

Shared Partisanship Dramatically Increases Social Tie Formation in a Twitter Field Experiment

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Abstract

Americans are much more likely to be socially connected to co-partisans, both in daily life and on social media. But this observation does not necessarily mean that shared partisanship per se drives social tie formation, because partisanship is confounded with many other factors. Here, we test the causal effect of shared partisanship on the formation of social ties in a field experiment on Twitter. We created bot accounts that self-identified as people who favored the Democratic or Republican party, and that varied in the strength of that identification. We then randomly assigned 842 Twitter users to be followed by one of our accounts. Users were roughly three times more likely to reciprocally follow-back bots whose partisanship matched their own, and this was true regardless of the bot's strength of identification. Interestingly, there was no partisan asymmetry in this preferential follow-back behavior: Democrats and Republicans alike were much more likely to reciprocate follows from co-partisans. These results demonstrate a strong causal effect of shared partisanship on the formation of social ties in an ecologically valid field setting, and have important implications for political psychology, social media, and the politically polarized state of the American public.

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Introduction

Partisanship is a core element of social identity for many people (1). Accordingly, Americans tend to distrust and dislike those from the opposing political party, and often report that they are unwilling to be friends with members of the opposing party (2). In line with this self-reported dislike for counter-partisans, observational studies find that Americans are substantially more likely to have face-to-face social interactions with co-partisans (3), and to be connected to co-partisans on social media networks (4) – all of which may contribute to “echo chambers” where like-minded individuals preferentially exchange information with those who share similar worldviews (5, 6).

But are Americans actually more likely to form social ties purely based on shared partisanship? Observational studies documenting homophily do not offer evidence of a causal effect of shared partisanship on tie formation. Co-partisanship is correlated with a multitude of other factors that are also likely to influence social tie formation. For example, individuals may simply be forming social ties based on other factors that happen to be correlated with partisanship, such as age, race, geographic location, or other interests and preferences (7). Furthermore, it may simply be that people have more opportunities to form ties with co-partisans, rather than an actual preference for forming co-partisan ties (8). In the context of social media in particular, recommendation algorithms may be preferentially suggesting like minded users to suggest as new contacts.

Thus, experimental evidence on social tie formation is needed. Because one cannot easily randomly introduce individuals to one another and examine who decides to befriend whom, nearly all research investigating causal effects of shared partisanship on interpersonal dynamics has relied on hypothetical self-report measures in survey experiments (e.g., (2); a notable exception involves experimentally documenting co-partisan preference in romantic relationships (9)). As a result, despite all of the interest in this area, the extent to which people condition on partisanship when actually forming social ties “in the wild” remains a largely open question.

Here, we shed new light on this issue. We do so by leveraging the power of field experiments on social media to allow for the causal identification of co-partisanship’s influence on actual social tie formation. Specifically, we created Twitter accounts that varied in their partisanship, and examined how likely Twitter users were to reciprocate social tie formation when followed by co-partisan versus counter-partisan accounts. Our bot accounts were designed to appear as humans with identical descriptions, except whether they (i) identified as Democrats or Republicans, and (ii) were strongly versus weakly partisan; see Figure 1.

We then collected a list of Twitter users who had retweeted MSNBC or Fox News posts, collected up to their last 3200 tweets, and classified each user’s partisanship based on the content they shared from left versus right leaning websites (10). From this full list, we constructed a politically balanced set of users to form the subject pool for our experiment; we also removed users with more than 15,000 followers or for whom the partisanship estimator was unable to return a score. To balance subjects across experimental conditions and to improve our precision in our causal inference, we performed randomized assignment by blocking (11). We created homogeneous blocks of users based on (i) users partisanship, (ii) log transform of number of followers (we used log transform since this data is highly skewed), (iii) number of days with at least one tweet in past 14 days (to measure recent activity on the platform), and (iv) number of mutual friendships divided by total number of followers (as a proxy for tendency to reciprocate follows).

Using this blocking, users were randomly assigned to one of four conditions, in which the user was followed by a bot account that was either a co-partisan or counter-partisan, and that expressed either strong or weak partisanship. In total, our bot accounts followed $N=842$ users.

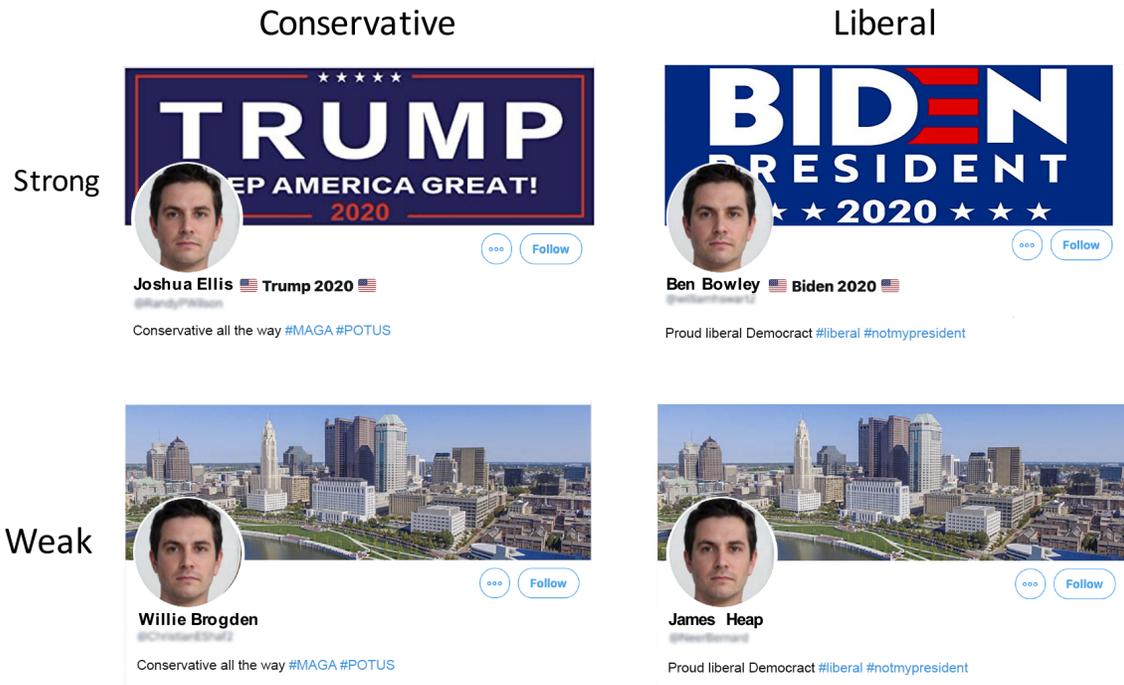


Figure 1. Design of bot accounts. We created 8 human-like identical looking bot accounts (two per each condition) and varied their political partisanship (Republican versus Democrat) as well as the extremity of political partisanship (strong versus weak). The bot accounts followed a set of elite accounts according to their political partisanship and retweeted randomly from them every day (this is the same for bot accounts with strong and weak political partisanship). Bot accounts with extreme partisanship have a background supporting a Democrat or Republican candidate with the name of the candidate as part of their profile names.

Results

Figure 2 shows the fraction of Democratic and Republican users that reciprocated our bot accounts' social tie formation in each experimental condition. We analyze the results using a linear probability model predicting whether the user followed the bot based on co-partisanship with the bot, partisanship extremity of the bot, political partisanship of the user, and all interactions; and we also report exact p -values (p_{FRI}) calculated via Fisherian randomization inference based on 10,000 permutations. We found evidence for strong preferential social tie formation based on shared partisanship ($b=0.093$, $SE=0.021$, $t(840)=4.281$, $p<.001$, $p_{FRI}<.001$): Users were nearly three times more likely to follow back a co-partisan compared to a counter-partisan. Interestingly, we found no evidence that this co-partisanship effect was moderated by the extremity of the bot account ($p=0.465$ and $p_{FRI}=0.469$; also no significant main effect of bot extremity, $p=0.754$ and $p_{FRI}=0.748$). It seems that indicating one's partisanship in the account description is enough to trigger preferential follow-back.

In addition to documenting an overall preference for tie formation with co-partisans, our design also allows us to investigate partisan asymmetries in this effect. Some observational research has found that conservatives tend to be more homophilous on Twitter (12). Yet in our experiment, there was no significant difference in the extent of preferential follow-back of co-partisans among Democrats versus Republicans (interaction between co-partisan bot and user partisanship, $p=0.771$ and $p_{FRI}=0.784$; also no significant main effect of user partisanship, $p=0.563$ and $p_{FRI}=0.583$, and no significant three-way interaction with bot extremity, $p=0.886$ and $p_{FRI}=0.881$).

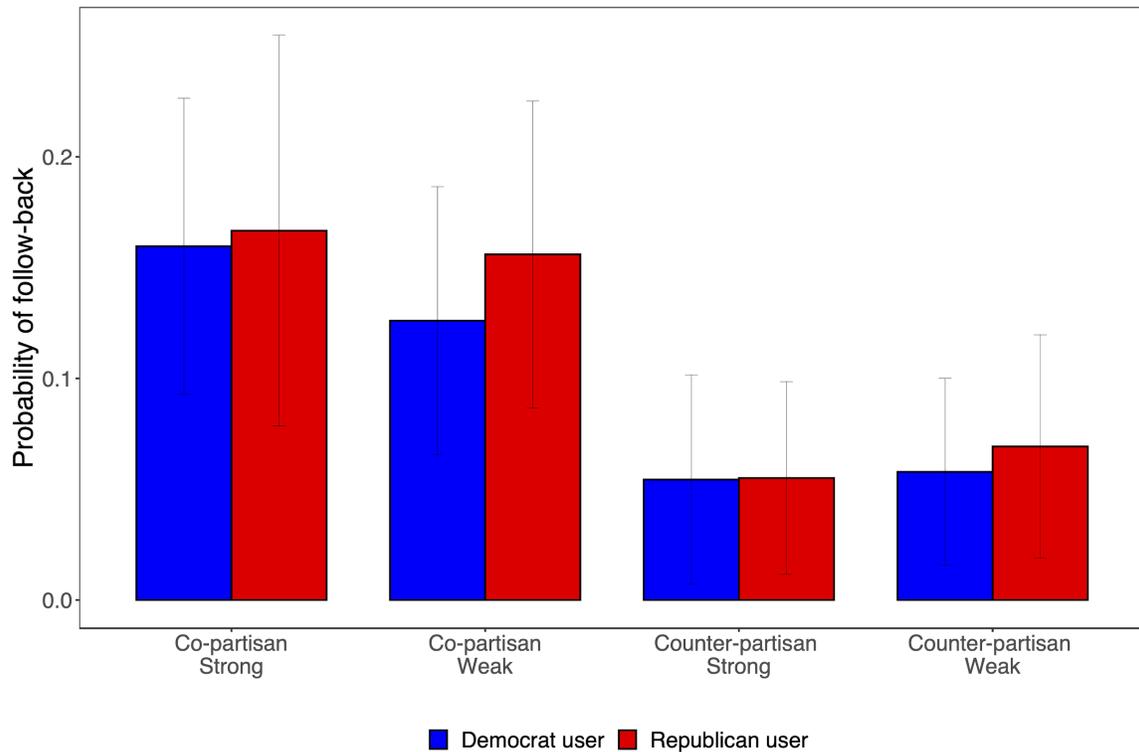


Figure 2. *Twitter users of both parties were nearly three times more likely to follow-back a co-partisan account compared to a counter-partisan account. Shown is the probability of Democratic and Republican users following-back our accounts in each experimental condition. Error bars indicate 95% confidence intervals.*

Discussion

Here we have provided the first evidence that shared partisanship per se has a causal – and large - effect on preferential social tie formation on Twitter. This observation has important implications.

First, our results suggest that prior findings from survey experiments in political psychology *do* generalize to actual social tie formation. This is of substantial theoretical significance, given the large body of existing survey work coupled with lack of field experiments outside the context of romantic relationships (9). Furthermore, our results contribute to ongoing debates about asymmetries in partisan bias (13, 14). In contrast to the suggestions of some observational work (12), we find that Democrats and Republicans in our sample are equally likely to favor co-partisan strangers when forming new social ties. Future work should investigate whether this finding extends to users who do not share partisan news sources.

Second, we shed light on the microfoundations of the partisan homophily – and associated potential for “echo chambers” – that is observed on social media networks. Our findings demonstrate that people are more likely to receive information from like-minded co-partisans not just because offline networks are homophilous, or because algorithms preferentially recommend new connections with co-partisans. Instead, partisans are much more likely to connect to complete strangers simply because they share the same political views. This suggests that if one seeks to reduce homophily on social media networks, it may be necessary for algorithms to actively counteract preexisting psychological biases – biases that are part of the political sectarianism in which America is currently embroiled (15).

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