dyads	If Man Sends Message and Woman Replies	Percentage Point Difference	p-value of difference in means	Proportional Increase in Match Rate
Match Height Quintile	23.4%	24.7%	1.3%	<.001	5.5%	24.7%	25.7%	1.0%	<.001	4.0%	23.4%	25.7%	2.3%	<.001	9.8%
Match Age (5 year bins, beginning with 18-22)	20.6%	38.4%	17.9%	<.001	87.0%	38.4%	41.5%	3.1%	<.001	8.0%	20.6%	41.5%	20.9%	<.001	101.9%
Match Race	54.7%	59.5%	4.7%	<.001	8.7%	59.5%	63.8%	4.3%	<.001	7.3%	54.7%	63.8%	9.1%	<.001	16.6%
Match Religion	21.4%	29.6%	8.2%	<.001	38.6%	29.6%	32.0%	2.4%	<.001	8.2%	21.4%	32.0%	10.7%	<.001	50.0%
Match Education	43.2%	46.6%	3.4%	<.001	7.9%	46.6%	47.7%	1.2%	<.001	2.5%	43.2%	47.7%	4.6%	<.001	10.6%
Match Ideology	50.6%	52.6%	1.9%	<.001	3.8%	52.6%	54.5%	2.0%	<.001	3.7%	50.6%	54.5%	3.9%	<.001	7.7%
Match Partisanship	42.1%	44.1%	2.1%	<.001	4.9%	44.1%	46.1%	2.0%	<.001	4.5%	42.1%	46.1%	4.0%	<.001	9.5%
Match Media Preferences	42.4%	43.4%	1.0%	<.001	2.5%	43.4%	44.0%	0.6%	0.055	1.4%	42.4%	44.0%	1.6%	<.001	3.8%
Match Role of Church	89.7%	88.4%	-1.3%	<.001	-1.4%	88.4%	89.2%	0.8%	<.001	0.9%	89.7%	89.2%	-0.5%	<.001	-0.6%
Match How Balance Budget	51.5%	55.5%	3.9%	<.001	7.7%	55.5%	57.1%	1.6%	<.001	2.9%	51.5%	57.1%	5.6%	<.001	10.8%
Match Political Interest	28.2%	30.1%	1.9%	<.001	6.9%	30.1%	31.2%	1.1%	<.001	3.6%	28.2%	31.2%	3.0%	<.001	10.7%
Match Duty to Vote	60.3%	61.4%	1.0%	<.001	1.7%	61.4%	61.6%	0.2%	0.088	0.4%	60.3%	61.6%	1.3%	<.001	2.1%
Dyads	367,047,169					2,073,902					367,047,169				
Men	142,964					142,622					142,964				
Women	119,754					119,569					119,754				
Outcome rate	0.565%					24.091%					0.136%				

Note: Cell entries in each block (e.g., Men's Sending Behavior) are first the proportion of dyads that match for a given row variable (e.g., both heights in the same quintile, see SI for complete coding), second the proportion matching for the subset of dyads in which the outcome of interest occurs (e.g., the man sends the woman a message), third the percentage point increase in matching from the first to the second (Column 2-Column 1), fourth the p-value of the hypothesis test that the two proportions are equal, and fifth the proportional increase in matching from the first to the second ((Column 2-Column 1)/Column 1). All statistics exclude individuals who did not provide a response (there are no missing cases for age or height).