

# Political Identity and Trust\*

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## Abstract

We explore how political identity affects trust. Using an incentivized experimental survey we vary information about partners' partisan identity to elicit trust behavior and beliefs. By eliciting beliefs, we are able to assess whether differences in trust rates are due to stereotyping or a "taste for discrimination." By measuring actual trustworthiness, we are able to determine whether beliefs are statistically correct. We find that trust is pervasive and depends on the partisan identity of the trustee. Differential trust rates are explained by incorrect stereotypes about the other's lack of trustworthiness rather than by a "taste for discrimination."

**Keywords:** *Trust, Beliefs, Social Preferences, Political Ideology*

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# 1 Introduction

Political polarization of the American public has increased and partisan antagonism is "deeper and more extensive than at any point in the last two decades" (Pew Research Center, 2014). The consequences of this cross-partisan antipathy manifest themselves in a myriad of ways, both in politics and in everyday life. In this paper, we explore the role of partisan identity in trust behavior.

We focus on trust, as it is fundamental in economic organization (see e.g. Arrow 1974). We are interested in analyzing the mechanism underlying trust. As in Williamson (1993), we focus on two dimensions of trust: calculative and non calculative. The former comprises trusting decisions based upon calculations of expected monetary costs and benefits, while the latter refers to decisions based upon sentiments and affection. The main goal of this paper is to determine whether the mechanism underlying trust is derived from expected monetary payoffs (i.e. calculative) or sentiments (i.e. non-calculative). Williamson devised this distinction before the large body of experimental evidence supporting preferences for giving and reciprocating. In order to harmonize with the extant experimental literature, we interpret Williamson's "non-calculative trust" as other-regarding concerns along the same lines Gneezy and Ferschtman (2001) interpret them as a "taste for discrimination."

Evidence suggests that political polarization may be hindering cross-partisan trust, creating political and economic gridlocks (Carlin and Love 2013). Political polarization and mistrust have been explained by sentiments of dislike (and even loathe) towards their political opponents (e.g., Iyengar et al. 2012). We find, however, that partisanship affects trust through perceptions of opponents' trustworthiness, rather than sentiments. The distinction is important not only because most of the definitions of trust hinge upon beliefs,<sup>1</sup> but because there exists evidence that beliefs about partner's trustworthiness drive trust. (See e.g. Garbarino and Slonim (2008) who found that expectations about partners' trustworthiness drive trust in experiments

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<sup>1</sup>A widely accepted inter-disciplinary definition of trust comes from Rousseau et al. (1998):

"Trust a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intention or behaviors of others."

focused on the effect of gender and age on trust behavior.)

In this paper, we propose a highly incentivized experimental survey in which we vary the political identity (in terms of partisanship) and measure trust behavior, beliefs about trustworthiness, and actual trustworthiness across a sample of the general US population. The main questions we answer in this paper are: 1) whether trust levels vary with political identity of the partner; 2) whether these differences in trust, if any, depend on beliefs about partner's trustworthiness or they depend on (social) preferences favoring ingroup members relative to outgroup members; 3) whether these beliefs respond to the partisan identity of the partners in the interaction; and 4) whether these beliefs are statistically correct.

In order to address these questions, we base our analysis on a structural model of identity and social preferences introduced by Chen and Li (2009), which builds upon Charness and Rabin (2002) and operationalizes Akerlof and Kranton's (2000) "prescribed behavior" according to identity. We conducted a simplified version of the traditional trust game in Berg, Dickhaut and McCabe (1995) similar to the one used in Charness and Dufwenberg (2006). This simplified version is a two-player game in which Player A (the sender) chooses (\$5,\$5) for himself and other, respectively, or defers the decision between (\$10,\$10) and (\$0,\$14) to Player B (the receiver). We use this simplified version because it allows us to elicit beliefs about trustworthiness directly. The outcomes of Player A and B's decisions were paid in full. Hence, to the best of our knowledge, this is the first widely administered and highly incentivized experimental survey incorporating partisan identity.

We find that, overall trust rates are around 60% for both Democrats and Republicans. Trust rates, however, depend on the partisan identity of Player B. Democrats and Republicans trust other Democrats more often, on average. However, only Democrat Player A types have such different trust levels as to be statistically significant. We find these different trust rates are explained by differential beliefs about trustworthiness that Democrats hold in favor of Democrats. Sentiments of dislike or loathe, which Fershtman and Gneezy (2001) suggested are represented by other-regarding concerns, do not seem to determine trust rates across partisan identity, at least for our game.

Are these beliefs about partner’s trustworthiness statistically correct? Social psychology research shows (see e.g. Chambers and Melnyk, 2006) individuals of different partisan identity hold perceptions of large disagreements with opponents in core values such as abortion, while in reality opinions and actions are more similar than perceived. We find that, overall, our evidence is consistent with this observation. Individuals, regardless of partisan identity, engage in higher rates of reciprocation (i.e. the outcome (\$10,\$10) occurs almost 80% of the time) than the reciprocation rate subjects expected of others (means of roughly 60%). In addition, Republicans (who are thought to be less trustworthy by both Democrats and Republicans) reciprocate slightly more often than Democrats.

These results complement previous literature, which has found higher levels of trust among individuals from the same partisan identity (Carlin and Love 2013) and that self-described liberals trust more often (Anderson, Mellor, and Milyo 2005). Our contribution to the literature is threefold. First, we explore the mechanism that drives trust (beliefs over other-regarding concerns). Second, these studies use college students while our population consists of individuals living in the US ranging between 18 and 82 years old. Third, the stakes in the present experiment are high considering the duration of the experiment and the incentives we use (i.e., average payoffs were equivalent to \$400 per hour).

The last set of questions we explore are whether subpopulations (e.g. by gender or ethnicity) behave differently and hold different beliefs when they are matched to either a Democrat or a Republican. To do so, we compare trust, beliefs and trustworthiness across subpopulations. In terms of trust, we find that those who work less than 40 hours a week, those whose income ranges between US\$75k and US\$150k, and those who consider themselves liberal in terms of political ideology trust Democrats significantly more often. No subsample trust Republicans significantly more often than Democrats.

In terms of beliefs about partner’s trustworthiness, the subsamples of females, whites, singles, full-time students, those who work more than 40hrs a week, those who make less than US\$75k a year, those who consider themselves as liberals, and have mid-scores on the Cognitive Reflection Test, believe that Democrats are significantly

more trustworthy than Republicans. No subsample believes Republicans are more trustworthy than Democrats.

Finally, regarding actual trustworthiness, only the subsample of "liberals" reciprocate to a Democrat more often than a Republican. For all the other subsamples, reciprocation rates are no different.

## 2 Experimental Design

The experiment was designed to examine how trust behavior changes when we manipulate partners' partisan identity. We used the Kellogg School of Management E-lab system, which maintains a pool of 7,045 participants from across the United States. E-lab staff pre-screens individuals in this subject pool through a survey instrument from which partisan identity and other demographic information are collected. Subjects in this pool are then provided an opportunity to periodically participate in research surveys sponsored by faculty.

To maximize the response rate, our experimental survey was highly incentivized based on individual decisions. The procedure was as follows: Each participant received an invitation to participate in the experimental survey.<sup>2</sup> Balancing parsimony and the need to identify both trust behavior and beliefs about partners' trustworthiness, the survey consisted of 8 questions, the first 4 were incentivized and the last 4 were not. From the incentivized questions, the first one was a standard dictator game, where subjects were told to allocate \$5 anonymously between themselves and another participant.

The second question corresponded to the sender role in a trust game similar to Charness and Dufwenberg (2006) in Figure 1. Participants had a choice of trusting or not a trustee, who would then make a final allocation decision. If the sender (from now on "Player A") decided not to trust, each participant received \$5. If Player A decided to trust the receiver (from now on "Player B"), the decision left payoffs as a function of the Player B's choice. Our first intervention took place in

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<sup>2</sup>The survey was administered via Qualtrics. A copy of the survey instrument can be found in the appendix.

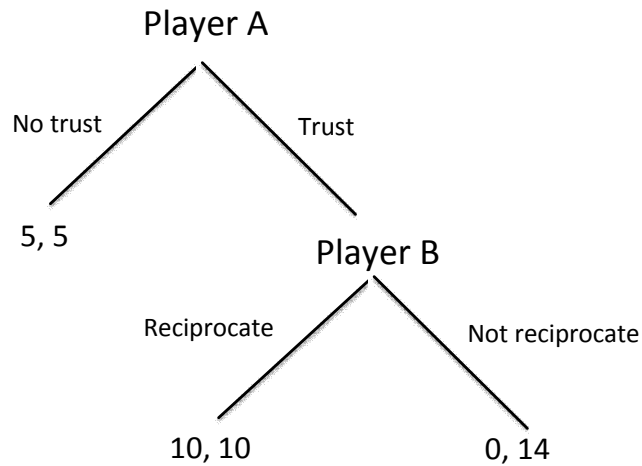


Figure 1: Game tree.

this second question.<sup>3</sup> We varied the identity of Player B by letting Player A know that the otherwise anonymous Player B identified him or herself as a Democrat or a Republican.<sup>4</sup> We also run a baseline treatment where there was no such mention of the political identity of the subject's partner.

The third question asked the participant to make an allocation choice if entrusted by Player A. Following Charness and Dufwenberg (2006), the participant, now in the role of Player B, had to decide whether to allocate \$10 to each of them or to behave opportunistically and take \$14 for him or herself and provide \$0 for Player A. In this question, we also varied the identity of Player A to be a Democrat or a Republican.<sup>5</sup> We also ran a baseline treatment where Player A's political identity was not revealed.

Crucial to our analysis is the fourth question in which we elicited participant's

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<sup>3</sup>We did not mention political affiliation to subjects until after the dictator game decision so as to obtain a measure of Democrats' and Republicans' unconditional altruism and to avoid framing effects on the subsequent trusting decision.

<sup>4</sup>Question Q2 in the Appendix "Survey instrument, treatment conditions: Revealing partner's political identity"

<sup>5</sup>Question Q3 in the Appendix "Survey instrument, treatment conditions: Revealing partner's political identity"

belief about the proportion of those in the role of Player B (in the previous question) would prove trustworthy. A payment of \$3 was awarded if the participant predicted the fraction of sample's Player B—within the decile of probability—actual trustworthiness rate (i.e. those who would choose the (\$10,\$10) option when given the role of Player B). As in the previous two questions, we varied the information regarding the identity of those in the role of Player B by whether they identified themselves as Democrat or Republican in the pre-screen survey.<sup>6</sup> Consistent with the other questions, we also run a no identity baseline treatment.

Each participant received only one type of survey instrument: that is, we fixed the identity of the partner across questions. For example, when a participant was told in the second question she will be matched to a Democrat Player B, in the third question she was told she will be matched to a Democrat Player A, and in the fourth question she had to state her beliefs about the proportion of Democrats in the role of Player B who would prove trustworthy. The same was true for Republican and anonymous partners. In this sense, we are using the so-called "strategy method" to elicit behavior: participants make decisions individually and then we match the decisions across subjects accordingly to compute payoffs.

It is important to note that the outcomes of Player A and B's decisions were paid in full. Hence, to the best of our knowledge, this is the first widely administered and highly incentivized experimental survey incorporating partisan identity.

The next four non-incentivized questions presented the Cognitive Reflection Test from Frederick (2005); and asked for political orientation (from very liberal to very conservative), income range, and partisan identity (Republican, Democrat, Independent, or Other). These final four demographic questions, including asking again for partisan identity, used the exact same language in the E-lab's pre-screen survey.<sup>7</sup>

We used the partisan identity information from the E-lab's pre-screen survey to identify participants. The E-lab sent the experimental survey to 250 Democrats and 250 Republicans in total. The baseline treatment survey (no partner's identification)

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<sup>6</sup>Question Q4 in the Appendix "Survey instrument, treatment conditions: Revealing partner's political identity"

<sup>7</sup>We find that subjects' answers to our questions are consistent with those given the E-lab, sometimes many months prior.

<b>Partner's ideology:</b>	<b>Participant's ideology</b>	
	Democrat (D)	Republican (R)
Not revealed (NR)	<b>D-NR (N=100)</b>	<b>R-NR (N=94)</b>
Democrat (D)	<b>D-D (N=100)</b>	<b>R-D (N=45)</b>
Republican (R)	<b>D-R (N=48)</b>	<b>R-R (N=98)</b>

Table 1: Treatment conditions. Total number of participants: 485.

was sent to 100 out of the 250 Democrats, the survey type identifying the partner as a Democrat was sent to 100 of the remaining 150, and the survey type identifying the partner as Republican was sent to the remaining 50 Democrats. The response rate was 100/100, 100/100, and 48/50, respectively. An analogous procedure was conducted with the 250 identified Republicans. The baseline was sent to 100, the type of survey identifying a partner as a Republican was sent to 100 of the 150 remaining, and the type identifying the partner as a Democrat was sent to the remaining 50. The response rates were 94/100, 98/100, and 45/50, respectively. In total, we had 485 participants. No subject was allowed to answer more than one incentivized survey. Table 1 shows the treatments.

After the surveys were completed, subjects were randomly matched so that payments could be calculated. The survey was highly incentivized, payments averaged \$20 per participant and the survey took on average less than three minutes to complete. Payments were made via electronic Amazon gift cards within approximately a week of completing the experiment. Subjects were only allowed to participate in one treatment, i.e. answer one experimental survey.

We now turn to our theoretical framework.

### 3 Theoretical framework and hypotheses

In this section we describe a simple model that incorporates beliefs and social preferences into the decision to trust. Recall that we denote Player A as the sender and



Player B as the receiver. Player A's feelings towards Player B's monetary gains may be reflected in Player A's utility function. Following Andreoni and Miller (2002) and Fisman et al. (2005), we represent Player A's utility by

$$u_A(\pi_A, \pi_B) = \alpha(I) \pi_B + [1 - \alpha(I)]\pi_A \quad (1)$$

where,  $\alpha(I)$  is the weight on other's payoff,  $I = s(ame)$ ,  $o(ther)$  denotes the identity of the receiver, and  $\pi_A$  and  $\pi_B$  represent monetary payoffs. Equation (1) captures Gneezy and Fershtman's (2001) "taste for discrimination" as it represents, through  $\alpha(I)$ , the extent to which individuals from a group are willing to give away money in order to benefit others. Hence,  $\alpha(I) < 0$  represents Player A loathing or disliking Player B, in our setting.

The decision to trust is inherently strategic, as it also depends on the beliefs about partner's trustworthiness. Player A may decide to trust Player B even if she loathes him provided she is optimistic enough about Player B will honor trust. These beliefs reflect the perception that individuals have about the behavior of others, and they may have little to do with their own feelings about people from the same or different group. As Gneezy and Fershtman's (2001) point out, the perception about others' behavior may come from stereotypes that may or may not be accurate. Precisely, Player A's decision to trust responds to her expected net benefit (Williamson's "calculative trust"), which in turn depends on her sentiments held regarding others,  $\alpha(I)$ , and the beliefs about the other player's trustworthiness,  $p$ . Assuming risk neutrality, and assuming preferences are as in equation (1), the utility of not trusting is equal to 5 and the expected utility of trusting is  $p10 + (1 - p)\alpha(I)14$ . Assuming also that there are other random elements that determine the decision to trust and not to trust, which we denote  $\varepsilon_T$  and  $\varepsilon_{NT}$  respectively, then Player A will trust if and only if

$$p10 + (1 - p)\alpha(I)14 + \varepsilon_T \geq 5 + \varepsilon_{NT}$$

Let  $F$  be a cumulative distribution function of  $\varepsilon_{NT} - \varepsilon_T$ , then the probability we observe trust is given by

$$\Pr\{A \text{ trusts} | p, I\} = F(p10 + (1 - p)\alpha(I)14 - 5) \quad (2)$$

Note from equation (2) that the probability Player A trusts Player B conditional on  $p$  is weakly increasing in  $\alpha(I)$ . Current theories describe polarization in the American society as being rooted on loathe and dislike (see e.g. Iyengar 2012). This can be represented as  $a(s) > \alpha(o)$ : An individual benefits more from others' payoffs when they express sympathy for the same political party. If this is the case, then Player A is more likely to trust a co-partisan than an opponent.

**Claim 1** *Conditional on the beliefs about receiver's (Player B's) trustworthiness, Senders' (Player A) trust rates are higher when the receiver has the same political identity than when she has different political identity.*

Trust behavior, however, can also emerge in the extreme case of negative other-regarding concerns between members of different groups. In equation (2), for example, even if we let  $\alpha(o) \leq 0$ , more optimistic beliefs will make trust more likely.<sup>8</sup> More generally, for any fixed  $\alpha(I)$  below 5/7, the probability Player A trusts Player B is increasing in  $p$ .

**Claim 2** *Senders' (Player A) propensity to trust is increasing in her beliefs about receivers' (Player B) trustworthiness.*

As Akerlof and Kranton (2005, p. 12) point out, the views as how people should behave depend upon the situation, and in particular, between whom a transaction takes place. Republicans, for example, appealing to in-group loyalty (see the "moral foundations" in Graham, Haidt, and Nosek 2009) may reciprocate trust more often to fellow Republicans than to Democrats Players A. Along the same lines, Democrats may believe Republicans' reciprocate less often than fellow Democrats, as Democrats

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<sup>8</sup>In fact, with our assumptions about preferences, the probability of trusting is increasing in  $p$  as long as the weight in others' payoffs is "reasonable,"  $\alpha(I) < 5/7$ .

show greater endorsement to the fairness/ reciprocity "moral foundation" in Graham et al. (2009). In general, scholars have argued that political polarization in terms of partisan identity has caused people to be biased (favoring their own group) in their assessments of relative group merits (see e.g. Oten and Wentura 1999, Mason 2014). The broader point is that beliefs about trustworthiness depend on Player B's partisan identity and on whether Player B's identity matches Player A's. In our model, we represent this as  $p = p(I)$ . Our third hypothesis is therefore:  $p(s) > p(o)$ .

**Claim 3** *Participants believe individuals with the same partisan identity are more likely to be trustworthy than individuals with different partisan identity.*

These stereotypes, however, may or may not reflect actual behavior. Using equation (1), and comparing the utility of reciprocating,  $u_B(10, 10) = 10 + \eta_R$ , with the utility of not reciprocating,  $u_B(14, 0) = [1 - \alpha(I)]14 + \eta_{NR}$ , the probability Player B reciprocates is given by

$$\Pr\{B \text{ reciprocates} | I\} = G(\alpha(I)14 - 4)$$

where  $G$  is the cumulative distribution function of  $\eta_{NR} - \eta_R$ . In this case, Player B honors trust more often when Player A identifies herself with the same party, i.e.  $a(s) > a(o)$ .

**Claim 4** *Receivers (Player B) rates of reciprocation are higher with co-partisan senders (Player A) than with others.*

In other words, beliefs about trustworthiness should be statistically correct.

We test these hypotheses in the next two sections. We first describe a reduced form model and then a simple structural model, based on social preferences as in Charness and Rabin (2002) and identity as in Chen and Li (2009).

## 4 Results

Before we run the reduced form and structural models, we describe the overall results directly from the data in Table 2. Trust, beliefs about partners' trustworthiness, and trustworthiness (or reciprocity) are relatively high and fairly similar across political identity of Player A. Democrats trust 56% of the time and believe Player B will reciprocate 62% of the time. The same figures for Republicans are: 60% and 63%, respectively (see column "Overall" in Table 2). The differences in trust rates are not statistically significant (chi-squared p-value = 0.4). The differences in beliefs are also not statistically different across partisan identity of Player A (Kolmogorov-Smirnov test for equality of distribution p-value = 1.0).

When we analyze Player A's behavior according to the partisan identity of Player B in Table 2, Democrats trust Democrats more often than Republican Players B: 63% of the time, compared to 40% of the time (chi-squared p-value < 0.01). Relative to an anonymous Player B, Democrats trust more other Democrats (63% versus 57%, chi-squared p-value = 0.4) and trust less a Republican Player B (40% versus 57%, chi-squared p-value = 0.05), although only the latter difference is statistically significant at conventional levels. Regarding beliefs, Democrats Player A believe a Democrat Player B is more trustworthy on average: The mean expected frequency of reciprocal behavior is 67% when Player B is Democrat compared to 52% when Player B is Republican. The distributions of beliefs are statistically different at conventional levels (Kolmogorov-Smirnov test p-value < 0.01). When compared to an anonymous Player B the mean belief about Player B's trustworthiness is 62%. The difference between the distributions of beliefs about a Democrat and an anonymous Player B is not statistically significant at conventional levels (Kolmogorov-Smirnov test p-value = 0.6), but this difference is significant when we compare a Republican and an anonymous Player B (Kolmogorov-Smirnov test p-value = 0.02).

Perhaps surprisingly, Republicans trust more often a Democrat Player B (67% of the time) than a Republican Player B (57% of the time), although the difference is not statistically significant at conventional levels (chi-squared p-value = 0.3). Neither are there any statistical differences in trust for Republicans across other pair-wise

Democrat's partner identity is...	Not revealed	Democrat	Republican	Overall
Fraction of Trust	0.57	0.63	0.4	0.56
# of Players A who Trust/Total	57/100	63/100	19/48	139/248
Mean beliefs about trustworthiness	0.62	0.67	0.52	0.62
s.d.	(0.22)	(0.21)	(0.28)	(0.24)
Republican's partner identity is...	Not revealed	Democrat	Republican	Overall
Trust	0.6	0.67	0.57	0.6
# of Players A who Trust/Total	56/94	30/45	56/98	142/237
Mean beliefs about trustworthiness	0.64	0.63	0.62	0.63
s.d.	(0.21)	(0.21)	(0.24)	(0.22)

Table 2: This table shows the fraction of Democrats and Republicans Player A who trust and their mean beliefs about about Player B's trustworthiness. The columns "Not revealed," "Democrat," and "Republican" refer to the treatments in which Player B (receiver) is of each one of those categories. The last column, "Overall," shows the trust rates and mean beliefs for each subpopulation of Democrat and Republican Player A (sender).

comparisons.

In sum, we find that partisan identity has an effect only for Democrat Players A: they believe that other Democrats are more trustworthy and they act consistently with this belief by more often trusting fellow Democrats. Note this analysis of the raw data allow us to test Claim 3, which is supported by the data only for Democrats. To test Claim 1 (conditional on beliefs, Player B's partisan identity determines trust through other-regarding preferences) we need to fix beliefs to determine whether trust rates vary across Player B's identity. To test Claim 2 (the propensity to trust depends on Player A's beliefs about Player B's trustworthiness), we estimate a probability model of trust as a function of Player A's beliefs.

In the next section we first fit a reduced form model to determine whether the propensity to trust responds to beliefs—providing a test for Claim 2. Then we test Claim 1 by estimating a structural model to explore whether it is beliefs or preferences that explain these trust rates.

## 4.1 Empirical models

Player A’s trust toward Player B may reflect other-regarding preferences or beliefs about Player B’s trustworthiness in both cases—although identity has a significant effect only on Democrats. Is trust explained only by beliefs about Player B’s trustworthiness? Or is it the case that when beliefs are fixed, identity determines Player A’s trust through sentiments represented on preferences favoring co-partisans? In the following two subsections we provide evidence that contradicts Claim 1 (i.e., we find that partisan identity does not matter once beliefs are controlled for) and lends support to Claim 2 (i.e., we find that trust rates are increasing in Player A’s beliefs about Player B’s trustworthiness)

### 4.1.1 Reduced form model

To analyze the impact of identity on the probability of trust, we estimate the following baseline reduced form empirical model:

$$Trust_i = \beta_0 + \beta_s I_s^i + \beta_o I_o^i + \gamma p_i + \Gamma' X_i + \varepsilon_i$$

The subscript  $i$  indexes individuals.  $I_s^i$  and  $I_o^i$  denote whether the political identity of Player B is either the same ( $s$ ) or other ( $o$ ) than Player A (the baseline corresponds to the cases in which the partisan identity of Player B is not revealed to Player A).  $p_i$  represents the beliefs about Player B’s trustworthiness, and  $X_i$  denotes demographic controls. We estimate this model for the overall sample, only for Democrat Player A, and only for Republican Player A. For each of these, we report regressions using a linear probability model without controlling for  $p_i$  and without controls, a linear probability model controlling for  $p_i$  and without controls, and a linear probability model controlling for  $p_i$  and using demographic controls.<sup>9</sup> The controls included are Amount Kept in Dictator Game, Gender, Cohort, Ethnicity, Marital Status,

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<sup>9</sup>We also run Probit and Logit models (results upon request) and the qualitative results remain unchanged.

English Writing Skills, Language at Home, Time Living in the US, Citizenship, Full-time School, Educational Attainment, Employment Status, Income Range, Size of Household, Minors at Home, and Political Orientation (from very liberal to very conservative).

Table 3 columns (1)-(3) show the results for the overall sample, columns (4)-(6) the results for Democrat Player A, and columns (7)-(9) the results for Republican Player A. Overall, we find that without controlling for beliefs about partner's trustworthiness, Player B's identity significantly determines trust only when Player A is a Democrat (which is another way of seeing the results in Table 2 for Democrat Players A). This result, however, confounds the impact of identity through beliefs. In short, when controlling for beliefs, the coefficient of identity is no longer significant regardless of Player A's partisan identity.

Moreover, Player A's beliefs about Player B's trustworthiness are highly significant for all the specifications. Column (2) and (3) in Table 3 show that a change in one standard deviation in beliefs (23%) makes 10% more likely Player A trusts Player B. The large share of this effect is explained by Democrat Players A. On the one hand, when looking at the coefficient of beliefs only for Democrat Players A, an increase in one standard deviation in beliefs yields a 12% increase in the likelihood of Player A trusting Player B, according to this model. The corresponding effect for Republican Players A is roughly 9%.

These results give no support to Claim 1, as Player B's partisan identity does not have an effect on Player A's trust rates when beliefs are controlled for. Claim 2, however, is borne out by the data: Player A's propensity to trust is increasing in her beliefs about Player B's trustworthiness. This effect is more pronounced for Democrat Players A.

In the next section, we exploit the preferences specifications used in Charness and Rabin 2002 and Chen and Li 2009 to provide a further test of Claim 1 and Claim 2 by estimating a simple structural model of trust.

	Overall (Player A)			Democrat Sender (Player A)			Republican Sender (Player A)		
	(1) Trust	(2) Trust	(3) Trust	(4) Trust	(5) Trust	(6) Trust	(7) Trust	(8) Trust	(9) Trust
Same partisan identity (Is)	0.01 (0.05)	0.00 (0.05)	-0.01 (0.05)	0.06 (0.07)	0.03 (0.07)	-0.01 (0.07)	-0.04 (0.07)	-0.04 (0.07)	-0.01 (0.08)
Different partisan identity (Io)	-0.06 (0.06)	-0.03 (0.06)	-0.03 (0.06)	-0.17** (0.09)	-0.12 (0.08)	-0.09 (0.09)	0.07 (0.09)	0.07 (0.09)	0.06 (0.10)
Beliefs: B's trustworthiness		0.46*** (0.10)	0.46*** (0.10)		0.53*** (0.13)	0.52*** (0.15)		0.31** (0.15)	0.42*** (0.15)
constant	0.58*** (0.04)	0.30*** (0.07)	0.74*** (0.26)	0.57*** (0.05)	0.24** (0.09)	0.97*** (0.32)	0.60*** (0.05)	0.40*** (0.11)	-0.07 (0.53)
CONTROLS	NO	NO	YES	NO	NO	YES	NO	NO	YES
N	485	485	485	248	248	248	237	237	237
R-sq	0.00	0.05	0.15	0.03	0.09	0.24	0.01	0.03	0.20

Table 3: This table shows a linear probability reduced form model. The dependent variable is whether Player A (sender) trusts Player B (receiver). The explanatory variables showed represent: Whether Player B's partisan identity coincides with Player A's, whether it does not coincide, Player A's beliefs about Player B's trustworthiness, and the constant. In columns (3), (6), and (9) demographic controls were considered. The first three columns pool all the observations, the second three columns consider only Democrat Player A, and the last three only Republican Player A.

#### 4.1.2 Structural model

In this section we are more specific about how we model sentiments by representing preferences using the Charness and Rabin (2002) baseline model and estimating the actual parameters from Chen and Li (2009). According to Charness and Rabin (2002), equation (1) can be written as

$$\begin{aligned}
u_A(\pi_A, \pi_B) &= \alpha\pi_B + [1 - \alpha]\pi_A \\
&= (\lambda l + \eta h)\pi_B + [1 - (\lambda l + \eta h)]\pi_A
\end{aligned}$$

where  $h = 1$  if  $\pi_B > \pi_A$  and  $h = 0$  otherwise;  $l = 1$  if  $\pi_B < \pi_A$  and  $l = 0$  otherwise; and  $\lambda, \eta$  are parameters to be estimated. Following Chen and Li (2009) we incorporate group identity by setting

$$\alpha = \lambda(1 + I_s q + I_o \bar{q})l + \eta(1 + I_s w + I_o \bar{w})h \quad (3)$$



where  $I_s = 1$  if Player A and Player B share the same partisan identity and zero otherwise, and  $I_o = 1$  if they hold different partisan identity and zero otherwise. The parameters  $q$  and  $w$  (respectively  $\bar{q}$  and  $\bar{w}$ ) represent the utility benefit Player A receives for trusting a Player B who shares the same (respectively different) partisan ideology.

Replacing equation 3 on equation 2 yields to

$$\begin{aligned} \Pr\{A \text{ Trust}|p\} &= F(p10 + (1 - p)\alpha14 - 5) \\ &= F(\delta_0 + \delta_1 p + \delta_2 I_s + \delta_3 I_o + \delta_4 I_s p + \delta_5 I_o p) \end{aligned}$$

where  $\delta_0 = (14\eta - 5)$ ,  $\delta_1 = (10 - 14\eta)$ ,  $\delta_2 = 14\eta w$ ,  $\delta_3 = 14\eta\bar{w}$ ,  $\delta_4 = -14\eta w$ , and  $\delta_5 = -14\eta\bar{w}$ .

Claim 1 states that if trusting decisions are rooted on dislike or loathe, i.e. partisan identity matters through preferences, then for given beliefs about Player B's trustworthiness,  $p$ , the probability Player A trusts a co-partisan Player B ( $I_s = 1$ ) should be larger than the probability Player A trusts a Player B with different partisan ideology ( $I_o = 1$ ). Hence, using this model Claim 1 can be stated as

$$F(\delta_0 + \delta_2 + (\delta_1 + \delta_4)p) - F(\delta_0 + \delta_3 + (\delta_1 + \delta_5)p) > 0 \quad (4)$$

We estimate this probabilities using a linear model without controls.<sup>10</sup> Figure 2 shows the difference in (4) is not statistically different from zero for all values of  $p$ . This result does not support Claim 1 and it corroborates our results from the reduced form model in the previous subsection.

In order to test Claim 2, we plot each one of the terms on the left-hand side of (4) in Figure 3 estimated for the full sample. Both are increasing in  $p$ . Moreover, the marginal effect of  $p$  in the first term (when matched to same partisan ideology Player

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<sup>10</sup>This result remains unchanged if we incorporate demographic controls and if we use non-linear probabilities models such as Probit or Logit.

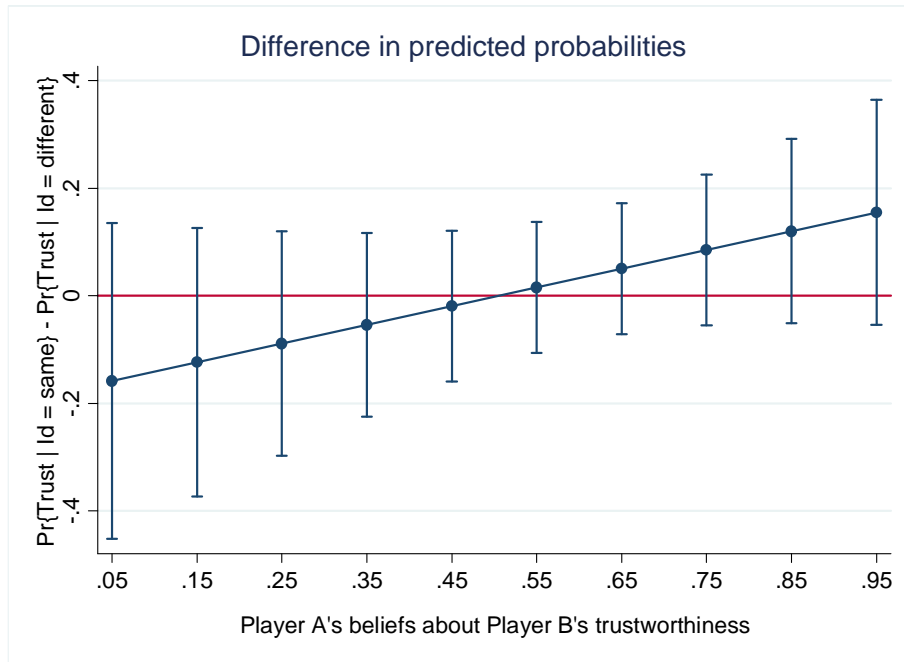


Figure 2: This figure shows the difference in predicted probabilities (using a linear probability model) of Player A (sender) trusting Player B (receiver) when Player B shares the same partisan identity than Player A and when Player B holds a different partisan identity. The standard errors used to compute the confidence intervals represented by the vertical segments were calculated using the Delta-method.

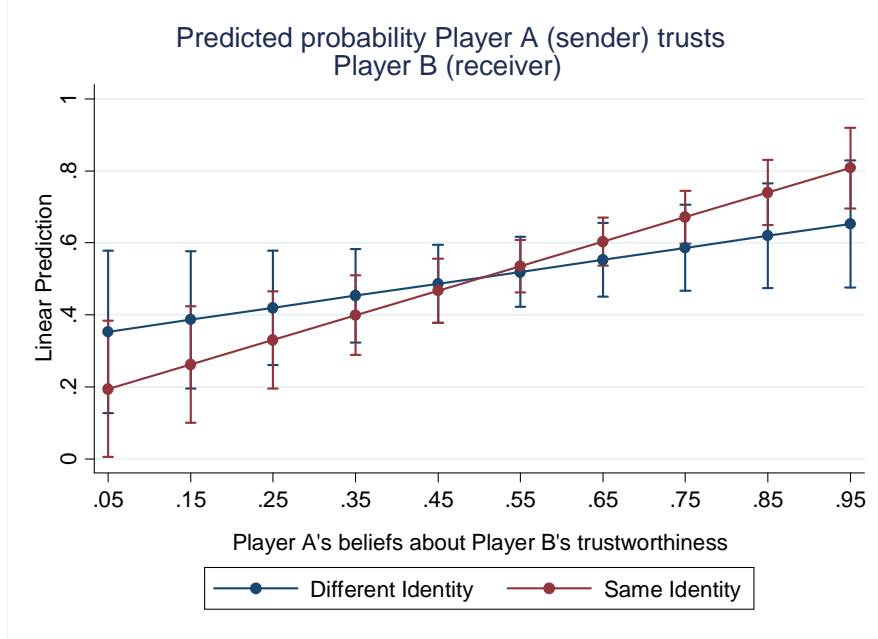


Figure 3: This figure shows the predicted probability Player A (sender) trusts a Player B (receiver) from the same partisan identity (green line) and from different partisan identity (blue line) for different values of  $p$ . The standard errors used to compute the confidence intervals represented by the vertical segments were calculated using the Delta-method.

B,  $I_s = 1$ ),  $F(\delta_0 + \delta_2 + (\delta_1 + \delta_4)p)$ , is 68% (t-test p-value  $< 0.01$ ) and the marginal effect of  $p$  in the second term (when matched to a different partisan ideology Player B,  $I_o = 1$ ),  $F(\delta_0 + \delta_3 + (\delta_1 + \delta_5)p)$ , is 33% (t-test p-value = 0.09). These results support Claim 2, as in the previous subsection.

In sum, the results from reduced form and structural models suggest that trust behavior is driven by beliefs of trustworthiness rather than by affinity or dislike for a particular member's partisan identity.

Beliefs are driving trust in our setting. Do Player A's beliefs depend on the partisan identity of Player B? Before we move on to testing Claim 4 (whether beliefs are statistically correct), we answer this question in the next section.

## 5 Beliefs and Identity

In this section we ask whether partisan identity has an effect shaping beliefs about partner’s trustworthiness, that is, whether in-group and out-group stereotypes determine trust.

Table 4 shows several variations of the baseline empirical model:

$$p_i = \gamma_0 + \gamma_s I_s^i + \gamma_o I_o^i + \Theta' X_i + \xi_i$$

The subscript  $i$  indexes individuals.  $p_i$  represents the beliefs about Player B trustworthiness,  $I_s^i$  and  $I_o^i$  denote whether the political identity of Player B is either the same ( $s$ ) or other ( $o$ ) than Player A (the baseline corresponds to the case when individuals do not know the identity of the partner), and  $X_i$  denotes demographic controls. We estimate this model for the overall sample, only for Democrat Player A (sender), and only for Republican Player A. For each of these subsamples, we report regressions using a linear probability model without demographic controls, and a linear probability model using demographic controls. The controls included are: Amount Kept in Dictator Game, Gender, Cohort, Ethnicity, Marital Status, English Writing Skills, Language at Home, Time Living in the US, Citizenship, Full-time School, Educational Attainment, Employment Status, Income Range, Size of Household, Minors at Home, and Political Orientation (from very liberal to very conservative).

Table 4 columns (1) and (2) show the results for the overall sample, columns (3) and (4) the results for Democrat Player A, and columns (5) and (6) the results for Republican Player A. Our results are consistent with Claim 3. We find that partisan identity shapes beliefs. Overall, individuals are 6% less optimistic (t-test p-value < 0.05) about Player B’s trustworthiness if his identity is not revealed. There is no difference in Player A’s beliefs about Player B’s trustworthiness between same identity Player B and Player B whose identity is not revealed. As a result, we could say Player A’s beliefs are 6% less optimistic when Player B’s partisan identity is

	Overall		Democrat Sender		Republican Sender	
	(1)	(2)	(3)	(4)	(5)	(6)
	p	p	p	p	p	p
Same partisan identity ( $I_s$ )	0.01 (0.02)	0 (0.02)	0.04 (0.03)	0.03 (0.03)	-0.02 (0.03)	-0.05 (0.04)
Different partisan identity ( $I_o$ )	-0.06** (0.03)	-0.06** (0.03)	-0.11*** (0.04)	-0.12*** (0.04)	-0.01 (0.04)	0 (0.05)
CONTROLS	NO	YES	NO	YES	NO	YES
N	485	485	248	248	237	237
R-sq	0.015	0.141	0.054	0.269	0.001	0.13

Table 4: This table shows a linear reduced form model in which dependent variable are the beliefs a given Player A (sender) holds about Players B’s trustworthiness. The explanatory variables consist of an indicator variable on whether Player B (receiver) is from the same,  $I_s$  or different  $I_o$  partisan identity. Columns (1) and (2) show the results for the overall sample (with and without demographic controls, respectively), columns (3) and (4) the results for democrat Player A (with and without demographic controls, respectively), and columns (5) and (6) the results for Republican Player A (with and without demographic controls, respectively).

different. This result, however, is driven by Democrat Players A. Democrats are 11-12% (t-test p-value < 0.01) less likely to trust a Republican, when compared to a Player B whose partisan identity is unknown or whose partisan identity is also Democrat. For Republicans in our sample partisan identity does not seem to affect beliefs.

These results show that Democrats perceive Republicans as less trustworthy than Democrats, and that Republicans’ perceptions about Player B’s trustworthiness do not depend on Player B’s partisan identity. Are these perceptions statistically correct? In the next section we explore this question in order to test Claim 4.

## 5.1 Beliefs and actual trustworthiness

We have provided tests for Claims 1,2, and 3. In this section, we proceed to test Claim 4. In general, Table 5 shows beliefs about partner’s trustworthiness are not statistically correct—they are more pessimistic. Overall, Democrat Players A believe on average 62% of Players B will reciprocate, but 80% end up doing so. Not all, of course, were excessively pessimistic: 53 out of 248 Democrat Players A stated that at

Democrat Player A				
Player B identity is...	Anonymous	Democrat	Republican	Overall
Mean Player A's beliefs about Player B's trustworthiness	0.62	0.67	0.52	0.62
s.d.	(0.22)	(0.21)	(0.28)	(0.24)
Player B's actual trustworthiness	0.72	0.85	0.91	0.8
# of participants / Total	139/194	85/100	41/45	389/485
Republican Player A				
Player B identity is...	Anonymous	Democrat	Republican	Overall
Mean Player A's beliefs about Player B's trustworthiness	0.64	0.63	0.62	0.63
s.d.	(0.21)	(0.21)	(0.24)	(0.22)
Player B's actual trustworthiness	0.72	0.79	0.86	0.8
# of participants / Total	139/194	38/48	88/102	389/485

Table 5: This table shows the average beliefs about Player B's trustworthiness and the actual of Player B's reciprocation. The "Anonymous" column corresponds to the treatment in which neither Player A's identity nor Player B's identity was revealed. The "Democrat" ("Republican") column shows the beliefs Player A holds about a Democrat (Republican) Player B's trustworthiness and the actual fraction of Player B's who chose the option to reciprocate, [10,10]. The "Overall" column shows the average beliefs averaged for all Democrats and Republican Players A and the rate of reciprocation overall the sample.

least 80% of Players B will reciprocate. Similarly, Republican Players A believe on average 63% of Players B will cooperate. 57 out of 237 Republican Players A stated that at least 80% of Players B will reciprocate.

These differences are more pronounced when we separate them by the partisan identity of Player B. Republican Players B reciprocate trust to a Democrat Player A 91% of the time, which is notably higher than the mean belief a Democrat Player A holds about a Republican Player B: 52%. Only 8% (4 out of 48) of Democrat Players A were correct in their guesses: these 4 Democrats believed at least 90% of Republican Players B would reciprocate trust. The difference is less pronounced when Player B is Democrat and Player A is Republican: Mean beliefs are 63% and actual reciprocation rate 79%. 25% (11 out of 45) of Republican Players A believed at least 80% of Democrat Players B would reciprocate trust.

As we saw in the previous section, Player B's partisan identity has a statistically

significant effect on beliefs (see Table 4 and the columns of Table 5) only for Democrat Players A. In this case, the actual reciprocation rate by Democrats is 85% (85 out of 100) compared to 91% (41 out of 45) by Republican Players B. Although this difference is not statistically significant (chi-squared p-value = 0.31), if anything, it points in the other direction: Republicans are more trustworthy than Democrats, when matched to a Democrat Player A (sender). In contrast, Republicans do not show a statistically different perception about Player B’s trustworthiness across partisan identity (mean beliefs are 63% when matched a Democrat Player B versus 62% when matched a Republican Player B); and there is also no significant differences in terms of actual behavior, 79% versus 86%, chi-squared p-value = 0.17. Although not statistically significant, Republican Players B tend to reciprocate more often than Democrat Players B, when matched to a Republican Player A.

Overall, Player A’s beliefs about Player B’s trustworthiness are lower than actual reciprocation rates. For Democrat Players A, beliefs turn out to be incorrect, which does not support Claim 4. For Republican Players A, there is no statistical difference in Player B reciprocation rates between Democrats and Republicans, which is consistent with Republican Player A’s beliefs. In total, these results do not support Claim 4.

In the next section we explore the role of identity in the trustworthy behavior.

### 5.1.1 Trustworthy behavior and preferences

The decision to reciprocate does not hinge on beliefs. A further test on whether preferences, on top of beliefs, play a role is to explore the effect of partisan identity on the decision to reciprocate. Table 6 reports results for the following linear probability model:

$$Trustworthiness_i = \gamma_0 + \gamma_s I_s^i + \gamma_o I_o^i + W'X_i + \omega_i$$

The subscript  $i$  indexes individuals.  $I_s^i$  and  $I_o^i$  denote whether the political identity of Player B is either the same ( $s$ ) or other ( $o$ ) than Player A (the baseline corresponds to the cases in which the partisan identity of Player B is not revealed to Player A).  $X_i$  denotes the usual demographic controls. Overall, a Wald test fails to reject the

	Overall		Democrat Player B		Republican Player B	
	(1)	(2)	(3)	(4)	(5)	(6)
	Trustworthy	Trustworthy	Trustworthy	Trustworthy	Trustworthy	Trustworthy
Same partisan identity ( $I_s$ )	0.15*** (0.04)	0.07* (0.04)	-0.01 (0.05)	-0.02 (0.05)	0.31*** (0.06)	0.13** (0.06)
Different partisan identity ( $I_o$ )	0.13*** (0.05)	0.07 (0.05)	-0.07 (0.06)	-0.09 (0.07)	0.35*** (0.07)	0.16** (0.07)
_cons	0.72*** (0.03)	1.18*** (0.18)	0.86*** (0.04)	1.32*** (0.23)	0.56*** (0.04)	1.09*** (0.37)
CONTROLS	NO	YES	NO	YES	NO	YES
N	485	485	248	248	237	237
R-sq	0.031	0.304	0.005	0.228	0.139	0.474

Table 6: This table shows a reduced for linear probability model of reciprocation (trustworthiness) as a function of whether Player A’s (sender) partisan identity coincides with individual  $i$  which in this case is Player B (receiver).

hypothesis that the coefficient for the dummy representing same ( $I_s$ ) and other ( $I_o$ ) identity are different from each other for each of the columns. That is, the decision to reciprocate does not significantly depend on the partisan identity of the sender when this identity is known.

It is worth noting that only Republican Players B tend to reciprocate trust significantly more often when Player A’s partisan identity was revealed than when it was not. This effect diminishes when we incorporate demographic controls into the estimation. This suggests some of the preferences for reciprocation may be driven by subpopulations who may condition their behavior when interacting with individuals from known and unknown partisan identity. Thus, in the next section we explore the differences in trust and trustworthiness for each demographic characteristic when we vary the identity of the matched partner.

## 5.2 Demographics and Political Ideology

In this section we explore whether individuals with different demographic characteristics react differently, in terms of trust, beliefs, and trustworthiness to partner’s



partisan identity.

Consider the differences in Player A's trust rates between those who are matched to Democrat Players B and those matched to Republican Players B. Figure 4 shows the difference in trust rates between Players A matched to Democrat Player B and Players A matched to Republican Player B for each demographic subsample. For most of the subsamples, the differences are positive: trust rates are higher when Player B is a Democrat than when she is a Republican. These differences in trust rates are positive and statistically significant for white individuals, for those who work less than 40 hours a week, for those whose income ranges between US\$75k and US\$150k, and for those who consider themselves liberal in terms of political ideology. The three exceptions to higher trust rates of Democrat Players B are: Black, individuals with income higher than US\$150k a year, and those who declare themselves to have a "Moderate" political orientation.

Regarding beliefs, we estimate a reduced form regression in which the dependent variable is beliefs and the explanatory variable is a dummy representing Democrat Player B for each demographic subsample. Figure 5 shows the point estimates (of the coefficients) and the confidence intervals of these estimates. As before, the point estimates are positive, except for those with college education, and those who declare themselves to be "Conservative." For the subsamples of: females, whites, singles, full-time students, work more than 40hrs a week, make less than US\$75k a year, "liberals", and mid-scores on the Cognitive Reflection Test, the difference is positive and statistically significant at the 5% level.

Finally, regarding trustworthy behavior, in Figure 6 we observe that the differences in reciprocation rates when Player A was a Democrat compared to when he was a Republican are positive and statistically significant only for those who declare to hold a "Liberal" political ideology. Also, Black, Hispanic, and individuals who declared their income was above 150k reciprocate more often when Player a was a Republican, although the results are not significant at the conventional levels. In sum, "Liberals" seem to be driving any difference in actual trustworthy behavior

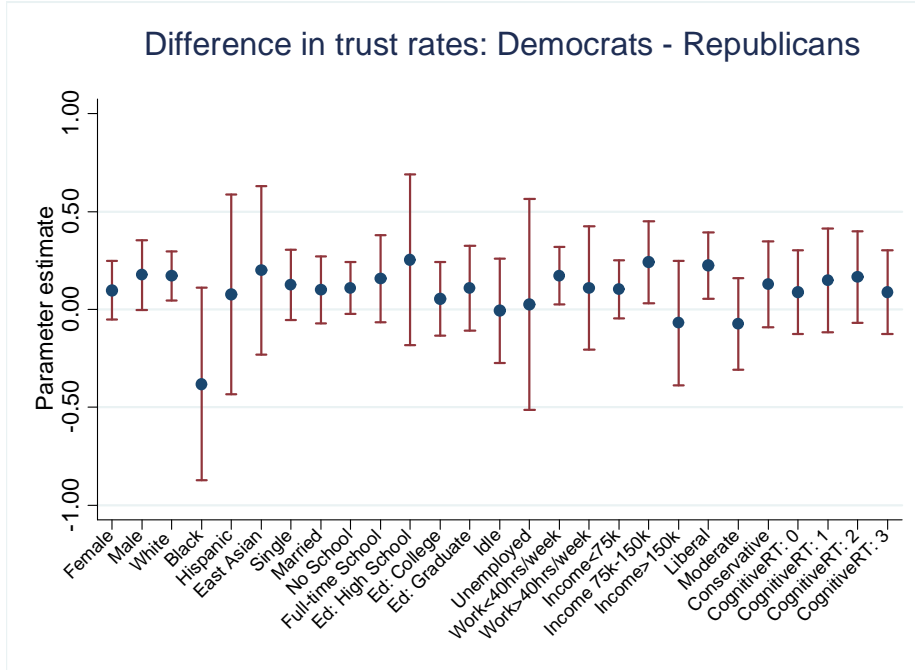


Figure 4: This figure shows the difference in trust rates for Players A (senders) from the different subsamples when they are matched a Democrat Player B (receiver) and a Republican Player B. The figure features the point estimates of the coefficient associated to a dummy variable that indicates Player B is a Democrat in the reduced form model  $Trust_i = \beta_0 + \beta_s I_d^i + e_i$  were  $i$  represents the individual in each subsample and  $I_d^i$  is a dummy for whether Player B is a Democrat.

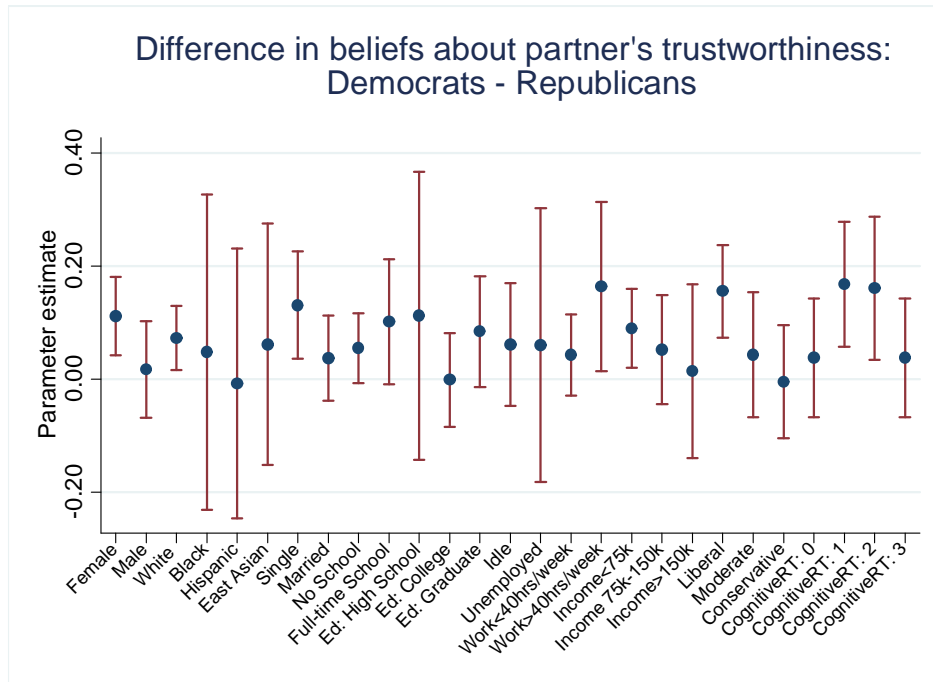


Figure 5: This figure shows the difference Players A (senders) beliefs about Player B's trustworthiness from the different subsamples when they are matched a Democrat Player B (receiver) and a Republican Player B. The figure features the point estimates of the coefficient the dummy variable that indicates Player B is a Democrat in the reduced form model  $p_i = \beta_0 + \beta_s I_d^i + e_i$  were  $i$  represents the individual in each subsample and  $I_d^i$  is a dummy for whether Player B is a Democrat.

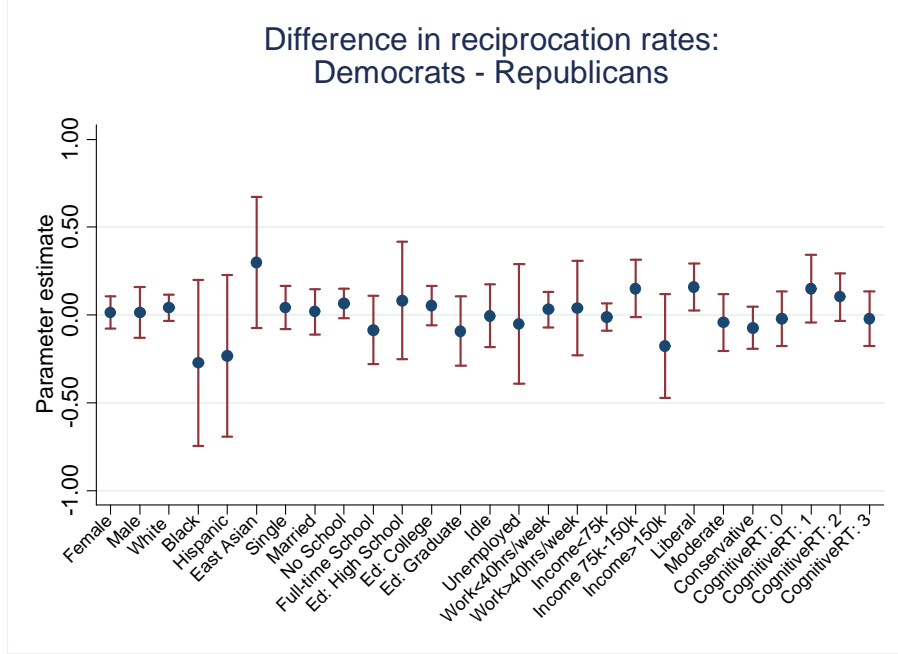


Figure 6: This figure shows the difference in reciprocation rates for the different subsamples when they are matched a Democrat Player A (sender) and a Republican Player A. The figure features the point estimates of the coefficient the dummy variable that indicates Player A is a Democrat in the reduced form model  $Trusworthy_i = \beta_0 + \beta_s I_d^i + e_i$  were  $i$  represents the individual in each subsample and  $I_d^i$  is a dummy for whether Player A is a Democrat.

reciprocating at much higher rates to fellow Democrats than to Republicans.

### 5.3 Conclusion

We studied the relationship between political ideology and trust. We found that there are partisan identity-based differences in trusting rates. Whereas Republicans do not exhibit different trust rates between partners of different partisan identities, Democrats trust partners of their own partisan identity more than Republicans. The mechanism that explains this difference seems to be driven by beliefs about partner trustworthiness and not a taste for discrimination based on partisan identity. The source of trusting behavior is important—whether it comes primarily from beliefs

or taste—because the former can likely be manipulated, whereas the latter cannot. For example, beliefs can be manipulated by making public the actual levels of loan repayment as a function of identity.

We also found that although there was no difference in trustworthiness as a function of partisan identity; overall individuals held beliefs that were much more pessimistic than actual trustworthiness, regardless of partisan identity of both the trustee and trustor. To the extent these findings are representative of broader settings, this suggests an opportunity for policy. In particular, if these systematically incorrect priors can be even partially corrected, the level of welfare improving transactions will be increased.

We did not explore whether people have different other-regarding concerns as a function of partisan identity. Using dictator games, Fisman, Jakiela and Kariv (2014) show that roughly half of Americans in their sample have equality-focused preferences and the other half efficiency-focused preferences. They find these preferences match liberal and conservative voting decisions, respectively. It is an open question, however, whether the equality or efficiency concerns depend on the partisan identity of the receiver. We leave this to further research.

## 6 References

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## 7 Appendix

### 7.1 Survey instrument, baseline condition: Without revealing partner's political identity

Political Ideology

\* For the following questions, you will be paid in Amazon gift certificates according to how you choose to answer them.

Q1 You will receive a payment according to your decision in the following scenario: You have a total of \$5 to divide between yourself and another survey participant in any way you want (in increments of \$1).

\_\_\_\_\_ Decide how many dollars you hold (1)

\_\_\_\_\_ Decide how many dollars you pass (2)

Q2 You will receive a payment based on your decision in the following scenario: You will be matched to another survey participant. You need to decide between the following two options: 1) You and the other participant each receive \$5 2) You let the other participant choose. He/she will decide between one of two options: i) You receive \$0 and he/she receives \$14 or ii) Each of you receives \$10. Please enter your decision:

■ I choose option 1) (1)

■ I choose option 2) (2)

Q3 You will receive a payment based on your decision in the following scenario: You will be matched to another survey participant. The other participant can choose for each of you to receive \$5 or instead he/she can let you decide between one of two options: 1) You and the other participant each receive \$10 2) You receive \$14 and the other participant receives \$0 In case the other participant lets you choose, please enter your decision:

■ I choose option 1) (1)

- I choose option 2) (2)

Q4 You will receive an additional \$3 if you guess the correct percentage range of participants that choose option 1) for the above question: Between:

- 0 and 9% (1)
- 10 and 19% (2)
- 20 and 29% (3)
- 30 and 39% (4)
- 40 and 49% (5)
- 50 and 59% (6)
- 60 and 69% (7)
- 70 and 79% (8)
- 80 and 89% (9)
- 90 and 100% (10)

Q5 Please answer the following questions:

A bat and a ball cost \$1.10 in total. The bat costs \$1.00 more than the ball. How much does the ball cost? (1)

If it takes 5 machines 5 minutes to make 5 widgets, how long would it take 100 machines to make 100 widgets? (2)

In a lake, there is a patch of lily pads. Every day, the patch doubles in size. If it takes 48 days for the patch to cover the entire lake, how long would it take for the patch to cover half of the lake? (3)

Q6 What is your political orientation?

- Very Liberal (1)
- Liberal (2)
- Moderate (3)
- Conservative (4)
- Very Conservative (5)
- Don't know (6)

Q7 What is your annual household income?



- less than \$10,000 (1)
- \$10,001 to \$20,000 (2)
- \$20,001 to \$50,000 (3)
- \$50,001 to \$75,000 (4)
- \$75,001 to \$100,000 (5)
- \$100,001 to \$150,000 (6)
- \$150,001 to \$250,000 (7)
- \$250,001 to \$350,000 (8)
- more than \$350,000 (9)

Q8 Based on your political views, would you consider yourself to be:

- A Democrat (1)
- A Republican (2)
- An Independent (3)
- Other (4)

\* Click continue to finish your survey. You will receive your total final payment in the coming week. Thank you for participating!

## 7.2 Survey instrument, treatment conditions: Revealing partner's political identity

Political Ideology

\* For the following questions, you will be paid in Amazon gift certificates according to how you choose to answer them.

Q1 You will receive a payment according to your decision in the following scenario: You have a total of \$5 to divide between yourself and another survey participant in any way you want (in increments of \$1).

\_\_\_\_\_ Decide how many dollars you hold (1)

\_\_\_\_\_ Decide how many dollars you pass (2)

Q2 You will receive a payment based on your decision in the following scenario: You will be matched to another survey participant **who considered him or herself to be [POLITICAL IDENTITY]**. You need to decide between the following two options: 1) You and the other participant each receive \$5 2) You let the other participant choose. He/she will decide between one of two options: i) You receive \$0 and he/she receives \$14 or ii) Each of you receives \$10. Please enter your decision:

- I choose option 1) (1)
- I choose option 2) (2)

Q3 You will receive a payment based on your decision in the following scenario: You will be matched to another survey participant **who considered him or herself to be [POLITICAL IDENTITY]**. The other participant can choose for each of you to receive \$5 or instead he/she can let you decide between one of two options: 1) You and the other participant each receive \$10 2) You receive \$14 and the other participant receives \$0 In case the other participant lets you choose, please enter your decision:

- I choose option 1) (1)
- I choose option 2) (2)

Q4 You will receive an additional \$3 if you guess the correct percentage range of **[POLITICAL IDENTITY]** participants that choose option 1) for the above question: Between:

- 0 and 9% (1)
- 10 and 19% (2)
- 20 and 29% (3)
- 30 and 39% (4)
- 40 and 49% (5)
- 50 and 59% (6)
- 60 and 69% (7)
- 70 and 79% (8)

- 80 and 89% (9)
- 90 and 100% (10)

Q5 Please answer the following questions:

A bat and a ball cost \$1.10 in total. The bat costs \$1.00 more than the ball. How much does the ball cost? (1)

If it takes 5 machines 5 minutes to make 5 widgets, how long would it take 100 machines to make 100 widgets? (2)

In a lake, there is a patch of lily pads. Every day, the patch doubles in size. If it takes 48 days for the patch to cover the entire lake, how long would it take for the patch to cover half of the lake? (3)

Q6 What is your political orientation?

- Very Liberal (1)
- Liberal (2)
- Moderate (3)
- Conservative (4)
- Very Conservative (5)
- Don't know (6)

Q7 What is your annual household income?

- less than \$10,000 (1)
- \$10,001 to \$20,000 (2)
- \$20,001 to \$50,000 (3)
- \$50,001 to \$75,000 (4)
- \$75,001 to \$100,000 (5)
- \$100,001 to \$150,000 (6)
- \$150,001 to \$250,000 (7)
- \$250,001 to \$350,000 (8)
- more than \$350,000 (9)

Q8 Based on your political views, would you consider yourself to be:

- A Democrat (1)
- A Republican (2)
- An Independent (3)
- Other (4)

\* Click continue to finish your survey. You will receive your total final payment in the coming week. Thank you for participating!