Social norms and identity dependent preferences

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Abstract: The introduction of social identity into an economic framework provides a new way in which norms can affect preferences. We present experimental results that test the impact of norms on social identity dependent choice. We use a 2 (identity prime) × 2 (choice or norms) experimental design to separately and directly elicit empirical measures of identity dependent norms for eleven different redistribution situations. We combine identity dependent norms with separately elicited choice data to predict changes in behavior across situations. We demonstrate that including identity dependent norms as a utility component improves our ability to predict behavior. We also estimate a key structural parameter of the social identity model—identity dependent norm sensitivity. Our findings provide direct evidence of the identity dependent norms mechanism in social identity motivated choice.

Keywords and phrases: norms, social identity, altruism.

1. Introduction

The introduction of social identity into an economic framework provides a new way in which norms can affect preferences. In this paper we present new experimental results on the role that norms play in social identity driven choice. Social identity describes the part of an individual's sense of self that stems from their perceived membership with a social group (Akerlof and Kranton, 2000).[1] Each social group has a set of corresponding normative prescriptions (norms) for behavior that characterizes how members of the group ought to behave in a particular situation. For this reason the social identity model offers a mechanism, identity dependent social norms, by which to characterize how behavior can vary from one situation to the next and from one identity to another, even within the same individual. The model also motivates the considerable energy that organizations invest in cultivating identities and their associated norms.[2]

On the empirical side, social identity dependent choice can explain a host of observed social phenomena such as ingroup bias (Terry and O'Brien, 2001; Wichardt, 2008; Goette et al., 2012), persistence of stereotypes (Steele and Aronson, 1995; Shih et al., 1999, 2006; Afridi et al., 2015), and labor disputes (Akerlof and Kranton, 2005). It has been shown to affect cooperation (Eckel and Grossman, 2005; Goette et al., 2006; Charness et al., 2007), coordination (Weber, 2006; Chen and Chen, 2011; McCarter and Sheremeta, 2013; Chen et al., 2014), and behavior in markets (Li et al., 2011; Gneezy et al., 2012a,b). Both field and laboratory experiments show that inducing a social identity or making an existing identity salient can shift time, risk and other-regarding preferences (Chen and Li, 2009; Benjamin et al., 2010; Butler, 2014). In addition, it is evident that there is considerable variation in identity dependent preferences, predispositions towards and attachment to social identities (Chen and Li, 2009; Kranton et al., 2013). In short, the social identity model has given rise to a rich foundation of empirical work. Yet, despite the central and prominent role of norms in identity based choice models, previous work often relies on assumptions about the norm that are based

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[1] Social groups are defined in Tajfel and Turner (1979) as "a collection of individuals who perceive themselves to be members of the same social category."

[2] For a discussion on the values of identity this context, refer to Englmaier and Schüßler (2015).

on a combination of introspection, observation of behaviors and/or interviews (cf. Roy, 1952; Benjamin et al., 2010).

There are several challenges that may explain why there are few direct tests of identity dependent norms and their impact on behavior. First, when conducting empirical studies, it is not possible to identify the effect of identity dependent norms on behavior using choice data alone.[3] As we elaborate in the next section, the identification problem arises because the observed choice data is a consequence of both an individual's utility over outcomes as well as her utility derived from norm compliance. A second challenge is that social identities themselves are fluid, multiple, and socially constructed, making it difficult to pin down. A third challenge arises from the norms themselves. Norms can vary from situation to situation (Krupka and Weber, 2013) and there are no models of what a norm ought to be across games, settings or identities.[4] All of the aforementioned make it difficult to generate direct tests of identity dependent preferences.

To provide direct evidence of the social norms mechanism we empirically estimate norms and observe behavior both when an identity is salient and when it is not. To do so, we employ the technique from social psychology of "priming." The goal of this technique is to make a part of the subject's identity more salient by exposing the subject to stimuli that are related to the target identity. In experimental economics, this technique has been used to make an individual's gender, race, professional, or school identity salient (e.g. Benjamin et al., 2010; Cohn et al., 2014; Chen et al., 2014).

In our *choice experiment*, subjects are first either primed with their (homegrown) political identity or they are treated with a neutral prime. Then they are asked to make decisions in each of eleven redistribution situations. For the eleven redistribution situations, we begin with the standard dictator game and then vary the situation by changing the share of the endowment that the dictator initially holds (cf. Eichenberger and Oberholzer-Gee, 1998; Swope et al., 2008; Krupka and Weber, 2013). This creates situations where the dictator must "take" money from the receiver rather than just "give" it away.[5] By varying the initial endowment held by the dictator, we change the norms for the redistribution decision without varying (1) the possible payoffs that subjects can receive and (2) the salience of the identity. Thus, our *choice experiment* varies the prime between subjects (neutral or identity prime) and varies the initial endowment distribution within subjects. Our primary variable of interest is the allocation decision in each redistribution situation.

To address the fact that we do not know the norm profiles across redistribution decisions and identities, we follow the work of Krupka and Weber (2013) and directly elicit the social norms for different identities and situations.[6] We use different sets of subjects for the *norms elicitation experiment* and the *choice experiment*. We modify the Krupka and Weber (2013) protocol to elicit non-identity dependent as well as identity dependent norms by introducing two variations. To elicit neutrally primed norms (non-identity dependent norms), we treat our subjects with a neutral prime and then ask them to complete the Krupka and Weber (2013) norm rating task by matching their responses to another randomly selected participant. To elicit identity primed norms (identity dependent norms) we treat subjects with an identity prime and then ask them to match responses with another participant who shares their identity. Our primary variables of interest are the appropriateness ratings generated in the norms rating task. The average norm ratings constitute an

[3] Charness et al. (2014) identify the trade-off between identity and potential monetary considerations by varying whether people participate in a group activity and the size of the endowment received. However, in the case of that paper, the authors' focus is not on the identity dependent norms, but on which sense of identity becomes salient in which circumstances.

[4] People have many identities that they carry with them and different situations and goals can trigger different identities, making the study of identity dependent choice challenging (Shih et al., 1999). Models of self- and other-signaling derive predictions for specific norms in a given game (cf. Bénabou and Tirole, 2006; Andreoni and Bernheim, 2009) but do not address identity directly.

[5] List (2007), Bardsley (2008) and Bosman and Van Winden (2002) make changes to the payoff space (by adding or restricting the set of payoffs a subject can choose from) so that for some choices subjects have to "take" money from the recipient. Similar to Goerg and Walkowitz (2010), we do not change the underlying payoff space with our variations in the initial endowment. In a related literature, treatments change the frame or the endowments of subjects in a VCM setting (Andreoni, 1995; Dufwenberg et al., 2006; Grossman and Eckel, 2012).

[6] Others have adapted Krupka and Weber (2013) to elicit norms for a variety of games. Kimbrough and Vostroknutov (2014), Gächter et al. (2013), Veselỳ (2015), Erkut et al. (2014), D'Adda et al. (2015), Gangadharan et al. (2015), and Banerjee (2014) examine norm compliance across a variety of games using Krupka and Weber (2013) but they do not examine identity dependent norms. Yet a different approach to eliciting norms is to use third party advisors (Schram and Charness, 2011); however, this approach is more challenging to adapt to the study of identity dependent norms. Another similar alternative is used in Bicchieri and Chavez (2010), where norms are elicited by asking proposers and responders in an Ultimatum Game to guess how many responders perceive each of the proposers' options as a fair option. But this approach limits what we would be able to say about a 'set' of appropriate actions.

empirical measure of identity or neutrally primed norms for the eleven redistribution situations.

Prior literature has established that priming affects behavior (c.f. Shih et al., 1999; Benjamin et al., 2010). However, in order to establish a causal link between identity, norms, and behavior, we also need to establish that priming affects norms and that changes in norms cause changes in behavior. To do so, an experimental design needs to produce behavioral effects through an exogenous change in norms without changing identity salience.[7] In this experiment, we use different subjects for our *norms elicitation* and *choice experiments*, and are therefore able to separately show that the prime affects the norms and that the prime affects behavior. Then, using our within-subject design whereby we vary the dictator endowments (resulting in "give" and "take" scenarios) to generate exogenous changes in norms without changing identity salience, we show that changing the norms while keeping the priming constant also affects behavior. Taken together, we establish a causal link between identity, associated norms and behavior.

Using just our *norms elicitation experiment* data, we find that both identity and neutrally primed norms are affected by variations in how the initial endowment is distributed between the dictator and the recipient. We also find that identity and neutrally primed norms are significantly different from each other. Finally, while identity primed Republican norms differ substantially from identity primed Democratic norms, neutrally primed Democratic and Republican norms do not differ from each other.

These results provide an important, policy relevant examination of how political identity can affect social norms. While it is understood that Democrats and Republicans have different views on wealth redistribution, our direct elicitation of neutrally primed Democratic and Republican norms show only minor differences between these two populations. It is only when subjects' political identities are made salient through priming do we observe dramatic differences between Democratic and Republican redistribution norms, driven mainly by Republican sensitivity to initial endowments. The same individual who feels favorably towards policies that promote wealth redistribution may feel antagonistic towards the same policies when her political identity is primed. A key role of political parties is to keep their members' political identities salient.

We then combine our empirical estimate of the identity dependent norms for Democrats and Republicans with the behavior of identity primed subjects in the *choice experiment*. The *choice experiment* shows evidence that individuals make decisions driven by the norms that they face. For some situations and identities, the elicited norms indicate that subjects in the *choice experiment* may experience a tension between the action that yields the highest monetary payoff and the most appropriate action. In these cases, we see that some subjects split their choices between the payoff-maximizing and the appropriateness-maximizing actions. For other situations and identities, the norms indicate that there is no tension between these two objectives (i.e. the payoff-maximizing action is seen as the most appropriate action). We see in those cases that nearly all of the subjects choose the payoff maximizing action.

Using both nonparametric and parametric methods, we show that the identity driven choice model explains significantly more behavior than a standard classical model. Our design also allows us to estimate a key structural parameter of the identity model: identity dependent norm sensitivity. That is, we estimate the average weight individuals place on complying with their identity's social norms.

Our work makes three key contributions. First, we adapt the Krupka and Weber (2013) norm elicitation protocol to be identity dependent, allowing us to overcome the identification problem endemic to research in this area. Second, we provide a direct test of how norms affect identity driven choice. Third, we propose an experimental design and empirical strategy by which to estimate norm adherence which we believe can significantly advance research in the area of identity research.

2. Theoretical Framework

To motivate our experimental approach, we begin with a preference-based model of social norms based on the model introduced by Akerlof and Kranton (2000, 2005). An individual i's utility U_i is based on the actions undertaken by herself and others ($\mathbf{a} = (a_i, \mathbf{a}_{-i})$), the salient social identities of herself and others

[7] We thank an anonymous referee for helping us articulate this point.

($\mathbf{I} = (I_i, \mathbf{I}_{-i})$),[8] and the situation (s):

$$U_i = U_i(\mathbf{a}, \mathbf{I}, s)$$

A situation, as defined by Ellingsen and Mohlin (2014), is a "shared view of the set of participants and the relevant set of actions."[9] We assume that this utility can be separated into a value placed on monetary payoffs (only affected by actions) and on adhering to social norms (affected by actions, the situation and the individual's salient social identity):

$$U_i(\mathbf{a}, \mathbf{I}, s) = V_i(a_i|\mathbf{a}_{-i}) + \gamma_i N(a_i|\mathbf{a}_{-i}, \mathbf{I}, s), \tag{1}$$

where V captures a subject's utility over her monetary payoff, and is not dependent on social identity or situation.[10]

$N(\cdot)$ is the social norms function that maps utility over appropriateness to the relevant set of actions for situation s undertaken by individual i (Krupka and Weber, 2013). In other words, when a person's social identity or situation changes so does the shared view of the appropriateness of the actions – i.e. the norms change. Identity dependent social norms vary at the group level and, from each group member's perspective, they are exogenous and given.[11] In our experiment, we obtain an empirical measure of this appropriateness by eliciting the collective judgment by members of i's salient social identity I_i for situation s in the *norms elicitation experiment*.

The γ_i term reflects the degree to which person i cares to comply with the social norms for her identity. In this model, the degree to which a person cares to adhere to social norms varies between people but not between situations. Intuitively, if an individual cares deeply about complying with her identity's norms, then she will care similarly about complying with those norms regardless of the situation she faces.

When we write the utility function this way, we can readily see the identification problem that must be addressed if social identity driven choice is to be empirically tested. It makes sense to write V as a function that is affected by the actor's actions as well as those of others. It also makes sense to write the utility from taking a socially appropriate action as a function of the actions themselves (Krupka and Weber (2013) and Reuben and Riedl (2013) offer compelling evidence for this). Further imperative for conditioning $N(\cdot)$ on actions comes from theory itself: writing norms this way conforms with Akerlof and Kranton's utility formulation as well as the spirit of the model. They write "...views as to how people should behave [depend] on the particular *situation* – that is, when, where, how and between whom a transaction takes place" (Akerlof and Kranton, 2005).

However, this formalization also very directly highlights the identification problem that any empirical test of such a model will encounter. It is not possible to identify the effect of norms on behavior using choice data alone. But if we empirically measure the identity dependent norm for a situation using a different group of subjects than those who are making choices in these situations, then we can estimate the relative impact of $N(\cdot)$ on choice in a situation where identity salience is unchanged but norms are exogenously changed. This observation is an important cornerstone in our empirical strategy.

By separately and independently identifying identity dependent norms, we overcome several challenges. It is now possible to construct tests of the social identity model for identities or situations where we do not have ex-ante strong intuitions regarding the prescriptions for behavior. While we can look for evidence of identity driven choice in places like religious groups, where we may have strong intuitions regarding the identity dependent norms, we may not be able to do research in organizational settings like those imagined

[8] Akerlof and Kranton (2005) note that individuals can and do have multiple social identities and that sometimes these identities are more or less consciously present or salient. They state: "Researchers use the term social identity to describe types of people and argue that social categories matter to behavior because people often think of themselves (perhaps to great or lesser degree or more or less consciously) in terms of social categories." Several papers have leveraged these features of identity to test identity-based model (e.g. Shih et al., 1999; Shih and Pittinsky, 2005; Benjamin et al., 2010, 2013).

[9] Akerlof and Kranton (2005) use more general terms to define a situation. They define a situation as described by the "when, where, how and between whom a transaction takes place." We use Ellingsen and Mohlin (2014)'s definition because it emphasizes a collective perception and is more readily operationalized.

[10] This formalization of the first term in the utility function follows Akerlof and Kranton (2005) who write "In a standard economic model, an individual's preferences are fixed, and utility depends only on pecuniary variables."

[11] Endogenous selection of social identity is sometimes possible, as with choosing your profession, and sometimes not possible, as with race or gender (cf. Akerlof and Kranton (2000)). Endogenous norm formation is not treated here, but we note that norm formation is likely to take some time, and therefore at a particular point in time, it is reasonable to think of the norm as given.

by Akerlof and Kranton (2005) where we are not sure of the norms. By modifying Krupka and Weber's (2013) norm elicitation protocol, we are able to elicit identity dependent norms for novel situations.

By moving away from articulations of identity dependent norms that are coarsely stated, we are able to make specific predictions about the behavior we expect. That is, we move beyond mere "directional" formulations such as "identity x will perform worse than identity y." Moving away from coarse hypotheses is also desirable when comparing between competing models, as empirical tests may favor the less coarsely stated model or measured construct. In this paper, we exploit being able to directly measure norms to run horse races between different models with social norms as predictors.

Finally, by eliciting an empirical measure of the norms, we are able to overcome a serious limitation endemic to previous work. Work that relies only on observed behavior and/or variation in the experimental manipulation (e.g. identity was or was not made salient) are necessarily joint tests of both the effect of social identity on choice and whether the researcher has identified the *correct* identity dependent norm. Our experimental design overcomes this challenge by eliciting the norm separately from behavior and directly for each situation.

3. Experimental Design

To collect information on both behavior and social norms, we conduct two different experiments - a *choice experiment* and a *norms elicitation experiment* - with two different sets of subjects using workers from Amazon Mechanical Turk (MTurk).[12] Workers on MTurk perform small tasks set by requesters, who then pay the workers for completing the tasks. For economics experiments, workers are paid a standard flat rate plus a bonus which depends on their actions in the experiment. Requesters also pay Amazon a 10% commission for completed tasks. In this sense, the flat rate corresponds to a show-up fee, the bonus to incentives, and the commission to fees one might pay to use the lab in a traditional economics laboratory experiment.

This leads to a between-subjects design with four treatments. First, we vary the type of information we collect from the subjects (behavior or social norms). Second, we vary whether subjects are treated with a neutral prime or a political identity prime (neutral or identity prime from here on).[13] We select two political social identities (Democrat and Republican) because political identity is a "homegrown" identity (i.e. one that subjects bring with them to the laboratory) that U.S. subjects tend to have some affiliation with by the time they reach adulthood.[14,15,16]

In the *choice experiment*, subjects first complete three tasks that collectively serve as our neutral or identity prime. The identity prime is designed to make the subjects' political identities salient while the neutral prime makes no identity salient. The neutral prime tasks are, however, designed to parallel the identity prime tasks.[17]

In the first task, we show subjects five pairs of pictures of people and ask them to tell us which person in each pair they find more attractive. In the neutral prime the pairs of pictures are of ordinary people, while

[12] MTurk started in 2005 as a spot market for labor that is now being used for experimental research. The population of MTurk workers is at least as representative of the U.S. population as traditional subject pools and several classic experiments have been replicated online such as prisoner's dilemma, priming and framing results (Horton et al., 2011; Chandler and Kapelner, 2013; Paolacci et al., 2010). Although MTurk workers take on many tasks (often working for 2 hours a day on such tasks), it is unlikely that they will have encountered our prime or the norms rating activity in previous tasks because our prime is unique to this experiment (we do not reuse a prime developed elsewhere) and because the norms rating activity has not yet been used in an online setting. It is possible that they have encountered the dictator game before and may have "set" or "routine" responses to such games. However this is less concerning because our treatments vary the prime rather than the task. So, if we observe that identity primed subjects behave differently from neutrally primed subjects on the same task, we can attribute this change in behavior to the effect of the prime.

[13] The literature in this area approaches priming endogenous identities (such as race or gender) by administering a questionnaire or a sentence unscrambling task related to the identity (Shih et al., 1999; Benjamin et al., 2010; Kranton et al., 2013). The identity priming task we create for this experiment is most similar to the sentence unscrambling task where concepts related to the target identity are surfaced in the priming activity. For additional discussion on priming and norms, refer to Trafimow (2000).

[14] Not only do most U.S. adults possess a political identity, but it exerts high influence during the decision-making process. Iyengar and Westwood (2015) find that the impact of political identity on judgment and behavior exceeds even that of racial identity.

[15] Kranton et al. (2013) review several different approaches to studying homegrown versus identities created in the laboratory.

[16] We restrict our subjects to U.S. citizens and only allow subjects to participate in one of the treatments.

[17] This is to control for any effect from simply filling out a questionnaire.

in the identity prime the pictures are of well-known politicians. In the identity prime each pair of politician pictures includes one Democrat and one Republican. In both cases the order of the picture pairs is always the same but within each pair the left and right position of the pictures is randomized. In the second task we show subjects two pictures of people in lines and ask them to judge which line is longer. In the neutral prime, the pictures are of people lining up to buy a product, while in the identity prime the pictures are of people waiting to vote. In the third task we show subjects four states and ask them to answer a factual question about each state. In the neutral prime we ask subjects to guess the average temperature of the state in 2013, while in the identity prime we ask them whether Barack Obama or Mitt Romney won that state's electoral votes in the 2012 US presidential election. For this set of three tasks, subjects are not paid based on their answers but are paid a flat fee of $0.50 for completing all three tasks, a practice consistent with the MTurk format. Subjects know that payment for these three tasks does not depend on how they answer.

Subjects then proceed to a fourth task that consists of a series of eleven dictator games for which they *are* paid based on the decisions they make. Instructions for this task are given to the subjects with neutral language in the neutral prime and with tax-redistribution language in the identity prime. We create eleven different situations by varying the initial distribution of wealth. For each situation there are a total of 10 tokens to split between the dictator and a receiver. However, we vary the fraction of the initial endowment that is held by the dictator. The eleven situations reflect the eleven possible whole-token splits of the endowment, from a situation where the dictator starts with 10 tokens and the receiver starts with none (the standard dictator game), to a case where the dictator starts with no tokens and the receiver starts with all 10 (the "bully" game).[18]

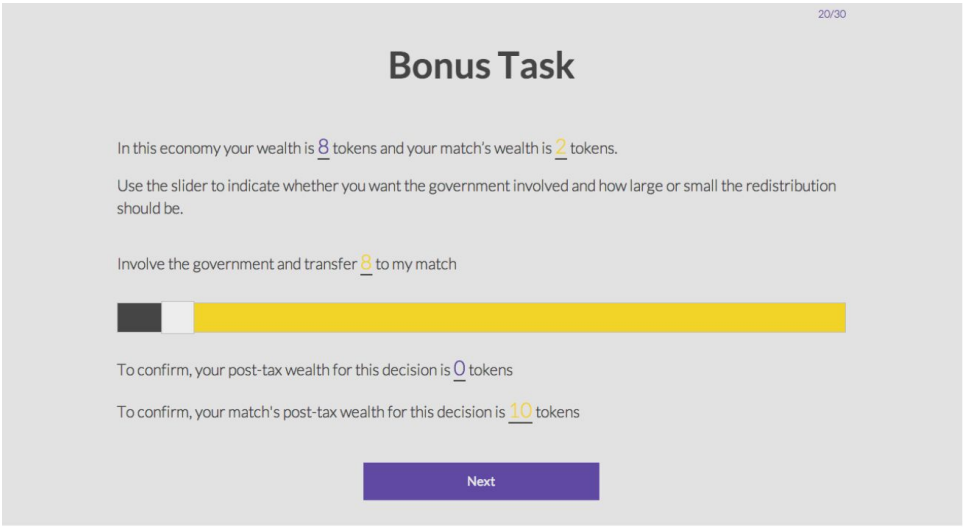

Fig 1: Screen shot of the *choice experiment* redistribution task for identity primed subjects

Figure 1 is a screen shot of the decision that a primed subject in our *choice experiment* encounters. The depicted decision is one where the initial endowment for the dictator is 8 tokens and for the receiver is 2 tokens. The dictator has to indicate her decision by moving the white box along the slider (in Figure 1, the slider has already been moved to indicate a transfer of 8 tokens to the receiver). The subject cannot move on to the next screen until she actively moves the slider. The neutral position of the slider is left/right

[18]The order in which subjects encounter the eleven situations is randomized according to four blocks. The four blocks have the following order: in block (1) the dictator's initial endowment varies from 0, 1, 2, ..., 10 tokens; in block (2) it varies from 5, 0, ..., 4, 6, ..., 10 tokens; in block (3) it varies from 10, 9, 8, ..., 0 tokens; and in block (4) it varies from 5, 10, ..., 6, 4, ..., 0 tokens.

randomized at each decision.Once she moves the white box along the slider, then the other elements of the screen dynamically update to reflect the choice being made and the final allocation.

After subjects complete the decision making rounds, we administer a fifth task which is the same regardless of treatment. Using a 5-item demographic questionnaire we elicit the degree to which each subject self-identifies as a Republican or a Democrat by answering the question "In politics, as of today, do you consider yourself:" with a response scale that includes the choices "A Republican", "Leaning more towards the Republican Party", "Leaning more towards the Democratic Party", and "A Democrat."[19] In our analysis, a subject's response to this question determines which political identity our priming task makes salient. Thus, when we refer to an "identity primed Republican," we are referring to a subject who is both in our priming treatment and also self-identifies as a Republican (or leans towards the Republicans) in the questionnaire.

Once all subjects' responses are collected for each of the five tasks of the experiment, each subject is randomly paired with another subject, a random initial token distribution is selected for each pair, and a random subject in each pair is selected to be the dictator. That dictator's decision in that situation is then implemented, with each token worth \$0.10.

In the *norms elicitation experiment* we collect responses to the 5-item demographic questionnaire before the priming tasks and the norm elicitation task.[20] Subjects are then either treated with the neutral or identity prime (which is identical to those used in the *choice experiment*) and they are paid a flat fee of \$0.50 to complete all questions. They then move on to the incentivized norm elicitation task.

For the norm elicitation task, we follow Krupka and Weber (2013). To minimize fatigue, subjects in these sessions see only three of the initial token distribution situations seen by those in the *choice experiment*. That is, we describe the situation where the dictator is endowment is 5 tokens (the standard dictator game), the situation where the dictator is endowed with 5 and the recipient with 5 tokens, and the situation where the dictator is endowed with 0 and the recipient with 10 tokens. Subjects read about each of these three situations, but the order in which they read about them is randomized.

We ask that for each of these situations, subjects report appropriateness ratings for each of the actions that the dictator can take. They report these ratings as part of a coordination game in which they are paid to match their ratings to those of another randomly drawn participant. In particular, for each situation, the subject is asked to rate the appropriateness of each of eleven possible actions (from the dictator keeping 0 to the dictator keeping all 10 tokens) on a six-point scale. The subject receives a monetary reward if her appropriateness ratings match the rating provided by another MTurker. The ratings are "very socially appropriate," "socially appropriate," "somewhat socially appropriate," "somewhat socially inappropriate," "socially inappropriate," and "very socially inappropriate."

For example, a subject who reads about the standard dictator game (where the dictator's initial endowment is 10 tokens) rates the appropriateness of keeping 0 tokens in that situation and receives a monetary reward if she gives the same rating as her match. The subject plays this ratings coordination game for each of the eleven actions (keep 0 to keep 10 tokens) in this situation - thus, she plays 11 coordination games - before reading about the next situation. The order in which we presented situations is randomized, but the actions are always listed from "keep 0 tokens" to "keep 10 tokens." In total, each subject in the *norms elicitation experiment* plays 33 coordination games.

In order to elicit norms that are identity dependent, we pay subjects to give us their best guess of the appropriateness ratings given by another person *who shares their political identity*. As an example, Figure 2 shows a screen shot of the situation where the dictator's initial endowment is 0 tokens and the dictator chose action "take 10 tokens." A subject in our *norms elicitation experiment* who is in the identity primed treatment reads about this situation and is then asked to guess how appropriate another MTurk participant of the same political persuasion would rate the action "take a tax transfer of 10 tokens from worker B."[21] Using the drop down menu, the subject indicates her guess of how "socially appropriate and consistent with what a Democrat would think worker A OUGHT to do." By asking the subject to coordinate with another Democrat (if she is a Democrat), we elicit the identity dependent norms for Democrats. For those subjects who received the neutral prime, we elicit non-identity dependent norms by asking them to give us their best

[19] This question is adapted from Gallup's standard party identification question, in use since 1944 (Gallup, 1991).

[20] Though it is possible that moving the questionnaire to the front will affect our results, it is less likely to be an issue in this experimental context because subjects in both the neutral and identity prime answer the same questionnaire, and thus differences in subsequent ratings will be attributable to the prime that follows the demographic questions.

[21] Those that respond that they "lean" towards a party are treated as members of that party.

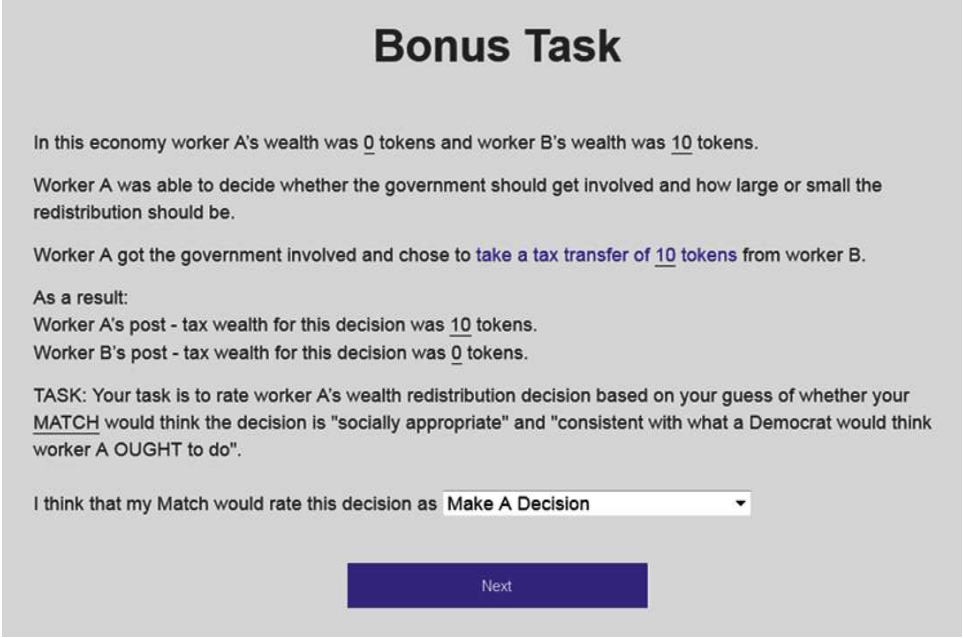

Fig 2: Screen shot of the *norms elicitation experiment* ratings task for identity primed Democrats

guess of the appropriateness ratings given by another randomly selected MTurker.[22]

For each of the 33 possible actions subjects are shown, they receive 1 token, or \$0.10, for each rating that is identical to that of their target match. For the neutrally primed subjects, we interpret this measure as the respondent's best guess about the non-identity dependent norm for the situation. For the identity primed treatment, this task gives us a measure of each political party's identity dependent norm profile and an empirical measure of N for each identity and dictator situation.

Our treatments map back to the utility function and can be used to test our research questions. Allow k_i to denote the amount of wealth kept by dictator i, and e the initial endowment of wealth held by i. Then the utility function from Equation 1 simplifies to:

$$U_i(k_i, I_i, e) = V_i(k_i) + \gamma_i N(k_i|I_i, e). \tag{2}$$

Here, a dictator i decides how much to keep for herself, k_i, given her social identity I_i and the situation, denoted by the initial endowment, e. In what follows, changes in initial endowment are how we operationalize changes in the situation.

By separately eliciting social norms from behavior, and for the different social identities, we are able to measure N for the various situations and social identities. By varying whether the respondent was identity primed or not, we are able to estimate both identity dependent as well as non-identity dependent norms and behavior. Finally, by varying the initial endowments but not the payoff space of the dictator games we can keep V constant across situations.

In the *choice experiment* a total of 98 subjects participated in the neutral prime treatment and 198 in the identity prime treatment. In the *norms elicitation experiment* 197 subjects participated in the neutral prime norm elicitation and 196 in the identity prime norm elicitation.

Average payment was \$1 for the *choice experiment*, \$0.95 for the identity prime treatment of the *norms elicitation experiment* and \$1.10 for the neutral prime treatment of the *norms elicitation experiment*.

[22] We also run a condition in which our neutrally primed subjects are told to match their responses with someone who has their same political identity, but found that these ratings were very similar to those provided by neutrally primed subjects who matched ratings with a randomly selected MTurker. This shows evidence that the prime, not the identity of the match, affects the reported appropriateness ratings.

4. Results

We begin our discussion of the results by analyzing the data generated from our *norms elicitation experiment*. We then present the results from our *choice experiment* and then combine the two data sets to predict behavior.

4.1. Norms

First, we examine the norms reported by subjects in the *norms elicitation experiment*. We pool subjects who self-identify as "leaning" towards a political party with those who identify as members of that party.[23] We find that 31.63% and 22.84% of subjects identify as Republicans in the identity primed and neutrally primed treatments, respectively ($p = 0.0503$, two-sided t-test).

We transform the appropriateness ratings from the *norms elicitation experiment* into an empirical measure of the norm by converting the subjects' ratings into numerical scores (or norm ratings). A rating of "very socially inappropriate" receives a score of -1, "socially inappropriate" receives a score of -0.6, "somewhat socially inappropriate" receives a score of -0.2, "somewhat socially appropriate" receives a score of 0.2, "socially appropriate" receives a score of 0.6, and "very socially appropriate" receives a score of 1.[24,25]

To empirically estimate the Democratic (Republican) identity primed norms when the dictator's initial endowment is 10 tokens, we use only the responses from identity primed subjects who (1) self-report that they are Democrats (Republicans) and (2) are rating the situation where a dictator has an initial endowment of 10. As with Krupka and Weber (2013), we take the the average norm rating for each action. We proceed identically for when the initial endowment is 5 and 0 tokens. The resulting profiles of average norm ratings is our empirical proxy for the Democratic (Republican) identity primed norms for that endowment.[26] In a parallel fashion, we construct neutrally primed norm profiles for Democrats (Republicans) but use the responses from neutrally primed subjects who self-report that they are Democrats (Republicans).

Figure 3 shows the average norm ratings for the different identities and primes (identity primed Democrats, identity primed Republicans, neutrally primed Democrats and neutrally primed Republicans). For each identity and prime, we display the norm ratings for the three initial endowments (0, 5, or 10 tokens) that the subjects rate. Along the x-axis is the action that is being rated (e.g., "keeping 0 tokens for oneself and transferring 10" is depicted at "0" on the x-axis). The y-axis shows different possible values that the average norm ratings may take, with -1 representing the rating for "very socially inappropriate" and 1 representing the rating for "very socially appropriate." Because these norm ratings differ on multiple dimensions, our analysis will treat these identities and primes separately, looking at the norm differences across each of these dimensions.

4.1.1. Norms vary by the situation

Prior research, notably Krupka and Weber (2013), leads us to predict that norms and behavior will differ when we vary the initial endowment distribution. For instance, the Krupka and Weber (2013) results comparing the standard game (where the dictator starts with all 10 tokens) to the bully game (where the receiver starts with all 10 tokens), suggest that when we change the initial endowment, subjects will find any action that involves "taking" to be less appropriate than the identical payoff obtained without "taking."

Hypothesis 1 (**Norms: situations**). *Subjects' norm ratings will differ by the initial endowment distribution. Though each of these situations yield the same mapping from action to payoff, the appropriateness of a particular action will depend on what fraction of the initial endowment is held by the dictator.*

[23] Recall that subjects in both the *norms elicitation experiment* and the *choice experiment* self-report their party affiliations. The prime activates the subject's political identity but does not, in itself, indicate the subject's political identity. For that we use the self-reported measure.

[24] Our transformation is similar to that of Krupka and Weber (2013).

[25] By giving the ratings a numerical value, we are imposing ratio scale characteristics on measurements that are in design ordinal. In some of what follows this is merely for convenience, such as when we use a rank-order test for the equality of distributions. But on other occasions it implicitly adds extra assumptions upon which our analysis is then conditional, such as when we compare means.

[26] We also perform this transformation using the median rather than mean norm ratings and find similar results. We report the results from analyses using these median norm ratings in the Appendix.

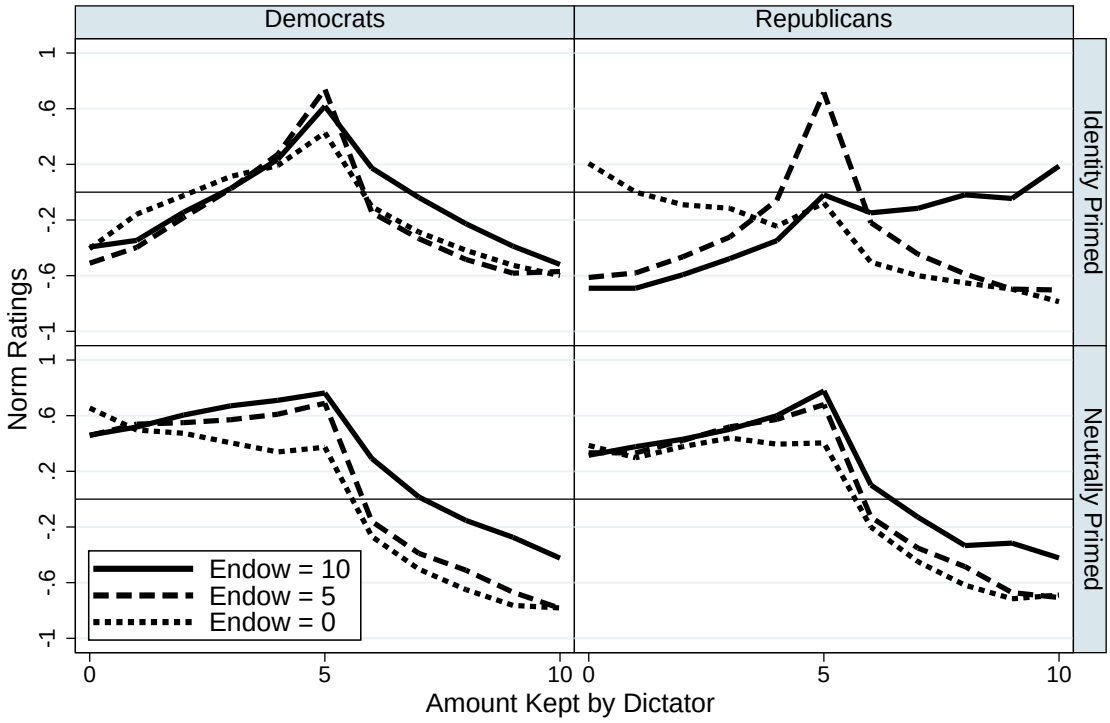

Fig 3: Norm ratings by identity, initial endowment, and dictator action

Visually, Democrats' identity primed norm profiles (top-left panel of Figure 3) are similar in shape across different endowments. The most socially appropriate action is the equal split for all endowments. However, there are still differences in the appropriateness of deviation from equal distribution, depending on the initial endowment. That is, the slope on either side of the dictator's action "keeping 5 tokens" varies depending on the initial endowment.

The norm profiles for Republicans are clearly different for initial endowments of 0, 5, and 10 tokens (top-right panel of Figure 3). Notably, the norm profiles for different endowments are not 'simple' transformations of each other such that if you knew the profile for "Endowment = 10" you could add a constant to get the norm profile for "Endowment = 5." For example, the Republican norm for keeping 0 tokens when the dictator has an endowment of 0 tokens is rated as the most socially appropriate action, while the same action is rated as "somewhat socially inappropriate" when the dictator's initial endowment is either 5 or 10 tokens.

For identity primed Republicans, staying at the initial allocation is always considered to be the most appropriate action. An equal split is only considered the most appropriate action when the initial endowment is 5. It is evident that the most appropriate action is dependent on the endowment and the subject's identity. It is also clear that the norm ratings have a non-linear relationship with the actions.

The bottom panels of Figure 3 plot the average neutrally primed norm ratings for Democrats and Republicans for the three initial endowments. Recall that the data used to generate Democratic and Republican neutrally primed norm ratings comes from subjects in the neutral prime treatment of our *norms elicitation experiment* who self-identify as Democrats and Republicans, respectively. Thus, we can view these norm ratings as those given by Democrats and Republicans when their political identity is not salient. We also see some visual differences for these subjects. In particular, although the shapes of their norm profiles are similar across the endowments, the slopes of these norm profiles still differ for neutrally primed Democrats and Republicans.

Table 1 presents piecewise OLS regressions that test the differences in the norm ratings of the three initial endowments (0, 5, or 10 tokens) for identity primed Democrats (Panel A, columns 1 and 2) and Republicans

Table 1: Piecewise OLS regressions of norm ratings on endowment and actions for each identity

Panel A: OLS regression of identity primed norm ratings on endowment and actions

	Dependent variable: identity primed norm ratings			
	Democrats		Republicans	
	(1) Keep ≤ 5	(2) Keep > 5	(3) Keep ≤ 5	(4) Keep > 5
Endowment0	0.14*	-0.59***	0.89***	0.51**
	(0.080)	(0.127)	(0.122)	(0.220)
Endowment5	-0.11**	-0.73***	-0.03	1.07***
	(0.054)	(0.134)	(0.075)	(0.273)
Keep	0.20***	-0.17***	0.13***	0.07**
	(0.015)	(0.015)	(0.020)	(0.033)
Endowment0 × Keep	-0.05**	0.05***	-0.19***	-0.14***
	(0.019)	(0.015)	(0.029)	(0.030)
Endowment5 × Keep	0.04***	0.06***	0.11***	-0.20***
	(0.014)	(0.016)	(0.026)	(0.035)
Constant	-0.50***	1.19***	-0.79***	-0.62**
	(0.075)	(0.116)	(0.080)	(0.258)
Observations	2,412	2,010	1,116	930
R^2	0.224	0.134	0.202	0.218
H_0: Endowment0 × Keep = Endowment5× Keep	$p < 0.01$	$p = 0.32$	$p < 0.01$	$p < 0.01$

Panel B: OLS regression of neutrally primed norm ratings on endowment actions

	Dependent variable: neutrally primed norm ratings			
	Democrats		Republicans	
	(1) Keep ≤ 5	(2) Keep > 5	(3) Keep ≤ 5	(4) Keep > 5
Endowment0	0.13**	-0.83***	0.07	-0.31
	(0.064)	(0.109)	(0.095)	(0.254)
Endowment5	0.00	-0.55***	0.01	-0.06
	(0.046)	(0.110)	(0.090)	(0.251)
Keep	0.06***	-0.17***	0.09***	-0.12***
	(0.014)	(0.011)	(0.026)	(0.025)
Endowment0 × Keep	-0.12***	0.04***	-0.07**	-0.00
	(0.017)	(0.013)	(0.028)	(0.030)
Endowment5 × Keep	-0.02**	0.02	-0.01	-0.02
	(0.011)	(0.013)	(0.022)	(0.030)
Constant	0.47***	1.27***	0.28**	0.77***
	(0.067)	(0.080)	(0.123)	(0.180)
Observations	2,736	2,280	810	675
R^2	0.038	0.276	0.039	0.152
H_0: Endowment0 × Keep = Endowment5× Keep	$p < 0.01$	$p < 0.05$	$p < 0.05$	$p = 0.41$

Notes: Standard errors (in parentheses) are adjusted for clustering at the individual level.
Significant at the *** 1 percent, ** 5 percent, and * 10 percent levels.

(Panel A, columns 3 and 4).[27] We regress subjects' norm ratings on "Keep," the number of tokens kept by the dictator (0 to 10 tokens), a dummy for endowments 0 and 5 (10 is omitted), and an interaction between the endowment and the action number.[28] For each identity, the first column looks only at cases where the dictator keeps fewer than or exactly 5 tokens, while the second column looks only at the cases where the dictator keeps more than 5 tokens.

For this analysis, we are interested in the interaction terms, "Endowment0 × Keep" and "Endowment5 × Keep." These terms give the difference in the slopes of the norm profiles for the different endowments in Figure 3. The coefficients on those terms in Table 1 (Panel A) are compared to the (omitted) situation where the dictator's initial endowment is 10 tokens. We also report Wald tests comparing the two interaction terms in order to compare the situation where the dictator's initial endowment is 5 tokens to the situation where the dictator's initial endowment is 0 tokens (Table 1, Panel A's last row).

For identity primed Democrats (columns 1 and 2), both interaction terms are significantly different from 0 in both columns. That is, the slopes of endowment 0's and endowment 5's norm profiles are significantly different from endowment 10's norm profile. The Wald tests comparing the slopes of endowment 0's and endowment 5's norm profiles also show significant differences, but only when the dictator keeps 5 tokens or less ($p < 0.01$ in column 1 and $p = 0.32$ in column 2).

For identity primed Republicans (columns 3 and 4), we again find that both interaction terms are significant in both columns ($p < 0.01$). Wald tests comparing the slopes of endowment 0's and endowment 5's norm profiles also show significant differences ($p < 0.01$ in both columns 3 and 4). That is, endowment 0's and endowment 5's norm profiles have significantly different slopes.

Table 1 also shows the same regressions for neutrally primed Democrats (Panel B, columns 1 and 2) and Republicans (Panel B, columns 3 and 4). Looking first at the neutrally primed Democrats, we find that endowment 0's interaction term is significant in both columns ($p < 0.01$), while endowment 5's interaction term is significant only when the dictator keeps 5 or fewer tokens ($p < 0.05$). The Wald tests show that endowment 0's and endowment 5's norm profiles are significantly different ($p < 0.01$ for column 1, $p < 0.05$ for column 2).

Finally, looking at the neutrally primed Republicans, we find that endowment 0's interaction term is significant only when the dictator keeps 5 tokens or less ($p < 0.05$). Also, endowment 5's interaction term is not significant in either column. The Wald tests show that the endowment 0 and endowment 5 norm profiles are significantly different when the dictator keeps 5 tokens or less ($p < 0.05$ for column 3), but not when the dictator keeps more than 5 tokens ($p = 0.41$ for column 4).[29]

Taken together, this analysis leads to the following result:

Result 1 (**Norms: situations**). *Subjects' reported norm ratings generally differ by the dictator's initial endowment. This depends on the action that the subjects rate, but the norm profiles for the different endowments are usually different from each other. The direction of these differences depends on the identity and whether that identity has been primed.*

4.1.2. Norms vary by identity salience

While Krupka and Weber (2013) can help us formulate predictions about neutrally primed norms as well as variations in behavior stemming from changes to the initial endowment, the act of priming should generate differences between identity primed and neutrally primed norms.

Hypothesis 2 (**Norms: identity salience**). *For a particular identity, the identity primed norms will differ from the neutrally primed norms.*

[27] We also report the Mann-Whitney U test testing for differences in norm ratings across endowments in the Appendix for identity primed and neutrally primed Democrats and Republicans (Tables A1 and A2) .

[28] In all specifications we cluster the standard errors at the individual level.

[29] Recall that subjects in the *norms elicitation experiment* rate the appropriateness of actions for when the endowment is 0, 5, and 10, with the order endowments randomized. When we consider only norm ratings from the first situation that subjects see, we find similar results. For identity primed Democrats, with the exception of actions keeping 5 tokens or less, the other interaction terms are all significant at the $p < 0.05$ level. Further, the Wald tests for the two interaction terms are also significant at the $p < 0.05$ level. For identity primed Republicans, the interaction terms and their Wald tests are all significant ($p < 0.05$) for all actions. When neutrally primed, with the exception of Democrats for actions keeping 5 tokens or less, all interactions and their Wald tests are not significant. However, for actions keeping 5 tokens or less, neutrally prime Democrats rate these actions different for endowments 0 vs. 10 and endowments 5 vs. 10.

Comparing the top and bottom panels of Figure 3, consistent with Hypothesis 2, it is apparent that neutrally primed norms differ from identity primed norms. Identity and neutrally primed Democratic norm profiles have similar shapes, but neutrally primed subjects report higher appropriateness with keeping no tokens. On the other hand, identity and neutrally primed Republican norms show clear differences. For example, when the endowment is 10, identity primed Republicans find keeping all 10 tokens to be somewhat appropriate while neutrally primed Republicans find it to be inappropriate.

Table 2: Piecewise OLS regressions of norm ratings on priming and actions for each identity

Panel A: OLS regression of Democratic norm ratings on priming and actions						
	Dependent variable: Democratic norm ratings					
	Endowment = 0		Endowment = 5		Endowment = 10	
	(1) Keep ≤ 5	(2) Keep > 5	(3) Keep ≤ 5	(4) Keep > 5	(5) Keep ≤ 5	(6) Keep > 5
Primed	-0.95***	0.16	-1.08***	-0.27**	-0.97***	-0.08
	(0.088)	(0.126)	(0.095)	(0.120)	(0.100)	(0.141)
Keep	-0.06***	-0.13***	0.04***	-0.15***	0.06***	-0.17***
	(0.014)	(0.010)	(0.014)	(0.010)	(0.014)	(0.011)
Primed × Keep	0.21***	0.01	0.20***	0.04***	0.14***	-0.00
	(0.023)	(0.016)	(0.020)	(0.015)	(0.021)	(0.018)
Constant	0.60***	0.44***	0.47***	0.72***	0.47***	1.27***
	(0.052)	(0.083)	(0.064)	(0.083)	(0.067)	(0.080)
Observations	1,716	1,430	1,716	1,430	1,716	1,430
R^2	0.182	0.151	0.323	0.131	0.295	0.160
Panel B: OLS regression Republican norm ratings on priming and actions						
	Dependent variable: Republican norm ratings					
	Endowment = 0		Endowment = 5		Endowment = 10	
	(1) Keep ≤ 5	(2) Keep > 5	(3) Keep ≤ 5	(4) Keep > 5	(5) Keep ≤ 5	(6) Keep > 5
Primed	-0.25	-0.58**	-1.11***	-0.27	-1.07***	-1.39***
	(0.154)	(0.226)	(0.145)	(0.252)	(0.146)	(0.314)
Keep	0.01	-0.12***	0.07***	-0.15***	0.09***	-0.12***
	(0.032)	(0.023)	(0.027)	(0.023)	(0.025)	(0.024)
Primed × Keep	-0.08	0.06**	0.17***	0.03	0.04	0.20***
	(0.046)	(0.027)	(0.033)	(0.029)	(0.033)	(0.041)
Constant	0.35***	0.46**	0.29**	0.71***	0.28**	0.77***
	(0.114)	(0.190)	(0.116)	(0.184)	(0.122)	(0.179)
Observations	642	535	642	535	642	535
R^2	0.105	0.082	0.382	0.108	0.415	0.067

Notes: Standard errors (in parentheses) are adjusted for clustering at the individual level. Significant at the *** 1 percent, ** 5 percent, and * 10 percent levels.

In Table 2 we report piecewise OLS regressions comparing the differences between the identity and neutrally primed norm ratings for each endowment for Democrats (Panel A) and Republicans (Panel B).[30] We regress the norm ratings on whether the subject is identity primed ("Primed" is 1 if the subject is identity primed and 0 if she is neutrally primed), "Keep" and an interaction term. For each endowment, the first column reports the case where the dictator keeps 5 or fewer tokens and the second column reports the case where the dictator keeps more than 5 tokens. We are primarily interested in the interaction term "Primed × Keep," which gives the difference in the slopes of the norm profiles for identity and neutrally primed subjects.

We first examine the Democrats (Panel A). When the endowment is 0, the identity and neutrally primed norm profiles differ when the dictator keeps 5 or fewer tokens (column 1, $p < 0.01$). When the endowment is

[30]We also report the Mann-Whitney U test testing for differences between identity primed and neutrally primed norm ratings in the Appendix for Democrats and Republicans (Table A3).

5, the identity and neutrally primed norm profiles differ for all dictator actions (columns 3 and 4, $p < 0.01$). Lastly, when the endowment is 10, the norm profiles differ significantly only when the dictator keeps 5 or fewer tokens (column 5, $p < 0.01$).

Looking only at the Republicans (Panel B), we again find that identity and neutrally primed norms differ for certain endowments and actions. When the endowment is 0, the norms differ when the dictator keeps more than 5 tokens (column 2, $p < 0.05$). When the endowment is 5, the norms differ when the dictator keeps 5 or fewer tokens (column 3, $p < 0.01$). Finally, when the endowment is 10, the norm profiles differ when the dictator keeps more than 5 tokens (column 6, $p < 0.01$).[31]

Taking these results together, we find that priming does have an effect on norm ratings, leading to the following result:

Result 2 (**Norms: identity salience**). *Subjects' reported norm ratings generally differ by whether or not the subjects' political identities are primed. As with the situation differences, norm ratings depend on the action that the subjects rate, but the norm profiles for identity primed and neutrally primed subjects are generally different from each other. The direction of these differences depends on the identity and on the dictator's initial share of the endowment.*

4.1.3. Norms vary by identity

We also expect that norms will differ between the Democratic and Republican identities. To sharpen our hypothesis, we can turn to the party platforms. The 2012 Democratic National Platform, in 4 separate instances, advocates for the "wealthiest taxpayers to pay their fair share." The 2012 Republican Platform, on the other hand, states that the stance of the party is to "reject the use of taxation to redistribute income..." Similarly, a Pew Research Center/USA TODAY survey conducted in January of 2014 shows, for the question "How much should the government do to reduce the gap between the rich and everyone else," 88% of liberal Democrats and a much smaller fraction (40%) of conservative Republicans answered "A lot" or "Some."

Based on this, we expect that identity primed Democrats will rate an equal redistribution of the total endowment as most appropriate and that these ratings will depends less on the initial distribution of the endowment. On the other hand, Republicans will view the status quo (i.e. not changing the initial endowment distribution) as the most appropriate, with appropriateness decreasing as the dictator transfers more of the endowment (either to the receiver or to herself). This suggests that identity primed subjects' norms and behaviors will differ. In this section, we focus on what this means for the Democratic and Republican norms.

Hypothesis 3 (**Norms: identity**). *The norms for identity primed Republicans and identity primed Democrats will differ. In particular, Democrats will find redistribution that favors equality most appropriate. Republicans will find the status quo (i.e. no redistribution) to be most appropriate.*

When we consider identity primed Democrats (the top-left panel of Figure 3), we see that for all three initial endowments, the most socially appropriate action is for the dictator to keep 5 tokens. Consistent with their party platform, regardless of the Democratic dictator's initial endowment, the most socially appropriate action is to redistribute the tokens such that the dictator and the receiver each receives 5 tokens. In addition, the further the deviation from this equal split of the total available tokens, the more inappropriate it is to take that action.

In contrast, for identity primed Republicans (the top-right panel of Figure 3), the most appropriate action depends on the dictator's endowment. In particular, when the dictator's endowment is 0, the most appropriate action is for the dictator to keep 0 tokens and to not redistribute any tokens. Furthermore, regardless of whether the dictator's initial endowment is 5 or 10 tokens, the most socially appropriate action is to stay at the initial distribution. Consistent with their party platform, identity primed Republicans' most socially appropriate action is to keep the status quo. Analogous to the identity primed Democrats, the further the deviation from this most appropriate action, the more inappropriate the action is (except for the equal split, which is seen as more appropriate than the actions around it, but still less appropriate than the status quo).

[31] When we consider only norm ratings from the first situation that subjects see, we again find similar results. With the exception of actions keeping more than 5 tokens when the endowment is 5 or 10, the norm ratings are significantly different for identity primed and neutrally primed Democrats ($p<0.05$). For Republicans, identity primed and neutrally primed norms are significantly different ($p<0.05$) with the exception of actions keeping more than 5 tokens when the endowment is 5 and keeping 5 tokens or less when the endowment is 10.

Comparing the top-left and top-right panels of Figure 3, we see that the norms for identity primed Democrats and Republicans differ when the dictator's endowment is not 5 tokens. This is not the case when the subjects are neutrally primed (bottom-left and bottom-right panels of Figure 3); the norm profiles for neutrally primed subjects appear to be independent of identity.

Table 3: Piecewise OLS regressions of norm ratings on identity and actions by initial endowment

Panel A: OLS regression of identity primed norm ratings on identity and actions						
	Dependent variable: identity primed norm ratings					
	Endowment = 0		Endowment = 5		Endowment = 10	
	(1) Keep ≤ 5	(2) Keep > 5	(3) Keep ≤ 5	(4) Keep > 5	(5) Keep ≤ 5	(6) Keep > 5
Republican	0.46***	-0.71***	-0.20*	-0.01	-0.29***	-1.81***
	(0.125)	(0.153)	(0.113)	(0.192)	(0.109)	(0.282)
Keep	0.15***	-0.12***	0.24***	-0.11***	0.20***	-0.17***
	(0.019)	(0.012)	(0.015)	(0.011)	(0.015)	(0.015)
Republican × Keep	-0.22***	0.06***	-0.00	-0.01	-0.07***	0.25***
	(0.037)	(0.018)	(0.025)	(0.021)	(0.025)	(0.036)
Constant	-0.36***	0.60***	-0.61***	0.45***	-0.50***	1.19***
	(0.071)	(0.094)	(0.070)	(0.087)	(0.075)	(0.116)
Observations	1,176	980	1,176	980	1,176	980
R^2	0.107	0.120	0.318	0.083	0.254	0.129
Panel B: OLS regression of neutrally primed norm ratings on identity and actions						
	Dependent variable: neutrally primed norm ratings					
	Endowment = 0		Endowment = 5		Endowment = 10	
	(1) Keep ≤ 5	(2) Keep > 5	(3) Keep ≤ 5	(4) Keep > 5	(5) Keep ≤ 5	(6) Keep > 5
Republican	-0.24*	0.03	-0.18	-0.01	-0.18	-0.50**
	(0.125)	(0.207)	(0.132)	(0.202)	(0.139)	(0.196)
Keep	-0.06***	-0.13***	0.04***	-0.15***	0.06***	-0.17***
	(0.014)	(0.010)	(0.014)	(0.010)	(0.014)	(0.011)
Republican × Keep	0.07*	0.00	0.03	0.01	0.03	0.05*
	(0.035)	(0.025)	(0.030)	(0.025)	(0.029)	(0.027)
Constant	0.60***	0.44***	0.47***	0.72***	0.47***	1.27***
	(0.052)	(0.083)	(0.064)	(0.083)	(0.067)	(0.080)
Observations	1,182	985	1,182	985	1,182	985
R^2	0.022	0.143	0.026	0.178	0.047	0.139

Notes: Standard errors (in parentheses) are adjusted for clustering at the individual level. Significant at the *** 1 percent, ** 5 percent, and * 10 percent levels.

In Table 3, we report piecewise OLS regressions comparing identity primed Democratic and Republicans norm profiles for each endowment (Panel A).[32] We regress the identity primed norm ratings on whether the subject is a Republican ("Republican" is 1 for Republicans and 0 for Democrats), "Keep," and an interaction term. As with the other piecewise OLS regressions in earlier sections, for each endowment, the first column reports the case where the dictator keeps 5 or fewer tokens and the second column reports the case where the dictator keeps more than 5 tokens. As before, we are primarily interested in the interaction term "Republican × Keep." This gives the difference in the slopes of the norm profiles of Democrats and Republicans.

When the dictator's endowment is 0 or 10, identity primed Democrats and Republicans have norm ratings that are significantly different at the 1% level. When the endowment is 5, the differences are not significant. This is consistent with our observations from Figure 3, where Democrats find an equal split to be most appropriate while Republicans find the status quo to be the most appropriate. Their norm ratings therefore align when the status quo is an equal split.

[32]We also report the Mann-Whitney U test testing for differences across Democratic and Republican identity primed and neutrally primed norm ratings in the Appendix (Table A4).

Table 3 also shows piecewise OLS regressions for neutrally primed Democrats and Republicans (Panel B). The specifications are the same as those in Panel A. We find that neutrally primed norm ratings are more similar than identity primed norm ratings. There are only two exceptions: when the dictator keeps 5 or fewer tokens when the endowment is 0 and when the dictator keeps more than 5 tokens when the endowment is 10 ($p < 0.10$ in both cases).[33] This analysis leads to the following result:

Result 3 (**Norms: identity**). *Identity primed Democratic and Republican norm ratings differ significantly, with Democrats finding an equal split to be most appropriate and Republicans finding the status quo to be most appropriate. An exception occurs in the situation where the status quo is an equal split. Neutrally primed ratings show some differences by political identity, but they are much less pronounced.*

4.2. Predicting behavior

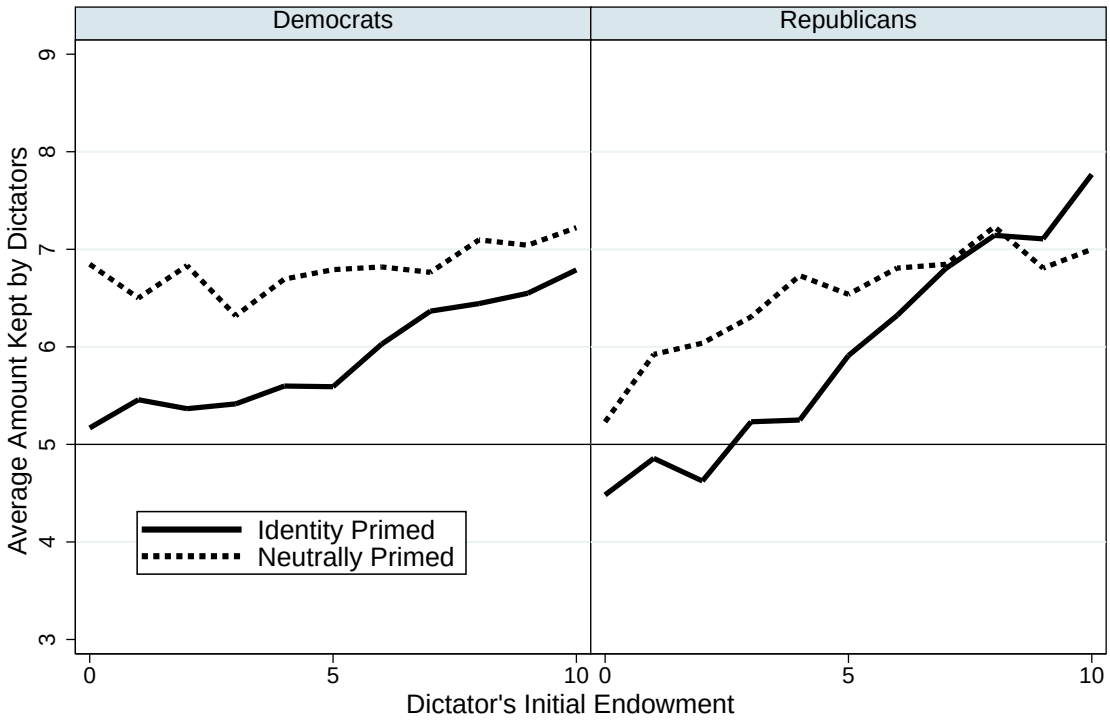

Fig 4: Dictator choices by identity and initial endowment

Having established that identity primed norms differ by situation, identity, and identity salience, we are in a position to test the identity model's behavioral predictions. Figure 4 shows the average dictator actions in the *choice experiment* for different endowments, separated by the identities and primes.

Based on our findings to this point, we expect that behavior will be affected by differences in situation, prime and identity. This leads to the following hypothesis:

Hypothesis 4 (**Behavior**). *Dictator behavior will depend on the dictator's initial endowment, identity salience and identity as indicated by the model of identity dependent norms.*

[33] Only looking at the norm ratings from the first situation that subjects rate, we again find similar results. For identity primed norm ratings, Democratic and Republican norms are significantly different for keeping 5 or less tokens when the endowment is 0 ($p<0.01$). Identity primed Democratic and Republican norms are also significantly different for all actions when the endowment is 10 ($p<0.05$). In contrast, neutrally primed Democratic and Republican norms do not significantly differ from each other for all actions in all endowments.

In order to test Hypothesis 4, we first calculate the behavioral implications of the model given the elicited social norms from the *norms elicitation experiment*. Combining the utility function in Equation 2 with our elicited norms for the various identities and situations, we can construct the dictators' utility functions. For instance, an identity primed Democratic dictator with an initial endowment of 0 tokens faces the norms and utilities displayed in Table 4.

Table 4: Norms and utilities for identity primed Democrats, Endowment = 0

Action (payoff)	Norm	Utility
0	-0.41	-0.41γ
1	-0.16	$1-0.16\gamma$
2	-0.02	$2-0.02\gamma$
3	0.11	$3+0.11\gamma$
4	0.19	$4+0.19\gamma$
5	0.43	$5+0.43\gamma$
6	-0.10	$6-0.10\gamma$
7	-0.29	$7-0.29\gamma$
8	-0.42	$8-0.42\gamma$
9	-0.53	$9-0.53\gamma$
10	-0.60	$10-0.60\gamma$

We define $B_0^D(\gamma)$, the optimal choice function for an identity primed Democrat with initial endowment 0:

$$B_0^D(\gamma) = \begin{cases} 10 & \text{if} \quad \gamma \leq 4.87 \\ 5 & \text{if} \quad \gamma \geq 4.87 \end{cases}$$

Table 5: Optimal choice functions

Treatment	Identity	Endowment	Choice function
Identity Primed	Democrats	0	$B_0^D(\gamma) = \begin{cases} 10 & \text{if} \quad \gamma \leq 4.87 \\ 5 & \text{if} \quad 4.87 \leq \gamma \end{cases}$
		5	$B_5^D(\gamma) = \begin{cases} 10 & \text{if} \quad \gamma \leq 3.82 \\ 5 & \text{if} \quad 3.82 \leq \gamma \end{cases}$
		10	$B_{10}^D(\gamma) = \begin{cases} 10 & \text{if} \quad \gamma \leq 4.40 \\ 5 & \text{if} \quad 4.40 \leq \gamma \end{cases}$
	Republicans	0	$B_0^R(\gamma) = \begin{cases} 10 & \text{if} \quad \gamma \leq 7.05 \\ 5 & \text{if} \quad 7.05 \leq \gamma \leq 17.61 \\ 0 & \text{if} \quad 17.61 \leq \gamma \end{cases}$
		5	$B_5^R(\gamma) = \begin{cases} 10 & \text{if} \quad \gamma \leq 3.52 \\ 5 & \text{if} \quad 3.52 \leq \gamma \end{cases}$
		10	$B_{10}^R(\gamma) = 10$
Neutrally Primed	Democrats	0	$B_0^d(\gamma) = \begin{cases} 10 & \text{if} \quad \gamma \leq 4.33 \\ 5 & \text{if} \quad 4.33 \leq \gamma \leq 17.76 \\ 0 & \text{if} \quad 17.76 \leq \gamma \end{cases}$
		5	$B_5^d(\gamma) = \begin{cases} 10 & \text{if} \quad \gamma \leq 3.39 \\ 5 & \text{if} \quad 3.39 \leq \gamma \end{cases}$
		10	$B_{10}^d(\gamma) = \begin{cases} 10 & \text{if} \quad \gamma \leq 4.21 \\ 5 & \text{if} \quad 4.21 \leq \gamma \end{cases}$
	Republicans	0	$B_0^r(\gamma) = \begin{cases} 10 & \text{if} \quad \gamma \leq 4.57 \\ 5 & \text{if} \quad 4.57 \leq \gamma \leq 56.25 \\ 3 & \text{if} \quad 56.25 \leq \gamma \end{cases}$
		5	$B_5^r(\gamma) = \begin{cases} 10 & \text{if} \quad \gamma \leq 3.61 \\ 5 & \text{if} \quad 3.61 \leq \gamma \end{cases}$
		10	$B_{10}^r(\gamma) = \begin{cases} 10 & \text{if} \quad \gamma \leq 4.17 \\ 5 & \text{if} \quad 4.17 \leq \gamma \end{cases}$

This means that, depending on the extent to which identity primed Democrats care about complying with their identity's norms for this situation, they will choose to keep either 5 or 10 tokens. Repeating this exercise for each identity and situation, we obtain the optimal choice functions displayed in Table 5. Hypothesis 4 indicates that subjects should follow these optimal choice functions depending on their γ.

We next examine the individual choices made by the subjects in the *choice experiment*. Figure 5 shows

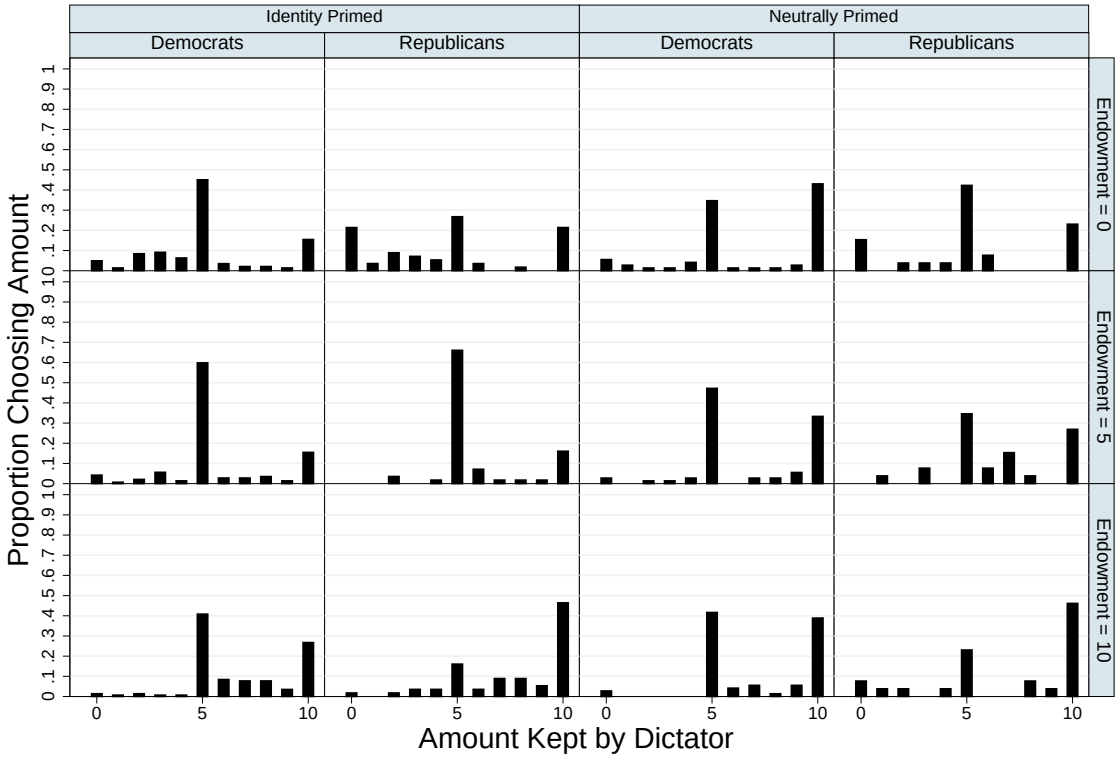

Fig 5: Histograms of dictator choices by initial endowment

the distributions of dictator choices for each identity and prime. These distributions are displayed for the three endowments for which we collect norms ratings in the *norms elicitation experiment.*

Connecting the model's predicted optimal choice functions to subject behavior, we are able to calculate how many subjects' choices the model is able to explain. Our model also assumes that γ does not differ across endowments within an individual. This means that there are only certain combinations of actions for each identity and prime that are explained by our model. For instance, if an identity primed Democrat has a $\gamma < 3.82$, according to Table 5, she should choose to keep 10 tokens for each endowment. If, on the other hand, $3.82 < \gamma < 4.40$, she should choose to keep 10 tokens when her endowment is 0 or 10, but keep 5 tokens when her endowment is 5. Repeating this, we find that for identity primed Democrats, the only combinations of actions that our model explains are $(k^0, k^5, k^{10}) = (10, 10, 10), (10, 5, 10), (10, 5, 5)$, and $(5, 5, 5)$, where k^e is the amount kept when the endowment is e.

Using the calculated choice functions for each prime, identity and endowment combination, we find that our model can explain 127 out of 296 subjects' choices (42.9%). The corresponding null hypothesis to Hypothesis 4 is that none of the three dimensions (identity, prime, and endowment) have an effect on behavior. Under this null, if we were to randomly permute the subjects' identities or primes, we would expect that the model would explain approximately the same number of subjects' choices as we actually observe. We therefore run 2 permutation tests to see whether this is the case for either prime or identity.

When permuting over the prime (i.e. each subject's political identity is kept constant but their prime is randomly reassigned), we find that observed value of 127 subjects' choices explained is significantly larger than can be explained by random reassignment of the prime ($p = 0.04$). Similarly, when permuting over the identity (i.e. each subject's prime is kept constant but their political identity is randomly reassigned), we find that our observed value is significantly larger than can be explained by random reassignment of identities ($p < 0.01$).

For the endowment, we have within-subject variation, making the permutation test slightly different. For each subject, we can randomly reassign their choices to one of the 3 initial endowments, ensuring that each endowment is represented. For each subject, this gives us 6 possible permutations of the endowments. As this is far more manageable than the previous permutation tests, we are able to directly calculate the probability of observing more than 127 subjects' choices explained given the random permutations. This calculation yields $p < 0.01$.

This analysis leads us to the following result:

Result 4 (**Behavior**). *Dictator behavior depends on the dictator's initial endowment, identity salience and identity as indicated by a social identity model in Equation 2. That model explains significantly more dictator choices than would be expected if dictator behavior did not depend on these dimensions.*

Using the permutation test, we have shown that the model is able to explain a large number of individuals' choices. We demonstrate that, assuming individuals take into consideration the payoff and appropriateness level associated with each action, we are able to explain the choices of our subjects. Now we relax this assumption and consider a different test to examine the importance of norms in predicting behaviors. More specifically, we test whether or not including norm ratings improves the model's predictive power.

Because we separately identify the norms data from the choice data, we can fit individual utility functions to the choice data and test whether including identity primed norm ratings improves our ability to predict identity dependent choice, reflected by lower Akaike and Bayesian information criteria (AIC and BIC) when norms are included in our econometric model. This leads to the following prediction:

Hypothesis 5 (**Behavior and Norms: prediction**). *A model including social norms as an explanatory variable for identity primed behavior will improve our ability to predict behavior (as measured, e.g., through lower AIC and BIC) than a model excluding those norms as an explanatory variable.*

We assume that individuals employ a logistic choice rule, where the likelihood of choosing any action, a, depends on the relative utility of that action compared to the other action:

$$P(a = a_i) = \frac{\exp(U_i)}{\sum_j \exp(U_j)} \tag{3}$$

Our first specification assumes that utility depends only on the dictator's own payoff (one way to think of this is that we set $\gamma = 0$ in Equation 2). To estimate the weight placed on monetary payoffs, we impose a

linear restriction on $V_i(\cdot)$, such that for any final payoff, k, $V_i(k_i) = \beta_i k_i$. Thus, we estimate the weight, β_i, that individuals place on the money they receive from a particular choice as follows:

$$U_i(k_i) = \beta_i k_i \qquad \text{(Selfish Model)}$$

To test whether concern for norm compliance predicts behavior, we can estimate Equation 2 using the average norm ratings that identity primed subjects give us in the *norms elicitation experiment* and a subset of the choice data of identity primed subjects in the *choice experiment*. In particular, we use the subset of subject choices where the dictator's initial endowment is 0, 5, or 10 tokens, the situations for which we also elicit norms.

We use a conditional logit regression (McFadden, 1974),[34] where the dependent variable is the selected action and the independent variables are the characteristics of the possible action choices (i.e. each action's average norm rating and monetary payoff). Because the average norm ratings are a measured quantity which may have sampling error, we use bootstrapped standard errors for the model containing norm ratings.[35,36]

For each action, we consider the average identity primed norm ratings, $N(\cdot)$, which vary by the dictator's identity and whether the initial endowment, e, is 0, 5, or 10. If the changes in a subject's behavior are driven by changes in the norms across endowments, we would expect to see the weight that individuals place on complying with the norm, γ_i, to be significantly different from 0. Thus, in our second specification, we assume that an individual is motivated by both the monetary gain from the action as well as the social appropriateness of that action:

$$U_i(k_i, I_i, e) = \beta_i k_i + \gamma_i N(k_i|I_i, e) \qquad \text{(Norms Model)}$$

Table 6 reports conditional logit regressions for identity primed Democrats and Republicans (Panel A).[37] The reported coefficients reflect the relative weight that each component has in the utility function. The coefficient for payoffs, β, is an estimate of the weight subjects place on the payoff characteristic of the action. The coefficient for identity primed norm ratings provides an estimate of the weight on social appropriates in Equation 2, or γ.

We report the first specification in columns 1 and 3. Here we consider the *selfish model*, where we assume that utility from an action depends only on the payoff received from that action. For both Democrats ($\beta = 0.086$, $p < 0.01$) and Republicans ($\beta = 0.108$, $p < 0.01$), the coefficient on the monetary payoff is positive and significant. That is, subjects are more likely to choose an action that has higher payoffs.

Next, we consider our second specification and assume that individuals care about both the payoffs and the social appropriateness of their choices. In columns 2 and 4, we report the *norms model*, which incorporates both the payoffs and the identity primed norm ratings in our conditional logit. We find the coefficient on the payoff is positive and statistically significant for both identities ($\beta = 0.325$, $p < 0.01$ for Democrats and $\beta = 0.218$, $p < 0.01$ for Republicans). Further, we find that the coefficients on the identity primed norm ratings are also positive and significant ($\gamma = 2.763$, $p < 0.01$ for Democrats and $\gamma = 2.729$, $p < 0.01$ for Republicans). This suggests that actions associated with higher norm ratings are more likely to be chosen.

We can take advantage of the logit estimation structure and use the ratio of γ and β to estimate how much money an individual is willing to sacrifice for one unit increase in the norm rating.[38] Allowing only changes in the monetary payoffs and norm ratings of the actions, we obtain:

$$\frac{dk_i}{dN(k_i|I_i, e)} = \frac{\frac{\partial P_i}{\partial N}}{\frac{\partial P_i}{\partial k_i}} = \frac{\gamma_i}{\beta_i} \tag{4}$$

[34] Conditional logit models are similar to multinomial logit models, however conditional logit models emphasize the characteristics of the alternatives, while multinomial logit models depend on the characteristics of the individual making the choice. See Hoffman and Duncan (1988) for a comparison between these models.

[35] To construct the bootstrapped standard errors we conduct 1000 replications. In each replication we resample (with replacement) from the appropriateness ratings data (generated from the *norm elicitation experiment*) and construct an average norm function $N(\cdot)$. We then re-estimate the choice model based on the sampled norm function. The distribution of the coefficients across replications generates the standard errors.

[36] We also perform the same set of regressions using the median norm ratings as opposed to the average norm ratings. We report the results in the Appendix (Table B4).

[37] Here, we do not make the distinction between whether the decision was made when the endowment is 0, 5, or 10. We assume that these differences are captured by the different average norm ratings attached to each action for different endowments.

[38] We calculate this by taking $0.1 \cdot (\gamma/\beta)$. That is, we multiply the ratio by 0.1 to get the dollar value of this trade-off since each token in our experiment is worth \$0.10. Similar analysis using these ratios are also reported in Davies et al. (2001) and Boskin (1974).

Table 6: Conditional logit estimation pooled across initial endowments for Democrats and Republicans using average norm ratings

Panel A: Conditional logit estimation for identity primed choices				
	Conditional logits: Identity primed choices			
	Democrats		Republicans	
	(1) Selfish Model	(2) Norms Model	(3) Selfish Model	(4) Norms Model
Payoff for action (β)	0.086***	0.325***	0.108***	0.218***
	(0.016)	[0.042]	(0.027)	[0.044]
Identity primed norms (γ)		2.763***		2.729***
		[0.189]		[0.244]
$0.1 \cdot \frac{\gamma}{\beta}$		0.849***		1.250***
		[0.081]		[0.267]
Observations	4,686	4,686	1,848	1,848
Log likelihood	-1006	-807.1	-393.4	-306.8
AIC	2014	1618	788.8	617.5
BIC	2020	1631	794.4	628.6
Panel B: Conditional logit estimation for neutrally primed choices				
	Conditional logits: Neutrally primed choices			
	Democrats		Republicans	
	(1) Selfish Model	(2) Norms Model	(3) Selfish Model	(4) Norms Model
Payoff for action (β)	0.213***	1.190***	0.130***	0.495***
	(0.038)	[0.138]	(0.048)	[0.140]
Identity primed norms (γ)		4.917***		2.334***
		[0.536]		[0.608]
$0.1 \cdot \frac{\gamma}{\beta}$		0.413***		0.472***
		[0.013]		[0.052]
Observations	2,376	2,376	858	858
Log likelihood	-475	-373.5	-180.8	-166.9
AIC	952	751.1	363.6	337.8
BIC	957.7	762.6	368.3	347.3

Notes: Standard errors (in parentheses) and robust errors [in brackets], both are adjusted for clustering at the individual level.
Significant at the *** 1 percent, ** 5 percent, and * 10 percent level.

Using this ratio, we see that identity primed Democrats are willing to sacrifice \$0.85 for one unit of increase in appropriateness, while identity primed Republicans are willing to sacrifice \$1.25 for the same increase in appropriateness level.[39]

In Hypothesis 5, we predict that the *norms model* will do a better job than the *selfish model* in explaining the behaviors we see across endowments. To formally test whether the *norms model* has greater predictive power relative to the *selfish model*, we use the AIC, BIC, and the likelihood ratio test.

The AIC and BIC are used to compare the likelihood that a model fits the observed data. Smaller values of the AIC and BIC indicate a better fit of the model to the data.[40] Both the AIC and BIC penalize models for the number of parameters; that is, if $N(\cdot)$ does not improve the fit of the model, we would expect to see the AIC and BIC of our *norms model* to be larger than that of the *selfish model*. The likelihood ratio test, on the other hand, tests the fit of a model (*selfish model*) against one of its non-nested models (e.g. *norms model*) for how likely the observed data is from one model over the other, assuming no improvements in fit between the nested and non-nested model as the null hypothesis. Thus, a small p-value indicates that the additional parameters in the non-nested model lead to a significant improvement in fit.

Consistent with Hypothesis 5, augmenting the *selfish model* with the identity primed norm ratings significantly improves the model's predictive fit for both Democrats and Republicans. For Democrats, the AIC and BIC of the *norms model* are 1618 and 1631, respectively, while those of the *selfish model* are 2014 and 2020, which means that the *norms model* is a better fit. Similarly, for Republicans, we find that both the AIC and BIC are smaller for the *norms model* (AIC = 617.5 and BIC = 628.6) than for the *selfish model* (AIC = 788.8 and BIC = 794.4). Further, looking at the likelihood ratio tests using the *selfish model* as the nested model and *norms model* as the non-nested model, we find that adding $N(\cdot)$ leads to a significant improvement in model fit for both the Democrats and Republicans ($p < 0.01$ in both cases).

To further test our model, we perform the same analysis on neutrally primed subjects (Table 6, Panel B). We see results consistent to what we find with identity primed subjects. Assuming that the neutrally primed Democratic and Republican dictators care only about the payoff associated with their choices (columns 1 and 3), the greater the payoff associated with a choice, the more likely the dictator will make that choice ($p < 0.01$ for both Democrats and Republicans). When we include the neutrally primed norm ratings in our *norms model* (columns 2 and 4), we see that both the payoff and the norm rating associated with a choice have significant and positive effects ($p < 0.01$). In other words, the higher the payoff and the norm rating associated an action, the more likely the neutrally primed subjects are to take that action.

For both Democrats and Republicans, the magnitude of the coefficient on neutrally primed norm ratings (γ) is larger than that on the payoff (β). That is, the subjects' concern for the social appropriateness of an action outweighs their concern for the payoff of that action. We estimate that the Democratic (Republican) dictators are willing to forgo \$0.41 (\$0.47) in order to take the more appropriate action. As with the identity primed subjects in Panel A, the AICs and BICs of the *norms model* are smaller (AIC = 751.1 and BIC= 762.6 for Democrats; AIC = 337.8 and BIC = 347.3 for the Republicans) relative to those of the *selfish model* (AIC = 952 and BIC = 957.7 for the Democrats; AIC = 363.6 and BIC = 368.3 for the Republicans). The likelihood ratio tests reports that these improvements in fit are significant ($p < 0.01$ for both Democrats and Republicans). Taken together, we obtain the following result:

Result 5 (**Behavior and Norms: prediction**). *For each combination of prime and identity, including the corresponding norm ratings in the model signficantly improves our ability to predict behavior.*

To summarize, we find that behavior changes across different endowments for both Democrats and Republicans, and that these changes can be accounted for by changes in the social appropriateness of seemingly identical (in terms of payoffs) actions. That is, individual decisions are motivated not only by the payoffs associated with each action, but also by the social norms attached to those actions.

[39] If one were sure that the attachment to an identity were similar between Democrats and Republicans, then these results would suggest that Republican behavior is more strongly influenced by the norm. We leave this up the reader to decide, and instead focus on using this ratio to make comparisons of model performance within an identity but across specifications in the subsequent analysis of this section.

[40] A more in-depth discussion of these two estimators can be found in Aho et al. (2014).

5. Conclusion

Theory gives norms a leading role in explaining identity dependent behavior. Despite their central and prominent role in identity based choice models, there is little work that directly tests their effect on behavior. In this paper we provide direct evidence of the norms mechanism in social identity driven choice.

We use two laboratory experiments to generate the data for our test and analyze their role in predicting behavior for two different identities (Republicans and Democrats). We use an incentivized method to elicit identity dependent norms using coordination games, and then put these elicited norms to work on a set of choices that are all variants of dictator games.

Using our *norms elicitation experiment*, we demonstrate that both identity and neutrally primed norms vary across situations for the same outcome. That is, depending on the initial endowment, the social appropriateness of the same action varies. We also demonstrate that norms are identity dependent and vary in a manner consistent with the party platforms for each identity. We then show that the the behavior observed in our *choice experiment* can be explained by incorporating these elicited norms into a norms-based social identity model. Using conditional logit specifications we show that a linear model with weight both on own payoffs and on the elicited identity dependent norms does a good job fitting the data *across* identities. In short, the results offer compelling and direct evidence of the role that identity dependent norms play in affecting identity driven choice.

However, our results also connect with a broader discussion about identity dependent preferences. One implication of the social identity model, that our findings support, is that we cannot just consider final outcomes when modeling behavior. Outcome based social preference models that consider the final distribution of outcomes, such as Fehr and Schmidt (1999) and Chen and Li (2009), might allow for Democrats and Republicans to make different allocations in the dictator game.[41] These models can also account for how variations in the initial endowment will yield different transfer decisions. However, the final allocation an actor seeks to achieve should not vary by initial endowment. On the other hand, a social identity model in which the norms *do* vary with initial endowment accounts for how variations in the initial endowment will yield different transfer decisions as well as different final allocations. Thus, the simplicity (and portability) of outcome based social preference models would require specific, narrow, additional or new assumptions regarding the impact of identity as well as situation on behavior.

Kimbrough and Vostroknutov (2014) argue that the norms approach incorporates social preference models because the latter are a shorthand for a particular norm. Taking this further, it could be argued that all of the different situations covered by these models simply reflect different norms. The identity dependent norms approach allows us to make behavioral predictions in each of these situations without having to model situation and norms.

The identity dependent norms approach in this paper makes several contributions that will go a long way toward furthering this research program. First, empirically eliciting the identity based norms offers a good balance between model portability, methodological mapping from model to experimental design and predictive power. Using experimentally elicited identity dependent norms is advantageous because the elicited norms are less dependent on specific functional form assumptions (such as assuming a linear decline in utility when deviating from the identity prescribed action captured as $|x - x^*|$, where x is the action and x^* the prescribed action).

Another strength of our empirical approach to identity dependent norms is that one need not know the particular social norm (is it a norm of fairness, of wealth redistribution or entitlement?) or the particular manner in which the norm expresses itself for an identity ex-ante. Rather one can use this technique to characterize the identity dependent norm and make and test predictions about behavior that were heretofore not possible.

Further, we can collect the norms data from third-party subjects who are not playing the game, and predict the behavior "out of sample" - suggesting that we are identifying general features of identity dependent norms rather than just fitting a model ex-post to a particular situation and identity. This method avoids confounds that might otherwise hamper our ability to identify the effect of identity dependent norms on choice.

Finally, by collecting norm ratings across a number of different identities and situations, we can begin to identify features of a situation or of an identity's norms that consistently activate specific normative

[41] Outcome based social preference models can account for differences across identities because the differences are attributed to selection; the Democratic and Republican platforms select for different types.

principles. Over time, we can develop a more general model of what the norms will be in various settings or for various identities, and construct a portable model.

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Appendices

Appendix A: Additional analysis of the *norm elicitation experiment*

In this section, we report additional results from the *norms elicitation experiment*. In particular, we give a sense of the distribution of norm ratings reported, and we perform non-parametric tests of the hypotheses regarding the norm ratings.

A.1. Norm ratings with confidence intervals

Figure A1 reproduces Figure 3, adding 95% confidence intervals around the average rating for each action. These confidence intervals are calculated separately for each possible dictator action, political identity, prime and endowment.

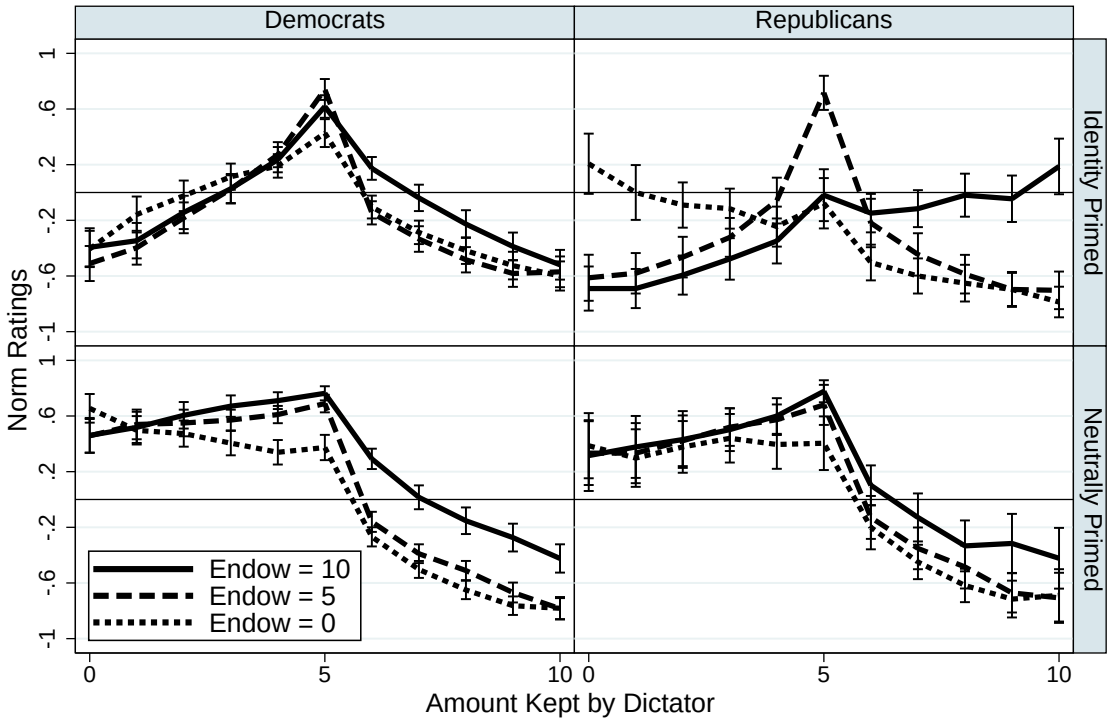

Fig A1: Norm ratings with 95% confidence intervals by identity, initial endowment, and dictator action

A.2. Mann-Whitney U tests

In this section, we report the results of Mann-Whitney U tests on the norm ratings, examining the effects of different endowments, priming and identity on those ratings.

A.2.1. Endowments

Tables A1 and A2 show the results of Mann-Whitney U tests examining the effects of different endowments on the norm ratings. For each endowment pair, identity and prime, we run a separate test for each dictator action ("Keep"). We report the z-score and p-value of each test.

Table A1: Mann-Whitney U tests - effect of endowment on norm ratings for identity primed subjects

Panel A: Identity primed Democrats						
	Endowments 0 v. 5		Endowment: 0 v. 10		Endowment: 5 v. 10	
Keep	z-score	p-value	z-score	p-value	z-score	p-value
0	1.464	0.143	0.203	0.839	-1.197	0.232
1	2.657	0.008	2.171	0.030	-0.392	0.695
2	1.908	0.056	1.573	0.116	-0.123	0.902
3	1.293	0.196	1.203	0.229	0.014	0.989
4	-1.265	0.206	-0.817	0.414	0.493	0.622
5	-4.855	0.000	-2.639	0.008	2.494	0.013
6	0.564	0.573	-4.702	0.000	-5.205	0.000
7	1.176	0.240	-3.770	0.000	-4.491	0.000
8	1.028	0.304	-2.892	0.004	-3.859	0.000
9	0.972	0.331	-2.333	0.020	-3.267	0.001
10	-0.447	0.655	-1.480	0.139	-1.050	0.294
Panel B: Identity primed Republicans						
	Endowments 0 v. 5		Endowment: 0 v. 10		Endowment: 5 v. 10	
Keep	z-score	p-value	z-score	p-value	z-score	p-value
0	5.430	0.000	5.810	0.000	0.674	0.500
1	4.285	0.000	5.138	0.000	1.399	0.162
2	3.330	0.001	4.478	0.000	1.424	0.154
3	2.035	0.042	3.585	0.000	1.833	0.067
4	-1.541	0.123	1.189	0.234	2.517	0.012
5	-6.206	0.000	-0.434	0.664	5.821	0.000
6	-2.254	0.024	-3.501	0.001	-0.746	0.456
7	-1.462	0.144	-4.887	0.000	-3.511	0.000
8	-0.783	0.434	-5.663	0.000	-5.057	0.000
9	-0.357	0.721	-5.588	0.000	-5.523	0.000
10	-0.866	0.387	-6.819	0.000	-6.202	0.000

Table A2: Mann-Whitney U tests - effect of endowment on norm ratings for neutrally primed subjects

Panel A: Neutrally primed Democrats						
	Endowments 0 v. 5		Endowment: 0 v. 10		Endowment: 5 v. 10	
Keep	z-score	p-value	z-score	p-value	z-score	p-value
0	2.312	0.021	1.896	0.058	-0.292	0.771
1	-1.251	0.211	-1.157	0.247	0.086	0.932
2	-1.750	0.080	-2.997	0.003	-1.200	0.230
3	-2.659	0.008	-4.993	0.000	-2.628	0.009
4	-4.505	0.000	-6.455	0.000	-2.854	0.004
5	-5.191	0.000	-6.529	0.000	-1.406	0.160
6	-2.411	0.016	-9.664	0.000	-8.055	0.000
7	-2.616	0.009	-8.788	0.000	-6.677	0.000
8	-3.467	0.001	-7.875	0.000	-5.429	0.000
9	-2.599	0.009	-7.754	0.000	-5.947	0.000
10	-0.138	0.890	-6.294	0.000	-6.188	0.000
Panel B: Neutrally primed Republicans						
	Endowments 0 v. 5		Endowment: 0 v. 10		Endowment: 5 v. 10	
Keep	z-score	p-value	z-score	p-value	z-score	p-value
0	0.403	0.687	-0.004	0.997	-0.266	0.790
1	-0.289	0.773	-0.687	0.492	-0.419	0.675
2	-0.340	0.734	-0.626	0.531	-0.353	0.724
3	-0.314	0.753	-0.416	0.678	-0.042	0.967
4	-1.158	0.247	-1.600	0.110	-0.620	0.535
5	-2.271	0.023	-2.728	0.006	-0.194	0.846
6	-0.668	0.504	-2.773	0.006	-2.222	0.026
7	-0.766	0.443	-2.621	0.009	-1.840	0.066
8	-1.143	0.253	-2.123	0.034	-1.046	0.296
9	-0.664	0.507	-2.947	0.003	-2.430	0.015
10	0.061	0.952	-2.301	0.021	-2.406	0.016

These tests show that whether the norm ratings differ depends on the actions and the endowment being considered. For identity primed Democrats (Table A1, Panel A), at least 4 out of the 11 actions have different norm ratings ($p < 0.01$) when we compare endowments 0 versus 10 and 5 versus 10. When we compare endowments 0 versus 5, 2 out of the 11 actions differ in norm ratings on the 1% level. For identity primed Republicans (Table A1, Panel B), for all comparisons, at least 4 out of the 11 actions differ on the 1% level. For neutrally primed Democrats (Table A2, Panel A), every endowment comparison has at least 7 actions (out of 11) for which this is true. For neutrally primed Republicans (Table A2, Panel B), endowment 0 and endowment 5 only differ significantly at the 5% level when the action is 5. So, while the differences depend, in particular, on priming, overall this analysis shows that the endowment, or the situation, has an effect on norm ratings.

A.2.2. Priming

Table A3: Mann-Whitney U tests - effect of priming on norm ratings

Panel A: Democrats						
	Endowment = 0		Endowment = 5		Endowment = 10	
Keep	z-score	p-value	z-score	p-value	z-score	p-value
0	10.028	0.000	9.169	0.000	7.989	0.000
1	7.117	0.000	9.451	0.000	8.702	0.000
2	6.362	0.000	8.467	0.000	8.442	0.000
3	4.491	0.000	7.753	0.000	8.641	0.000
4	2.716	0.007	5.762	0.000	7.968	0.000
5	-1.013	0.311	-1.939	0.053	2.139	0.033
6	-2.744	0.006	-0.055	0.957	2.116	0.034
7	-3.907	0.000	-0.161	0.872	0.705	0.481
8	-3.825	0.000	0.340	0.734	1.071	0.284
9	-3.973	0.000	-0.648	0.517	1.550	0.121
10	-2.980	0.003	-3.356	0.001	1.557	0.120
Panel B: Republicans						
	Endowment = 0		Endowment = 5		Endowment = 10	
Keep	z-score	p-value	z-score	p-value	z-score	p-value
0	0.656	0.512	5.700	0.000	5.566	0.000
1	2.113	0.035	5.871	0.000	6.410	0.000
2	3.644	0.000	6.191	0.000	6.559	0.000
3	4.583	0.000	6.567	0.000	6.821	0.000
4	5.124	0.000	5.124	0.000	6.627	0.000
5	3.413	0.001	-0.470	0.638	5.648	0.000
6	2.913	0.004	0.973	0.330	2.170	0.030
7	2.442	0.015	1.432	0.152	-0.339	0.735
8	1.679	0.093	1.605	0.109	-2.600	0.009
9	0.226	0.821	0.608	0.543	-2.073	0.038
10	0.613	0.540	-0.180	0.858	-3.615	0.000

Table A3 shows the results of Mann-Whitney U tests examining the effects of priming on the norm ratings. For each endowment and identity, we run a separate test for each possible dictator action ("Keep") comparing the norm ratings for identity primed and neutrally primed Democrats (Panel A) and Republicans (Panel B). We report the z-score and p-value of each test.

These tests show that whether the identity and neutrally primed norms differ depends on the action and the the endowment being considered. Here, every comparison has at least 5 actions (out of 11) for which the norm ratings differ significantly at the 1% level, showing that priming, or identity salience, has an effect on norm ratings.

A.2.3. Identity

Table A4 shows the results of Mann-Whitney U tests examining whether Democrats and Republicans have different norm ratings. For each endowment and prime, we run a separate test for each possible dictator

Table A4: Mann-Whitney U tests - effect of identity on norm ratings

Panel A: Identity primed						
	Endowment = 0		Endowment = 5		Endowment = 10	
Keep	z-score	p-value	z-score	p-value	z-score	p-value
0	-4.605	0.000	1.026	0.305	2.647	0.008
1	-1.174	0.240	1.822	0.069	3.499	0.001
2	0.770	0.441	3.157	0.002	4.794	0.000
3	2.421	0.016	3.692	0.000	5.280	0.000
4	4.724	0.000	3.309	0.001	5.851	0.000
5	4.655	0.000	0.193	0.847	5.866	0.000
6	4.933	0.000	1.111	0.267	3.660	0.000
7	4.765	0.000	1.791	0.073	0.816	0.414
8	3.651	0.000	1.929	0.054	-2.297	0.022
9	2.529	0.011	1.391	0.164	-3.410	0.001
10	2.121	0.034	1.504	0.133	-5.726	0.000
Panel B: Neutrally primed						
	Endowment = 0		Endowment = 5		Endowment = 10	
Keep	z-score	p-value	z-score	p-value	z-score	p-value
0	2.929	0.003	1.439	0.150	1.248	0.212
1	1.764	0.078	2.127	0.034	1.459	0.145
2	0.859	0.390	1.483	0.138	1.642	0.101
3	-0.587	0.557	0.857	0.391	2.214	0.027
4	-0.797	0.426	0.882	0.378	1.577	0.115
5	-0.678	0.498	-0.542	0.588	0.030	0.976
6	-0.657	0.511	-0.163	0.871	2.408	0.016
7	-0.979	0.327	-0.265	0.791	1.596	0.111
8	-0.859	0.390	0.078	0.938	1.945	0.052
9	-0.623	0.533	0.182	0.856	0.709	0.478
10	-0.875	0.382	-0.727	0.468	0.369	0.712

action ("Keep"). We report the z-score and p-value of each test.

These tests show that whether the norm ratings differ by identity depends on the action being considered and whether the subjects are identity or neutrally primed. Here, for identity primed subjects (Panel A), every comparison has at least 3 actions for which the norm ratings differ significantly at the 1% level. However, for neutrally primed subjects (Panel B), the Democratic and Republican norms are very similar at each action. The only action which differs at the 1% level is keeping 0 tokens in endowment 0. This shows that identity may have an effect on norm ratings, but only when that identity is made salient.

Appendix B: Additional analysis of the *norms and choice experiment*

We chose to elicit an estimate of the median because (unlike a quadratic scoring rule to elicit the mean) this yields fewer extreme ratings when the distribution of the other's ratings is particularly skewed (as might be the case for actions that are, as an example, extremely self-regarding or other-regarding). Further, while there may be no changes in the modal rating an action receives, the median rating can change between endowment situations. As an example, even if the modal rating for taking the most appropriate action action is unchanged when the endowment is 0 or when the endowment is 10, the degree to which appropriateness ratings vary for actions that deviate from the most appropriate action may vary across endowment situations. This, in turn, will change the median rating.

In this section, we repeat our earlier analysis using the medians of the appropriateness ratings reported by individuals. That is, for each action, we take the median of the appropriateness ratings for that particular primed $\times$ identity $\times$ endowment treatment as the norm rating. Figure B1 below reproduces Figure 3 using the median norm ratings. We see that the shapes of these norm profiles are similar as when we use the average norm ratings.

In Tables B1, B2, and B3 we run quantile regressions that are analogues to the OLS regessions in Tables 1, 2, and 3 respectively. That is, in these quantile regressions, we consider the influence of the endowment (Table B1), prime (Table B2), and identity (Table B3) on the predicted median norm ratings as opposed to

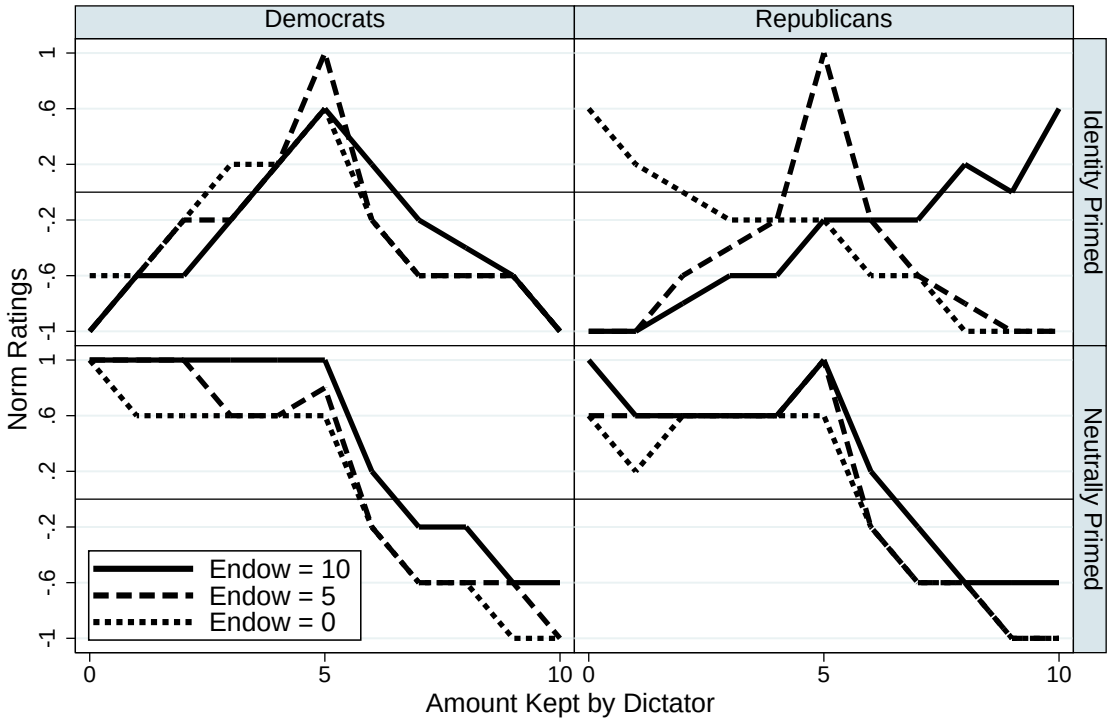

Fig B1: Median norm ratings by identity, initial endowment, and dictator action

the average norm ratings. For most of the quantile regressions, the directions of the coefficients are the same as their OLS counterparts.

Lastly, Table B4 reproduces Table 6 using the median norm ratings instead of the average norm ratings. We find that the coefficients on the median norm ratings (γ) are similar both in direction and magnitude to those on the average norm ratings in Table 6.

Table B1: Piecewise quantile regressions of norm ratings on endowment and actions for each identity

Panel A: Quantile regression of identity primed norm ratings on endowment and actions

	Dependent variable: identity primed norm ratings			
	Democrats		Republicans	
	(1) Keep ≤ 5	(2) Keep > 5	(3) Keep ≤ 5	(4) Keep > 5
Endowment0	0.27***	-0.80***	1.33***	1.00***
	(0.075)	(0.167)	(0.392)	(0.368)
Endowment5	-0.00	-0.80***	-0.00	1.33***
	(0.035)	(0.153)	(0.057)	(0.410)
Keep	0.32***	-0.27***	0.16***	0.13**
	(0.011)	(0.022)	(0.032)	(0.055)
Endowment0 × Keep	-0.05***	0.07***	-0.29***	-0.23***
	(0.018)	(0.024)	(0.103)	(0.053)
Endowment5 × Keep	0.08***	0.07***	0.14***	-0.27***
	(0.011)	(0.023)	(0.041)	(0.056)
Constant	-1.00***	1.80***	-1.00***	-1.00***
	(0.044)	(0.136)	(0.041)	(0.384)
Observations	2,412	2,010	1,116	930
R^2	0.219	0.131	0.198	0.214
H_0: Endowment0 × Keep = Endowment5× Keep	$p < 0.01$	$p < 0.01$	$p < 0.01$	$p < 0.01$

Panel B: Quantile regression of neutrally primed norm ratings on endowment and actions

	Dependent variable: neutrally primed norm ratings			
	Democrats		Republicans	
	(1) Keep ≤ 5	(2) Keep > 5	(3) Keep ≤ 5	(4) Keep > 5
Endowment0	0.00	-0.40***	0.00	-0.20
	(0.011)	(0.068)	(0.281)	(0.622)
Endowment5	0.00	-0.40***	0.00	-0.20
	(0.011)	(0.070)	(0.255)	(0.627)
Keep	0.00	-0.20***	0.00	-0.20***
	(0.000)	(0.009)	(0.071)	(0.073)
Endowment0 × Keep	-0.13***	0.00	0.00	0.00
	(0.029)	(0.009)	(0.061)	(0.071)
Endowment5 × Keep	-0.08***	0.00	0.00	0.00
	(0.004)	(0.009)	(0.056)	(0.072)
Constant	1.00***	1.40***	0.60*	1.20*
	(0.011)	(0.057)	(0.340)	(0.631)
Observations	2,736	2,280	810	675
R^2	0.012	0.262		0.137
H_0: Endowment0 × Keep = Endowment5× Keep	$p < 0.01$	$p < 0.01$	$p = 1$	$p = 1$

Notes: Standard errors (in parentheses) are adjusted for clustering at the individual level.
Significant at the *** 1 percent, ** 5 percent, and * 10 percent levels.

Table B2: Piecewise quantile regressions of norm ratings on priming and actions for each identity

Panel A: Quantile regression of Democratic norm ratings on priming and actions						
	Dependent variable: Democratic norm ratings					
	Endowment = 0		Endowment = 5		Endowment = 10	
	(1) Keep ≤ 5	(2) Keep > 5	(3) Keep ≤ 5	(4) Keep > 5	(5) Keep ≤ 5	(6) Keep > 5
Primed	-1.73***	0.00	-2.00***	-0.00	-2.00***	0.40**
	(0.088)	(0.086)	(0.043)	(0.079)	(0.043)	(0.186)
Keep	-0.13***	-0.20***	-0.08***	-0.20***	-0.00	-0.20***
	(0.011)	(0.005)	(0.007)	(0.004)	(0.001)	(0.020)
Primed × Keep	0.40***	-0.00	0.48***	0.00	0.32***	-0.07***
	(0.024)	(0.009)	(0.010)	(0.007)	(0.009)	(0.024)
Constant	1.00***	1.00***	1.00***	1.00***	1.00***	1.40***
	(0.021)	(0.044)	(0.018)	(0.046)	(0.017)	(0.133)
Observations	1,716	1,430	1,716	1,430	1,716	1,430
R^2	0.180	0.113	0.296	0.122	0.282	0.157
Panel B: Quantile regression Republican norm ratings on priming and actions						
	Dependent variable: Republican norm ratings					
	Endowment = 0		Endowment = 5		Endowment = 10	
	(1) Keep ≤ 5	(2) Keep > 5	(3) Keep ≤ 5	(4) Keep > 5	(5) Keep ≤ 5	(6) Keep > 5
Primed	-0.27	-1.00***	-1.60***	-0.67**	-1.60***	-2.20***
	(0.439)	(0.201)	(0.252)	(0.295)	(0.370)	(0.636)
Keep	-0.00	-0.20***	-0.00	-0.20***	-0.00	-0.20***
	(0.046)	(0.015)	(0.054)	(0.018)	(0.077)	(0.014)
Primed × Keep	-0.13	0.10***	0.30***	0.07**	0.16*	0.33***
	(0.122)	(0.020)	(0.058)	(0.029)	(0.083)	(0.089)
Constant	0.60***	1.00***	0.60**	1.00***	0.60	1.20***
	(0.192)	(0.146)	(0.241)	(0.185)	(0.368)	(0.144)
Observations	642	535	642	535	642	535
R^2	0.102	0.082	0.371	0.106	0.401	0.065

Notes: Standard errors (in parentheses) are adjusted for clustering at the individual level. Significant at the *** 1 percent, ** 5 percent, and * 10 percent levels.

Table B3: Piecewise quantile regressions of norm ratings on identity and actions by initial endowment

Panel A: Quantile regression of identity primed norm ratings on identity and actions						
	Dependent variable: identity primed norm ratings					
	Endowment = 0		Endowment = 5		Endowment = 10	
	(1) Keep ≤ 5	(2) Keep > 5	(3) Keep ≤ 5	(4) Keep > 5	(5) Keep ≤ 5	(6) Keep > 5
Republican	1.07**	-1.00***	0.00	-0.67	0.00	-2.80***
	(0.448)	(0.234)	(0.082)	(0.610)	(0.059)	(0.525)
Keep	0.27***	-0.20***	0.40***	-0.20***	0.32***	-0.27***
	(0.032)	(0.008)	(0.008)	(0.009)	(0.012)	(0.014)
Republican × Keep	-0.40***	0.10***	-0.10***	0.07	-0.16***	0.40***
	(0.127)	(0.021)	(0.019)	(0.059)	(0.029)	(0.073)
Constant	-0.73***	1.00***	-1.00***	1.00***	-1.00***	1.80***
	(0.130)	(0.085)	(0.044)	(0.098)	(0.048)	(0.148)
Observations	1,176	980	1,176	980	1,176	980
R^2	0.100	0.109	0.313	0.079	0.237	0.126
Panel B: Quantile regression of neutrally primed norm ratings on identity and actions						
	Dependent variable: neutrally primed norm ratings					
	Endowment = 0		Endowment = 5		Endowment = 10	
	(1) Keep ≤ 5	(2) Keep > 5	(3) Keep ≤ 5	(4) Keep > 5	(5) Keep ≤ 5	(6) Keep > 5
Republican	-0.40**	0.00	-0.40**	-0.00	-0.40	-0.20
	(0.158)	(0.128)	(0.158)	(0.124)	(0.300)	(1.119)
Keep	-0.13***	-0.20***	-0.08***	-0.20***	-0.00	-0.20***
	(0.013)	(0.005)	(0.007)	(0.005)	(0.001)	(0.023)
Republican × Keep	0.13***	-0.00	0.08**	0.00	0.00	-0.00
	(0.039)	(0.013)	(0.036)	(0.012)	(0.062)	(0.130)
Constant	1.00***	1.00***	1.00***	1.00***	1.00***	1.40***
	(0.023)	(0.050)	(0.021)	(0.052)	(0.024)	(0.151)
Observations	1,182	985	1,182	985	1,182	985
R^2	0.020	0.141	0.002	0.177	0.007	0.135

Notes: Standard errors (in parentheses) are adjusted for clustering at the individual level. Significant at the *** 1 percent, ** 5 percent, and * 10 percent levels.

Table B4: Conditional logit estimation pooled across initial endowments for Democrats and Republicans using median norm ratings

Panel A: Conditional logit estimation for identity primed choices				
	Conditional logits: Identity primed choices			
	Democrats		Republicans	
	(1) Selfish Model	(2) Norms Model	(3) Selfish Model	(4) Norms Model
Payoff for action (β)	0.086***	0.267***	0.108***	0.191***
	(0.016)	(0.039)	(0.027)	(0.043)
Identity primed norms (γ)		1.773***		1.721***
		(0.159)		(0.164)
$0.1 \cdot \frac{\gamma}{\beta}$		0.665		0.900
Observations	4,686	4,434	1,848	1,848
Log likelihood	-1006	-788.7	-393.4	-339.5
AIC	2014	1581	788.8	683
BIC	2020	1594	794.4	694
Panel B: Conditional logit estimation for neutrally primed choices				
	Conditional logits: Neutrally primed choices			
	Democrats		Republicans	
	(1) Selfish Model	(2) Norms Model	(3) Selfish Model	(4) Norms Model
Payoff for action (β)	0.213***	1.304***	0.130***	0.536***
	(0.038)	(0.154)	(0.048)	(0.132)
Identity primed norms (γ)		4.149***		1.838***
		(0.461)		(0.446)
$0.1 \cdot \frac{\gamma}{\beta}$		0.318		0.343
Observations	2,376	2,376	858	858
Log likelihood	-475	-374.2	-180.8	-163.4
AIC	952	752.4	363.6	330.8
BIC	957.7	764	368.3	340.3

Notes: Standard errors (in parentheses) and robust errors [in brackets], both are adjusted for clustering at the individual level.
Significant at the *** 1 percent, ** 5 percent, and * 10 percent level.